ERRATA.

Page 226, line 1, for "*January*" read May.

Pages 843, 844, 846, and 848, columns 4, 6, 8, 10, 12, 14, and 16, for "Lat." read Long. W.

Page 868, in the table, column 8, "course" for "NW. by W." read W.SW.

Page 868, column 16, for "W.SW." read NW. by W.

NOTE.—The navigator will please make these corrections when he receives this volume.

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EXPLANATIONS AND SAILING DIRECTIONS

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TO ACCOMPANY THE

WIND AND CURRENT CHARTS,

APPROVED BY

CAPTAIN D. N. INGRAHAM,

CHIEF OF THE BUREAU OF ORDNANCE AND HYDROGRAPHY,

AND PUBLISHED BY AUTHORITY OF

HON. ISAAC TOUCEY,

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BY

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SUPERINTENDENT OF THE U. S. OBSERVATORY AND HYDROGRAPHICAL OFFICE,
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FROM THE ATLANTIC TO THE GULF PORTS.

THE GULF STREAM, with its eddies and counter currents, renders the navigation of the Florida pass one of the most dangerous in the world. These currents have strewn the Florida Reefs with carcasses of ships and men, and have caused the loss of many millions worth of property.

At the instance of one of the marine insurance offices of New York, I undertook in the summer of 1857, with the assistance of Lieutenant Young, to examine the time by the several routes into the Gulf of Mexico, for the purpose of ascertaining if, without any considerable lengthening of the passage, the Gulf bound vessels might not enter this Mediterranean sea of America by the Yucatan instead of the Florida pass.

All vessels from the Atlantic to the Gulf ports have to cross the parallel of 30° N., and from this parallel the way into the Gulf is the same for all. I therefore prepared a table to show, first, these ports, the time from them to the parallel of 30° N., and the place of crossing this parallel; and second, the time thence by the different "passages" to the destined Gulf port. With this formula in hand, all the log-books in the office were overhauled, and the "crossings" and time tabulated according to the month.

The result of this examination does not encourage the hope of any change of route. The entrance by the Yucatan pass is the safer, but it prolongs the voyage; and in this age, when "time is reckoned as money," to ships as well as to men, I know not how any change in the present routes between the Atlantic and Gulf ports of the country is to be effected without the aid of underwriters themselves. IT IS SAFER TO ENTER BY THE YUCATAN PASS, *but it takes more time.*

Routes into the Gulf of Mexico, from latitude 30° north.

JANUARY.—VIA HOLE IN THE WALL.

Name of vessel.	Date of crossing 30° N.	Longitude of crossing 30° N.			Whither bound.	No. of days.	Total passage.
Barque Attica	Jan. 24, 1844	13 days from	Portland	in 71° 04′ W.	To Matanzas	12	25
Brig Blakeley	Jan. 5, 1834	11	Portland	68 56	Matanzas	14	25
Barque William Smith	Jan. 4, 1835	9	Portland	71 34	Havana	7	16
Barque William Smith	Jan. 4, 1836	8	Portland	68 15	Havana	29	37
Brig Motto	Jan. 13, 1839	9	Portland	69 13	Havana	15	24
Brig Hogan	Jan. 13, 1841	11	Portland	75 14	Havana	9	20
Brig Hogan	Jan. 13, 1842	10	Portland	66 00	Havana	13	23
Brig Portland	Jan. 19, 1850	10	Portland	70 20	Cardenas	------	------
Ship Ohio	Jan. 30, 1849	4	New York	70 40	Apalachicola	14	18
Ship Tarquin	Jan. 11, 1848	7	Boston	71 00	Mobile	12	19
Ship Milan	Jan. 12, 1848	6	Bath, Me.	72 50	New Orleans	8	14
Brig Washington	Jan. 12, 1831	11	Portland	67 51	Havana	24	35
Brig Washington	Jan. 19, 1832	10	Portland	71 58	Havana	13	23
Brig Washington	Jan. 6, 1832	9	Portland	70 04	Matanzas	22	31
Barque Mary Lowell	Jan. 5, 1848	8	Portland	68 15	Matanzas	9	17
Barque Statia	Jan. 27, 1831	8	Portland	66 20	Mobile	27	35
Brig Henrietta	Jan. 19, 1837	6	Portland	72 03	Matanzas	13	19
Brig Henrietta	Jan. 22, 1838	12	Portland	73 18	Matanzas	8	20

Routes into the Gulf of Mexico for January—Continued.

Name of vessel.	Date of crossing 30° N.	Longitude of crossing 30° N.			Whither bound.	No. of days.	Total passage.
Ship Aspasia	Jan. 7, 1826	6 days from	Newport	in 69° 00′ W.	To New Orleans	19	25
Ship Orion	Jan. 26, 1856	5	Boston	73 00	New Orleans	15	20
Ship Ionia	Jan. 20, 1856	5	Boston	68 44	New Orleans	14	19
Ship Thomas Perkins	Jan. 25, 1856	5	Boston	69 25	New Orleans	12	17
Ship Zephyr	Jan. 12, 1855	7	Boston	70 23	New Orleans	27	34
Ship Woodside	Jan. 2, 1849	6	New York	73 00	Mobile	11	17
Ship Aberdeen	Jan. 10, 1849	5	New York	71 00	Apalachicola	6	11
Ship Creole	Jan. 5, 1850	5	New York	72 25	New Orleans	10	15
Ship Princeton	Jan. 14, 1854	7	New York	73 52	New Orleans	9	16
Ship Albion	Jan. 24, 1833	3	Charlestown	74 41	Mobile	14	17
Brig Nun	Jan. 21, 1839	7	Portland	72 41	Havana	16	23
Brig Samuel and John	Jan. 21, 1840	10	Frankfort	70 05	Havana	11	21
Ship Franconia	Jan. 22, 1847	5	New York	73 50	New Orleans	14	19
Barque Statira	Jan. 16, 1833	9	Portland	68 54	Mobile	20	29
Ship John Marshal	Jan. 24, 1855	12	Portland	70 34	New Orleans	------	------
Ship President	Jan. 1, 1843	8	Portland	71 00	Matanzas	9	17
Barque Octavia	Jan. 25, 1848	8	Portland	71 50	Matanzas	13	21
Brig Agenoria	Jan. 22, 1839	14	Portland	73 14	Matanzas	15	29
Brig Mary J. Sargent	Jan. 24, 1840	8	Portland	70 05	Matanzas	10	18
Brig Henrietta	Jan. 28, 1839	9	Portland	69 59	Matanzas	11	20
Brig Washington	Jan. 1, 1839	9	Portland	71 30	Matanzas	9	18
Brig Washington	Jan. 22, 1841	10	Portland	72 44	Matanzas	8	18
Barque John Browner	Jan. 12, 1846	6	Portland	67 10	Apalachicola	12	18
Barque Herkle	Jan. 10, 1854	9	New York	72 22	Cardenas	7	10
		VIA WINDWARD PASSAGE.					
Brig Catharine	Jan. 28, 1849	5 days from	New York	in 66 06	To St. Jago	5	10
Barque Wagram	Jan. 7, 1848	8	Boston	67 34	St. Jago	9	17
Brig Washington	Jan. 22, 1824	2	Wilmington, N. C.	75 30	Jamaica	19	21
Schooner Mary E. Balch	Jan. 31, 1852	8	Boston	69 10	Jamaica	13	21
Brig Hellen Jane	Jan. 3, 1855	6	Boston	68 14	Truxillo	12	18
Brig Nora	Jan. 1, 1848	4	Philadelphia	73 00	Cienfuegos	11	15
Ship Mary	Jan. 9, 1807	13	Portland	64 22	Jamaica	20	33
Barque American	Jan. 6, 1844	7	Portland	65 40	Trinidad	12	19
Barque American	Jan. 13, 1845	13	Portland	66 40	Trinidad	11	24
		VIA MONO PASSAGE.					
Barque Delaware	Jan. 20, 1851	11 days from	New York	in 65 52	To St. Juan de Nicaragua.	10	21
Schooner Dorsas	Jan. 23, 1850	3	Wilmington	-----	Mayagues	10	13
Schooner Barnstable	Jan. 25, 1852	12	Boston	63 47	Aux Cayes	12	24

AVERAGE CROSSING OF 30° N. LATITUDE:—From Boston and Maine (mean of 34 passages,) 8.6 days, between 70° and 71° W. longitude. Mean of 17 best:—6.9 days, near 70° W. longitude.

New York, (mean of 7 passages,) 5.8 days, between 72° and 73° W. longitude. Mean of 4 best:—4.7 days, near 72° W. longitude.

AVERAGE FROM 30° N. LATITUDE:—To Matanzas, (mean of 13 passages,) 11.9 days, near 71° W. longitude. Mean of 6 best:—8.8 days, near 71° W. longitude.

Mobile, (mean of 5 passages,) 16.8 days, near 71° W. longitude. Mean of 3 best:—12.3 days, 73° near W. longitude.

New Orleans, (mean of 9 passages,) 14.2 days, near 71° W. longitude Mean of 4 best:—9.7 days, near 71° W. longitude.

Routes into the Gulf of Mexico—Continued.

FEBRUARY.—VIA HOLE IN THE WALL.

Name of vessel.	Date of crossing 30° N.	Longitude of crossing 30° N.			Whither bound.	No. of days.	Total passage.
Ship Louisville	Feb. 3, 1840	4 days from	New York	in 75° 30′ W.	To New Orleans	10	11
Ship Chasco	Feb. 29, 1852	7	New York	71 53	New Orleans	10	17
Ship Houston	Feb. 16, 1855	6	New York	72 00	Galveston	15	21
Ship Senator	Feb. 27, 1855	5	New York	73 14	New Orleans	12	17
Ship Richard Alsop	Feb. 4, 1850	6	New York	72 00	New Orleans	10	16
Ship Alleghany	Feb. 29, 1844	4	Philadelphia	73 37	New Orleans	10	14
Ship Hobart	Feb. 2, 1834	7	New York	71 04	New Orleans	10	17
Ship Adelaide	Feb. 21, 1848	6	Philadelphia	70 08	Vera Cruz	19	25
Ship St. Louis	Feb. 16, 1852	6	New York	72 20	New Orleans	12	18
Ship Chasco	Feb. 29, 1852	7	New York	71 53	New Orleans	13	20
Barque Elizabeth	Feb. 24, 1849	5	Philadelphia	74 32	Havana	7	12
Brig Athens	Feb. 20, 1823	7	Boston	70 39	Havana	10	17
Barque Montauk	Feb. 12, 1853	4	New York	73 57	Galveston	14	18
Ship Vicksburg	Feb. 17, 1845	5	New York	74 00	New Orleans	11	16
Ship Vicksburg	Feb. 12, 1847	6	New York	71 52	New Orleans	10	16
Ship Sarah	Feb. 15, 1843	13	Portland	74 20	Mobile	21	34
Ship Edwina	Feb. 3, 1849	5	New York	72 38	Mobile	15	20
Barque Brilliante	Feb. 11, 1852	8	New York	76 10	New Orleans	11	19
Barque Mexico	Feb. 12, 1830	6	Portland	74 34	New Orleans	17	23
Ship Jessore	Feb. 3, 1845	7	New York	72 41	New Orleans	15	22
Ship Vicksburg	Feb. 9, 1851	5	New York	75 27	New Orleans	9	14
Barque Mopang	Feb. 27, 1851	5	New York	74 04	Cardenas	17	22
Ship Vicksburg	Feb. 1, 1848	7	New York	74 40	New Orleans	12	19
Ship Sarah Boyd	Feb 16, 1852	8	New York	68 30	Havana	13	21
Barque Nimrod	Feb. 13, 1851	7	New York	71 38	New Orleans	9	16
Ship Burmah	Feb. 9, 1835	7	Portsmouth, N. H.	70 50	New Orleans	18	25
Brig Sublime	Feb. 5, 1838	8	Portland	73 59	Havana	18	26
Brig Erie	Feb. 27, 1838	5	New York	74 22	Apalachicola	10	15
Ship Tarolinta	Feb. 10, 1843	16	Boston	78 38	Apalachicola	9	25
Ship Tarolinta	Feb. 19, 1846	1	Charleston	76 50	Matanzas	5	6
Ship Thomas Wright	Feb. 25, 1848	9	New York	68 53	Vera Cruz	19	28
Brig Washington	Feb. 24, 1834	12	Portland	68 35	Matanzas	14	26
Brig Samuel	Feb. 24, 1841	13	Portland	64 15	Havana	15	28
Brig Virginia Packet	Feb. 3, 1834	11	Portland	69 47	Havana	15	26
Brig Albion	Feb. 22, 1835	10	Portland	72 23	Matanzas	9	19
Brig Turner	Feb. 13, 1837	15	Portland	60 51	Matanzas	20	35
Brig Merida	Feb. 17, 1840	10	Portland	72 30	Havana	7	17
Barque John Brown	Feb. 13, 1847	13	Boston	64 06	Apalachicola	20	3
VIA WINDWARD PASSAGE.							
Brig Catherine	Feb. 22, 1850	6 days from	New York	in 66.00	To St. Jago de Cuba	8	14
Barque A. B. Sturges	Feb. 13, 1851	6	New York	70.32	St. Jago de Cuba	5	11
Barque American	Feb. 4, 1847	8	Portland	67.00	Trinidad	12	20
Barque A. B. Sturges	Feb. 12, 1852	7	New York	74.01	St. Jago de Cuba	6	13

Routes into the Gulf of Mexico for February—Continued.

GULF STREAM.

Name of vessel.	Date of crossing 30° N.	Longitude of crossing 30° N.	Whither bound.	No. of days.	Total passage.
Barque Erie	Feb 9, 1851	4 days from New York in 72° 09′ W.	To Apalachicola	9	13

VIA MONO PASSAGE.

Ship Corsair	Feb. 9, 1849	7 days from Boston in 62. 00	To Chagres	15	22

AVERAGE CROSSING OF 30° N. LATITUDE FROM:—Boston and Maine, (mean of 13 passages,) 10.8 days, near 70° W. longitude. Mean of 6 best:—8 days, between 72° and 73° W.

New York, (mean of 20 passages,) 6 days, near 73° W. longitude. Mean of 10 best:—5 days, near 73° W. longitude.

AVERAGE FROM 30° N. TO:—Matanzas, 12 days, between 69 and 70 W. longitude. Mean of two best:—7 days, near 74° W. longitude.

Mobile, (mean of 2,) 18 days, between 73 and 74 W. longitude.

New Orleans, (mean of 17,) 11.7 days, near 73° W. longitude. Mean of 8 best:—9.7 days, near 73° W. longitude.

MARCH:—VIA HOLE IN THE WALL.

Name of vessel.	Date of crossing 30° N.	Longitude of crossing 30° N.	Whither bound.	No. of days.	Total passage.
Ship Mary Francis	Mar. 12, 1846	4 days from New York in 76° 00′ W.	To Mobile	10	14
Ship Mary Francis	Mar. 14, 1847	5 New York 74 16	Mobile	8	13
Ship Warsaw	Mar. 10, 1845	7 New York 73 12	New Orleans	10	17
Ship Panchita	Mar. 5, 1854	8 New York 70 25	Cardenas	8	16
Barque Apollo	Mar. 8, 1857	8 New York 73 42	Havana	7	15
Barque Hecla	Mar. 23, 1853	8 New York 71 00	Cardenas	7	15
Brig Flora	Mar. 25, 1841	13 Portland 70 45	Havana	12	25
Ship Washington	Mar. 12, 1827	9 Portland 69 16	Havana	12	21
Brig Argo	Mar. 16, 1830	16 Portland 72 09	Havana	9	25
Ship Sarah	Mar. 9, 1844	7 Boston 76 03	Mobile	17	24
Barque Nautilus	Mar. 31, 1846	10 Boston 71 22	Havana	4	14
Ship Burmah	Mar. 1, 1834	10 Boston 74 01	Havana	8	18
Ship Tarolinta	Mar. 5, 1838	4 New York 72 30	New Orleans	10	14
Ship Tarolinta	Mar. 17, 1840	5 New York 71 30	Mobile	14	19
Ship Tarolinta	Mar. 7, 1844	5 Boston 70 00	Apalachicola	7	12
Schooner Emeline	Mar. 8, 1833	6 New York 74 09	Matanzas	9	15
Brig Henrietta	Mar. 9, 1840	9 Portland 70 19	Matanzas	11	20
Brig Harriet	Mar. 19, 1846	10 Portland 66 25	Havana	13	23
Brig Emeline	Mar. 17, 1835	14 Portland 68 34	Matanzas	23	37
Barque Mary Lowell	Mar. 16, 1847	5 Portland 74 12	Matanzas	4	9
Ship Walpole	Mar. 10, 1842	9 Boston 72 45	New Orleans	8	17
Ship Medford	Mar. 30, 1841	2 Savannah 78 06	New Orleans	10	12
Ship Wisconsin	Mar. 4, 1848	5 New York 74 00	New Orleans	12	17
Ship Antarctic	Mar. 30, 1851	6 New York 73 00	New Orleans	15	21
Ship Vicksburg	Mar. 5, 1850	5 New York 75 22	New Orleans	10	15
Ship Cynthia	Mar. 23, 1855	7 New York 75 20	New Orleans	13	21
Barque Montauk	Mar. 5, 1857	8 New York 72 42	Galveston	17	25
Ship Nabob	Mar. 9, 1854	8 Boston 71 49	New Orleans	27	34

Routes into the Gulf of Mexico for March—Continued.

VIA HOLE IN THE WALL.

Name of vessel.	Date of crossing 30° N.	Longitude of crossing 30° N.,			Whither bound.	No. of days.	Total passage.
Ship Bostonian	Mar. 20, 1854	7 days from	Boston	in 68° 30′ W.	To New Orleans	9	15
Ship J. W. Fannin	Mar. 19, 1854	6	New York	67 58	Galveston	------	-----
Brig Washington	Mar. 16, 1842	13	Portland	70 00	Matanzas	14	27
Ship Creole	Mar. 8, 1850	4	New York	74 38	New Orleans	10	14
Barque Cordelia	Mar. 28, 1851	4	Philadelphia	75 45	Havana	5	9
Ship Fanshon	Mar. 26, 1844	4	New York	71 20	Mobile	10	14
Ship Arcole	Mar. 15, 1847	4	New York	73 03	Vera Cruz	13	17
Brig Chinchilla	Mar. 7, 1852	4	Baltimore	73 00	Cardenas	9	13
Ship Mary Ann	Mar. 24, 1845	7	Boston	70 55	New Orleans	9	16
Ship St. Louis	Mar. 17, 1851	7	New York	71 30	New Orleans	11	18
Barque Rienzi	Mar. 19, 1851	10	Boston	69 08	New Orleans	12	22
Schooner Emeline	Mar. 7, 1834	15	Portland	69 03	Matanzas	11	26
Brig Morgiana	Mar. 16, 1834	8	Portland	72 44	Havana	8	16
Brig Henrietta	Mar. 25, 1836	7	Portland	71 35	Matanzas	6	13
Barque Macedonia	Mar. 15, 1848	9	Boston	71 15	Matanzas	8	17
Brig Henrietta	Mar. 15, 1841	10	Portland	72 23	Matanzas	8	18
Barque Attica	Mar. 20, 1845	5	Boston	67 39	Apalachicola	11	16
Brig Emiline	Mar. 25, 1836	10	Portland	72 51	Matanzas	7	17
Ship Clinton	Mar. 25, 1845	7	Bath, Me.	71 33	Havana	9	16
Ship Clinton	Mar. 17, 1846	10	Boston	71 14	Havana	8	18
Barque Catharine	Mar. 9, 1844	8	New York	75 57	New Orleans	15	23
Brig Henrietta	Mar. 17, 1842	8	Portland	72 30	Havana	16	24
Barque Attica	Mar. 20, 1845	5	Boston	67 39	Apalachicola	11	16

VIA WINDWARD PASSAGE.

Bhip Panther	Mar. 12, 1854	7 days from	Boston	in 66 57	To New Orleans	26	32
Brig Gratia	Mar. 4, 1852	2	Baltimore	71 52	Port Maria, Ja.	10	12
Barque American	Mar. 21, 1848	7	Boston	68 20	Trinidad	11	18
Barque J. W. Blodget	Mar. 31, 1848	7	Boston	69 10	St. Jago	8	15
Brig Hellen Jane	Mar. 14, 1852	7	Boston	67 40	Turk's Island and Truxillo.	8 & 6	21
Steamer Philadelphia	Mar. 31, 1850	3	New York	72 41	Chagres	8	11
Brig Tarquina	Mar. 26, 1845	4	New York	70 43	St. Jago de Cuba	6	10
Barque American	Mar. 24, 1843	6	Portland	72 20	Trinidad	20	26
Barque American	Mar. 27, 1845	7	Portland	66 38	Trinidad	10	17

VIA MONO PASSAGE.

Brig Captain Tom	Mar. 5, 1850	5 days from New York	in 67 51	To Chagres	12	17

AVERAGE CROSSING OF 30° N. FROM:—Boston and Maine, (mean of 28 passages,) 9.1 days, near 71° W. longitude. Mean of 14 best:—7 days, near 71° W. longitude.

New York, (mean of 20,) 6 days between 72° and 73° W. longitude. Mean 10 best, 4.8 days, near 73° W. longitude.

AVERAGE FROM 30° N. TO:—Matanzas, (mean of 10,) 10 days between 71° and 72° W. longitude. Mean of 5 best:—6.6 days between 71° and 72° W. longitude.

Mobile, 11.8 days, near 74° W. longitude. Mean of 3 best:—9.3 days near 74° W. longitude.

New Orleans, 11 days, near 70° W. longitude.

Routes to ports in the Gulf of Mexico—Continued.

APRIL.—VIA HOLE IN THE WALL.

Name of vessel.	Date of crossing 30° N.	Longitude of crossing 30° N.			Whither bound.	No. of days.	Total passage.
Ship Sultana	April 6, 1851	9 days from	New York	in 75° 51′ W.	To New Orleans	14	23
Brig R. H. Douglass	April 4, 1848	6	New York	72 20	New Orleans	12	18
Brig Samuel	April 7, 1843	12	Portland	69 25	Matanzas	9	21
Ship Tarquin	April 7, 1845	11	Boston	70 40	Mobile	9	20
Brig Oxford	April 18, 1853	12	Portland		Havana	7	19
Ship Neutrality	April 5, 1809	11	Portland	64 25	Havana	21	32
Ship Creole	April 25, 1849	6	New York	75 40	New Orleans	10	16
Brig Blakely	April 30, 1835	13	Portland	70 11	Matanzas	9	22
Brig Charlotte	April 13, 1841	10	Portland	72 18	Matanzas	9	19
Barque Macedonia	April 3, 1846	6	Boston	72 23	Matanzas	5	11
Barque Macedonia	April 5, 1847	12	Boston	68 48	New Orleans	20	32
Barque Henrietta	April 6, 1843	8	Portland	73 00	Havana	8	16
Barque Samuel	April 12, 1839	20	Portland	69 52	Havana	13	33
Barque Samuel	April 10, 1840	15	Portland	63 46	Havana	15	30
Barque Washington	April 17, 1835	10	Portland	72 31	Matanzas	10	20
Barque Washington	April 23, 1836	16	Portland	73 31	Matanzas	7	23
Barque Washington	April 5, 1837	10	Portland	66 14	Matanzas	16	26
Barque Washington	April 11, 1838	11	Portland	73 31	Matanzas	7	18
Barque Henrietta	April 27, 1837	10	Portland	72 31	Matanzas	9	19
Brig Henrietta	April 30, 1838	10	Portland	70 23	Matanzas	11	21
Brig Henrietta	April 24, 1839	6	Portland	72 00	Matanzas	5	11
Brig Washington	April 21, 1839	14	Portland	67 00	Matanzas	9	23
Brig Washington	April 9, 1840	9	Portland	71 46	Matanzas	9	18
Brig Samuel	April 22, 1844	13	Portland	72 13	Havana	8	21
Barque John Browner	April 4, 1848	6	Boston	70 10	Apalachicola	17	23
Ship St. Louis	April 24, 1852	4	New York	73 55	New Orleans	15	19
Brig Washington	April 15, 1844	10	Portland	72 24	Matanzas	9	19
Brig Washington	April 13, 1828	9	Portland	71 17	Matanzas	11	20
Barque Octavia	April 12, 1848	7	Portland	73 34	Cardenas	6	13
Ship Peparter	April 26, 1854	7	Boston	71 20	New Orleans	15	22
Ship Vicksburg	April 29, 1846	5	New York	75 50	New Orleans	22	27
Barque Attica	April 3, 1846	6	Boston	74 00	Havana	4	10
Ship Vicksburg	April 10, 1848	5	New York	75 10	New Orleans	12	17
Brig Samuel	April 7, 1842	12	Portland	69 39	Havana	9	21
Ship Jessore	April 27, 1846	8	New York	72 33	New Orleans	21	29
Ship Mary Ann	April 8, 1849	6	Boston	70 23	New Orleans	16	22
Barque Hecla	April 4, 1854	7	New York	70 48	Cardenas	8	15
Brig Washington	April 12, 1828	12	Portland	69 37	Havana	14	26
Barque Mopang	April 22, 1851	4	New York	72 52	Cardenas	8	12
VIA WINDWARD PASSAGE.							
Barque American	April 6, 1844	6 days from	Portland	in 69 10	To Trinidad	9	15
Barque American	April 27, 1847	10	Portland	60 20	Trinidad	23	33
Brig Catherine	April 10, 1849	5	New York	72 27	St. Jago de Cuba	5	10
Brig G. W. Russell	April 13, 1851	3	Baltimore	71 34	Port Mario, Ja.	10	13

Routes to ports in the Gulf of Mexico—Continued.

APRIL:—VIA HOLE IN THE WALL.

Name of vessel.	Date of crossing 30° N.	Longitude of crossing 30° N.			Whither bound.	No. of days.	Total passage.
Brig Helen Jane	April 24, 1853	9 days from Boston		in 66° 17′ W.	To Turk's Island and Truxillo.	8 & 8	25
Brig Catherine	April 27, 1850	6	New York	67 03	St. Jago de Cuba	8	14
Barque A. B. Sturges	April 15, 1851	5	New York	74 18	St. Jago de Cuba	8	13
Barque Sarah Chase	April 21, 1854	9	New York	66 40	Cienfuegos	13	22
Brig Crocket	April 5, 1809	11	Portland	64 25	St. Jago de Cuba	15	26
Brig Leo	April 11, 1839	9	Portland	70 43	Trinidad	17	26

AVERAGE CROSSINGS OF 30° N. FROM:—Boston and Maine, (mean of 29 passages,) 10.4 days, near 71° W. longitude. Mean of 14 best:—8.4 days' near 71° W. longitude.

New York, (mean of 9 passages,) 6 days, between 73° and 74° W. longitude. Mean of 4 best:—4.5 days, near 74° W. longitude.

AVERAGE FROM 30° N. to:—Matanzas, (mean of 15 passages,) 9 days near 71° W. longitude. Mean of 7 best:—7.6 days, near 71° W. longitude.

New Orleans, (mean of 10 passages,) 15.7 days, near 73° W. longitude. Mean of 5 best:—12.6 days, near 75° W. longitude.

MAY:—VIA HOLE IN THE WALL.

Name of vessel.	Date of crossing 30° N.	Longitude of crossing 30° N.			Whither bound.	No. of days.	Total passage.
Ship Senator	May 12, 1854	6 days from New York		in 73° 19′ W.	To New Orleans	8	14
Ship Lowell	May 31, 1848	12	New York	75 00	Galveston	14	26
Ship Hobart	May 2, 1835	9	New York	68 25	New Orleans	14	23
United States ship Cyane	May 5, 1855	6	Boston	69 54	Key West	8	14
Ship Diadem	May 4, 1852	6	New York	74 30	Mobile	14	20
Ship Diadem	May 3, 1849	6	New York	75 20	Mobile	9	15
Barque William Smith	May 20, 1836	12	Portland	73 10	Havana	11	23
Brig Merida	May 6, 1840	13	Portland	69 43	Havana	9	22
Schooner Emeline	May 31, 1834	15	Portland	67 18	Matanzas	17	32
Brig Albion	May 14, 1835	11	Portland	73 26	Matanzas	12	23
Brig Washington	May 26, 1833	11	Portland	61 53	Matanzas	18	29
Brig Washington	May 30, 1834	12	Portland	67 05	Matanzas	18	30
Brig Henrietta	May 23, 1840	9	Boston	68 48	Havana	15	24
Brig Washington	May 5, 1841	21	Portland	64 09	Matanzas	17	38
Brig Plato	May 29, 1842	15	Boston	68 59	Havana	15	30
Ship Mary Francis	May 14, 1846	9	New York	76 04	Mobile	11	20
Ship Vicksburg	May 31, 1845	5	New York	74 39	New Orleans	7	12
Barque Octavia	May 2, 1847	16	Portland	71 48	Havana	15	31
Brig Agenoria	May 16, 1839	13	Portland	72 44	Matanzas	14	27
Brig Washington	May 26, 1824	11	Portland	74 15	Matanzas	10	21
VIA WINDWARD PASSAGE.							
Barque American	May 15, 1842	11 days from Portland		in 67 58 W.	To Trinidad	11	22
Steamer Philadelphia	May 7, 1850	4	New York	72 07	Chagres	6	10
Brig Cuba	May 7, 1856	9	Boston	70 15	Kingston, Jamaica	11	20
Schooner Mary E. Balch	May 1, 1852	15	Boston	68 59	Jeremil, Hayti	11	26
Barque Panchita	May 26, 1854	7	New York	75 00	Santa Cruz, Cuba	16	24

Routes into the Gulf of Mexico—Continued.

MAY.—VIA GULF STREAM.

Name of vessel.	Date of crossing 30° N.	Longitude of crossing 30° N.			Whither bound.	No. of days.	Total passage.
Ship Hindoo	May 15, 1848	6 days from	Philadelphia	in 74° 00′ W.	To New Orleans	12	18
VIA HOLE IN THE WALL.							
Brig Washington	May 6, 1826	14 days from	Portland	in 70 38	To Matanzas	14	28
Barque Rachelle	May 17, 1847	4	New York	73 30	Havana	9	13
Ship George Porter	May 8, 1847	7	Boston	75 38	New Orleans	21	28
Barque Minatononi	May 31, 1852	6	New York	68 31	New Orleans	16	22
Ship Burmah	May 13, 1836	11	Boston	73 47	Havana	5	16
Brig Erie	May 4, 1838	5	New York	71 02	Apalachicola	13	18
Brig Nunn	May 31, 1838	14	Portland	70 00	Havana	11	25
Brig Samuel & John	May 24, 1840	6	Portland	73 33	New Orleans	22	28
Barque Apollo	May 9, 1850	8	New York	72 07	Havana	11	19
Brig Washington	May 10, 1830	7	Portland	75 00	Mobile	23	30
Brig Washington	May 3, 1831	13	Portland	66 50	Matanzas	17	30
Brig Washington	May 6, 1832	15	Portland	71 47	Matanzas	10	25
Steamer Philadelphia	May 7, 1850	4	New York	72 07	----------	------	------
Ship Pelm	May 25, 1851	4	Baltimore	73 20	New Orleans	9	13
Ship Ocean	May 31, 1841	9	Boston	74 32	New Orleans	19	28

AVERAGE CROSSING OF 30° N. FROM:—Boston and Maine, (mean of 22 passages) 11.7 days, near 71° W. longitude. Mean of 11 best 9 days, near 72° W. longitude.

New York, (mean of 12 passages) 6.7 days, near 73° W. longitude. Mean of 6 best 5 days, near 73° W. longitude.

AVERAGE FROM 30° N. TO:—Matanzas, (mean of 10) 14.7 days, near 69° W. longitude. Mean of 5 best:—12 days, near 73° W. longitude.

Mobile, (mean of 4) 14.2 days, near 75° W. longitude. Mean of 2 best:—10 days, near 76° W. longitude.

New Orleans, (mean of 8) 14.5 days, near 73° W. longitude. Mean of 4 best:—9.5 days, near 72° W. longitude.

JUNE.—VIA HOLE IN THE WALL.

Name of vessel.	Date of crossing 30° N.	Longitude of crossing 30° N.			Whither bound.	No. of days.	Total passage.
Ship Genesee	June 5, 1848	9 days from	New York	in 75° 15′ W.	To New Orleans	9	18
Brig Mary Ann	June 8, 1847	7	Philadelphia	70 00	Sisal	13	20
Ship Zephyr	June 12, 1856	7	Boston	71 17	New Orleans	18	25
Brig Henrietta	June 9, 1836	20	Boston	72 40	Matanzas	9	29
Barque Macedonia	June 17, 1846	13	Portland	68 49	New Orleans	18	31
Ship Sarah Boyd	June 2, 1852	7	New York	74 51	Havana	8	15
Barque Panchita	June 6, 1853	6	New York	72 26	Cardenas	7	13
Barque Hecla	June 6, 1853	6	New York	72 16	Matanzas	6	12
Barque Mopang	June 14, 1851	10	New York	69 30	Cardenas	7	17
Brig Agenoria	June 2, 1838	20	Portland	70 41	Matanzas	11	31
Barque Cordelia	June 4, 1851	5	Philadelphia	72 11	Havana	9	14
Barque Wm. Smith	June 13, 1837	9	Portland	73 59	Matanzas	15	24
Brig Samuel	June 14, 1841	15	Portland	69 41	Matanzas	14	29
Ship Medora	June 14, 1844	12	Boston	74 06	Havana	6	18

Routes to ports in the Gulf of Mexico—Continued.

JUNE.—VIA HOLE IN THE WALL.

Name of vessel.	Date of crossing 30° N.	Longitude of crossing 30° N.			Whither bound.	No. of days.	Total passage.
Brig Portland	June 24, 1849	8 days from	Portland	in 68° 27′ W.	To Cardenas	13	21
Brig Abeona	June 12, 1852	8	New York	72 03	Cardenas	5	13
Ship Warsaw	June 24, 1846	9	New York	72 15	New Orleans	19	28
Ship Geneva	June 6, 1848	9	Boston	67 45	New Orleans	12	21
Barque Apollo	June 14, 1844	8	Boston	70 00	Havana	5	13
Barque Mary Lowell	June 6, 1847	10	Portland	71 27	Matanzas	11	21
Brig Washington	June 2, 1827	13	Portland	74 00	Havana	12	25
VIA WINDWARD PASSAGE.							
Barque J. W. Blodget	June 25, 1854	7 days from	New York	in 67 00 W.	To Sisal, Yucatan	30	37
Brig Helen Jane	June 25, 1856	10	Boston	65 36	Truxillo, Hondu's	17	27
Steamer Philadelphia	June 16, 1850	3	New York	73 58	Chagres	6	9
Barque American	June 30, 1843	13	Portland	68 35	Trinidad	13	26
Barque A. B. Sturges	June 14, 1851	10	New York	67 22	St. Jago de Cuba	8	10
Brig Catherine	June 29, 1849	1	Bermuda	64 17	St. Jago de Cuba	8	9
Ship Affghan	June 16, 1852	6	New York	70 30	Navy Bay	17	23
Schooner Catherine	June 8, 1847	4	New York	74 02	St. Jago de Cuba	13	17

AVERAGE CROSSING OF 30° N. LATITUDE FROM:—Boston and Maine, (mean of 12 passages,) 12 days, near 71° W. longitude. Mean of 6 best:—8. 5 days, near 70° W. longitude—

New York, (mean of 7 passages,) 7. 8 days, near 72° W. longitude.

AVERAGE, (mean of 6,) FROM 30° N. TO:—Matanzas, 11 days, near 72° W. longitude. Mean of 3 best:—8.6 days, near 72° W. longitude—

Mean of 5 to New Orleans, 15.2 days, near 71° W. longitude.

Mean of 3 best:—13 days, near 71° W. longitude.

JULY.—VIA WINDWARD PASSAGE. *

Name of vessel.	Date of crossing 30° N.	Longitude of crossing 30° N.			Whither bound.	No. of days.	Total passage.
Ship Montreal	July 4, 1848	9 days from	New York	in 65° 25′ W.	To Vera Cruz	29	38
Ship Nebraska	July 2, 1848	9	New York	71 45	Vera Cruz	21	30
Brig Orbit	July 23, 1848	12	New York	70 01	St. Jago de Cuba	8	20
Brig G. W. Russell	July 26, 1850	7	Baltimore	68 40	Kingston, Jamaica	11	18
Brig Harriet	July 20, 1845	12	Calais, Me.	62 24	Kingston, Jamaica	20	32
Barque American	July 30, 1842	13	Portland	67 48	Trinidad	13	26
VIA HOLE IN THE WALL.							
Ship Streglite	July 17, 1842	18 days from	Boston	in 70 31 W.	To Havana	11	29
Ship Vicksburg	July 10, 1848	19	New York	74 28	New Orleans	9	28
Ship Montreal	July 4, 1848	10	New York	65 25	Vera Cruz	21	31
Ship J. W. Fanin	July 1, 1854	7	New York	72 30	Galveston	16	23
Barque Montauk	July 6, 1850	8	New York	68 00	Galveston	24	32
Ship Vicksburg	July 7, 1850	12	New York	73 19	New Orleans	24	36

* No routes, via Gulf Stream or Mona passage, during the month of July.

Routes to portes in the Gulf of Mexico—Continued.

JULY.—VIA HOLE IN THE WALL—Continued.

Name of vessel.	Date of crossing 30° N.	Longitude of crossing 30° N.			Whither bound.	No. of days.	Total passage.
Barque Monsoon	July 28, 1848	17 days from	New York	in 73° 00′	To Matanzas	13	30
Ship Sarah and Eliza	July 14, 1848	10	New York	74 30	New Orleans	15	25
Ship Sultana	July 4, 1851	14	New York	72 23	New Orleans	19	33
Barque Octavia	July 27, 1848	12	Portland	73 01	Cardenas	15	27
Brig Susan Jane	July 11, 1837	15	Portland	70 20	Havana	29	44
Brig Lucy Ann	July 14, 1848	8	Boston	75 02	Vera Cruz	18	26
Barque Oxford	July 17, 1843	12	Boston	74 08	Havana	10	22
Brig Washington	July 10, 1829	26	Portland	68 06	Havana	17	43
Ship Cygnet	July 21, 1848	7	New York	71 15	New Orleans	9	16
Ship Silas Holmes	July 8, 1848	8	New York	71 30	New Orleans	12	20
Brig "Dante"	July 15, 1839	20	Portland	69 12	Havana	15	35
Brig Washington	July 31, 1835	18	Portland	67 28	Matanzas	15	33

AVERAGE CROSSING FROM 30° N. LATITUDE FROM:—Boston and Maine, (mean of 8 passages,) 16 days, near 71° W. longitude; Mean of 4 best:—11.7 days, near 73° W. longitude—

New York, (mean of 10,) 11.2 days, between 71° and 72° W. longitude;—Mean of 5 best:—8 days, near 72° W. longitude.

AVERAGE FROM 30° N. TO:—Matanzas (mean of 2,) 14 days, 70° W. longitude—

New Orleans, (mean of 6) 14.7 days, near 73° W. longitude.

AUGUST.—VIA HOLE IN THE WALL.

Name of vessel.	Date of crossing 30° N.	Longitude of crossing 30° N.			Whither bound.	No. of days.	Total passage.
Brig Washington	Aug. 21, 1824	11 days from	Portland	in 74° 35′ W.	To Havana	22	33
Barque Montauk	Aug. 5, 1853	10	New York	72 07	Galveston	20	30
Barque Genesee	Aug. 13, 1845	9	New York	74 28	New Orleans	17	26
Ship Ashland	Aug. 30, 1849	6	New York	74 27	New Orleans	17	23
Ship Rajah	Aug. 13, 1856	14	New York	72 31	New Orleans	26	40
Brig Lowell	Aug. 22, 1847	8	New York	72 00	Galveston	13	21
Barque Erie	Aug. 5, 1850	13	New York	75 15	New Orleans	16	29
Barque Tedesco	Aug. 3, 1847	24	Portland	75 55	Matanzas	5	29
Brig Washington	Aug. 8, 1828	28	Portland	76 41	Havana	31	59
Brig Hogan	Aug. 20, 1840	12	Boston	74 59	New Orleans	22	34
Brig Albion	Aug. 12, 1835	15	Portland	72 12	Matanzas	6	21
Brig Sublime	Aug. 10, 1838	11	Portland	69 32	Havana	34	45
Barque Mary Lowell	Aug. 11, 1848	13	Portland	69 04	Matanzas	16	29
Brig Washington	Aug. 22, 1836	12	Portland	71 27	Matanzas	19	31
Brig Washington	Aug. 10, 1837	13	Portland	70 50	Matanzas	17	30

VIA WINDWARD PASSAGE.

Barque A. B. Sturges	Aug. 23, 1851	8 days from	New York	in 71 40	To St. Jago de Cuba	15	23
Barque American	Aug. 17, 1845	14	Calais, Me.	67 28	Jamaica	17	31
Barque American	Aug. 2, 1848	18	Portland	69 10	Trinidad	14	32

Routes to ports in the Gulf of Mexico—Continued.

AUGUST.—VIA WINDWARD PASSAGE—Continued.

Name of vessel.	Date of crossing 30° N.	Longitude of crossing 30° N.			Whither bound.	No. of days.	Total passage.
Brig Mary Ann	Aug. 18, 1847	4 days from	New York	in 69° 40′ W.	To Balize, Hs	22	26
Schooner Catharine	Aug. 5, 1847	11	New York	69 46	St Jago de Cuba	8	19
Barque J. A. Gardiner	Aug. 16, 1848	11	New York	75 18	Belize	22	33

AVERAGE CROSSING OF 30° N. FROM:—Boston and Maine, (mean of 9 passages,) 15.4 days, near 73° W. longitude.—Mean of 4 best:—11.5, near 73° W. longitude.—

New York, (mean of 6,) 10 days, near 73° W. longitude. Mean of 3 best:—9 days, near 73° W. longitude.

AVERAGE FROM 30° N. TO:—Matanzas, (mean of 5,) 12.6 days, near 72° W. longitude. Mean of 3 best:—9 days, near 73° W. longitude.—

New Orleans (mean of 5,) 19.6 days, near 75° W. longitude. Mean of the 3 best passages:—16.6 days, near 75° W. longitude.

SEPTEMBER.—VIA WINDWARD PASSAGE.

Name of vessel.	Date of crossing 30° N.	Longitude of crossing 30° N.			Whither bound.	No. of days.	Total passage.
Barque American	Sept. 26, 1843	8 days from	Portland	in 68° 59′ W.	To Trinidad	22	30
Brig Helen Jane	Sept. 15, 1854	9	Boston	62 21	Truxillo, Hs	22	31
Brig G. W. Russell	Sept. 25, 1850	7	Baltimore	71 40	Kingston, Ja	7	14
Schooner Catherine	Sept. 28, 1847	5	New York	72 01	St. Jago de Cuba	15	20
Schooner Catherine	Sept. 20, 1848	6	New York	70 37	St. Jago de Cuba	*13	19
VIA HOLE IN THE WALL.							
Brig Blakely	Sept. 5, 1835	9 days from	Portland	in 71 15 W.	To Havana	10	19
Ship Lebanon	Sept. 29, 1849	5	New York	71 12	New Orleans	15	25
Ship Clinton	Sept. 29, 1846	4	New York	75 20	Brazos St. Jago	9	13
Ship Mary Francis	Sept. 11, 1846	6	New York	73 48	Mobile	12	18
Brig Henrietta	Sept. 16, 1837	12	Portland	73 34	Havana	10	22
Brig Washington	Sept. 13, 1844	10	Portland	72 58	Matanzas	11	21
Ship Chasca	Sept. 16, 1852	10	Boston	74 09	New Orleans	7	17
Brig Jane	Sept. 21, 1841	7	Portland	72 10	Matanzas	15	22
Ship Garrick	Sept. 14, 1855	6	New York	72 26	New Orleans	14	20
Ship Milan	Sept. 23, 1849	5	Philadelphia	73 19	New Orleans	17	22
Brig Washington	Sept. 13, 1830	17	Portland	72 28	Havana	18	35
Brig Angeline	Sept. 17, 1850	5	New York	74 48	Mobile	12	17
Barque Mary Adelia	Sept. 17, 1850	8	Boston	72 35	New Orleans	16	24
Brig Hogan	Sept. 19, 1841	7	Portland	74 10	Havana	12	19
Ship Vicksburg	Sept. 12, 1845	4	New York	75 05	New Orleans	12	16

AVERAGE CROSSING OF 30°N. FROM:—Boston and Maine, (mean of 8 passages,) 10 days, near 72° W. longitude. Mean of 4 best:—7.7 days, near 72° W. longitude.

New York, (mean of 6,) 5 days, near 74° W. longitude. Mean of 3 best 4.3 days, 75° W. longitude.

AVERAGE FROM 30° N. TO:—Matanzas, (mean of 2,) 13 days, 73° W longitude.

Mobile, (mean of 2,) 12 days, between 74° and 75° W. longitude.

New Orleans, (mean of 5,) 14.8 days, near 73° W. longitude. Mean of 3 best:—13.6 days, near 73° W. longitude.

Routes to ports in the Gulf of Mexico—Continued.

OCTOBER.—VIA HOLE IN THE WALL.

Name of vessel.	Date of crossing 30° N.	Longitude of crossing 30° N.			Whither bound.	No. of days.	Total passage.
Brig Washington	Oct. 17, 1840	8 days from	Portland	in 72° 40′ W.	To Matanzas	8	16
Brig Albion	Oct. 30, 1834	9	Portland	72 49	Havana	10	19
Brig Henrietta	Oct. 13, 1836	7	Portland	72 19	Havana	6	13
Barque Octavia	Oct. 27, 1847	16	Portland	68 54	Havana	11	27
Ship Reporter	Oct. 12, 1853	6	Boston	70 16	New Orleans	9	15
Barque Mopang	Oct. 20, 1851	6	New York	74 49	Cardenas	6	12
Barque Nimrod	Oct. 23, 1850	7	New York	74 07	New Orleans	10	17
Brig Argo	Oct. 22, 1820	10	Portland	74 00	Havana	5	15
Barque Fenelon	Oct. 2, 1850	6	New York	74 17	Apalachicola	9	15
Ship Vicksburg	Oct. 29, 1850	7	New York	74 02	New Orleans	7	14
Ship Mary Ann	Oct. 25, 1848	6	New York	72 38	New Orleans	12	18
Ship Gallia	Oct. 17, 1851	4	New York	74 40	Mobile	12	16
Brig Danté	Oct. 23, 1835	12	Portland	73 14	Matanzas	17	29
Ship Vicksburg	Oct. 22, 1848	5	New York	74 57	New Orleans	12	17
Brig Flora	Oct. 11, 1840	16	Portland	72 25	Cedar Key	36	42
Ship Walpole	Oct. 7, 1842	6	Boston	73 14	New Orleans	13	19
Brig Margaret and Sarah	Oct. 13, 1816	7	Boston	71 25	New Orleans	28	35
Ship Walpole	Oct. 31, 1843	7	Boston	73 39	New Orleans	10	17
Ship Thos. Wright	Oct. 27, 1847	7	New York	73 29	New Orleans	9	16
Ship Walpole	Oct. 23, 1845	6	Boston	72 58	New Orleans	7	13
Barque Montauk	Oct. 1, 1856	4	New York	74 52	Galveston	22	26
Ship Herculean	Oct. 4, 1854	6	New York	74 40	Mobile	7	13
Ship Tarquin	Oct. 16, 1845	6	New York	73 27	Mobile	9	15
Brig Washington	Oct. 9, 1842	14	Portland	72 14	Matanzas	9	23
Ship Winfield Scott	Oct. 14, 1854	6	New York	74 54	Mobile	8	14
Ship Neptune	Oct. 21, 1841	6	Portsm'th, N.H.	71 00	New Orleans	15	21
Ship Champlain	Oct. 8, 1841	4	Philadelphia	75 10	New Orleans	9	13
Ship Malabar	Oct. 31, 1843	9	Waldoboro'	74 28	New Orleans	8	17
VIA WINDWARD PASSAGE.							
Brig "Catharine"	Oct. 8, 1849	6 days from	New York	in 70 58	To St. Jago de Cuba	9	15
Barque Macedonia	Oct. 20, 1847	9.	Portland	70 08	St. Jago de Cuba	16	25
Ship John H. Stephens	Oct. 28, 1847	9	Lubeck, Me.	67 20	Montego bay	18	27
VIA GULF STREAM.							
Ship Rajah	Oct. 9, 1848	4 days from	New York	in 75 36	To New Orleans	19	23

AVERAGE CROSSINGS OF 30° N. FROM:—Boston and Maine, (mean of 14 passages,) 9.3 days, near 72° W. longitude. Mean of 7 best:—6.4 days, near 72° W. longitude.—

New York, (mean of 12,) 5.8 days, near 74° W. longitude. Mean of 6 best:—5.2 days, near 74° W. longitude.

AVERAGE FROM 30° N. TO:—Matanzas, (mean of 3,) 11.3 days, near 73° W. longitude. Mean of 2 best:—8.5 days, near 73 W. longitude.—

Mobile, (mean of 4,) 9 days, near 75° W. longitude. Mean of 2 best:—7.5, and 75° W. longitude.—

New Orleans, (mean of 13,) 10 days, near 73° W. longitude. Mean of 6 best:—8 days, near 73° W. longitude.

Routes to ports in the Gulf of Mexico—Continued.

NOVEMBER.—VIA HOLE IN THE WALL.

Name of vessel.	Date of crossing 30° N.	Longitude of crossing 30° N.			Whither bound.	No. of days.	Total passage.
Brig Washington	Nov. 4, 1827	9 days from	Portland	in 71° 47′ W.	To Havana	22	31
Ship Vicksburg	Nov. 29, 1847	4	New York	74 45	New Orleans	8	12
Ship Toronto	Nov. 4, 1848	4	New York	74 35	New Orleans	9	13
Ship Albania	Nov. 15, 1848	6	New York	75 36	New Orleans	14	20
Barque Attica	Nov. 30, 1846	12	Boston	63 08	New Orleans	22	34
Barque Warwick	Nov. 7, 1846	9	Portland	75 18	New Orleans	12	21
Brig Portland	Nov. 10, 1848	8	Portland	73 00	Cardenas	9	17
Brig Argo	Nov. 13, 1819	8	Portland	69 34	Havana	10	18
Brig Samuel	Nov. 18, 1844	10	Portland	71 12	Havana	9	19
Barque John Brouwer	Nov. 9, 1848	7	Portland	71 07	Apalachicola	20	27
Ship Burmah	Nov. 24, 1833	6	Boston	71 30	New Orleans	11	17
Ship Burmah	Nov. 7, 1834	6	Boston	72 45	New Orleans	10	16
Ship Burmah	Nov. 5, 1836	6	Boston	73 53	New Orleans	9	15
Brig Washington	Nov. 20, 1833	13	Portland	65 47	Matanzas	10	23
Brig Henrietta	Nov. 28, 1835	7	Portland	74 47	Matanzas	9	16
Brig Washington	Nov. 12, 1841	7	Portland	71 35	Matanzas	11	18
Schooner Emeline	Nov. 29, 1833	10	Portland	70 54	Matanzas	19	29
Ship Memphis	Nov. 20, 1853	6	New York	76 05	New Orleans	7	13
Barque Montauk	Nov. 16, 1853	7	New York	75 20	St. Mark's	16	23
Ship Diadem	Nov. 25, 1853	5	New York	72 20	Mobile	9	14
Barque Commerce	Nov. 5, 1851	8	Portland	70 05	New Orleans	16	24
Brig Washington	Nov. 13, 1826	9	Portland	69 16	Matanzas	13	21
Brig Henrietta	Nov. 28, 1839	7	Portland	73 23	Matanzas	10	17
Ship Warsaw	Nov. 18, 1845	6	New York	71 49	New Orleans	18	24
Ship Vicksburg	Nov. 26, 1846	5	New York	72 36	New Orleans	10	15
Brig Samuel	Nov. 5, 1840	12	Portland	69 33	Havana	14	26
Ship Alleghany	Nov. 12, 1843	4	Philadelphia	74 00	New Orleans	9	13
Ship Plymouth	Nov. 20, 1834	12	Bath, Me.	71 00	New Orleans	16	28
Brig Lowell	Nov. 30, 1847	5	New York	74 00	Galveston	11	16
Ship Sarah	Nov. 18, 1845	8	Portland	71 30	Mobile	17	25
Ship Zephyr	Nov. 27, 1855	10	Boston	71 02	New Orleans	18	21
Ship Ashland	Nov. 3, 1850	6	New York	76 08	Mobile	15	21
Ship Tarquin	Nov. 26, 1842	8	Boston	70 28	Mobile	10	18
Ship Nebraska	Nov. 10, 1848	4	New York	72 30	Apalachicola	15	19
Ship Reporter	Nov. 14, 1854	6	Boston	74 00	New Orleans	12	18

AVERAGE CROSSING FROM 30° N., FROM:—*Boston and Maine*, (means of 23 passages,) 8.6 days, near 71° W. longitude. Mean of 11 best:—6.9 days, near 72° W. longitude.—

New York, (mean of 11,) 5.3 days, near 74° W. longitude. Mean of 5 best:—4.4 days, near 74° W. longitude.

AVERAGE FROM 30° N. TO:—Matanzas, (mean of 6,) 12 days, near 71° W. longitude. Mean of 3 best:—6.9 days, near 71° W. longitude.—

Mobile, (mean of 4,) 12.7 days, near 72° W. longitude. Mean of 2 best:—9.5 days, near 71° W. longitude.—

New Orleans, (mean of 15,) 11.9 days, near 73° W. longitude. Mean of 7 best:—9 days, near 74° W. longitude.

Routes to ports in the Gulf of Mexico—Continued.

DECEMBER.—VIA HOLE IN THE WALL.

Name of vessel.	Date of crossing 30° N.	Longitude of crossing 30° N.			Whither bound.	No. of days.	Total passage.
Barque Attica	Dec. 9, 1845	7 days from	Boston	in 73° 43′ W.	To New Orleans	17	24
Brig Charlatta	Dec. 31, 1840	8	Boston	69 40	Matanzas	7	15
Barque American	Dec. 28, 1842	6	Portland	67 30	Trinidad	12	18
Barque Macedonia	Dec. 13, 1845	11	Portland	69 30	Matanzas	14	25
Ship Sarah	Dec. 17, 1844	9	Portland	68 29	Mobile	14	23
Ship John Knox	Dec. 29, 1854	11	Bucksport, Maine.	70 46	Havana	6	17
Barque F. A. Perley	Dec. 20, 1848	9	Portland	69 39	Havana	9	18
Barque Macedonia	Dec. 31, 1846	9	Portland	66 08	Mobile	13	22
Brig Henrietta	Dec. 10, 1840	9	Portland	72 23	Matanzas	9	18
Brig Henrietta	Dec. 26, 1842	9	Portland	71 40	Matanzas	9	18
Brig Turner	Dec. 1, 1832	11	Portland	69 46	Matanzas	13	24
Barque Mary Lowell	Dec. 27, 1846	6	Portland	70 24	Matanzas	8	14
Brig Samuel	Dec. 21, 1839	10	Portland	70 39	Havana	17	27
Ship Mary Francis	Dec. 13, 1846	5	New York	75 10	Mobile	10	15
Brig Emeline	Dec. 23, 1834	8	Portland	72 38	Matanzas	16	24
Brig Emeline	Dec. 18, 1835	12	Portland	65 38	Matanzas	13	25
Brig Washington	Dec. 27, 1843	13	Portland	74 20	Matanzas	10	23
Brig Washington	Dec 16, 1824	8	Portland	73 45	Matanzas	13	21
Ship Athens	Dec. 21, 1848	6	Boston	69 03	Mobile	10	16
Barque Fenelon	Dec. 30, 1850	9	New York	73 25	New Orleans	14	23
Ship Aberdeen	Dec. 31, 1850	7	New York	75 21	Mobile	15	22
Ship Senator	Dec. 19, 1856	4	New York	74 07	New Orleans	18	22
Ship Cornelia	Dec. 21, 1848	6	New York	71 55	Mobile	11	17
Ship Richard Alsop	Dec. 10, 1849	6	New York	73 52	New Orleans	10	16
Ship Walpole	Dec. 28, 1841	6	Boston	74 33	New Orleans	13	19
Brig Samuel	Dec. 23, 1841	11	Portland	70 57	Havana	7	18
Brig Samuel	Dec. 14, 1842	12	Portland	71 13	Matanzas	10	22
Brig Washington	Dec. 4, 1829	7	Portland	71 50	New Orleans	17	24
Ship John Marshall	Dec. 20, 1837	6	Baltimore	75 40	Mobile	11	17
Ship John Marshall	Dec. 6, 1838	7	New York	70 56	Mobile	19	26
Ship Sabina	Dec. 28, 1837	3	New York	74 24	Mobile	14	17
Ship Uncas	Dec. 25, 1845	7	New York	72 03	New Orleans	14	21
Brig Samuel	Dec. 25, 1843	12	Portland	71 05	Matanzas	10	22
Brig Washington	Dec. 23, 1834	8	Portland	72 54	Matanzas	25	33
Brig Washington	Dec. 20, 1835	14	Portland	63 01	Matanzas	18	32
Brig Washington	Dec. 15, 1836	14	Portland	69 17	Matanzas	9	23
Brig Washington	Dec. 16, 1837	9	Portland	64 29	Matanzas	14	23
Brig Washington	Dec. 23, 1852	4	New York	68 20	Mobile	9	13
Ship Morgiana	Dec. 13, 1833	7	Portland	71 46	Havana	11	18
Ship Mas. Livingston	Dec. 19, 1848	8	New York	72 38	Apalachicola	11	19
Brig Washington	Dec. 23, 1829	10	Portland	68 19	Matanzas	17	27
Schooner Emeline	Dec. 23, 1832	19	Portland	69 44	Matanzas	7	26

Routes to ports in the Gulf of Mexico—Continued.

DECEMBER.—VIA WINDWARD PASSAGE.

Name of vessel.	Date of crossing 30° N.	Longitude of crossing 30° N			Whither bound.	No. of days.	Total passage.
Barque American	Dec. 11, 1848	8 days from	Portland	in 70° 05′ W.	To Trinidad	12	20
Barque J. W. Blodget	Dec. 28, 1847	10	Boston	68 40	Trinidad	11	21
Schooner Catharine	Dec. 8, 1847	6	New York	72 00	St. Jago de Cuba	6	12
Brig Washington	Dec. 20, 1828	12	Portland	65 14	St. Jago de Cuba	12	24
Ship Saphire	Dec. 25, 1832	8	Boston	65 00	New Orleans	19	27
U. S. Frigate Potomac	Dec. 4, 1855	6	New York	68 23	Nicolo Mole	6	12
Barque American	Dec. 19, 1848	8	Portland	65 15	Trinidad	12	20

AVERAGE CROSSING OF 30° N. FROM:—Boston and Maine, (mean of 30 passages,) 9.7 days, between 71° and 72° W. longitude. Mean of 15 best:—7.5 days, between 70° and 71° W. longitude.—

New York, (mean of 12,) 6 days, near 71° W. longitude. Mean of 6 best, 4.8 days, near 73° W. longitude.

AVERAGE FROM 30° N. TO:—Matanzas, (mean of 18,) 12.3 days, near 70° W. longitude. Mean of 9 best:—8.9 days, near 71° W. longitude.—

Mobile, (mean of 10,) 12.5 days, between 71° and 72° W. longitude. Mean of 5 best:—10.2 days, near 72° W. longitude.—

New Orleans, (mean of 27,) 14.7 days, near 73° W. longitude. Mean of 4 best:—12.7 days, between 73° and 74° W. longitude.

Monthly averages of passages from Atlantic to Gulf ports.

VIA HOLE IN THE WALL.

Months.	Number of—	Number of—	Number of days—	Days.
January	Vessels to 30° N. 14	Days to 30° N. 6.0	From 30° N. to New Orleans and Mobile 15.1	Total passage 21.1
February	do 19	do 6.2	do do 12.4	do 18.6
March	do 20	do 6.0	do do 12.0	do 18.0
April	do 11	do 7.2	do do 15.1	do 22.3
May	do 12	do 6.7	do do 14.4	do 21.1
June	do 5	do 9.4	do do 15.2	do 24.6
July	do 6	do 11.6	do do 14.7	do 26.3
August	do 5	do 10.8	do do 19.6	do 30.4
September	do 8	do 6.7	do do 13.2	do 19.9
October	do 17	do 6.1	do do 10.9	do 17.0
November	do 20	do 6.5	do do 12.6	do 19.1
December	do 17	do 6.1	do do 13.4	do 19.5

Monthly averages of passages from Atlantic to Cuban ports.

VIA HOLE IN THE WALL.

Months.	Number of—	Number of—	Number of days—	Days.
January	Vessels to 30° N. 23	Days to 30° N. 9.5	From 30° N. to North Cuban ports 12.9	Total passage 22.4
February	do 12	do 9.5	do do 12.5	do 22.0
March	do 25	do 9.0	do do 9.4	do 18.4
April	do 27	do 10.4	do do 9.6	do 20.0
May	do 19	do 12.6	do do 13.0	do 25.6
June	do 15	do 10.5	do do 9.2	do 19.7
July	do 8	do 17.3	do do 15.6	do 32.9
August	do 8	do 15.9	do do 18.7	do 34.6
September	do 6	do 10.5	do do 12.7	do 23.2
October	do 8	do 9.0	do do 10.2	do 19.2
November	do 11	do 8.3	do do 12.3	do 20.6
December	do 23	do 10.5	do do 11.8	do 22.3

The passage to 30° N. is most tedious in June, July, and August; and from 30° N. the passage both to the Cuban and Gulf ports is most tedious during the same months. The passage during this season *ought not* to be so long: with proper use by navigators of the lights before them, and an attentive study of the Pilot and Trade-Wind Charts, time can be saved, and the voyages considerably shortened in summer.

FROM EUROPE TO THE GULF PORTS, AND FROM ASPINWALL.

Vessels bound from Europe to any of the Gulf, or Central American, Caribbean, or West India ports should proceed as though they were bound to ports beyond the equator, until they cross the calms of Cancer. The Trade-Wind Chart, together with the winds, the barometer, and the weather at the time, will enable the navigator to judge when he has crossed this belt, and when he may "stick her away west:"—when and how to cross the calms of Cancer, &c.

How to proceed thus far on the route, full instructions are given in the chapter on the route from Europe to ports beyond the equator.

The intelligent navigator, however, will take care not to follow those directions blindly. Suppose, for instance, after getting his offing, the winds should be fresh and fair for making westing, he should avail himself of all such favorable opportunities to make the best of his way westward. In crossing the place where the calm belt ought be, even with a "smashing breeze," care should be taken to run slantingly across, and having crossed it, the only further caution necessary is for the navigator to place himself fairly within the northeast trades and then "run them down" into the Caribbean Sea.

From Aspinwall, and all the Caribbean ports to the west, vessels bound to Europe or the ports of North America, instead of taking a dead beat to the eastward of Carthagena, are recommended, having a due regard to the shoals off the Central American coast, to do precisely as they are advised to do with regard to Cape St. Roque, when they cross the line well to the west, viz: stand boldly on, take advantage of slants, and do not beat until the shoals, or the land, compels you to stand off.

There is little difference as to currents, no odds where you beat; perhaps the currents along the Central American coast are a little more favorable than those on the Carthagena coast. But there is this gain by the northern route at least, viz: you need not beat any further than it may be necessary to weather the difficulties in sight.

Having gained an offing, the route is then *via* the Yucatan pass and so out upon the Atlantic with the Gulf Stream.

There is a constant set from the Caribbean Sea into the Mexican Gulf to feed the Gulf Stream. Vessels passing up to the northward may take advantage of it. It is bifurcated just after entering the Gulf.

The bottle paper of the Hermes followed this Yucatan current to the "fork" and then took the western branch:—"Her Majesty's ship 'Hermes,' 15th of April, 1856, latitude 17° 59′ N.; longitude 78° 50′ west.

"J. E. SOLFLEET, *Master.* "HENRY CONGTON, *Commander.*"

This paper was found on the 23d of August, 1857, on the south point of Padre Island, latitude 26° 05′ N., longitude 97° 10′ W., and forwarded to this office from Point Isabel by Mr. John R. Butler. The following is an extract from his letter accompanying it:

"The drift shown by the course of this bottle confirms my own observation since I have been here, viz: that the current of the Caribbean Sea *divides* between Cape Antonio, west

end of Cuba, and Cape Catoche, east end Yucatan; the eastern part of it rounding Cape Antonio, and passing out by the Gulf Stream; while the western part of it, after following the northeastern coast of Yucatan, turns westward round Cape Catoche, and keeps a westerly course until it reaches this coast between San Fernandino, on the coast of Mexico, and Corpus Christi on our coast, where it meets the southwesterly current from the coast of Florida and Louisiana. And it is strange to remark the mixture of floating objects thrown on the beach of this coast by this meeting of the currents. Flat-boats, oars, saw-logs, clap-boards, old skiffs, &c., from the Mississippi, mixed up with branches of mangrove, mahogany, bay-cedar, young cocoa-nuts blown from the trees, canoe paddles of mahogany, &c., from the Caribbean Sea and coast of Honduras.

"You will perceive that this paper was thrown overboard in the Caribbean Sea, southwest of Jamaica, sixteen months ago, and has, no doubt, travelled along the whole coast of Honduras and Yucatan."

This current is well and happily described Mr. Butler. On the west side of the Yucatan Pass there may often be found an eddy from the Gulf, setting back into the Carribean Sea, and vessels bound south may use it.

The bottle paper of the "Admiral" took the same fork; so also did one from the United States brig Dolphin thrown over in the mouth of the Amazon by Capt. Lee, in 1852. It was also picked up in Texas.

"Ship Admiral, for London, Samuel Picken, commander. On the equator longitude 30° 45′ W.; sixty-five days out from Melbourne; all well, 17th February, 1856."

Came ashore at Aransas Pass, Texas, 24th October, 1856; and forwarded by D. M. Hastins, postmaster. This bottle, like that of the May Queen, (see routes to Rio, for February,) appear to settle very nearly the rate of the great equatorial drift which feeds the Gulf Stream. They were both thrown overboard on the equator in February. This was in the water 250 days, that 58. This drifted about 4,300 miles, that 1,400. This averaged about $\frac{3}{4}$ of a knot, that a knot an hour. It is probable that the Texas-bound bottle after passing Yucatan and turning off to the west from the main feeder of the Gulf Stream, lessened its speed very much.

From the Bight of Benin, *via* the Caribbean Sea, to the Gulf of Mexico, the equatorial drift may be reckoned with considerable accuracy on the average at about 20 miles a day. As far as Jamaica its general direction is about W.NW. Shipmasters trading in the Caribbean Sea, or any port west of the Amazon, will do well to bear this in mind.

Bark "Arethusa," (Charles A. Homans,) from "Gloucester," Mass.

"*Paramaribo, January* 9, 1857.—I thought by seeing the water colored so far at sea to have found the coast current unusually strong, I found it so in some measure, but yet not so much so as I would have expected. About 75′ N. by W. of the Marowyne River I passed a large tree, which had not been long in the water, the coast current was here full two miles per hour setting NW. by N. In 6° 30′ I felt no more current, but made my course south, steered at the time as straight as possible.

"The water was much clearer on the coast than I ever saw it before, and looked more like rain or river water than is usual with this muddy, dirty water, all along this coast. In certain months (I believe from August to December) there is very little coast current, though this year may well prove an exception, as there has not been more than a dozen days without rain, for we have had no dry season for a twelve month."

Capt. Wm. C. Berry says: "Having had long experience in the trade between New York and New Orleans, I herewith furnish you with a few remarks on wind and currents. For the last six years I have commanded the ship Vicksburgh, constantly trading between these two ports. In making the passage out, after passing the Hole-in-the-Wall, I have frequently found a current from one to three miles per hour, setting to the eastward through the northwest channel of Providence, particularly after the wind has prevailed from the westward a few days. This, no doubt, has been the cause of putting a number of vessels on shore among the Berry Islands. I have latterly made it a point to take the last bearings of the light on the Hole-in-the-Wall, and either haul up or keep off as I found the current; generally running on a west course until quite down with Little Stirrup Keys, then steering W. by N. ½ N., by compass, if in the night, until I was up with the Great Isaacs. The last three voyages, having reached the vicinity of the Little Isaacs in the day-time, I have hauled in on the bank between the western Little Isaacs and the east Brother Rock, and steered SW. by W., by compass, which has brought me out in good passing distance from the Moselle Shoal. During one of my summer passages out, after passing the above shoal, I was compelled to anchor, and remained there for six days. The wind during all this time was light from the southward, and I could not help remarking the regularity of the current setting along the Bemini Islands ebb and flow, about two miles per hour. This continues as far as Gun Key, when it is broken off by the Gulf which sets close in to the Key. From this point up to Orange Key, when close in, little or no current is experienced, except the ebb and flow, which is directly off the bank. In crossing the Santaren Channel, the current is governed greatly by the winds; with strong southerly winds the current sets about N.NW., two miles per hour; on the other hand, with strong northerly winds, little or no current is felt. After leaving the Double-headed-Shot Key, I have generally hauled over for the Florida Reef, and in the daytime kept close in, when I have frequently found an eddy current setting to the westward from one to one and a half miles per hour. After passing the Tortugas, I have invariably felt a southerly current until I had reached the longitude of 84° 30′ W., and even further than this at times, as will be seen by referring to my journals, particularly in November, 1848. Returning from New Orleans, I have always made it a point to keep to the wetsward until I had reached the longitude 85°, latitude 28° before keeping off. My object in doing this is, that the wind here generally prevails from the northward and eastward, and that the current generally sets to the southward and eastward, which generally facilitates the passage. After rounding the Tortugas, with the wind from the eastward, I have generally beat down on the Florida side, knowing that the strongest current prevails on that shore, unless too close in. From Carysfort Reef to Mantanilla, I have always endeavored to keep in the centre of the stream. During all my voyages, I have made it a rule to steer from Mantanilla to latitude 22°, N. by W., and then north to latitude 31°, before hauling up NE. by N.; by so doing I have, with a few exceptions, kept the strongest current. On some other occasions, I have hauled up on a NE. by N. course, when in latitude 30°, longitude 79° 40′, an have soon found myself on the eastern edge of the gulf. After rounding Cape Hatteras, it is advisable to keep to the westward, especially in the winter season, on account of the prevailing westerly winds."

Lieut. Vaneèchout, of the French navy, mentions a singular use of the hygrometer, as per following extract of a letter dated Paris, December 8, 1857:

"During our sojourn in the roads of Chiriqui (New Grenada) in December, 1853, and January, 1854, we had," says he, "at different times violent gales from north and northeast which deserve especial mention, for the reason that no variation of the barometric column

indicated their approach. I may add that on this side we have constantly found these variations scarcely sensible.

"These storms sometimes last two or three days and announce themselves like a hail, by gales followed by intervals of calm, but their most remarkable characteristic is the influence which they exert upon the hygrometer. This instrument, which, during the strongest rains, has never reached beyond 40° or 50°, and which during the dryest and hottest days never fell below 29° or 30, descended at the commencement of these gales to 10°, then to 5°, and marked 0° when they attained their maximum. Some hours before the storm commenced to abate, it had already arisen again several degrees, and when it became really diminished it rose to 20°, then to 30°, and 35°.

"During these storms, the sky very clear; it showed, in the direction of the sea only, a free horizon and some light white *cirri;* on the mountains, however, from base to top were great immovable clouds, white and cottony, seeming as though compressed at their summits, and leaving nothing visible but the summit of the volcano of Chiriqui. It is by the appearance of these clouds, upon the mountains forming the back ground in this direction, by their form, and especially by the isolation of the summit of the volcano, that the people of the country foretell the approach of these north winds.

"We had only the now obsolete 'horse-hair hygrometer.'

"The barometer was silent during all our stay. It indicated, as usual in the gale, 30.36 inches. The thermometer stood at 86° before the gale, and went up to 89°.5 at its height; some hours before the wind began to abate, the temperature began to fall, and went back to 86° when the gale was over."

SAILING DIRECTIONS FOR THE COATZACOALCOS RIVER.

Capt. Foster, of the Albama, to Lieut. Maury.

"Sailing vessels bound for the Coatzacoalcos ought to make the land to the eastward. This precaution is necessary on account of the prevailing trade-winds, which cause a strong westerly current; also in case of a norther, to have the advantage of sea-room. The entrance to the river may be known by the virgia or tower situated upon the western side; likewise from the sand cliffs extending from that point to the westward.

"The best mark for crossing the bar is to bring the tower* to bear S. ¾ W., by compass. Having passed the bar, haul up to the east of south, and steer in midway between two points that form the entrance to the river. The wind, after crossing the bar, often falls to calm; for this reason it is necessary to have an anchor ready to let go, as the current on the ebb, even in the dry seasons, sets out strong.

"The extent of the bar, east and west, is about 220 fathoms, and the width, by actual measurement, 108 feet. The bottom, composed of sand and clay, is hard, on which account it is not reliable to shift. It forms in hard northerly gales a narrow barrier of breakers, and cannot be crossed without imminent risk. The depth at high water, on full and change, is about 13 feet, and falls as low as 10½ feet. The general depth, however, is twelve feet, from which it suddenly deepens to 5 or 6 fathoms.

"Except in heavy weather, there prevails a regular land and sea breeze. The latter sets in between the hours of 9 A. M. and noon."

APRIL, 1851.

* This tower, of great solidity, is destined to last for ages.

ROUTE TABLES TO AND FROM EUROPE.*

The information contained under this heading relates to the best routes, under canvas, between New York and Europe.

Upwards of thirty thousand observations on the winds in this part of the ocean alone, have been collated, compared, and discussed for these routes.

The best average route, each way, as it regards the winds, independent of currents, is only indicated, not established, by the "route tables."

The routes therein indicted are the results of this mass of materials, and these routes are to be looked upon as the mean or average track of all the vessels engaged in making the voyages which have afforded these observations, supposing that each vessel, under all circumstances and on every occasion, had made the most judicious courses.

My information is yet quite meagre in many portions of this part of the ocean, and the present routes should be regarded not as fixed and final determinations; they are rather approximations.

Though they be approximations to those routes which further investigations, based on more ample materials, may establish as the best, their importance will no doubt be readily appreciated when it is considered that the average per centum of calms, head and fair winds, is stated for each district of 5° square of ocean through which the vessel is recommended to pass; and that they are so stated in the tables, and exhibited on the Charts, the navigator, who pursues these routes and consults the authorities before him, will be freed from all doubt and perplexity which tack to take when the wind comes out *dead* ahead.

Upon a right decision in such cases often depends the success of the voyage as to time.

I have now before me the log-books of two vessels which afford a case in point; they were bound to Europe—were together, and had accomplished more than half the voyage; the wind came out ahead; one stood off to the northward on the starboard tack, the other to the southward on the opposite tack; one was right, and the other wrong; for, in consequence, one got into port ten days before the other.

In such cases, those who pursue these routes with the Pilot Charts on board, would be left in no doubt as to the tack having the greatest number of chances in its favor.

Permit me to call attention to a very remarkable part of the ocean through which these tracks pass. It is about 45° N. and 50° W. The water here is permanently cold; so cold that the water thermometer is sometimes found, within the distance of a few miles, to fall 40° of Fahrenheit; and I notice in many log-books the remark, "water, colored."

The spot is also remarkable for its fogs and its disturbed atmospherical conditions. If a vessel could be sent to examine into it, important service might be rendered to navigation, by showing how, when the heavenly bodies are obscured, the mariner may determine the position of his ship by dipping his thermometer into the water; or the examination might lead to other results not less important. It is probably the centre of great atmospherical disturbances.

EXPLANATION OF THE ROUTE TABLES.

The computed routes of the tables have been "got out" according to the method described pp. 300–2, vol. 1. The tables of crossings are the actual tracks of ships, with this remark columns 1, 2, and 3 of the Computed Route tables explain themselves.

Columns 1, 2, and 3 (see Tables of Routes, pp. 26 to 35; also those of the route to Rio) explain themselves.

* Letter to the Secretary of the Navy, January 1, 1850.

Column 4 gives the distance by middle latitude sailing, to be run on the course in column 3, when the winds are fair.

Column 5 shows the per centage by which the distance in column 4 is to be practically increased on the average, by adverse winds. The numbers in this column are obtained upon this principle : That, if a ship sail with the wind dead ahead, and within six points of it, she loses 62 miles in every hundred—that is, she has to sail 100 to make 38 miles good; when she sails within 4 points of her course, that is, when she has a *slant* wind, that will allow her to lay within 4 points of her course, she loses 29 miles only in 100; and when she sails within two points of her course, that is, when she has a *slant* wind 4 points from the course she wishes to steer, she then loses only 7.6 miles in 100.

This problem, *i. e.* the calculating from the Pilot Charts, the best route across the sea, involves many conditions; which conditions are, and must of necessity be, made up of chances and averages; and it is precisely one of those problems which would be exceedingly refractory under any attempt to treat it rigidly or to subject it to exact formulæ. For instance :

We discover that the wind on the average blows thus and so in square B, (Plate I;) and we can say that, according to the doctrine of chances any ship in endeavoring to sail on any particular rhomb through B, must make so many miles "good" with fair winds, and so many miles "good" with adverse winds; and to do this she must make a detour of so many miles. If that were all, the problem would be easy; but the winds differ in force, and the ships vary in speed not only as compared one with another, but also with themselves as they may be sailing close or large, &c., and exact calculation is difficult·

To comprehend and appreciate more fully the nature of the problem, let us suppose 100 vessels be required to make each 100 miles "good" on a due west course through square B; that 16.5 of the 100 find the wind dead ahead, that another 16.5 would find it within 4 points of the intended course; that 22 would find it within two points; and that the rest, forty-five, would find it fair. To make good their westing

Each of the 22 would have to sail 108.2 miles.
Each of the 16.5 (4 points) would have to sail 141.4 miles.
Each of the 16.5 (6 points) would have to sail 261.2 miles.

Or conversely and by averages each of the 100 ships would have to make "good" 16.5 miles with the wind dead ahead (6 points;) 16.5 miles with 4 point "slants;" 22 miles with 2 point "slants;" and 45 miles with free winds. Here is the rule by which the detour for any course through any given "field" was calculated :

To the per centum of head winds on any given course add $\frac{1}{4}$ the sum of the 4 point courses, and $\frac{1}{8}$ the sum of the 2 point courses. The sum total multiplied by the constant number 1.6, is the per centum of increased.distance.

This rule, though accurate enough for all practical purposes, will be a little nearer the mark by taking $\frac{1}{20}$, instead of $\frac{1}{8}$, of the 2 point courses.

The origin of this rule will be readily understood by navigators, if I state it in this form, *i. e.*, that a ship in turning to windward has, for every mile she makes good, to lose—

1.6 miles when sailing within 6 points of her course.
0.4 " when sailing within 4 points of her course.
0.08 " when sailing within 2 points of her course.

Thus we assume that the average time during which a vessel is in any square, may be

divided into 100 parts, answering to the per cents of the winds, and that the per cents of the distance to be made "good" is in direct proportion to the per cents of the winds.

Column 6 shows the distance in column 4, after the per cent. in column 5 has been added to it. It is the average distance to be sailed from point to point, not allowing for currents, and supposing the vessel to sail within 6 points of the wind when close hauled.

Column 7 shows the average per centage of winds that are *dead* ahead.

Column 8 shows the average per centage of *slant* winds from the northward or eastward that will head a vessel off the course given in column 3.

Column 9 shows the average per centage of *slants* from the southward or westward that will head a vessel off the course given in column 3.

Column 10 shows the average per centage of winds that are entirely fair for the course given in column 3.

Column 11 shows the average per centage of calms for each district of 5° square through which the course in column 3 leads.

Column 12 shows the number of observations from which the figures in the other columns, and the courses recommended, have been obtained.

When the winds are fair, and the vessel is near the route recommended, she should steer straight from *d* to *d*, instead of making a zigzag track, as by the projection.

The letter *w*, where it appears in column 8 or 9, means that that side is the windward side. But it is not necessary so to designate the windward side. It is obvious from mere inspection.

The letter *e*, in the column of calms, means that this part of the route is through the region of calms that border the northeast trade-winds, north and south, or that that part of the ocean is peculiary liable to calms.—(See *Trade-wind Chart.*)

The courses given are *true.*

It will be perceived by the tables that the average European passage in February ought to be nearly two days shorter than it is either in January or March.

According to the Pilot Charts, I make the average distance to be sailed by a New York packet ship by the routes, from January to April, not estimating for the set of currents, to be, when bound—

To Liverpool.

In January	3,075	miles to	10° W.,	for 250	of which	a vessel	will have	winds dead ahead.
February	3,015	"	"	234	"	"	"	"
March	3,150	"	"	231	"	"	"	"
April	3,051	"	"	244	"	"	"	"

To English Channel.

In January	3,300	miles to	5° W.,	for 293	of which	a vessel	will have	winds dead ahead.
February	3,245	"	"	261	"	"	"	"
March	3,448	"	"	249	"	"	"	"
April	3,275	"	"	265	"	"	"	"

It is important that navigators should bear in mind that, when the winds are fair, they are not expected to make the zigzag track of the Tables, but to steer straight from *d* to *d*.

THE BEST AVERAGE ROUTES TO AND FRO BETWEEN NEW YORK, CAPE CLEAR, AND THE ENGLISH CHANNEL.

The route tables are as just stated calculated from the Pilot Chart; and they represent each for its month the best track *on the average* which a vessel can make.

The navigator who intends to follow any one of these routes should lay it down on his Chart from the table; and when he gets thrown off of his track by the winds and currents, as he often will, he should then, instead of turning out of his way to get back to it, recollect that if a special route were now calculated for him from this position, it probably would not touch the projected route at all. He, therefore, is in a new position, and must consult his Pilot Chart as to future courses and route. In recommending these routes, and in speaking of them, I wish navigators to understand and bear in mind *always*, that I am speaking from the information before me, which is sometimes imperfect and often deficient. When full and complete, it may modify present conclusions; present conclusions, therefore, must be regarded only as approximations.

If every vessel, whose log between this and Europe has afforded materials for the Pilot Chart, had always taken the most judicious course; and when she was headed off, if she had in every instance taken that tack which was really the best; and then, if a line had been drawn to represent on the Chart the average or mean track of all those vessels for January, February, March, or April, and the other months, then that line would be represented by the route as given in the tables for that month.

In other words, the vessels that shall pursue the routes here given, will pursue exactly that course which the experience of all has shown to be the best on *the average.*

By consulting the Pilot Chart, or the column "Total Number of Observations," in the Table of Routes, it will be observed that for the months for which the routes are given for European traders, I have not observations enough to the north of 45° N., and west of 45° W., to enable me to speak of the advantages or disadvantages of making that part of the ocean a greater thoroughfare than it is.

Take the computed route *from* New York in March for illustration: It will be seen by the table that the course recommended from longitude 55° to 50° is east, and that the winds are from E. on *the average* 1.9 per cent. of the time, and that a vessel in steering E. there, would be headed off from her course by slant winds from the northward, 2.8 times; and by slant winds from the southward, 15.9 times in the hundred—and that these proportions are derived from the records of 108 vessels between these meridians in that month, or, which is the same, by 108 observations there, during the month of March of different years.

The south, therefore, is the windward side then and there; therefore these facts thus presented will leave the navigator, when he comes to be headed off in that part of his route, in no doubt as to which tack to go upon; with the wind directly ahead or east, he should stand to the southward or to windward, because the probabilities of the wind's coming out from that quarter are greater than they are that it will come from the northward. At least such is the rule; it has its exceptions, and should yield to the rules of the storm when the occasion arises, and leave the shipmasters take that tack which safety and the march of the gale indicate as proper. I am not prepared, for I have not the materials, and if materials in sufficient quantity, not the force to go into a discussion as to the rules of the storm; and until the time for that discussion shall arrive, I refer the navigator to Piddington, Redfield, and other writers upon the subject.

Again, from the meridian of 35° to 30° W., the best average course in March is E.NE.; 1.3 per cent. of the winds are *dead* ahead, and 19 are slant from the northward, against 4.3 from the other side. Here, then, it is shown, from the records of 80 vessels, that the northward is the windward side.

I have the records of two vessels which were together in this part of the ocean, on their way to Europe; they had kept together so far on their way; they sailed alike; when they arrived here, the wind came out ahead—one went off on the larboard and the other on the starboard tack; the latter arrived in port ten days before the other. With the Pilot Charts on board, it would have been impossible for the other vessel so to have mistaken the chances in favor of her proper course. Captain Hartshorn, of the E. Z., informs me that on his voyage from Liverpool to New York, he made these Charts his guide; that he made the most remarkable passages of the season (19 days,) and that vessels which sailed about the same time he did, did not arrive for twenty days or more after he did. He attributed his success to the lights which the experience of others, as expressed by these Charts, afforded him.

I have not calculated the track beyond 10° W. off Cape Clear for the Liverpool track, nor beyond 5° W. for the English Channel, because, beyond these meridians, the best course to steer is indicated by the land and the winds that happen to prevail.

These tracks were computed and given to navigators several years ago. The data for the calculation were derived from the Pilot Charts. Passages enough have since been made to prove them fully. These routes have, therefore, been submitted to the test of experience, and the agreement of the mean route actually pursued by the best navigators, with the computed route, is really surprising. The tables of "Crossings" (p. 36) afford the means of comparison.

These tables (*i. e.*, those only from New York to Europe, pp. 26–30,) contain only the shortest passages—none over 28 days.

All over 28 days are excluded from those tables, for the reason that this route, of all others, across the ocean, is best understood, and that nothing is to be gained, in a practical way, by the study of long passages on such a voyage. There are no calm belts to be crossed, and, by an inspection of the crossings, it will not appear that any one part of the passage is more difficult than the other.

Let us assume the longitude of 40° to be midway the meridians of Cape Clear or the Lizard on the one hand, and Sandy Hook on the other. The mean monthly crossings of this meridian fall in between 43° 30′ and 45° 30′—that is, 43° 30′ is the average crossing for April, and 45° 30′ the average crossing for each of the months of August, September, and December. We see, from a study of these crossings, that the Steam Lanes, as they are projected on the Charts and in this work, are laid off so as to interfere, to the least possible extent, with the best sailing route; both Lanes are to the north of the best average crossing of 40° W. for any month. The highest average crossing for any month is 45° 30′; the crossing of the Steam Lane going is 45° 46′, and of the Steam Lane coming, 48° 33′.

These tables show that in mid-ocean the sailing vessels require a belt of sea room about 120 miles broad. This, the Steam Lanes leave them. Indeed, it is seldom that vessels, while standing on the same course, come into collision at sea. It is those which are standing in opposite directions or athwart each other's tracks, that "collide," and, therefore, the mean passage belt for vessels bound under canvas to Europe comes nearest the Lane for steamers bound in the same direction.

ROUTES BETWEEN NEW YORK AND EUROPE.

Computed routes and actual crossings between New York and long. 10° W., for vessels bound to and from Liverpool; also, between New York and long. 5° W., for vessels bound in or out of the English Channel.

JANUARY.—NEW YORK TO EUROPE.—COMPUTED.

Latitude.	Longitude.	Course.	DISTANCES. True.	Per cent.	Average.	WINDS—PER CENT. Head.	Slants from— Northw'd.	Southw'd.	Fair.	Calms.	Total No. observations.	
40° 28′	74° 00′ to											
40 28	70 00	E.	182	6.2	193	6.2	6.0	5.0	82.8	2.1	97	
42 02	65 00	E.N.E.....	245	10.4	271	2.8	5.6	*w* 13.3	78.3	3.6	143	
43 33	60 00	E.N.E.....	238	20.8	287	8.0	12.8	12.8	66.4	3.2	64	
43 33	55 00*d*	E.	217	4.2	226	0.0	*w* 11.0	4.4	84.6	4.4	94	
45 03	50 00	E.N.E.....	233	14.4	266	4.8	*w* 13.2	8.4	73.6	8.5	89	
45 03	45 00	E.	212	11.4	236	0.0	14.3	14.3	71.4	0 0	7	
45 28	40 00*d*	E.	212	6.8	226	0.0	3.1	*w* 18.6	78.3	0.0	32	
45 27	35 00	E.	212	5.1	223	1.5	3.0	4.5	91.0	9.2	71	
46 30	30 00	E.N.E.....	227	8.5	246	2.2	9.9	9.9	78.0	2.1	94	
47 55	25 00*d*	E.N.E.....	221	5.6	233	0.0	4.8	*w* 13.2	82.0	7.0	92	
47 55	20 00	E.	201	8.1	217	1.5	9.0	*w* 12.0	77.5	3.1	67	
49 17	15 00	E.N.E.....	214	2.2	219	0.0	1.4	*w* 8.4	90.2	2.8	74	
50 00	12 20	E.N.E.....	113	6.3	120	2.1	4.2	4.2	89.5	0.0	43	To Liverpool.
50 38	10 00	E.N.E.....	98	15.1	112	5.8	*w* 13.6	2.9	77.7	1.9	105	
			2825		3075							
49 17	10 00	E.	196	8.0	212	4.2	*w* 4.2	0.0	91.6	0.0	43	To Channel.
49 36	5 00	E. ½ N.....	196	24.9	245	8.3	0.0	*w* 41.5	50.2	0.0	12	
			3006		3300							

FEBRUARY.—NEW YORK TO EUROPE.—Computed.

Latitude.	Longitude.	Course.	Distances. True.	Distances. Per cent.	Distances. Average.	Winds—per cent. Head.	Slants from— Northw'd.	Slants from— Southw'd.	Fair.	Calms.	Total No. observations.	
From												
40° 27′	74° 00′ to											
40 45	70 00	E. ¼ N.*.....	182	7.7	196	1.0	8.7	w 10.5	79.8	1.9	106	
41 42	65 00	E. by N. ½ N..	233	8.2	252	3.4	w 8.5	3.4	84.7	6.6	62	
43 13	60 00	E.N.E...	238	5.7	251	0.0	w 12.0	8.4	79.6	0.0	84	
44 42	55 00	E.N.E.....	234	10.8	259	2.2	11.0	11.0	75.8	7.8	96	
44 42	50 00*d*	E.....	213	9.0	232	3.3	w 12.1	3.3	81.3	2.3	88	
44 42	45 00	E.....	213	7.4	228	0.0	w 13.0	8.0	79.0	2.9	105	
45 00	40 00	E. ¼ N.....	212	5.9	229	2.8	1.4	w 2.8	93.0	4.4	70	
46 26	35 00	E.N.E.....	225	6.1	235	0.0	3.2	w 19.2	77.6	3.1	65	
47 50	30 00	E.N.E.....	221	7.8	239	1.0	7.0	w 13.0	79.0	4.9	106	
49 13	25 00	E.N.E.....	217	3.6	225	0.9	2.7	w 4.5	91.9	4.3	111	
49 13	20 00*d*	E.....	197	10.3	216	3.0	8.0	8.0	81.0	4.0	103	
50 00	15 00	E. by N. ½ N..	200	8.5	217	4.2	4.2	w 5.6	86.0	1.4	69	
50 50	10 00	E. by N. ½ N..	196	11.2	217	3.6	5.4	w 16.2	74.8	3.5	118	To Liverpool.
			2781		2996							
49 30	10 00	E. ¾ S.....	200	16.7	233	5.7	w 22.8	w 7.6	63.9	1.9	52	To Channel.
49 30	5 00	E.....	195	9.9	214	0.0	16 6	16.6	66.8	0.0	6	
			2980		3226							

Average sailing distance to 10° W., by this route, to Liverpool, 2,996 miles; for 215 of which the winds, on the average, are *dead* ahead.
Average sailing distance to 5° W., English Channel, 3,226 miles; for 246 of which the winds, on the average, are *dead* ahead.

* Nantucket Shoals are in the way of an E.N.E. course, which would be the best.

MARCH.—NEW YORK TO EUROPE.—Computed.

Latitude.	Longitude.	Course.	Distances. True.	Distances. Per cent.	Distances. Average.	Winds—per cent. Head.	Slants from— Northw'd.	Slants from— Southw'd.	Fair.	Calms.	Total No. observations.	
40° 27′	74° 00′ to											
40 27	70 00	E.....	182	12.4	205	6.2	2.8	w 6.9	84.1	4.1	151	
40 00	65 00	E.N.E.....	245	7.2	263	7.2	7.1	w 15.8	69.9	1.4	206	
42 45	62 30	E.N.E.....	119	13.1	134	2.5	13.2	w 15.0	69.3	4.1	126	
42 00	60 00*d*	E.S.E....	119	13.7	135	4.2	13.3	13.0	69.5			
43 31	55 00	E.N.E.....	238	13.2	269	9.6	7.1	w 15.1	68.2	5.3	118	
43 31	50 00	E.....	217	7.9	234	1.9	2.8	w 15.9	79.4	0.9	108	
43 31	45 00	E.....	217	9.4	238	1.7	w 10.3	8.5	79.5	2.5	121	
43 31	40 00	E.....	217	3.7	225	1.6	2.1	3.2	93.1	5.0	200	
43 31	35 00	E.....	217	7.6	234	0.0	2.9	7.6	89.5	4.8	109	
45 00	30 00	E.N.E.....	233	4.3	243	1.3	w 19.0	4.3	75.4	3.9	80	
46 27	25 00*d*	E.N.E.....	226	8.4	245	4.4	4.4	1.1	90.1	1.1	90	
46 27	20 00	E.....	206	3.2	212	0.0	w 7.0	2.2	90.8	2.2	90	
47 52	15 00	E.N.E.....	221	6.7	236	0.0	w 12.0	6.3	81.7	0.0	74	
50 00	11 45	N.E.....	181	5.4	191	0.0	4.0	w 12.0	84.0	0.0	67	
50 44	10 00	N.E. by E.....	81	10.8	90	5.4	6.0	w 8.4	80.2	3.5	116	To Liverpool.
			2919		3154							
50 00	10 00	E.....	67	11.8	75	3.0	9.0	9.0	79.0	0.0	67	To Channel.
49 40	5 00	E. ¼ S.....	194	10.0	213	17.0	25.0	8.3	49.7	0.0	12	
			3099		3352							

APRIL.—NEW YORK TO EUROPE.—Computed.

Latitude.	Longitude.	Course.	Distances. True.	Distances. Per cent.	Distances. Average.	Winds—per cent. Head.	Slants from— Northw'd.	Slants from— Southw'd.	Fair.	Calms.	Total No. observations.	
40° 27′	74° 00′ to											
40 27	79 00	E.....	182	9.2	199	3.0	9.6	w 11.4	76.0	7.1	180	
42 00	65 00d	E.N.E.....	244	12.3	274	3.2	8.3	w 11.1	77.4	2.5	161	
42 00	60 00	E.....	223	12.7	251	5.2	7.8	w 9.1	77.9	7.3	88	
43 31	55 00	E.N.E.....	237	7.9	256	2.4	6.4	5.7	85.5	4.1	126	
45 00	50 00	E.N.E.....	233	5.0	244	0.0	w 9.9	w 7.2	82.9	10.1	120	
46 21	45 00d	E.N.E.....	226	3.3	233	0.0	0.0	8.3	91.7	0.0	12	
46 27	40 00	E.....	207	6.6	320	0.0	w 5.5	w 16.5	78.0	5.6	19	
46 27	35 00	E.....	207	5.5	218	2.5	5.0	0.0	92.5	7.6	42	
46 27	30 00	E.....	207	10.1	228	0.0	8.8	w 20.9	70.3	5.5	92	
47 52	25 00	E.N.E.....	221	15.6	255	5.2	11.8	w 16.3	66.7	7.4	145	
49 14	20 00d	E.N.E.....	215	12.9	242	4.2	6.7	w 10.9	78.2	5.9	125	
49 14	15 00	E.....	196	8.8	213	3.6	w 13.2	3.6	79.6	7.5	86	
49 14	10 00	E.....	196	4.6	205	1.1	1.1	w 7.7	90.1	0.0	89	
49 30	5 00	E. ½ N.....	196	20.9	237	5.5	11.0	w 33.0	50.5	5.6	12	To Channel.
			2990		3375							
50 00	13 06	E.N.E.....	79	4.0	82	1.1	4.4	5.5	89.0	0.0	89	To Liverpool.
Cape Clear	10 00	E.N.E.....	130	3.6	135	0.0	3.6	3.6	92.8	0.0	80	
			2807		3150							

MAY.—NEW YORK TO EUROPE—Computed.

Latitude.	Longitude.	Course.	Distances. Direct.	Distances. Per cent.	Distances. True.	Winds—per cent. Head.	North.	South.	Fair.	Calms.	Total No. observations.
Sandy Hook to—											
40° 27′	74° 00′										
42 00	70 00	E. ¾ S.....	185	14.4	211	5.4	9.1	7.7	77.8	4.0	235
41 34	65 00	E.N.E.....	246	10.2	271	2.7	11.0	6.8	79.5	7.3	281
43 06	60 00	E.N.E.....	240	10.4	265	1.2	18.2	7.8	62.8	3.9	189
44 36	55 00	E.N.E	234	8.8	254	1.2	4.3	11.0	83.5	3.0	170
44 36	50 00	E.....	214	11.5	238	3.9	8.5	8.5	79.1	3.9	160
44 36	45 00	E.....	214	7.3	229	2.2	7.6	6.0	84.2	4.8	195
44 36	40 00	E.....	214	5.6	226	1.1	6.8	5.1	87.0	2.9	180
45 00	35 00	E. ½ N.....	215	4.3	224	0.0	5.3	10.1	84.6	1.5	136
45 00	30 00	E.....	212	4.8	222	0.7	7.8	4.3	87.2	4.8	132
45 00	25 00	E.....	212	5.1	223	0.8	6.4	4.0	88.8	5.6	131
48 25	20 00	N.E.....	290	9.6	318	3.0	9.0	9.0	79.0	3.0	137
48 25	15 00	E.....	198	11.5	220	2.9	10.9	10.2	76.0	3.6	142
48 25	10 00	E.....	198	16.8	231	4.8	21.6	10.4	63.2	3.2	129
To Channel.....	.....	E.N.E.....	210	16.8	245	2.8	11.3	33.6	52.3	5.5	38
			3082		3377						
50 16	15 00	E.N.E.....	212	16.4	246		8.7	8.7	75.3	3.6	142
To Liverpool...	10 00	E.N.E.....	194	14.0	221		4.4	13.2	79.1	1.1	96
			2882		3148						

JUNE.—NEW YORK TO EUROPE.—Computed.

Latitude.	Longitude.	Course.	Distances. Direct.	Per cent.	True.	Winds—per cent. Head.	North.	South.	Fair.	Calms.	Total No. observations.
Sandy Hook to—											
40° 08′	73° 00′	E.S.E.....	50	9.7	55	1.7	11.0	9.2	78.1	2.7	232
41 13	70 00	E.N.E.....	170	8.7	185	1.8	4.8	10.9	82.5		
42 45	65 00	E.N.E.....	241	8.5	261	1.8	3.5	3.9	90.8	3.5	235
42 45	60 00	E.....	220	10.9	244	4.5	8.0	4.5	83.0	3.8	216
44 15	55 00	E.N.E.....	236	8.5	256	3.3	3.8	7.1	85.8	1.1	184
45 43	50 00	E.N.E.....	230	5.1	242	0.5	5.8	8.2	85.5	3.1	202
47 10	45 00	E.N.E.....	224	5.9	237	2.3	0.0	6.8	90.0	0.0	44
48 33	40 00	E.N.E.....	217	4.8	227	1.4	0.9	7.0	91.6	9.9	78
49 54	35 00	E.N.E.....	212	10.7	234	3.1	5.0	11.9	80.0	3.1	165
51 13	30 00	E.N.E.....	207	2.0	211	4.0	0.0	2.0	94.9	0.0	47
51 13	25 00	E.....	188	0.8	189	0.0	9.0	2.0	98.0	6.1	52
51 13	20 00	E.....	188	2.2	192	0.0	0.0	6.9	93.1	2.3	44
51 00	15 00	E. ½ S.....	190	15.4	218	7.2	6.0	4.7	82.1	0.0	82
50 40	10 00	E. ½ S.....	194	10.0	214	4.9	13.3	15.4	66.4	5.6	150
To Channel.....	.....	.....	209	5.1	219	3.9	18.2	1.3	76.6	0.0	78
			2976		3184						

According to the *Charts*, this is the best track yet developed, and ought to give the shortest passages.

JULY.—NEW YORK TO EUROPE.—Computed.

Latitude.	Longitude.	Course.	Distances. Direct.	Per cent.	True.	Winds—per cent. Head.	North.	South.	Fair.	Calms.	Total No. observations.	
40° 27′	74° 00′ to											
40 27	70 00	E.....	182	12.0	204	3.6	7.2	5.1	84.1	4.2	322	Calms.
42 00	65 00	E.N.E...	246	5.0	260	3.0	7.0	9.1	80.9	8.7	414	Calms.
43 30	60 55	E.N.E.....	237	4.2	247	0.9	3.3	4.8	91.0	8.4	350	
43 30	55 00	E.....	218	10.3	240	4.4	5.6	8.0	82.0	5.6	263	
44 59	50 00	E.N.E.....	233	5.9	244	0.4	8.8	7.6	83.2	5.4	236	
44 59	45 00*d*	E.....	212	12.6	238	4.4	8.1	8.1	79.4	8.1	173	
45 40	40 00	E. by N.....	214	8.0	231	1.0	8.0	3.0	88.0	4.0	103	
47 06	35 00	E.N.E.....	224	3.3	231	0.0	2.2	11.0	86.8	4.6	95	
47 06	30 00	E.....	204	5.9	216	1.1	10.6	4.1	84.2	3.2	77	
47 06	25 00	E.....	204	9.0	222	2.1	10.6	8.2	79.1	6.5	100	
48 29	20 00	E.N.E.....	218	8.8	237	4.2	2.1	6.3	87.4	9.4	105	
49 50	15 00	E.N.E.....	213	8.5	231	2.5	13.2	3.3	81.0	2.5	125	Liverpool.
50 30	10 00	To Liverpool..	195	13.4	220	5.7	5.6	9.1	79.6	4.5	92	
			2800		3021							
48 29	15 00	E..... ...	198	5.8	209	2.5	5.8	0.8	90.9	2.5	125	Channel.
48 29	10 00	E.....	198	17.8	234	6.5	17.5	3.2	72.8	2.2	94	
49 00	To Channel	E.N.E.....	213	12.8	240	0.0	28.0	8.0	64.0	0.0	24	

AUGUST.—NEW YORK TO EUROPE—Computed.

Latitude.	Longitude.	Course.	Distances. Direct.	Per cent.	True.	Winds—per cent. Head.	North.	South.	Fair.	Calms.	Total No. observations.	
40° 27′ *d*	74° 00′ to											
40 00	70 00	E. ¾ S.....	186	13.0	209	3.0	9.5	18.0	69.5	6.0	194	
39 12 *d*	67 30	E.S.E.....	125	8.7	135	3.1	2.9	10.7	83.3	3.6	229	
39 12	65 00	E.....	116	6.6	123	1.6	17.0	7.1	74.3			
39 12	62 30	E.....	116	8.0	125	3.0	6.5	5.5	85.0	4.3	193	
40 00	60 00	E.N.E.....	125	7.6	134	2.0	9.5	5.0	83.5			
41 34	55 00	E.N.E.....	246	7.1	263	7.1	7.0	8.4	77.5	6.8	157	
43 06	50 00	E.N.E.....	241	11.1	268	3.0	6.5	11.0	79.5	6.5	213	
44 36	45 00	E.N.E.....	235	14.3	268	4.8	12.0	12.6	70.6	3.7	166	
45 00	44 26	N.E.....	34	9.4	37	2.8	4.5	11.2	81.5	5.0	147	
48 08	40 00	N.E.....	260	7.	279	0.0	11.4	12.6	76.0	7.9	123	
48 00	35 00	E.....	201	8.2	217	2.4	7.2	7.2	83.2	9.4	129	
48 00	30 00	E.....	201	8.0	217	3.0	4.0	5.0	88.0	2.9	106	
48 00	25 00	E.....	201	3.0	207	0.0	5.0	6.0	89.0	1.1	92	
48 00	20 00	E.....	201	8.4	218	3.0	9.0	1.5	86.5	7.8	69	
48 00	15 00	E.....	201	3.0	207	0.0	8.0	2.0	90.0	4.2	100	
49 22	10 00	E.N.E.....	214	3.7	221	0.8	11.2	0.0	88.0	3.2	130	Liverpool.
49 30	5 00	E.....	195	5.0	205	0.0	5.1	8.4	86.0	0.0	36	Channel.
			3098		3333							

SEPTEMBER.—NEW YORK TO EUROPE.—Computed.

Latitude.	Longitude.	Course.	Distances. True.	Per cent.	Average.	Winds—per cent. Head.	North.	South.	Fair.	Calms.	Total No. observations.	
40° 27′	74° 00′ to											
40 00	72 35	E.S.E.....	71	5.4	75	0.0	9.9	5.4	84.7	4.5	115	
40 49	70 00	E.N.E.....	128	15.3	147	0.9	30.6	9.0	59.5			
40 49	65 00	E.....	227	10.4	250	4.2	9.0	3.6	83.2	5.3	178	
40 49	60 00	E.....	227	15.5	261	6.3	13.3	4.9	75.5	5.3	159	
42 22	55 00	E.N.E.....	243	5.6	256	0.0	13.8	5.4	80.2	3.7	167	
42 22	50 00	E.....	222	16.3	257	6.0	14.4	9.6	70.0	6.2	172	
43 53	45 00	E N.E.....	237	15.0	272	4.9	11.2	14.0	69.9	5.8	147	
45 22	40 00	E.N.E	232	9.8	255	4.2	8.4	4.2	83.2	2.2	138	
46 48	35 00	E.N.E.....	225	8.9	245	2.6	9.1	7.8	80.5	1.3	78	
48 12	30 00	E.N.E.....	220	4.7	229	1.2	6.3	5.1	87.4	6.2	85	
49 35	25 00	E.N.E.....	213	4.2	222	0.0	9.0	5.0	86.0	8.0	109	Liverpool.
49 35	20 00	E.....	192	12.2	216	3.6	11.7	15.3	69.4	0.9	111	
50 33	15 00	E. by N.....	201	7.6	216	1.8	3.6	19.2	75.4	1.8	64	
50 33	10 00	E.....	191	12.8	213	3.3	7.7	17.6	71.4	1.0	96	
			2830		3114							
45 22	35 00	E.....	211	9.9	232	3.9	5.2	6.5	84.4	1.3	78	
45 22	30 00	E.....	211	5.3	222	1.3	2.5	8.8	87.4	6.2	85	
46 48	25 00	E.N.E.....	225	4.2	234	0.0	9.0	5.0	86.0	8.0	109	
46 48	20 00	E.....	205	12.2	230	3.6	11.7	9.0	75.7	0.9	111	To Channel.
48 12	15 00	E.N.E.....	220	11.4	245	3.6	2.4	9.6	84.4	1.2	81	
48 12	10 00	E.....	200	14.8	230	3.6	21.6	5.4	69.4	1.8	57	
49 34	5 00	E.N.E.....	213	15.0	245	0.0	10.0	40.0	50.0	0.0	20	

JANUARY.—EUROPE TO NEW YORK.—Computed.

Latitude.	Longitude.	Course.	Distances. True.	Distances. Per cent.	Distances. Average.	Winds—per cent. Head.	Slants from— Northw'd.	Slants from— Southw'd.	Fair.	Calms.	Total No observations.	
49° 30′	5° 00′ to											
49 30	10 00	W.	192	0.0	192	0.0	0.0	0.0	100.0	0.0	12	From long. 5° W.
49 30	15 00*d*	W.	192	30.2	250	12.6	16.8	16.8	53.8	0.0	43	
50 40	10 00											From long. 10° W.
49 30	15 00*d*	W. by S. ¾ S.	202	36.1	275	16.5	15.5	17.5	50.5	1.9	105	
48 08	20 00	W.S.W.	213	37.1	293	14.0	*w* 30.8	23.8	31.4	2.8	74	
46 45	25 00	W.S.W.	219	24.0	272	9.0	*w* 22.5	7.5	61.0	3.1	67	
45 18	30 00	W.S.W.	226	29.3	292	10.8	18.0	*w* 24.0	47.2	7.0	92	
45 18	35 00	W.	211	22.7	259	6.6	15.5	*w* 20.9	57.0	2.1	91	
45 18	40 00	W.	211	28.8	270	9.0	12.0	*w* 28.5	50.5	9.2	71	
43 49	45 00	W.S.W.	232	18.9	276	5.5	*w* 18.7	16.5	59.3	6.8	78	
43 49	50 00*d*	W.	215	19.6	256	4.4	*w* 20.9	13.2	61.5	0.0	91	
42 19	55 00	W.S.W.	237	17.0	277	3.6	13.2	*w* 19.2	64.0	8.5	89	
40 46	60 00	W.S.W.	244	22.1	298	5.5	*w* 25.3	15.7	53.5	4.4	94	
40 46	65 00	W.	225	16.3	261	6.4	*w* 14.8	12.8	66.0	3.2	64	
40 46	70 00*d*	W.	225	26.8	285	9.1	*w* 21.0	16.7	53.2	3.6	143	
40 27	74 00*d*	W. ½ S.	183	24.4	226	9.0	*w* 23.0	11.0	57.0	2.1	97	
			2843		3540							

Average sailing distance, from 5° W., by this route, 3,707 miles; and from 10° W., coming out of Liverpool, 3,540. The aggregate of adverse winds, expressed in their equivalents of *winds dead ahead*, give 697 miles from Liverpool, and 687 from the Channel, for the average number of miles to be overcome by a dead beat during the voyage. It will be observed that the most difficult parts of the route are between longitudes 15° and 20°, 25° and 30°, and 35° and 40° W.; and that calms are most prevalent between longitudes 25° and 30°, 35° and 45°, and 50° and 55° W.

FEBRUARY.—EUROPE TO NEW YORK.—Computed.

Latitude.	Longitude.	Course.	Distances. True.	Distances. Per cent.	Distances. Average.	Winds—per cent. Head.	Slants from— Northward.	Slants from— Southward.	Fair.	Calms.	Total No. observations.
49° 00′	*d* 10° 00′ to										
47 38	15 00	W.S.W.	216	9.9	237	1.9	*w* 20.9	0.0	77.2	1.9	52
47 38	20 00	W.	202	18.8	239	5.6	11.2	*w* 19.6	63.6	1.4	69
47 38	25 00	W.	202	16.6	235	4.0	15.0	*w* 21.0	60.0	4.0	103
47 38	30 00	W.	202	24.8	242	6.3	17.2	*w* 25.4	51.1	4.3	111
46 12	35 00	W.S.W.	225	22.2	275	4.0	*w* 27.0	24.0	45.0	4.9	106
46 12	40 00	W.	208	29.4	269	11.2	12.8	*w* 19.2	56.8	3.1	65
46 12	45 00	W.	208	17.1	244	3.0	16.5	*w* 22.8	57.7	1.5	66
44 44	50 00*d*	W.S.W.	230	5.5	242	0.0	9.1	*w* 27.3	63.6	9.0	12
44 44	55 00	W.	213	23.9	264	8.8	*w* 22.0	16.5	52.7	2.3	88
43 15	60 00	W.S.W.	234	16.7	275	4.4	*w* 25.3	7.7	62.6	7.8	96
41 44	65 00*d*	W.S.W.	239	20.9	288	6.0	*w* 31.2	8.4	55.0	0.0	84
40 44	70 00	W. by S. ½ S.	233	24.1	290	8.5	*w* 27.2	11.9	52.4	6.6	62
40 29	74 00	W. ½ S.	184	11.3	204	0.0	*w* 21.1	13.5	65.4	1.9	106
			2796		3304						

Average sailing distance, from 10° W., by this route, 3,304 miles; for 308 of which the winds average ahead. It will be observed that, from longitude 25° to 35°, a vessel is more liable to adverse than fair winds; and further, that in this month the winds prevail very much from the westward, though not so much so as in some of the other months. From port, steer for longitude 10° in latitude 49°.

MARCH.—EUROPE TO NEW YORK.—Computed.

Latitude.	Longitude.	Course.	Distances. True.	Distances. Per cent.	Distances. Average.	Winds—per cent. Head.	Slants from— Northw'd.	Slants from— Southw'd.	Fair.	Calms.	Total No. observations.	
49° 30′	5° 00′ to											
50 00	6 54	W.N.W.....	79	6.6	85	0.0	w 16.6	8.3	75.1	0.0	12	From Channel.
50 49	10 00	W.N.W.....	128	15.4	147	3.0	14.0	14.0	69.0	2.7	38	
50 00	13 06	W.S.W.....	128	25.9	161	10.0	16.4	18.0	55.6	8.5	110	
49 30	15 00	W.S.W.....	79	23.0	97	3.0	w 38.0	21.0	38.0	0.0	67	
49 30	20 00	W	195	24.6	244	6.0	w 26.0	23.0	46.0	0.0	74	
49 30	25 00d	W.....	195	17.5	228	3.3	17.0	w 25.3	54.4	2.2	90	
46 05	30 00	W.....	290	26.5	366	9.0	w 30.8	8.2	52.0	1.1	90	
46 05	35 00	S.W.....	208	14.8	238	3.4	15.4	w 21.0	60.2	1.7	59	
46 05	40 00	W.....	208	25.0	260	9.1	7.0	w 25.0	58.9	1.2	82	
46 05	45 00	W.....	208	22.6	253	6.0	19.0	20.0	55.0	1.5	67	
46 05	50 00	W.....	208	12.6	234	6.0	w 6.0	3.0	85.0	0.0	36	
45 00	53 40d	W.....	170	10.0	187	0.0	w 25.0	0.0	75.0	8.3	13	
44 37	55 00	W.S.W.	61	13.9	148	4.7	w 12.3	8.4	74.6	0.9	108	
43 08	60 00	W.S.W.	234	8.9	255	0.9	w 16.9	8.9	73.3	5.3	118	
41 36	65 00d	W.S.W.	239	17.3	280	4.2	w 18.2	14.1	63.5	4.1	126	
40 02	70 00	W.S.W.....	245	17.2	286	4.1	w 18.8	12.8	64.3	1.4	200	
39 37	71 00	W.S.W.....	65	19.4	77	5.7	15.2	14.4	64.7	2.0	457	
40 27	74 00d	W. by N. ¾ N.	146	20.7	176	5.5	w 20.0	15.6	58.9	3.0	304	
			3086		3722							

Average sailing distance, from 5° W., by this route, 3,722 miles. The average per centum of adverse winds is equivalent to winds *dead ahead* for 636 miles. It will be observed that the most difficult part of this route is between longitude 10° and 30° W., where there are few calms, but a great prevalence of westerly winds.

APRIL.—EUROPE TO NEW YORK.—Computed.

Latitude.	Longitude.	Course.	Distances. Direct.	Distances. Per cent.	Distances. True.	Winds—per cent. Head.	North.	South.	Fair.	Calms.	Total No. observations.	
49° 30′	5° 00′ to											
49 30	10 00	W.....	195	9.0	213	5.5	w 11.0	5.5	78.0	5.6	19	From Channel.
49 30	15 00d	W.....	195	12.7	230	1.1	14.7	13.2	71.7	0.0	89	
50 40	10 00	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
49 30	15 00	W. ¾ S.....	205	21.0	248	7.5	17.1	18.2	57.2	4.0	85	
46 06	20 00	S.W.....	289	9.8	317	9.8	w 18.0	13.2	49.0	7.5	86	
45 00	21 34	S.W.....	93	11.9	104	2.5	w 14.3	11.7	71.5	5.9	125	
44 46	25 00	W. ½ W.....	147	15.1	168	0.0	14.0	w 33.6	52.4	5.7	37	
45 00	30 00	W. ½ N.....	147	16.2	171	6.0	7.5	w 13.0	73.5	4.5	70	
44 46	35 00	W. ½ S.....	147	16 8	172	6.7	8.6	w 10 5	74.2	1.0	104	
44 46	40 00	W.....	313	20.2	256	12.4	12.5	w 22.9	52.2	2.7	115	
44 46	45 00	W.....	213	27.5	271	7.1	23.9	24.0	45.0	2.7	115	
44 46	50 00d	W.....	213	18.7	253	5.2	14.7	w 17.3	62.8	6.9	115	
43 16	55 00	W.S.W.	234	22.9	268	8.2	w 18.1	10.0	63.7	10.1	120	
41 43	60 00	W.S.W.....	242	14.3	276	4.1	14.7	w 26.2	55.0	4.1	126	
41 43	65 00d	W.....	223	22.4	272	6.5	19.5	19.5	54.5	7.5	86	
40 27	70 00	W. ¾ S.	240	19.9	268	7.3	w 14.8	12.8	66.4	2.5	161	
40 27	74 00	W.	182	15.4	210	3.6	16.2	w 19.8	60.4	7.1	180	
			2973		3437							

Average sailing distance from 5° W., 3,437 miles; average per centum of adverse winds equivalent to winds *dead ahead* for 464 miles. Frequent calms in this month.

MAY.—EUROPE TO NEW YORK.—COMPUTED.

Latitude.	Longitude.	Course.	DISTANCES.			WINDS—PER CENT.					Total No. observations.	
			Direct.	Per cent.	True.	Head.	North.	South.	Fair.	Calms.		
Channel to												
50° 50′	10 00	W.N.W.....	209	7.8	225	2.8	11.2	2.8	83.2	5.5	38	
50 50	15 00	W.....	191	17.6	226	5.5	18.7	11.5	64.3	1.1	96	
50 50	20 00	W.....	191	13.2	216	4.4	5.5	15.4	74.7	6.7	95	
50 50	25 00	W.....	191	8.2	206	0.0	12.0	9.6	78.4	0.0	42	
50 50	30 00	W.....	191	20.5	228	9.6	6.4	12.8	71.2	3.2	32	
49 30	35 00*d*	W.S.W.....	209	14.1	237	2.9	5.9	17.7	73.5	0.0	17	
46 08	40 00	S.W.....	286	18.2	337	5.0	20.0	9.0	66.0	5.0	104	
44 41	45 00	W.S.W.....	228	15.2	261	0.0	24.0	28.0	48.0	3.9	53	
44 41	50 00*d*	W.....	213	21.3	258	7.0	9.8	23.2	60.0	4.8	195	
44 41	55 00	W.....	213	22.3	260	7.2	13.7	22.2	56.9	3.9	160	
43 11	60 00	W.S.W.....	234	18.0	276	3.1	15.8	21.3	59.8	3.0	170	
41 39	65 00	W.S.W.....	239	21.7	282	7.2	17.1	11.0	64.7	3.9	189	
40 05	70 00	W.S.W.....	245	27.2	310	10.6	17.1	13.0	59.3	7.3	281	
Port.....	.....	W. ½ N.....	184	10.0	202	2.5	10.8	14.5	72.2	4.0	235	
			3024	.....	3524	.....	.....	.....	.....	.....	.....	From Channel.
			2815	.....	3299	.....	.....	.....	.....	.....	.....	From Liverpool.

Aim to make a straight course from *d* to *d*.

Captain Oliver Eldridge, of the Liverpool packet ship, the Garrick—to whom I am indebted for much valuable information, and who is, moreover, a most zealous and efficient co-operator in collecting materials for these Charts—reports, on a recent voyage from Liverpool, two deep-sea soundings. They were without bottom; but they are the first I have received from a merchant ship, and I quote them as well for their value as for the example which they afford to the industrious and intelligent navigator, as to what he may do in assisting men of science to solve this interesting problem—the depths of the sea. A line of deep-sea soundings hence to Europe would be of great value and interest. It is supposed that the depth of the sea in that quarter is not very great, and that, therefore, these soundings may be had without much trouble to those who may be disposed to undertake them.

The following is from the abstract log of the Garrick, on her voyage from Liverpool to New York, May and June.

"*May* 30.—Latitude, 48° 5′ N.; longitude, 41° 39′ W.; temperature, 55°; let 1,150 fathoms line run out without finding bottom.

"*June* 2.—Latitude, 45° 14′ N.; longitude, 46° 36′ W.; temperature, 48°; no soundings with 450 fathoms line, and a strong current setting SE. by E."

His distance per log was 3,385 miles, being only 86 miles more than, according to the above route for May, he should have logged. This is but one of the many instances that I continually receive, illustrative of the correctness of the routes recommended. Steer such courses, the tables say, and you will meet, on the average, such and such winds; and the distance which you will have to sail, in order to accomplish your voyage, will be so many thousand miles. The navigator does it, and, in some instances, the computed distance and the actual distance by the log, will be found, after a voyage of 4,000 or 5,000 miles, to differ only a few leagues. In this case of the Garrick, the difference, though comparatively large, is less than 30 marine leagues.

JUNE.—EUROPE TO NEW YORK.—Computed.

Latitude.	Longitude.	Course.	Distances.			Winds—per cent.					Total No. observations.
			Direct.	Per cent.	True.	Head.	North.	South.	Fair.	Calms.	
Channel to											
48° 18′	10° 00′	W.S.W.....	213	29.4	276	9.1	16.9	35.1	.....	0.0	78
44 52	15 00	S.W.....	292	12.1	327	1.7	21.0	9.3	.....	8.4	129
41 13	20 00	S.W.....	310	2.4	316	0.0	3.0	6.0	.....	0.0	33
39 39	25 00	W.S.W.....	247	14.2	281	4.0	18 0	11.4	.....	0.0	51
39 39	30 00	W.....	230	23.2	283	7.1	14.3	22.0	57.0	4.4	189
39 39	35 00	W.....	230	12.5	259	0.0	12.0	20.0	68.0	5.6	200
39 39	40 00	W.....	230	26.0	290	11.0	15.8	17.3	55.9	3.4	215
39 39	45 00	W.....	230	18.3	272	5.0	8.0	24.5	62.5	3.4	213
39 39	50 00	W.....	230	13.2	263	2.8	6.0	22.8	78.4	2.5	251
39 39	55 00	W.....	230	22.3	281	7.2	10.0	22.3	65.5	4.1	281
41 13	60 00	W.S.W.....	247	20.4	297	7.6	3.1	22.0	67.3	0.9	225
41 13	65 00	W.....	226	25.3	283	8.0	7.0	36.0	49.0	3.8	210
40 28	70 00	W. by S.....	231	30.0	300	14.0	7.5	19.4	59.1	3.5	235
Port.....	.....	W.....	184	19.3	220	6.2	11.5	23.3	59.0	2.7	232
			3330		3948						

A tedious time of the year is the month of June to the homeward bound.

JULY.—EUROPE TO NEW YORK.—Computed.

Latitude.	Longitude.	Course.	Distances.			Winds—per cent.					Total No. observations.	
			Direct.	Per cent.	True.	Head.	North.	South.	Fair.	Calms.		
49° 40′	5° 00′ to											
48 18	10 00	W.S.W	213	15.6	245	4.2	25.0	0.0	70.8	0.0	24	
48 18	15 00	W.....	200	23.0	246	5.5	27.5	14.3	52.7	2.2	94	
44 50	20 00	S.W.....	295	14.2	336	1.6	27.8	8.2	62.4	2.5	125	
44 50	25 00	W.....	212	37.8	292	15.0	15.0	30.0	40.0	2.8	36	
44 50	30 00	W.....	212	18.5	251	5.0	14.9	16 2	63.9	16.2	93	
44 50	35 00	W.....	212	11.0	235	3.0	4.0	14.0	79.0	7.4	104	
44 50	40 00	W.....	212	24.9	264	10.5	5.6	18.2	65.7	6.3	151	
44 50	45 00	W.....	212	14.8	244	5.4	8.1	8.7	77.8	4.7	155	
44 50	50 00	W.....	212	24.2	263	8.7	10.0	20.0	61.3	8.1	173	
43 20	55 00	W.S.W	233	20.0	279	5.5	17.8	17.1	59.6	5.4	236	
41 48	60 00	W.S.W	240	26 9	305	8.3	21.2	19.2	51.2	5.6	263	
40 14	65 00	W.S.W	245	35.0	330	13.6	19.8	21.3	45.3	8.4	350	
40 14	70 00	W.....	230	27.8	294	10.7	10.8	26.0	52.5	8.7	314	
Port.....	74 00	W.....	183	29.9	237	11.2	7.7	35.9	45.2	4.2	322	
			3111	.....	3821	.....	.....	.....	.....	.....	.....	From Channel.
			2950	.....	3623	.....	.....	.....	.....	.....	.....	From Liverpool.

AUGUST.—EUROPE TO NEW YORK.—COMPUTED.

Latitude.	Longitude.	Course.	DISTANCES.			WINDS—PER CENT.					Total No. observations.
			True.	Per cent.	Average.	Head.	Slants from— N'd or E'd.	Slants from— S'd or W'd.	Fair.	Calms.	
49° 40′	5° 00′ to										
48 20	10 00	W.S.W.....	210	19.0	250	5.6	11.2	16.8	66.4	0.0	36
44 55	15 00	S.W.....	291	22.4	255	7.2	26.4	5.6	60.8	3.2	130
43 25	20 00	W.S.W.....	234	14.9	269	6.2	12.4	0.0	81.4	6.2	17
41 54	25 00	W.S.W.....	238	15.6	275	1.7	28.9	11.9	58.5	0.0	60
41 54	30 00	W.....	223	16.8	260	5.8	11.6	11.6	71.0	2.9	35
41 54	35 00	W.	223	21.4	270	6.0	15.0	22.0	57.0	1.9	106
41 54	40 00	W.	223	18.6	264	4.8	12.0	20.8	62.4	4.7	133
41 54	45 00	W.	223	18.1	263	5.6	9.8	19.6	65.0	5.0	147
41 54	50 00	W.	223	16.3	259	7.8	4.2	7.2	80.8	3.7	166
40 20	55 00	W.S.W.....	244	17.9	268	3.5	19.5	17.0	60.0	6.5	213
38 44	60 00	W.S.W.....	250	22.7	306	6.6	12.6	20.4	64.4	7.9	164
40 20	65 00	W.N.W.....	250	10.8	277	2.0	7.0	17.5	73.5	4.3	193
40 20	70 00	W.	229	19.0	272	7.5	9.6	16.2	66.7	6.3	336
40 20	74 00	W.	183	16.3	208	7.0	8.0	12.5	72.5	6.0	194
			3244		3696						

SEPTEMBER.—EUROPE TO NEW YORK.—COMPUTED.

Latitude.	Longitude.	Course.	DISTANCES.			WINDS—PER CENT.					Total No. observations.
			True.	Per cent.	Average	Head.	North.	South.	Fair.	Calms.	
49° 30′	5° 00′ to										
46 09	10 00	S.W.....	284	3.0	292	0.0	10.0	0.0	90.0	0.0	20
45 00	11 38	S.W.....	98	13.3	111	1.8	19.8	12.6	65.8	1.8	57
44 00	15 00	W.S.W.....	155	3.6	160	0.0	0.0	18.0	82.0	0.0	17
44 00	20 00	W.....	216	7.7	231	0.0	22.0	5.5	72.5	0.0	18
40 18	25 00*d*	S.W.....	314	6.2	333	0.0	7.7	7.7	84.6	7.7	14
40 18	30 00	W.....	229	19.6	274	6.8	18.7	10.2	64.3	7.0	62
40 18	33 00	W.....	143	6.8	152	1.3	8.8	7.5	83.4	8.7	87
39 42	35 00*d*	W.S.W.....	94	14.0	107	6.2	2.6	11.3	79.9		
39 42	40 00	W.....	230	15.2	265	4.4	13.2	13.2	69.2	0.0	95
39 42	45 00	W.....	330	14.2	263	3.2	8.0	20.8	68.0	7.7	139
39 42	50 00	W.....	230	16.7	269	6.3	3.5	16.8	73.4	5.1	145
39 42	55 00	W.....	230	13.9	262	5.6	6.3	10.5	77.6	3.6	144
40 39	58 06	W.N.W.....	149	16.1	173	4.4	10.8	16.0	68.8	4.0	148
38 45	65 00*d*	W.S.W.....	349	14.0	398	3.5	10.5	16.1	69.9	3.4	154
40 20	70 00	W.N.W.....	250	19.1	298	6.5	9.5	16.5	67.5	5.4	194
Port.....	.....	W.....	183	16.4	212	6.3	5.4	20.7	67.6	4.5	115
			3384		3800						

Crossings and Time from New York to England and Europe.

JANUARY.

Name of vessel.	For—	Date of sailing.	LATITUDE OF CROSSING THE MERIDIANS OF—																										Days from 15° W. to Lizard.	Total days to port.
			D.	70° W.	D.	65° W.	D.	60° W.	D.	55° W.	D.	50° W.	D.	45° W.	D.	40° W.	D.	35° W.	D.	30° W.	D.	25° W.	D.	20° W.	D.	15° W.		
Queen of the West..	Liverpool..	Jan. 26	1⅛	40¼	1⅛	40¾	1	40¼	1	42¼	1⅛	43¼	2	45	1	46	1	47¼	¾	48	1	48⅜	1	49	1	49¾	.....	17
Westminster	London ...	10	1⅛	40¼	2	41	1¼	41½	1¼	41½	1⅛	42½	1	43¼	2	45¼	2⅛	46¾	2⅛	47¾	1⅛	48¾	1	49	2⅛	49	2⅛	25
Splendid	Havre.....	12	1	39	2⅛	38⅛	1¼	39½	2	40	3	40¾	1¾	40	1½	40⅛	1¼	42	1⅛	45	1	46¼	1¼	47	1	48	2⅛	23
Prince Albert.....	London ...	4	1	39⅛	1	39⅛	2	40⅛	1⅛	41¼	1⅛	42⅛	1¼	44	1	45	1	46	1⅛	46⅛	1	47⅛	1	48	1⅛	48¾	3⅛	22
Centurian	Liverpool..	26	1⅛	40	2	40	1	41	1	42	1⅛	43¾	1½	45	1	46½	1	47	1	47¾	1	48¼	1	49	1	49⅛	.....	18½
Gladiator.....	London ...	18	1	39¾	3	36⅛	1⅛	37	1⅛	39	1¼	40¼	1¼	42	1⅛	44	2	47¾	1	49	2	49⅛	1	49¾	1	49¾	2	22
St. Patrick	Liverpool..	28	1⅛	39¾	1⅛	39¾	1⅛	40	2	40⅛	2⅛	40¾	2	42	1⅛	44	1	45	1¼	46¾	1¼	48	1	49	1	49¼	.....	22
Queen of the West..	....do.....	22	1	39⅛	2⅛	36¾	3	39¾	2⅛	40	2	39⅛	2	40	1	41¾	1	43	1	44⅛	1	45¾	1	47	1	50	.....	22
Underwriter	....do.....	16	1⅛	40	1¼	40	1¼	40	1	42	1	42⅛	1	43	1	44	1	45	1	46	1	47	1¼	49	1	50	.....	18
Splendid	Havre.....	24	1⅛	40	1	40¼	1⅛	39¼	1¼	38¾	1⅛	40⅛	3	39¾	2	40¾	1	42¼	1¼	44	1	45¼	1	46⅛	1	48	.....	21
Ship Silas Wright...	Liverpool..	17	1¼	40¼	1¼	41	1⅛	42	1	43¼	1¼	45	1⅛	47	2⅛	49	1⅛	50¾	1⅛	51	2⅛	51¼	1	51⅛	1	51¼	.....	21
Ship Jamestown	....do.....	12	2	40	2	41⅛	1⅛	40⅛	2	41	1	42⅛	1	43⅛	1	44⅛	1	46¼	1	48¼	1	49⅛	1	50¾	1⅛	52⅛	.....	28
Ship Ashburton	....do.....	16	1	39¼	1⅛	39	3⅛	40¼	2	41⅛	2	41¼	2	42¾	3	43⅛	1¼	45¾	1	47	1	47⅛	1	48	1⅛	48¾	.....	23
Ship Dreadnought...	.....	24	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Ship Chimborazo....	Havre.....	1	2	39¾	1	39¾	1⅛	40¼	1¼	40⅛	1	41¾	1¼	43	1⅛	46	1⅛	46¼	1	46¼	1⅛	46⅛	1	48	1	48¾	.....	20
Ship Henry Clay	Liverpool..	23	1	40	1⅛	40¾	1⅛	41⅛	1⅛	42	2⅛	43¾	2	45	1	49	1¼	50	1	51¼	1	51¼	1	51⅛	1	51¾	.....	20
Ship Splendid	Havre.....	6	2	39	1⅛	38¾	1⅛	39⅛	1⅛	40	1⅛	40	1⅛	40¾	2	42⅛	1⅛	44	1⅛	45	1	46¼	1	47	1⅛	47	3	22
Ship Silas Wright...	Liverpool..	7	1⅛	39⅛	1	40	1	41	2	42⅛	2	44	2	45	2	46	1	46	1	47	1	48	1	49¾	1	50⅛	.....	20
Ship Ashburton	....do.....	11	1	39¾	1	39⅛	1	41	1⅛	42	1⅛	43	1	43	1	46	3⅛	46	1⅛	48	1	49	1⅛	49¼	1	49¾	.....	19
Ship Ashburton	....do.....	9	1	40¼	1⅛	41¼	3	41	1¼	41⅛	1⅛	43	2	44	1	46	1	48	1	49	1	49⅛	1	49⅛	1	50⅛	.....	18
Ship Margaret Evans.	London ...	22	1	40	1⅛	40¾	1⅛	41	1¼	41⅛	1¼	42¾	1	43¾	1	45	2	46	1	47⅛	1⅛	48	1	48¼	1	48¾	4	19
Means.....	.....	.....	1.3	39.8	1.6	39.8	1.6	40.3	1.5	41.1	1.6	42.1	1.6	43.1	1.4	44.7	1.4	46.0	1.2	47.2	1.2	48.1	1.1	48.8	1.2	49.5	2.9	21.0
Mean of best 6:—Days from port to 15°W., 15.			1.2	40.0	1.5	40.3	1.5	40.8	1.2	41.9	1.4	43.0	1.4	44.0	1.0	45.6	1.6	46.5	1.0	47.7	1.1	48.4	1.1	49.0	1.0	49.7	.....	18.2

Crossings and Time from New York to England and North of Europe.

FEBRUARY.

Name of vessel.	For—	Date of sailing.	LATITUDE OF CROSSING THE MERIDIANS OF—																									Days from 15° W. to Lizard.	Total days to port.
			D.	70° W.	D.	65° W.	D.	60° W.	D.	55° W.	D.	50° W.	D.	45° W.	D.	40° W.	D.	35° W.	D.	30° W.	D.	25° W.	D.	20° W.	D.	15° W.		
Ship Albert Gallatin.	Liverpool..	Feb. 11	1	40⅛	1	39	1¼	39¼	1	41⅛	1	42	1	44	1	45	1⅛	46⅛	1¾	47⅛	1	47¼	3⅛	49¾	3	52	.....	22
Ship Andrew Foster.	....do.....	18	1	40	1⅛	41	1⅛	40¾	2⅛	42	1⅛	43¼	1⅛	44⅛	1	45	1	47	1	48¼	2	50⅛	1	51¾	1	51¾	.....	20
Ship Siddons.....	....do.....	8	1	40	1¾	41	1	41⅛	1	42⅛	1¼	44	1⅛	45⅛	1	47	1	47¾	1	48	1⅛	48⅛	1⅛	48⅛	1⅛	49⅛	.....	23
Ship Southampton...	London....	7	1	40	1⅛	40	1	41¼	1⅛	41¾	1	43	¾	44	1¼	47⅛	1⅛	46⅛	1	47⅛	1	48	1	48⅛	2	47¾	5	20
Ship Andrew Foster.	Liverpool..	7	1	40	1	40⅛	1¼	42	1	43	1	45⅛	1	47⅛	1	48	1	49⅛	1	50¾	1	51⅛	1	50¾	2	50¾	.....	21
Ship Ashburton.....	....do.....	15	1⅛	39¼	1⅛	39	1⅛	40¼	2	40¼	2	42	2¾	44¼	2¼	45⅛	1¼	46	2	47	1¼	49	1	49⅛	1⅛	50¾	.....	28
Ship Bavaria.....	Havre.....	26	1	39¼	1⅛	40	2	40⅛	1	40⅛	1	42⅛	1	43	1⅛	45	1	45	1	46¾	1⅛	49	2	51¾	6	49	.....	26
Ship Princeton.....	Liverpool.	3	1	39¾	2¼	39	1	39¾	1	40	1	40⅛	1¼	41⅛	1½	43	1	44⅛	1	46	1	47	1	48⅛	1⅛	49¾	.....	16
Ship Ashburton.....	London...	18	1	40	1¾	39⅛	2	38⅛	1⅛	38	2	39¼	2	40¾	1½	42	1⅛	43¾	1¼	45	1⅛	46¾	1⅛	47¼	1¼	47⅛	3	25
Ship New York.....	Liverpool..	17	1	39¾	2⅛	40	2	41¾	1⅛	42	1⅛	42	1	42⅛	3	44⅛	2¾	45	1	45¾	1⅛	47¼	1⅛	48	1	49⅛	.....	22
Ship Yorktown.....	London...	11	1	40	1	38¾	2⅛	39	1	40⅛	1	41⅛	1	43	1	44	1	44¼	1⅛	45	1	46	1	47	1	48¾	5	22
Brig Garland.....	Dublin.....	4	2	40¼	1¾	41	3⅛	40	3	43	2	44¾	2⅛	45	1¼	46⅛	1⅛	47	1	48	1⅛	49⅛	1	50⅛	1	51⅛	.....	26
Means.....	.....	.....	1.1	39.9	1.6	39.9	1.7	40.4	1.5	41.3	1.3	42.4	1.4	43.8	1.4	45.3	1.3	46.1	1.2	47.1	1.3	48.3	1.4	49.3	1.9	49.8	4.3	22.6
Mean of best 4:—Days from port to 15° W., 15.9			1.0	39.9	1.7	39.9	1.4	40.1	1.6	40.4	1.4	41.5	1.4	42.7	1.2	44.4	1.2	45.4	1.1	46.7	1.4	48.1	1.1	49.0	1.4	49.2	.....	19.2

Let us explain these tables by example: The "Queen of the West," in January, went from New York to Liverpool in seventeen days. If we wish to find the time from New York to 15° W. we must take the sum of the figures in all the day-columns, from the one that precedes 70° to the one that precedes 15° W., *inclusive*. And if we wish to know what time she had from 15° W. to Liverpool, we may ascertain it by subtracting the time from port to 15° W. from the time in column "total days to port."

And in the same way we find the time from port to the Lizard, and the time from the Lizard to London, Havre, and so on.

Crossings and Time from New York and ports north to England and North of Europe.

MARCH.

Name of vessel.	For—	Date of sailing.	LATITUDE OF CROSSING THE MERIDIANS OF—																									Days from 15° W. to Lizard.	Total days to port.
			D.	70° W.	D.	65° W.	D.	60° W.	D.	55° W.	D.	50° W.	D.	45° W.	D.	40° W.	D.	35° W.	D.	30° W.	D.	25° W.	D.	20° W.	D.	15° W.		
Ship Hendr'k Hudson	London ...	Mar. 15	3	38¼	1⅛	38⅛	1⅛	39	1	39	1¼	40⅛	1	42	2	44¾	1	44⅛	1¼	45	1⅛	46¼	1⅛	47	1⅛	49	2⅛	22⅛
Ship London.....	Liverpool..	26	1	40¼	2	39¼	1	40	1	40⅛	1	41	2⅛	42¾	1⅛	42¾	1⅛	44	2	46	1¾	48	1	49¼	2⅛	50	.....	21
Ship New World....	.... do.....	13	1⅛	39	4	40⅛	2	40⅛	1⅛	40¼	1	40¼	1⅛	40⅛	1⅛	42	1	44	2	46	1	48	1	49	1	49¾	.....	23
Ship Isaac Webb....	.... do....	8	2⅛	40⅛	1⅛	40	1	40	2	40¼	1	40⅛	1	42	1	43⅛	1	45	1	46	1	47	1	47⅛	1	48	.....	19
Ship Seaman's Bride.	Hamburg..	13	1	39⅛	1¾	39⅛	1	40	1	40⅛	1	41	1	42¼	2	44	1	45¼	1¾	46¾	1¼	48¼	1¾	48¾	2	49¾	.....	26
Ship Margaret Evans.	London ...	26	1	39¾	1	39¾	1	40	1	39¼	2⅛	38	2⅛	36⅛	6	41⅛	1	43	2	43¼	4⅛	44⅛	1⅛	46¼	1	48	3	27
Ship Leila.....	Rotterdam.	16	2⅛	40	2	41	1	43	1⅛	43¼	2	44¼	1⅛	44¾	1	46	1¼	46¼	1¼	46¾	1¼	47⅛	1	47¾	1	48⅛	3	24
Ship Fidelia	Liverpool..	4	1⅛	39	1	40⅛	1	40¾	1	42¼	1	43¾	1	45	1	46	1⅛	46⅛	1	47¾	1	48	1	48	1¼	49⅛	.....	24
Ship Simoon.....	London ...	26	1	39	1	39¼	1	40	1	41	1	42	1¼	44	1	45¾	1	47	1	49	1	50	1	50¼	1	51	.....	16
Ship Hendr'k Hudson	.... do.....	11	2	39¼	2	38	1¼	40⅛	1⅛	41⅛	2	42¾	3⅛	43⅛	2	44⅛	1⅛	45⅛	2	44¼	1	46¾	2	46⅛	1	48	3	28
Ship Virginian.....	Liverpool..	11	1	40⅛	3	39⅛	2¼	42	1	43¼	2	43¾	2	45⅛	1⅛	47⅛	1	48	1	48¼	1	49¼	1	49¾	1	50	.....	20
Ship Bavaria	Havre.....	26	2	40	1	40	1	40	1	40	3⅛	38⅛	4	40	2	38¾	1⅛	40	1⅛	42¾	3	42¾	2⅛	46	1	48	.....	27
Ship Waterloo.....	Liverpool..	16	1¼	40	1¼	40¼	1	40	1⅛	40¾	1¾	41	2	42	1⅛	44	1⅛	47	2	48⅛	2⅛	49	1	48⅛	2	49	.....	22
Ship Germania.....	Havre.....	2	1⅛	40	1⅛	39¾	1⅛	40	1	40¾	1⅛	41¾	1	42	1	43⅛	1⅛	44	1	45	1¼	45¼	1	46¼	1	47	2⅛	18
Ship Virginian.....	Liverpool..	13	2	40	4⅛	40	1⅛	41¾	1	43	1	44	1	45⅛	1⅛	47	1	49	1	49¾	1	50	1	50¾	1	50¾	.....	20
Do.....	.... do.....	23	1	40¼	1	40¼	1⅛	41	1	41¾	1	42	1¼	43¼	1⅛	44¾	2	45⅛	2	47	2	48	1	49⅛	1	51	.....	21
Ship Yorkshire.....	.... do.....	26	1⅛	40	1	40¼	1⅛	41	1⅛	42	1⅛	43¾	1⅛	44⅛	1	45	1	45⅛	1	46	1⅛	47¼	1	48⅛	1	49¾	.....	18
Ship New World....	.... do.....	7	1	40	1	39¼	1	39	1	39	1	39¼	1⅛	39	1	39⅛	1¼	43	1	49¼	1¼	48¼	1	51	3⅛	51	.....	20
Ship Roscius.....	.... do.....	7	1	40	1	39¼	1	39⅛	2	40⅛	1¼	41¼	1	41¼	1	43	1⅛	44⅛	1	46	1¼	48	2¾	50⅛	2⅛	48¼	....	22
Means.....	.....	.....	1.5	39.7	1.7	39.7	1.3	40.4	1.2	41.0	1.5	41.5	1.7	42.4	1.6	43.9	1.3	45.1	1.4	46.5	1.6	47.5	1.3	48.5	1.4	49.3	2.8	22
Mean of best 6:—Days from port to 15° W., 15.4			1.6	40.0	2.1	39.8	1.5	40.8	1.2	41.7	1.3	42.6	1.3	43.9	1.2	45.4	1.1	46.4	1.0	47.3	1.1	48.1	1.0	48.8	1.0	49.4	.....	18.5

Crossings and Time from New York and ports north to England and North of Europe.

APRIL.

Name of vessel.	For—	Date of sailing.	LATITUDE OF CROSSING THE MERIDIANS OF—																									Days from 15° W. to Lizard.	Total days to port.
			D.	70° W.	D.	65° W.	D.	60° W.	D.	55° W.	D.	50° W.	D.	45° W.	D.	40° W.	D.	35° W.	D.	30° W.	D.	25° W.	D.	20° W.	D.	15° W.			
Ship Princeton.....	Liverpool..	April 10	1¼	39¾	1⅛	39½	1⅛	39¾	6	42¾	3	42	1¼	43	1	44½	1	45½	1	47	1¼	48	1	49	1¼	50	.....	25
Ship James Wright..	....do.....	26	2¼	39	1	38½	1⅛	38¼	1⅛	40	1⅛	41	1⅛	42	1½	43½	1⅛	45	1⅛	46½	1⅛	48	1	49½	1	50½	.....	19
Ship E. Z.....	....do.....	20	1	40	1½	40½	1	41½	1⅛	42	1⅛	42½	2⅛	42	2	44	1⅛	45¾	1⅛	46½	1⅛	48	1	47	1	48	.....	21
Ship Liverpool.....	....do.....	20	2	40	2¼	41¼	2	41¾	1⅛	42	2	42¾	2	44¾	2	43¾	2	41½	2	42¼	1⅛	45	1	48	1	49½	.....	25
Do.....	....do.....	22	1	40	1	40¼	1⅛	40	1¼	39	1⅛	41	1½	42	1⅛	43¾	1½	44½	2⅛	46½	1	48	1⅛	49	2½	49½	.....	26
Do.....	....do.....	28	2	39	2	39½	1⅛	39	1⅛	39¾	1⅛	41½	1	41½	2⅛	43	1	45	1⅛	46	1	48	1	49¼	2⅛	50¼	.....	28
Ship Toronto.....	London....	23	1	40	2	39	1¾	38¾	1⅛	39	1	39½	2⅛	41¼	1	42¾	1⅛	42½	2	44	2⅛	44	1	45½	1⅛	47	4	24
Ship Rochester.....	....do.....	8	2	39½	2	39½	1¼	39¼	1⅛	39½	1⅛	39	1⅛	39¾	1¼	41	1¼	43	3	45	1⅛	46½	1⅛	48½	1	50¼	4	24
Ship West Point.....	Liverpool..	14	1	40	2	40	1	39¼	1⅛	39½	1⅛	38¾	1⅛	42	1	43	1⅛	45	1⅛	47	2	47¾	2	47	1⅛	49¾	.....	23
Ship Henry Clay....	....do.....	29	2⅛	40¼	2	41	1	41¾	1	42¼	1	42½	2⅛	44	1¼	45¾	1	47	1⅛	49	2	49¾	1¾	50	1	50¾	.....	21
Ship Virginian.....	....do.....	14	1½	40	1	39½	1	39½	1⅛	40	1	41¼	1	42	1	43¾	1	44¾	1	46¾	1	48	1	50	1⅛	51½	.....	19
Ship Liverpool.....	....do.....	23	1⅛	39½	1¼	39¼	1⅛	39¼	1⅛	39¾	1¼	40½	2	42	1⅛	44	1	45¼	1	47	1	48	1⅛	49½	1	50½	.....	18½
Do.....	....do.....	26	1	40	1¾	40¼	1⅛	40½	1⅛	40¾	1¼	40	1⅛	42	1¼	43	1	44	1⅛	45¾	1¼	46¾	1	46¾	2⅛	49½	.....	20
Do.....	....do.....	21	2	39½	1⅛	39¼	3	39½	1⅛	39¾	1⅛	41	1	41¼	1	41½	2	41	1	41¾	2⅛	46	2⅛	48	1	48¾	.....	26
Ship Kensington....	Havre.....	18	1⅛	39½	2	39¼	1⅛	39¾	1⅛	39¾	1⅛	39½	2¼	40	2	40¼	1⅛	41	1⅛	40¾	1⅛	42	1⅛	43	1⅛	45	3	24
Ship Liberty.....	Glasgow...	7	1	41	1⅛	39¾	1	40¼	1⅛	40	2⅛	41	2	43	1⅛	45	1	47	1⅛	49	1	51	1⅛	53	2	54	.....	26
Ship Ashburton,....	Liverpool..	8	1	40	1¼	40¼	1¾	40	1	40½	1⅛	42	1⅛	43¾	1⅛	45	1	46¾	1	47	1	49	1	50	1⅛	50¾	.....	12
Ship Constellation..	....do.....	15	1⅛	39¾	1⅛	40	1	40½	2	42½	1⅛	42	1⅛	43¼	1⅛	44	1	45½	1	40½	1⅛	47¾	1	48½	1½	49½	.....	28
Ship American Eagle	London....	12	1	39¼	1½	38¾	1	39¼	1⅛	39¾	3	40½	1⅛	43	1⅛	44	1	45½	1	46¾	1	47	1⅛	47½	1	48¼	3	24
Ship Jamestown.....	Liverpool..	12	2	40¼	1	40¾	1⅛	42	1	43	1⅛	44	1	45	1	46	1⅛	47	1⅛	48	1	49	1	49¾	1	50¼	.....	15
Ship Margaret Evans	London....	22	2	39½	1⅛	39¼	1¼	39	1⅛	39¾	1⅛	40¼	2	39¾	3	40	1⅛	41¾	1	43	1¾	45	1	46¾	1	47¾	.....	23
Ship Duch. de Orleans	Havre.....	11	2⅛	39	1	38¾	1	38¾	1⅛	39⅛	1	40	2	41¾	1½	44⅛	1	46	1⅛	47	1⅛	49	2⅛	49⅛	4½	49	5	28
Ship Southampton...	London....	5	¾	39¾	2	40¼	1¼	40½	2	40¾	1	41¾	1	43	1	45	1¼	46⅛	2	47⅛	3	49¼	1	49¼	1	49¼	.....	22
Ship Tornado	Liverpool..	21	1	40	1	40	1	40¼	1	40½	1¼	40¾	1⅛	42	1	44	1	47	1¼	48¼	1⅛	49½	1	49¾	1	50¼	.....	16
Ship Constantine....	....do.....	9	1⅛	40	2⅛	40½	1	40½	2⅛	41⅛	1½	41¼	3	40	1⅛	42	1	44	1¼	46	1⅛	48¾	1⅛	49½	1⅛	50½	.....	22
Ship E. Z.....	....do.....	29	3	39½	1⅛	38¼	1⅛	39	1⅛	40½	1⅛	42	1⅛	44⅛	1	46½	1¼	49	1	50½	1⅛	50½	1	50½	1	50¾	.....	20
Means.....	.....	.....	1.5	39.8	1.6	39.7	1.4	39.9	1.7	40.5	1.5	41.1	1.7	42.2	1.4	43.5	1.3	44.9	1.5	46.0	1.5	47.7	1.3	48.5	1.5	49.7	3.8	22.5
Mean of best 6:—Days from port to 15°W.,15.0			1.5	38.8	1.1	39.7	1.4	39.9	1.2	40.6	1.3	41.6	1.4	42.8	1.2	44.4	1.2	45.9	1.2	47.2	1.2	48.6	1.1	49.7	1.2	50.6	.....	17.4

Crossings and Time from New York and ports north to England and North of Europe.

MAY.

Name of vessel.	For—	Date of sailing.	LATITUDE OF CROSSING THE MERIDIANS OF—																									Days from 15° W. to Lizard.	Total days to port.
			D.	70° W.	D.	65° W.	D.	60° W.	D.	55° W.	D.	50° W.	D.	45° W.	D.	40° W.	D.	35° W.	D.	30° W.	D.	25° W.	D.	20° W.	D.	15° W.		
Ship Southampton..	London....	May 30	3	38⅛	3⅛	40	2¼	42¼	1⅛	42⅜	1⅛	42¼	1	42⅜	1	43	1	44¾	1⅛	46¼	1⅛	47	1	48	1	48⅛	5	25
Ship Silas Wright...	Liverpool..	17	2¼	39¾	2⅛	39¾	1⅛	40	1⅛	40¾	1	42	1¼	43	1	44	2	45⅛	1⅛	47	1	48	1⅛	49	1	49¼	.....	21
Ship Highflyer.....	....do.....	27	1	39	1	39	1	38½	1⅛	40	1⅛	41	1	41¾	1⅛	42¾	2	42¼	2⅛	44	1⅛	45	1⅛	47	1	48¾	.....	22
Ship Patrick Henry..	....do.....	9	1⅛	40	2	39⅛	1⅛	40¼	2	41¼	1⅛	43	1⅛	43¾	2⅛	45	1	45⅛	1	46⅛	2	47	1⅛	48¼	1	49	.....	21
Ship Devonshire....	London ...	11	1⅛	40	1⅛	39¼	1⅛	39¾	1⅛	39¼	1	40¼	1	42	2	43	1¼	43¼	1	43¼	1	44	2	46	2	48	2	20
Ship Patrick Henry..	Liverpool..	10	2¼	38	1	37¾	1¼	38¼	1	40	2¼	42½	1	44	1¼	46	1	47	1	49	1	49⅛	1	49¾	1	50	.....	23
S'p Queen of the West	....do.....	22	1	41¼	1	40	2	41	2	42¾	2	43	2	43	1	44	1⅛	45¾	1⅛	46¾	1⅛	46¾	1⅛	47	5⅙	49⅛	.....	27
Ship Gladiator.....	London ...	19	1	40¼	3⅛	41	1⅛	41¼	1⅛	41⅛	2	42¼	2	43	1⅛	44	1⅛	44⅛	1	45½	2¾	49	1¼	46	4¾	47	4	28
Ship Patrick Henry..	Liverpool..	8	3	40	2	40¼	1¾	41¾	1	42	1	42	2	42	2	42⅛	1¼	44⅛	2	44	1	47¾	1	48	2	49¾	.....	24
Ship New York.....	Havre.....	27	2½	40⅛	1	41	1	42	2¼	43	2⅛	43	2	44⅛	3	45¾	1	47	3	49	1¼	49¾	2	50⅛	1⅛	50	.....	27⅛
Ship Ashburton.....	Liverpool..	8	1⅛	40	1	40⅛	1	40⅛	1	40⅛	1⅛	40¾	1⅛	42	1	45⅛	2½	47	1	48	1	49½	2	49½	2	49½	.....	27
S'p Queen of the West	... do.....	1	1⅛	40¼	1⅛	41	1	42¾	1	44¼	1	44¾	2	46	1¼	47	1	48¼	1	48¾	1	49¼	1	49⅛	1	50	.....	18
Ship Prince Albert..	London ...	3	1	40	1	40¼	1	40¾	1	41	1⅛	41	1⅛	42⅛	1	43⅛	1⅛	44	2	45⅛	1	45¾	1	46½	1⅛	47¾	3	18
Ship Splendid.....	Havre.....	14	1⅛	39¼	1⅛	38¾	3¼	38¼	2	39¾	1¾	40⅛	1¾	41	2¼	44	2	46¼	2	48	2	48¾	1¾	48¾	1	49	3¼	26
Ship Gallatin.....	Liverpool..	21	1⅛	40¼	1	41⅛	1	40⅛	1	40¼	1	40¾	2	43	2	46¾	1¼	48	1	48	2⅛	48⅛	1	48¾	1	49¼	.....	21
Ship Underwriter...	....do.....	13	1¼	39	1⅛	39	3	38	2⅛	39	1¼	40¼	2	41¼	1⅛	44	1⅛	46¾	1	48	2	50¼	2⅛	51	1	50¾	.....	24
Means.....	.....	.....	1.7	39.7	1.7	39.9	1.6	40.4	1.5	41.1	1.5	41.8	1.6	42.8	1.6	44.4	1.5	45.6	1.5	46.7	1.5	47.9	1.4	48.3	1.7	49.1	3.4	23.2
Mean of best 6:—Days from port to 15° W., 16.3			1.5	40.0	1.6	40.2	1.2	40.7	1.3	41.1	1.2	42.0	1.5	43.4	1.6	44.9	1.3	45.7	1.2	46.5	1.4	47.1	1.3	48.0	1.2	48.9	.....	19.8

Crossings and Time from New York to England and North of Europe.

JUNE.

Name of vessel.	For—	Date of sailing.	LATITUDE OF CROSSING THE MERIDIANS OF—																									Days from 15° W. to Lizard.	Total days.
			D.	70° W.	D.	65° W.	D.	60° W.	D.	55° W.	D.	50° W.	D.	45° W.	D.	40. W.	D.	35° W.	D.	30° W.	D.	25° W.	D.	20° W.	D.	15° W.		
Ship Yorktown.....	London ...	June 2	1¼	39¾	1¾	40	1	40	1½	39¾	1½	40	1	41¾	1	42¼	2	43	1	45	1	46	2	47¼	2	48	3	21
Ship St. Patrick ...	Liverpool..	1	1	40	2	40½	1¼	40¾	2¼	41¾	2¼	43½	1½	44¼	1½	45¼	2½	47¾	1½	48¼	1½	49	1	49½	1	50	.....	24
Ship Ackbar.....	....do.....	6	1½	40¼	2	40	1	41	1	41¾	1	42¼	2	44¼	1	45¾	1	46½	2	48¾	1½	49¼	3½	51¼	2½	50½	.....	23
Ship St. Patrick.....	....do.....	—	2	39½	2	40¼	3	43¾	1½	42¼	2	43	1½	43¾	1½	45	1½	45½	1	47¼	1	48	2	49	1	50	.....	23
Ship Liberty.....	....do.....	21	2	40	3	39½	1	39¾	2	41	1¼	42	2½	44	2	45¼	1½	46¾	1	47½	1	49¼	1½	49¾	1	50¼	.....	22
Ship Yorktown.....	....do.....	1	1	39¾	2¼	40¼	1	41	3	42½	2	44	1½	44¾	1¼	46	1	47	1½	48	1	49	1	50¼	1	50¼	.....	21¾
Ship Wisconsin	....do.....	19	1	40	1	40¼	3	41	1¼	41¾	1½	42¾	1¼	44	1½	45¾	2½	48¾	1½	50½	4½	51	1¾	51	1	51	.....	25
Ship Gallia	Havre.....	10	1½	40	1	40½	1	41	1½	40¾	1½	40¾	4	40¾	2	42	1½	43¾	1½	45	1	46½	1	48	1½	48¾	.....	24½
Ship St. Louis.....	....do... ..	4	1	39½	1	40	1¼	40	1¼	41½	2	42	1	43	1	43¾	1	44¾	1	46	1	47	1	48¼	1	48½	4	22
Ship Patrick Henry.	Liverpool..	12	1½	39¾	2½	38¾	1½	39½	1¼	40	1¼	41½	1	42½	1½	44½	1½	45¾	2½	47¾	1	49	1	50½	2	50½	.....	21½
Shiy Ashburton.....	....do.....	3	1	39¾	1½	39¾	1¾	39½	1½	39½	1½	39½	1	40½	1	41	1¼	44	1	45	1	46¼	1	47	3	46¼	.....	20
Ship Princeton	....do.....	11	3	39¼	2¼	39	2	38¾	1½	39½	1	40¼	1¼	41¼	1	42¼	1	45	1¼	45¾	3	47	4	49¾	2	50	.....	28
Ship Ashburton.....	....do..	10	1	39½	2½	40	4	40¾	1	40½	1	40	1	40¾	1	42	2½	43	1½	44¾	1½	47½	1¼	49	2	49¾	.....	23
Ship Southampton..	.....	22	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Ship Dreadnought ..	London ...	24	1	40¾	2	40½	1½	42¼	1¼	43	1	44¼	1½	46¾	1	47½	1	48¾	1	49¼	1	49½	1	49½	1	49½	3	19
Ship Ashburton.....	Liverpool..	1	1	39½	2	39¾	1	39½	1½	39	1½	38	2	41	1	42½	1¾	45	2¼	47½	1¼	49	1	49½	1	50½	.....	19
Ship Robina.....	London ...	22	2	39½	1¼	39¼	1½	39¾	1½	40¼	1½	40¾	1½	42	1¼	44	1½	45¼	1	45¾	1	46½	1	47	1	48	3	20
Ship Macaulay	Liverpool..	20	1	39¾	2½	41¼	3	43	1	43¾	1½	45¼	1	47	1	48	1	48¾	1¼	49¾	1	50½	1	51	1	51½	.....	20
Means	.....	.....	1.4	39.8	1.9	40.0	1.7	40.7	1.5	41.1	1.5	41.7	1.6	43.1	1.3	44.3	1.5	45.8	1.4	47.2	1.4	48.2	1.5	49.3	1.5	49.6	3.2	22.5
Means of best 6.	.....	.....	1.2	39.8	1.8	40.1	1.6	40.7	1.4	40.9	1.4	41.3	1.3	43.2	1	44.2	1.4	45.8	1.2	47.0	1	47.9	1.2	48.5	1.5	49.0	.....	19.6

Crossings and Time from New York to England and North of Europe.

JULY.

Name of vessel.	For—	Date of sailing.	LATITUDE OF CROSSING THE MERIDIANS OF—																									Days from 15° W. to Lizard.	Total days.
			D.	70° W.	D.	65° W.	D.	60° W.	D.	55° W.	D.	50° W.	D.	45° W.	D.	40° W.	D.	35° W.	D.	30° W.	D.	25° W.	D.	20° W.	D.	15° W.		
Ship Margaret Evans	London ...	July 24	1½	40¼	1½	41	2	42¼	5	44	1½	44¼	1	44¼	1	44¼	2¼	46	1¼	48	1	48¼	1	48¾	1	49	3	23
Do.....	....do	1	1	40	1	40½	1½	42	1½	43	3½	44¾	1½	45	1	45½	1	46	1	46½	1	47	1	47¾	1	48	3	20
Ship Ashburton.....	Liverpool..	24	1½	39½	1½	38¾	3	38¾	1¾	40½	1¼	41¾	2¼	43	1½	45	1¼	46¾	1	47¾	1	48¾	1	50	1	50½	.....	21
Ship *Cultivator*.....	....*do*	28	3¼	39½	2¼	38½	4	40¾	1½	40½	1½	41¼	1½	42½	1	43¾	1	45	1	47	1	47½	1	47½	1	49	.....	21
Hamb'rg barque N'th America.....	Hamburg..	19	1	40	2¾	39¾	3	40¾	1½	40½	4	44¼	3	45¾	1	46	1	47¾	1	48½	1	48	1	48	1	48	.....	22
Ship Rattler.....	Havre.....	13	1	41¼	1	41	1¼	41¾	1¾	42¾	1	43	1½	43½	1½	45	1½	46½	1¼	47¼	1½	49½	1¼	50	1	50¼	.....	21
Ship New World....	Liverpool..	12	1	40	2	39¾	1	39½	1¼	39¾	1	40	1½	41	2½	43½	3	45½	1¼	47¼	1	48	1	48¾	1	49½	.....	19
Ship Atlantic.....	Havre.....	13	1½	40¼	2½	40¼	1½	41¼	1	42	2½	44	1½	45	1	46	1¼	46½	1	47	1	47½	1¼	48½	1	49	3	21
Ship Hendr'k Hudson	London ...	12	2½	40¼	1¾	40¾	1¼	41	1¼	42	2	43½	2	44¾	1½	46	1½	46¾	1½	47	1¾	48	1¼	48¾	1½	48¾	5	27
Ship *John R. Skiddy*.	Liverpool..	12	1½	40¼	1½	41	1½	42	2	43½	1½	45	2½	46	1	46¾	1½	48	1	48¾	1	49½	1	50	1	50¼	.....	20
Ship Isaac Webb ...	....do	1	2½	40¼	1¼	41	2	41½	1½	43	1½	43¾	1½	44	1½	45	1¼	47	2	47¾	1	48½	1	49	2	50	.....	22
Ship Waterloo.....	....do	12	1½	40¼	1½	40¾	1	41¾	1	43¼	1½	44	1½	45¾	1½	47	1½	47¾	1	49	1	50	1	50¼	1	50½	.....	17
Ship Louisville	....do	14	1¾	40	2	40	2½	41	1	42½	3	42¾	1½	44	1	45½	2	47¼	2½	48	1	49	1	49¾	2	50	.....	22
Ship Virginian.....	....do	15	1½	40	3	39¾	1	40½	1	41¾	2	43½	1	44	2	46	1	47½	2½	49	1	49½	1¼	50	1	51	.....	20
Do.....	....do	12	2	40½	1	40¼	2	41¾	1½	42½	1½	43½	2½	45¼	1½	46¼	1	47	1½	47¾	1½	49½	1	50	1	50	.....	21
Connecticut	Havre.. ..	27	1¾	40	1	40½	1	41¼	1¼	42½	1	43	1½	43¾	2½	45	1	46½	1	47¾	1	40½	1	48½	1	48½	.....	17
Means.....	.....	.....	1.5	40.1	1.7	40.2	1.9	41.1	1.6	42.1	1.9	43.3	1.7	44.2	1.4	45.4	1.4	46.7	1.3	47.7	1.1	48.1	1.0	49.1	1.1	49.5	3.5	21.5
Means of best 6.	.....	....	1.3	40.1	1.7	40.3	1.2	41.2	1.3	42.3	1.7	43.4	1.6	44.2	1.8	45.6	1.5	46.9	1.3	48.0	1.0	47.3	1.0	49.2	1.0	49.6	.....	19.0

Crossings and Time from New York to England and North of Europe.

AUGUST.

Name of vessel.	For—	Date of sailing.	LATITUDE OF CROSSING THE MERIDIANS OF—																									Days from 15° W. to Lizard.	Total days.
			D.	70° W.	D.	65° W.	D.	60° W.	D.	55° W.	D.	50° W.	D.	45° W.	D.	40° W.	D.	35° W.	D.	30° W.	D.	25° W.	D.	20° W.	D.	15° W.		
Ship Waterloo.....	Liverpool..	Aug. 15	1	38¾	1¼	39½	1⅞	41	2	43½	2	43½	2	44¾	1½	46	1	47¾	4	48¾	1½	48¾	2	49	1⅛	48¼	.....	26
Ship Virginian.....	....do.....	16	3	40	2	41	1½	42	1½	43½	1	43½	2¾	47¼	4	46½	1¾	47¾	1	48	1	49¼	1	49¾	1	50	.....	24
Do.....	....do.....	14	2	40¼	2¾	40¾	1	41½	1½	41¾	2¾	41	2	42	1½	43	2	46	1	47	1	48¾	1	48½	1	49¾	.....	23
Ship Constellation...	....do.....	11	3	40¼	1½	40¾	1	41	2¼	39½	2½	45	1	46	1	48	1	49	1	50	1	50½	1½	51	1	50¼	.....	21
Ship Isaac Wright..	....do.....	6	1	38¾	2	40¾	3	41¼	1	41½	2	42½	2	42½	2	43¼	1½	45	1	46½	2	47¾	2	49	1	50	.....	28
Ship Southampton..	London ...	7	2	39¾	3	40¼	1	40	2	40¾	1	42¼	2	45	1½	48½	1¼	46¼	1½	47	2	48	1	48½	1	51	.....	22
Ship Phantom.....	....do.....	13	1	39	1½	38	3	40	1	41	2	43	1	43¼	1¾	44	1	45	1	49½	1	50	1	49½	1	49	.....	20
Ship Dreadnaught...	Liverpool..	16	1	40	1¾	39¾	1	41	2¼	42	2	43½	1	44	2¼	45	1	46	1½	47	1½	47¼	1	48	1	49	.....	20
Ship Senator.....	....do.....	17	1	39½	4½	40½	1	40½	1¼	42	2½	42¾	2¾	45¾	1	47	1	48	1¼	49¼	1	49¼	1	49¾	1	50¼	.....	28
Duchess d'Orleans ..	Havre.....	12	1½	39¼	1¼	39½	1½	40	1½	40	1	42¼	1½	45¾	1½	47	1	48	1	49	1	49	¾	49	1	48¾	3	21
Ship Switzerland...	London....	2	2	39¾	2	39¾	1	39½	2	40	2	43	1½	44	2	46	2	47¾	1½	48	1½	48¼	1	48	1	48¼	3¼	22¼
Martha's Vineyard..	Glasgow...	1	3	40¾	2½	41	3	39¾	1½	40¾	1½	41¾	2½	43½	1½	46	2	48¼	1½	49¼	1½	49½	1½	50	1½	50½	.....	27
Ship Guy Mannering.	Liverpool..	13	2	40	1½	40	1½	40½	2½	43¾	1¾	44½	1¼	45½	1½	46½	1½	45½	2½	49	1½	50½	1¼	51	1	51¾	.....	27
Ship New World....	....do.....	1	1	40	2½	39½	2	39¾	2	41¼	1½	42	2	42¼	1½	46	1¼	47¾	1	48½	1½	49	1½	49½	1½	50	.....	22
Ship E. Z.....	....do.....	26	1½	39½	2	39½	1	40	1½	41	1½	42¾	3½	44	1	45¾	1	46½	1½	48	1	49	1	49½	1¼	50	.....	22
Ship Liberty.....	Glasgow...	26	1½	40	2	40¼	2	42¼	1½	43	3	44½	1	45¾	1⅞	46¾	1¼	47	3½	50	3	52	1¼	53½	1¼	56	.....	28½
Ship Henry Clay....	Liverpool..	28	2	40	2	41	2½	41¼	3	42½	1	43	1	43½	2	44	1	45	1	46	2	48	1½	48¼	1	50½	.....	28
Ship Liverpool.....	...do.....	16	2	40	2	39¼	1½	40½	1	41	1¼	41¾	1¼	43	1½	44¾	1½	46	2	46¾	2	47¾	1	48¾	2	50	.....	24
Do.....	....do.....	22	1	40¼	1½	40¼	1½	40½	1¼	41½	1½	42	1½	43¼	1½	43	4	43¾	2½	43¼	2½	45	1½	48	1	49	.....	26
Do.....	....do.....	23	2	39¾	1½	39	1½	39¾	1½	39¾	1	41	1	42	1¼	43¼	1¼	45	1	47	1	48¼	1½	49½	1½	50	.....	22
Means.....	.....	.....	1.7	40.0	2.1	40.0	1.6	40.6	1.7	41.5	1.7	42.8	1.7	44.2	1.6	45.5	1.5	46.6	1.6	47.9	1.5	48.8	1.3	49.4	1.1	50.1	3.1	24.1
Means of best 6.	....	.....	1.5	39.7	1.7	39.5	1.6	40.3	1.7	40.8	1.7	43.1	1.7	44.2	1.5	46.0	1.0	47.0	1.2	48.7	1.2	49.1	1.1	49.4	1.1	49.5	.....	21.0

Crossings and Time from New York to England and North of Europe.

SEPTEMBER.

Name of vessel.	For—	Date.	LATITUDE OF CROSSING THE MERIDIANS OF—																										Days from 15° W. to Lizard.	Total days.
			D.	70° W.	D.	65° W.	D.	60° W.	D.	55° W.	D.	50° W.	D.	45° W.	D.	40° W.	D.	35° W	D.	30° W.	D.	25° W.	D.	20° W.	D.	15° W.		
Ship Q'n of the West	Liverpool..	Sept. 8	1	40	3	40½	1	42	1	43	2½	44	3	45	1	46¾	1½	48	1	48¾	1	49½	1	50	1	50½	.....	21
Ship St. Louis.....	....do.....	12	1	40	1½	41	1½	41½	1	40	2½	42	1½	44	1	45½	1½	47½	1	48¾	1½	49½	1	50	1	50	.....	19½
Ship Ticonderoga...	....do.....	10	2	39¾	1¼	41	1	42	1½	43½	2	43¼	2½	44¾	1½	45¾	1¼	47	1	48	1	49	1	49	1	50	.....	20
Ship Princeton	....do.....	12	1	40	1	40	1¼	42	1½	42½	2½	41½	1½	43	1	44	1½	47	1	48	1	48½	1	49	1	50	.....	18
Ship James Wright..	....do.....	10	1¼	40	1¼	40¼	1½	41	2	41	3	42	1½	44	1	45¾	1	47	1	48¾	1½	49	1	50	1	50½	.....	20
Ship E. Z.....	....do.....	28	1½	40	1½	40¾	2	40	2½	45	1¼	47	1½	49	1	51½	1	52	2	55	2	56¾	1	57	1	56	.....	22
Ship Siddons.....	....do.....	29	4¼	38	1¾	37¼	1½	38	2	41¼	1	42¼	1	43¾	1½	45	1	46¼	1	47¼	1	48¾	1½	49½	4	51	.....	26
Ship Andrew Foster.	....do.....	16	1	40	1½	40	2	39¾	1½	40½	3	41	3	46	2	49¼	1½	50	1½	52	3	53¼	1	52½	1½	50½	.....	29
U.S. ship St. Lawrence	Southamp'n	9	2½	36¾	1½	38¾	2½	39¼	1¼	41¾	2½	45¼	1½	46¼	1½	47	1½	48	1½	49	1	48¾	1½	48½	1½	48¼	.....	25
Ship Underwriter...	Liverpool..	11	2	39¾	1¼	39¼	1½	38	3½	38¾	2	39½	1	40¾	1¼	43	1½	47	1	48	1½	48	1	49	1	50	.....	20½
Ship Splendid.....	Havre	8	2	39½	2¼	39¾	1¾	39¾	2	39	2½	40	1½	42	2	43½	1¼	45	2	44¼	2	46	1	47	1¼	48	3	25½
Ship Washington ...	Liverpool..	5	3½	39¾	2½	40	2	41	1¼	41½	1	40	2	40½	1¼	43	1½	45	2¼	46	1	46¾	1	48½	1¼	48¾	.....	25
Ship Andrew Foster.	....do.....	16	1½	39	1¾	39	2½	40	2	40¼	1	41	1½	43	1	44	¾	45	1½	46	1	47	1	48	1	49	.....	19
Ship Prince Albert ..	London ...	2	1½	39	2½	40	2	39¼	1	39¼	2½	38¾	1½	39¾	1¾	42¾	2½	47	2	47	1½	47¼	1	47½	1¾	47	6	29
Ship Ashburton.....	Liverpool..	26	1	39¾	2¼	39	3¾	41¼	2	42¾	1	42¼	2	42	2	42¾	3	45	1½	47½	1	48¼	1	48¾	1	49¾	.....	21
Ship Prince Albert ..	London ...	8	1	39½	1½	38¾	4	38½	2½	38½	2	40	1	41	1½	42¾	4	43¾	1½	45	1½	46	1¾	47½	1½	48½	2	28
Ship Q'n of the West	Liverpool..	23	3	39¾	2½	40½	2	41	2	41½	3	45	1	45	1	45½	1½	46	1	47	1	48	1	49	1	50	.....	26
Ship Edwina	Rotterdam.	15	1	40	3	41¼	2	43	1	43¾	1½	45	1½	46	1½	47¼	1½	48	2	48¼	1	48½	1	48¾	1	48¾	3	24½
Ship Peter Hatrick..	Antwerp...	11	1½	40	1½	40½	2	41	2	41½	1¼	42	2¼	43¾	2	45½	1½	47	1	48	2	48¼	2	48	1½	48¾	3	25
Ship Gladiator	London ...	17	1½	40	2½	41	1¼	42½	1½	43½	2½	44¾	1½	46	1	47¾	1½	48	1	48	1	48¼	1	48½	1	49	3	22
Ship New York.....	Havre.....	21	1	40	1	40	1	40	2	41	1	42½	1¼	44	1	45	1	46	1	47	1	47¾	1	48¼	1	49	2½	16
Ship Harrisburg.....	Belfast	14	1½	40¼	2	40	2	40	2	41¼	2	44	4	45¼	1½	46	1	46¼	1½	46¾	1¾	47¾	1½	48¾	1	49½	.....	27
Ship Ashburton.....	Liverpool..	10	1½	40	4	39	2¼	42¾	1	43¼	1	44	1	45¼	1	46½	1	48	1	49¾	2	51¾	2	56	1½	56	.....	23
Do.....	....do.....	8	2	40½	2¼	39½	2½	42¾	2	44½	1	45¼	1	45½	1	47	1	48	1	49	1	49¾	1	50½	1	51	.....	24
Means.....	.....	.....	1.7	39.6	1.9	39.9	2.0	40.7	1.8	41.6	1.9	42.6	1.7	44.0	1.3	45 5	1.5	47.0	1.3	48.0	1.4	48.8	1.2	49.6	1.3	50.0	3.2	23.1
Means of best 6.	.....	.....	1 3	39.8	1.3	40.2	1.4	41.1	1.7	41.4	2	42.0	1.6	43.8	1.1	45.0	1.2	46.6	1.1	47.7	1.2	48.4	1.0	49.0	1.0	49.7	.....	18 7

Crossings and Time from New York to England and North of Europe.

OCTOBER.

Name of vessel.	For—	Date of sailing.	LATITUDE OF CROSSING THE MERIDIANS OF—																									Days from 15° W. to Lizard.	Total days.
			D.	70° W.	D.	65° W.	D.	60° W.	D.	55° W.	D.	50° W.	D.	45° W.	D.	40° W.	D.	35° W.	D.	30° W.	D.	25° W.	D.	20° W.	D.	15° W.		
Ship Virginian.....	Liverpool..	Oct. 14	1	40¼	1	41	1	41¾	1⅛	43	2¼	44¼	1	45	1¼	46	1	47	1	47¾	1	48⅛	1	49⅛	1	50	.....	16
Ship Aberdeen.....	.... do.....	5	1⅛	39⅛	2	39	1⅛	40	1⅛	41	1⅛	42	2	42¾	1	40	1¼	47¾	1	50	1	50¾	1¼	51	1½	51	.....	19½
Ship Bavaria.....	Havre. ...	26	1⅛	40	1⅛	40	3¼	40⅛	1	42	1	43⅛	1½	45	1	46¾	1	47½	1	49	2	49	3⅛	49¾	2	50	2⅛	23
Ship New World....	Liverpool.	22	1	39¾	1	40	1⅛	41¾	1	43	2	45	1	45	3	46¾	4	50	1	51⅛	2	51¾	1	51½	1	51	.....	23
Ship Fidelia.....	.... do.....	19	1	40	1¼	40¼	1	40¾	1	41¾	1	40	1⅛	44½	1	45⅛	1	47	1	48	1	49¼	1	50	1⅛	50	.....	17
Ship Senator.....	.... do.....	21	3	40	1	41	1⅛	42	2	43	1¼	44⅛	1¾	45	1	45⅛	1	45½	1⅛	45¼	1	46¾	1	47½	2	49⅛	.....	21
Ship New World....	.... do.....	2	1	40	1	40	1⅛	41¾	2	43	4¼	43	¾	44	2¼	46	1¼	46¾	1	48	1	48½	1	50	2⅛	51	.....	26
Ship Old Colony*...	.... do.....	23	1	42	2	42	1¼	42	1¼	43	2¾	43¾	1⅛	45	1⅛	45¾	1⅛	46	1	47	1¼	48⅛	1	49	1	50	.....	21⅛
Ship Liverpool.....	.... do.....	25	1	40	2	40¾	1	41	3⅛	41¾	3	43¾	1⅛	43	2	44¼	1	45	2⅛	46¼	1¾	46¾	1¾	47½	2	49	.....	26
Ship Warren.....	Glasgow...	20	2	40	1⅛	40¾	1¼	41	1⅛	42½	2¼	43¾	2⅛	43¾	2¾	47⅛	3	48¾	1⅛	50	1	52⅛	1⅛	54¼	1½	55	.....	27
Ship Bavaria.....	Havre.....	12	1⅛	40⅛	1⅛	41	1	42	1⅛	43	1⅛	44	1¼	44¼	1	45	1⅛	45½	1¼	46¼	1	46¾	1	47	2	48	3	20
Ship George Manning	Liverpool..	31	1	40	2	40¼	1	41	2	42	1	43	1	44	2	45¾	3	46¼	4	50⅛	2⅛	51	1	51	1⅛	50¾	.....	25
Ship Yorktown.....	London ...	2	2⅛	39	1⅛	40	1⅛	39¾	1	39⅛	1⅛	39⅛	2	38⅛	1⅛	40½	1	41	3	42½	1⅛	45¾	1⅛	47	2	47⅛	5	27
Ship Southampton..	.... do.....	11	2	40¼	1	40⅛	1¼	41¼	2	42¼	1⅛	43	1⅛	43⅛	1⅛	44	1	46⅛	1	46	1	46⅛	1	47	1	48	3	19
Ship Margaret Evans	.... do.....	2	1¼	40	1	40⅛	1	41⅛	1	42	1⅛	42⅛	2⅛	44¾	2	45⅛	2	46	1⅛	46½	2	46⅛	1⅛	47	1	48	3	21
Ship North Wind ...	Havre.....	3	1	40	1⅛	40	1⅛	39⅛	3⅛	42	1⅛	43⅛	1	42¾	1	45¾	1	46¼	2⅛	46½	1	46	1	46⅛	1	47	.....	22
Ship Ashburton.....	Liverpool..	12	1	40	1	40¼	1⅛	41⅛	2	43¼	1¼	44	1⅛	45	1⅛	45¼	1⅛	46	1⅛	46¼	1	47	1⅛	49¾	1	50¼	.....	20
Ship Yorkshire.....	.... do.....	2	2⅛	39	1	39¾	1⅛	40⅛	1⅛	41⅛	1	42½	1⅛	42	1	44	1⅛	45⅛	1⅛	46	1⅛	48	1	49	1⅛	50¼	.....	21
Means	.....	.....	1.5	40.0	1.4	40.4	1.4	41.1	1.7	42.2	1.8	43.0	1.5	43.7	1.6	44.9	1.6	46.3	1.6	47.4	1.4	48.3	1.3	49.0	1.5	49.8	3.3	21.9
Means of best 6.	.....	.....	1.3	40.1	1.3	40.3	1.2	41.2	1.6	42.4	1.5	42 9	1.4	44.1	1.2	44.3	1.2	46.6	1.1	47.4	1.0	48.1	1.1	49.0	1.3	49.5	.....	18.6

* Sailed from Boston.

Crossings and Time from New York to England and North of Europe.

NOVEMBER.

Name of vessel.	For—	Date of sailing.	LATITUDE OF CROSSING THE MERIDIANS OF—																									Days from 15° W. to Lizard.	Total days.
			D.	70° W.	D.	65° W.	D.	60° W.	D.	55° W.	D.	50° W.	D.	45° W.	D.	40° W.	D.	35° W.	D.	30° W.	D.	25° W.	D.	20° W.	D.	15° W			
Ship Virginian.....	Liverpool..	Nov. 14	2	40¾	2	40¾	1½	41¾	1	42¼	1½	44	1	45½	1	46	1½	47	1	47¾	1½	49	1	50	1	50	.....	20
Ship American Union	....do	30	1	40	1½	41	1½	43	3	45¾	2¼	47	2	48½	1	50	1	51	1	51	1¼	52	1½	52½	1½	52½	.....	26
Ship Margaret Evans.	London....	25	1	39¾	1	40	1¼	41	1	41½	1¾	42	1½	43¼	1	44½	1½	46¾	1½	47½	1	48	1	48¾	1	48¾	4	18
Ship Roscius.....	Liverpool..	1	1	39¾	1¼	40¾	1½	41¾	2	43	1½	46	2	47	1	48	2	47	1½	48¾	2½	50½	1½	50	1	50½	.....	23
Ship Constellation ..	....do	13	3½	40	1¼	40¼	1	41½	1¼	43	1½	45	1	45¾	1¼	47¼	1	49	1	50	1	50¼	1½	51	2	52	.....	22½
Ship Marmion	....do	22	1½	39½	1½	38½	1½	39½	1¼	40¼	1	41	1	42	1	43	1	44	1	45	1¼	47	1	48½	4	52¼	.....	21
Ship Rattler	Havre.....	18	1	40	1	40¼	1	40	1	41	1½	42	2	43	1½	44¼	1	46	1½	47¾	3	49¾	2	49	1	49½	.....	22
Ship Echo.....	Glasgow ..	24	2	39¼	1	39¾	1½	39¾	2½	40	2½	40	3	40	2	42	1¼	42½	1¾	44¼	2	47	1½	49¼	1½	49¾	.....	25
Ship New World ...	Liverpool..	17	1	40	1	39¾	1¾	39¼	1¼	39	2	38¾	1½	42	1	40	1¾	46	3½	51	2¼	52	2½	51¼	3	50	.....	25
Ship Isaac Webb ...	....do	5	1	40	2	39½	1	39¾	3	40½	1¼	41½	2	43	3½	46½	1½	48	1	49½	1	50½	1½	50¼	0¾	50	.....	22
Ship Virginian.....	....do	13	1	40	1½	41	1½	41¼	1	42¼	2	44¾	1	45¾	1¼	47½	1	48	1½	48¾	1¼	50	1	52	1	52¾	.....	17
Means.....	.....	.....	1.4	39.9	1.4	40.1	1.4	40.8	1.6	41.7	1.7	42.9	1.6	44.2	1.4	45.4	1.3	46.8	1.5	48.3	1.6	49.6	1.4	50.2	1.6	50.7	4	22.0
Means of best 6.	.....	.....	1.2	40.0	1.5	40.0	1.3	40.5	1.4	41.3	1.5	42.5	1.4	43.7	1.5	45.3	1.2	46.6	1.2	47.7	1.5	49.0	1.3	49.7	1.4	50.5	.....	20.2

Crossings and time from New York to England and North of Europe.

DECEMBER.

Name of vessel.	For—	Date of sailing.	LATITUDE OF CROSSING THE MERIDIANS OF—																										Days from 15° W. to Lizard.	Total days.
			D.	70° W.	D.	65° W.	D.	60° W.	D.	55° W.	D.	50° W.	D.	45° W.	D.	40° W.	D.	35° W.	D.	30° W.	D.	25° W.	D.	20° W.	D.	15° W.		
Ship Margaret Evans.	London ...	Dec. 14	2	40	1½	40¾	1	42	1¼	43	1	44½	1¼	48	1	46½	1	47	1	47½	1	48	1	48¾	2	49¼	5	23
Ship West Point.....	Liverpool..	17	1½	39	1	40	1¼	41	2	41½	1	42½	1¼	44	1	45½	1½	47	1	48	1	49½	1	50	1	51	.....	17
Ship Virginian	....do.....	14	2	40	2½	41	1	41¼	1½	43	1½	43¾	1½	43½	2	46½	2	48	1	48	1	48¾	1	49	1	49¼	.....	24
Ship Liverpool	....do.....	23	3	38½	2	39½	1½	40	1½	41	1	41½	1½	42½	1½	44	1½	46	1½	47¼	1½	48¾	1½	50	2	51	.....	25
Do.....	....do.....	23	1½	40	1	40¼	1¼	40½	1½	41	1¼	42	1¼	43	1½	44	1½	45	1	46	1¼	47	1½	48¼	1½	49¾	.....	23
Ship E. Z.....	....do.....	30	2	39	1¾	40	2	40	1½	41	1½	41½	1½	44	1½	45	1	46	1½	47	2	48¾	1½	49¼	1½	51	.....	23
Ship Q'n of the West	....do.....	24	1	40	1	41½	1½	42	1¾	43½	1¼	45	1	46	1	46½	1½	48	1	48¾	1½	49½	1¼	50	1	50¼	.....	17
Ship Princeton.....	....do.....	5	1	40	1	39¾	1½	40	1	42¾	1	43	1½	44	1	45½	1¼	47	1	48	1	49½	1	50	1	50¼	.....	16
Ship Isaac Wright...	....do.....	4	1	40	2¼	41¼	1	41½	1½	41¾	2½	42½	1	43	1	44	1	45	1	46	1	48	1	49	1	50	.....	18
Ship Toronto.....	London ...	11	1	40¼	1½	40¼	1	40	1	40¼	2	41¾	1	43	1½	44	1½	45¾	1½	46¾	1	47½	1	48	1	48½	2½	19
Ship Southampton...	....do.....	5	1	40½	1¼	41¼	1	42	2	43	2	43	1	43	1	43¾	1½	45	1¼	46	1¼	48	1	49¼	1	49¼	.....	15
Ship Rapid.....	....do.....	16	2	40¼	1¼	41¼	1¼	43	1½	43¾	3	45	3½	47½	3	49	1½	50½	1	50¾	1	50½	2	49¼	1	49¼	2	23
Ship Constantine....	Liverpool..	11	1	40	1½	41	2½	43¼	1¾	43½	1¼	44	1	45½	1	46	1½	47¾	1½	48½	2	50¾	2	50¾	4½	50	.....	25
Ship Senator.....	....do.....	16	2	40	2	40½	1¼	41	1	42	4½	45	2¾	45	1¾	46¾	1	47	1	47	1	46½	1¼	47¼	1½	47¾	.....	28
Ship Edwin Forrest..	Havre.....	6	1	40	1	41	1	42¾	1	44¼	1	44½	3	44¼	2	45	1	45½	1	46	1½	47½	1	47½	2	47½	.....	27
Ship New World....	Liverpool..	13	2	40	2½	40½	1½	41¾	3	42	1¼	43	1¼	43¾	1¾	45¾	2	48½	1	48¼	2¾	48¾	1¼	48¾	1	49½	.....	24
Ship Henry Clay	....do.....	31	2	39	2½	40½	1	40¾	1½	41	2½	43¼	1	44¼	1½	46½	1	47½	1½	48¾	1	49½	1	49¾	1½	50½	.....	20
Ship E. Z.....	Glasgow...	17	1	40	2	40½	1¼	41¼	1¼	43	1½	43	2	44	2	46½	2	48	1	50	1½	52	1½	58¼	1	54½	.....	20
Ship Patrick Henry..	London ...	5	1¾	38½	1¼	39	1½	40	1¼	41¾	1½	43½	1¼	44½	1½	46	1	47	1	48	1	48	1	48	1	48¼	4	20
Ship Liverpool.....	Liverpool..	26	1	39	1¼	39¾	1	39¾	1½	41¾	1½	41¾	1	42	1½	43½	1½	46½	1	47¼	1	47½	1½	49	1	49½	.....	17½
Means.....	.....	.....	1.5	39.7	1.6	40.3	1.4	41.2	1.5	42.2	1.7	43.2	1.5	44.2	1.5	45 5	1.4	46.9	1.1	47.7	1.3	48.7	1.3	49.5	1.4	49.8	3.4	21.2
Means of best 7.	.....	.....	1.1	39.8	1.3	40.6	1.2	40.9	1.5	42.1	1.6	42.8	1.1	43.6	1.1	44.7	1.4	46.3	1.1	47.2	1.1	48.5	1.1	49.3	1.0	49.8	.....	17.1

Crossings and Time from England and the North of Europe to New York and ports east.

JANUARY.

Name of vessel.	PORTS. From—	PORTS. To—	Date of sailing.	LATITUDE OF CROSSING THE MERIDIANS OF— D.	15° W.	D.	20° W.	D.	25° W.	D.	30° W.	D.	35° W.	D.	40° W.	D.	45° W.	D.	50° W.	D.	55° W	D.	60° W.	D.	65° W.	D.	70° W.	Days from 70° W. to port.	Total days.
Waterloo	Liverpool	New York	Jan. 1	6	51	2	51⅛	1	51	1¼	50⅛	2½	46¾	4½	40¼	4¾	39½	5	40⅛	1¾	41	1¼	40½	1¾	42	1¼	40⅛	2	35
Margaret Evans	London	....do	28	6⅛	50⅛	3¼	49⅛	2	48½	4¼	45	1¾	45⅛	1	45¾	1¾	45¾	2½	42¼	2¾	42	2½	40½	3¾	41¾	1	40⅛	1	34
London	....do	....do	13	1¾	49¼	1¼	49	2¼	50½	2¼	52	1	52	2½	52	4⅛	45	5	43¼	2½	43½	3¼	41¼	1¼	41¼	3½	39⅛	2	33
West Point	Liverpool	....do	1	8	48	2¼	47¾	2½	48¾	3½	48½	2½	50	2	51¼	1½	48¼	1¼	45¾	1½	43	5¾	40¼	6	40⅛	...	.....	5	42
Moneynick	London	Boston	27	2	48	1½	47	2	46½	3½	43¼	2¾	40⅛	2¾	38	1⅛	37⅛	1½	37	1½	37¼	3¾	40	2¼	42¾	....	.....	2	27
Dreadnought	Liverpool	New York	18	5⅛	48¼	¾	47	1	45	¾	44½	1⅛	43¾	2	44¼	1⅛	45	¾	44¾	1	44	1	43	2¾	40¾	....	.....	2½	21
New World	....do	...do	14	8¼	47	1½	44⅛	1	43¼	1	43	2¼	42	1¾	41	1¼	41	1½	40½	1¼	41¼	3	41⅛	2	42	2¼	40½	3	30
Ashburton	....do	....do	10	2¾	49	1	48	1	47¼	5¾	44¾	12½	41	9	37½	4	37½	3	38¾	12	35¼	5	36¼	10	35¼	6	37	15	87
Leila	Rotterdam	....do	17	2	49½	2	48½	1½	48	2¼	48	1¼	46¼	1	45½	1	45½	2	45¼	2	43	4	41¼	1⅛	41	1⅛	40	2	24
Driver	Liverpool	... do	26	2⅛	49	1	47¼	¾	45¾	¾	45½	1½	45⅛	2¾	47½	1½	46¾	1¾	45	1¼	42¾	1⅛	42¼	1½	41¾	1¾	40¾	1¼	19
Robena	London	....do	14	5¾	49	5¾	47¾	2	47½	6¼	46¼	15¼	44½	2½	45	3	44½	7¼	41½	4½	40¼	15	37¾	7½	42¾	4½	39½	2½	82
American Union	Liverpool	....do	29	3¼	49¾	1½	51¾	6¼	52¾	1½	52	4	46¼	2½	46¼	3½	46	3	43¾	4½	42¾	2½	42	4½	41½	4	38½	5	46
Chasea	....do	Boston	11	11	49¼	2¼	48½	2¾	45¼	2¼	44½	3¾	45¼	2	44¼	2	44¼	2¼	44½	2½	43½	2¾	43	3¼	42	5½	42¼	½	43
Bavaria	Havre	New York	6	4½	48	2	47½	5	47	2	48½	2	50	3	50	1	48	7	44	2	42¾	2½	42	4	40	2	40½	2	39
Means	.....	.....	.....	5.0	49.0	2.0	48.2	2.2	47.7	2.7	46.9	3.9	45.7	2.7	46.3	2.3	43.9	3.1	42.6	2.9	41.6	2.8	40.8	3.7	41.1	3.0	39.9	3.3	40.1
Means of best 6	.....	.....	.....	3.7	48.5	1.3	47.2	1.4	46.5	1.7	46.0	1.7	45.0	2.0	44.7	1.9	43.5	2.1	42.6	1.6	42.0	2.7	41.5	1.9	41.6	2.2	40.2	2.1	25.7

Crossings and Time from England and the North of Europe to New York and ports east.

FEBRUARY.

Name of vessel.	PORTS. From—	PORTS. To—	Date of sailing.	LATITUDE OF CROSSING THE MERIDIANS OF— D.	15° W.	D.	20° W.	D.	25° W.	D.	30° W.	D.	35° W.	D.	40° W.	D.	45° W.	D.	50° W.	D.	55° W.	D.	60° W.	D.	65° W.	D.	70° W.	Days from 70° W. to port	Total days.
Ashburton	Liverpool	New York	Feb. 27	5	48¾	3	47¾	2¼	47¾	1¾	47¼	2¾	47⅛	2¼	45¼	1⅛	44⅛	1¾	42⅛	2¾	42¼	2	41¾	4¾	41⅛	1⅛	40⅛	1⅜	33
Do.	do	do	26	3¾	50¼	2¼	51¼	2	50¼	1	49⅛	1	49	2	48	3	44¾	2	42¼	2	41⅛	5	41¼	3	40⅛	2	40⅛	3	32
Liverpool	do	do	6	3⅛	47⅛	¾	47¾	1¼	48¼	2¼	46	3	44⅛	3⅛	45¾	3¼	44¾	1¼	43¾	1	43¾	1⅛	42¼	2⅛	42	2¾	39¼	2¼	29
Do	do	do	8	5	52	2¼	50	2¼	47	2¼	46¾	3⅛	45	3¾	42	1¾	43⅛	3	44⅛	6¼	38¼	2⅛	38⅛	2⅛	40¼	4¼	40¼	2¾	42
Do	do	do	8	3¼	49⅛	1	49	¾	48¾	1	48¼	1⅛	47⅛	2	47	1¾	46¾	3¼	42	5⅛	36¾	1¾	37¼	3¼	40	3	40	2	30
Do	do	do	13	8⅛	51¾	1	52	1¼	52	3⅛	51⅛	1¾	50⅛	5⅛	46	13⅛	37⅛	2⅛	37⅛	3	37	2⅛	37¾	4	38	3¼	39¼	1¾	52
Constantine	do	do	18	2⅛	50	2	50¼	1¼	50¼	1¼	49¾	1	48¾	1¼	47	1¼	45¼	5	43¼	2	43	1⅛	42¼	2¾	41⅛	2¼	40¾	3	27
Ratler	Havre	do	14	3¼	49¼	1¾	49	5	47	2⅛	46¾	6	45⅛	2	45¼	4⅛	42	3⅛	41¼	2⅛	40¾	2¼	41¼	3	39¾	3	40¼	3¾	43
E. Z.	Liverpool	do	1	2⅛	54	1	53	1¼	52	1⅛	51	1¼	50¼	1	49⅛	1⅛	48¼	1¾	46⅛	2¼	42⅛	1¼	42¼	1⅛	42	3¾	41	1⅛	22
Princeton	do	do	4	2¾	48⅛	1	47¼	1¼	46¼	2¼	44¾	1¼	43¾	1¼	42¼	1	42¼	1	42¾	1	42⅛	3⅛	41¾	1	41¼	1¾	39¾	2	21
E. Z.	Havre	do	22	3⅛	49¾	1	48⅛	1	47⅛	1¼	46⅛	1¾	45¼	1⅛	45¼	1¼	44	3¼	42¾	7	42¾	2	42¾	1	41¾	1⅛	40¼	6	32
New York	Liverpool	do	9	1¼	50⅛	1	49⅛	1	48¾	¾	48¼	1¾	46¾	1¼	45⅛	1⅛	44¾	1¼	43¼	2¼	43	15	37	2¼	36⅛	2¾	38⅛	7	39
Means				3.7	50.1	1.5	49.6	1.7	48.8	1.8	48.0	2.2	47.0	2.3	45.7	3.0	44.0	2.5	42.7	3.1	41.2	3.4	40.5	2.6	40.4	2.6	40.0	3.1	33.5
Means of best 6				3.0	49.8	1.1	49.3	1.1	48.8	1.6	47.7	1.6	46.7	1.7	46.1	1.7	45.2	2.6	43.5	3.1	41.9	1.9	41.4	2.0	41.4	2.5	40.2	2.8	26.8

Crossings and Time from England and the North of Europe to New York and ports east.

MARCH.

Name of vessel.	PORTS. From—	PORTS. To—	Date of sailing.	LATITUDE OF CROSSING THE MERIDIANS OF— D.	15° W.	D.	20° W.	D.	25° W.	D.	30° W.	D.	35° W.	D.	40° W.	D.	45° W.	D.	50° W.	D.	55° W.	D.	60° W.	D.	65° W.	D.	70° W.	Days from 70° W. to Port.	Total days.
St. Patrick	Liverpool	New York	Mar. 28	8	48½	1	47¼	1¼	46¾	1	46	1⅛	45¾	2¾	44¾	6¾	43¾	1	43⅛	4½	42⅛	2	42⅛	3	41¼	2¼	40¼	2	37
Queen of the West	do	do	10	4¼	47¾	1¼	46	1	43¼	1	42¼	¾	41¾	1	41¼	5	40	1	40¾	1¼	41¼	2¼	42	1¼	41	2	40¾	2	24
Garrick	do	do	26	4¾	50¾	1¼	50¾	4¼	50	4¾	51¼	2⅛	50	1¼	49¼	5¾	45	1¾	44¼	4¾	43⅛	1¾	42⅛	3¼	39¼	2⅛	40⅛	1	39⅛
E. Z.	Belfast	do	16	3	55⅛	1	54¾	1	53⅛	1	52¼	1	50¾	2	50¾	9	42⅛	1¾	42	2¼	41¼	2¾	41¼	1⅛	42	1¾	40⅛	1	29
Rapid	London	do	2	2⅛	48⅛	1	48⅛	1¼	49	1¼	49¾	2¼	49¾	1⅛	47	5⅛	44	1¾	43¼	2	42¾	2	41	1¼	41¾	6¾	39⅛	.....	29
Diadem	Havre	do	23	7⅛	49⅛	3	49¼	1⅛	49¼	1¾	50¾	3¼	48¾	3⅛	45¼	2	43	6	41⅛	5¾	41	1¾	41¾	1⅛	41¼	2	41	2⅛	42
New World	Liverpool	do	1	4¾	51⅛	2¾	51	3⅛	50⅛	2⅛	46⅛	3	45⅛	3	45	3	44¾	4⅛	42¾	4	40¼	2	40	1¾	40¾	3¾	40	2⅛	41
E. Z.	do	do	9	3	55⅛	2⅛	54	1¼	52¾	1¼	51¼	3	50⅛	2	49¼	5	44½	6	42	2¼	40⅛	3¾	42¼	2⅛	41¾	2¼	40	2¼	37
Tornado	Havre	do	17	2¾	49¾	1	49¾	1	49⅛	2	49	3⅛	47¼	3	45	2	44⅛	2	42⅛	1¾	42⅛	1¼	42⅛	1	42	1⅛	40¾	2¼	25
Luna	Rotterdam	Boston	11	2	49	1¼	48	1¾	48⅛	2⅛	49¾	5⅛	46⅛	2	44¼	2	42⅛	1	41¾	1¾	41⅛	1¼	42	2¾	42	3¾	42¼	1	28⅛
Cultivator	Liverpool	New York	30	4	50	1⅛	49	1⅛	48	1¼	47	1	46	1	44¾	1¼	44¼	1¼	44	1¼	43	2¼	42¼	2¼	41¼	2⅛	40⅛	1	22
Ashburton	do	do	10	11⅛	48¾	1⅛	47¾	2¾	47¾	3¾	46¼	4¼	42⅛	3¾	40¾	1	40½	1¼	40¼	1	40¼	1¼	40¼	2¼	40⅛	2¾	40¼	1	38
Silas Wright	do	do	7	5	50¼	1	49⅛	1¾	48⅛	4⅛	47¾	2¾	45	2	42	8	43½	4	41¼	1	42	3⅛	40¾	1¾	40¼	2¼	40	2	39⅛
Dreadnought	do	do	1	2⅛	49½	¾	48⅛	¾	46¾	¾	45¾	1¼	43¾	1¾	43¼	1⅛	42¼	2¾	43¾	2¾	42¼	3¼	41¼	2	40¼	2	40	1	23
Margaret Evans	London	do	21	2¼	49	2¼	49¼	1⅛	49¼	4⅛	47	2¼	44	2	43	2¼	41¼	3	39¾	2	41⅛	2¾	40⅛	1¼	41	1	40¾	1	28
Cultivator	Liverpool	do	30	3	50	1¾	49	1¼	48	1¼	47	¾	46	1	44¾	1¼	44¼	1	44	1¾	43	2¼	42	2¼	41¼	2⅛	40½	1	21¼
Yorktown	Portsmouth	do	23	3¼	48¾	1¼	48¾	4¼	47¾	4¾	47¼	2¼	45¾	1⅛	44¾	1⅛	43	2¾	42	2¼	42	1¾	41	2⅛	40⅛	2⅛	40	1⅛	32
Means				4.3	50.1	1.5	49.5	1.9	48.8	2.3	48.0	2.4	46.4	1.9	45.0	3.7	43.1	2.5	42.3	2.5	41.8	2.2	41.5	2.0	41.1	2.6	40.4	1.6	31.5
Means of best 6				3.1	49.3	1.4	48.6	1.2	47.5	1.8	46.3	1.6	44.8	1.6	43.7	2.2	42.7	1.8	42.5	1.8	42.2	2.3	41.7	1.7	41.1	1.9	40.5	1.4	23.9

Crossings and Time from England and the North of Europe to New York and ports east.

APRIL.

Name of vessel.	PORTS. From—	PORTS. To—	Date of sailing.	LATITUDE OF CROSSING THE MERIDIANS OF— D.	15° W.	D.	20° W.	D.	25° W.	D.	30° W.	D.	35° W.	D.	40° W.	D.	45° W.	D.	50° W.	D.	55° W.	D.	60° W.	D.	65° W.	D.	70° W.	Days from 70° W. to port.	Total days.
Tarolinta	Rotterdam	New York	April 29	2¾	48	2¼	48	4¼	51	2¾	52	6¼	48½	2¾	47½	3	46	2½	46	2¾	44	1¾	43¾	2½	42	3½	41	3	40
Hendrick Hudson	London	do	29	3¼	50	2½	49	1	48	1¼	47¼	3¼	46¾	3½	44½	3	45½	3¾	44	5	43	2¼	42½	2	42¼	2½	40½	1	34¼
Roscius	Liverpool	do	22	6½	46¾	2½	46¼	4	46¼	2½	45¼	2¼	43½	5¼	44½	2¼	44¾	4	43½	2	42	3½	42¼	3¼	42	4	40½	1	43
Romance of the Sea	London	Boston	13	2	47½	1	46¾	2	46	1½	45¾	2	43¾	2¼	42¼	2	42	2	42	1¼	42¾	2	41½	1½	42¼	2	42	¼	21¾
Albert Gallatin	Bristol	New York	8	3¼	49¾	1¼	48½	1½	47	5	46	3½	41½	3	39¾	2¼	38¾	1¾	37¾	1¼	37	1¾	37	7	37¾	3	38¾	2½	37
Senator	Liverpool	do	9	8½	49½	2¼	51	4¼	47¾	5½	44	2	42	1½	40¾	2	39½	3	37¾	2	38¾	2¼	39	3¼	40¾	2½	40	2	41
Fidelia	do	do	17	4¼	56¾	1¼	56½	1	56¼	1½	56¾	4½	52	1½	50¾	2¾	48	2	45½	3¾	45¼	2½	43¼	1	43½	3¼	39	1¾	31
New World	do	do	19	5½	49¼	1½	48	2½	45	4	44	5	44½	4	41	1	38½	2¼	38¼	1½	38¼	1¾	38	3½	39¼	4½	40	2	39
Southampton	London	do	24	4¾	49	1½	49	¾	48¾	1	48½	1	48¼	1	46½	1	45½	1	44½	2½	43½	1½	43	3½	41¼	2¾	40¾	1¾	24
Columbus	Liverpool	do	10	3	50	2	49¼	4	47	2½	46½	2	46	3	44	2	45	2	44	1½	45	1	45	4½	42	2½	40	1	31
Ivanhoe	do	do	3	10	47½	4½	47½	3½	49	3	51¼	2½	51	2	48	1	46½	2½	45	2¼	44	1¾	42½	1½	41	2½	40	3	40
Quebec	London	do	16	6	46	1½	45½	1½	45½	1	45½	1	45	3	47	2	45	2	45½	2½	44	3½	42½	2	40¾	2	41	2	30
Richard Alsop	Liverpool	do	1	5	48½	1	47½	½	47	1	46	1½	46	2	45	5	43½	1½	43	2	42	4	40½	2	40¾	1½	40½	2	29
Andrew Foster	do	do	21	3	47	2	46	1½	45½	2	44	3	43	2½	44	3	44	1½	42½	1½	42	2	41¾	3	42	6	40	1	32
London	London	do	17	4	49	2	48	2	49	2	48	2	48	4	43¾	2	44	3	45	1½	43½	1	42	1½	42	5	40½	2	32
Means				4.8	48.9	2.1	48.4	2.3	47.9	2.4	47.4	2.8	46.0	2.7	44.6	2.3	43.7	2.3	42.9	2.2	42.3	2.2	41.6	2.8	41.3	3.2	40.3	1.7	33.7
Means of best 6				4.2	49.5	1.4	49.0	1.6	48.4	1.5	48.1	1.8	46.7	2.1	45.9	2.5	44.8	1.7	44.1	2.2	43.7	2.4	42.6	2.4	41.7	2.3	40.8	1.5	27.7

Crossings and Time from England and the North of Europe to New York and ports east.

MAY.

Name of vessel.	PORTS. From—	PORTS. To—	Date of sailing.	LATITUDE OF CROSSING THE MERIDIANS OF— D.	15° W.	D.	20° W.	D.	25° W.	D.	30° W.	D.	35° W.	D.	40° W.	D.	45° W.	D.	50° W.	D.	55° W.	D.	60° W.	D.	65° W.	D.	70° W.	Days from 70° W. to port.	Total days.
Waterloo	Liverpool	New York	May 1	5	51⅛	1⅛	50¾	3¼	48¼	4½	47¾	1⅛	44¼	2¼	41½	2⅛	42⅛	1⅛	42¾	3½	42	1½	41¾	1	41⅛	1⅛	41	1¼	31
Milan	....do	..do	14	5¾	49¾	1¾	51¼	1⅛	50½	3	47	3	45¾	1⅛	44½	1¾	44¾	¾	44¼	2	42½	2	42	1⅛	41⅛	1⅛	39¾	3	29
Tarquin	Havre	....do	20	3¼	46¾	1¼	46⅛	2¾	46	2	46¼	2	46	1⅛	44	1¼	43⅛	2	42¼	4	40⅛	6	43	2¾	42¼	4¼	40⅛	5	38
Rochester	Liverpool	Bath, Me	24	5⅛	51⅛	1⅛	51⅛	1⅛	50	1¼	49¼	2¾	47⅛	2¼	46	5	43	3	43	1¾	43	1	42¾	1⅛	42⅛	2	40	2	29
Waterloo	....do	New York	28	2	50¾	1	50	2	48½	4¼	45¾	1¼	45¾	2⅛	47⅛	1⅛	46¼	2¾	43	1¾	43¾	2	42¼	3⅛	41	2	40¾	2⅛	29
Do	....do	....do	2	3	49¾	1⅛	49¾	1¾	49¼	1¼	47¼	1	46	1¼	44⅛	1⅛	44¼	1¼	43⅛	1	43¼	1	42¾	1¼	41¾	1⅛	41⅛	¾	18
Montauk	Antwerp	....do	21	2⅛	49¾	1¾	48½	2¾	49	1¾	48⅛	2¼	47⅛	2¼	46¾	1⅛	45¾	1¾	45	1⅛	45	3⅛	41¾	4½	40¼	3¾	40	2¼	32
Constantine	Liverpool	....do	25	2	51	1¼	50	1¼	49	3	47	2⅛	45	2½	46⅛	2¼	47¾	3¼	45½	2¾	43¾	3	42¾	3¼	41½	3	40⅛	2	32
Margaret Evans	London	....do	21	5⅛	48	3¾	47¾	1½	47½	1¼	47¼	1	47	1	46	¾	45¼	1¼	43¾	3	42¼	2⅛	41	2	41	3⅛	40	1	25
Do	....do	....do	22	2¾	49¼	1	49	1	48½	2¼	47¾	2¼	46⅛	1¾	45½	1¾	44¾	2¾	44	2	43¾	1¾	43	4⅛	40¾	2¼	40¾	1	27
Ashburton	....do	....do	1	1¾	48¾	1	47¾	1	46¾	1¼	46	1¼	46⅛	3¾	46½	3	45½	4⅛	43⅛	2⅛	41¾	1⅛	41¼	2⅛	41⅛	1	40⅛	1	26
American Union	....do	....do	12	4⅛	51	1¼	51¾	2⅛	50½	2½	49¾	1¼	48¼	1¼	45¾	3	46¼	4	43¼	3	44⅛	1¾	43¾	4⅛	41¾	2¼	40⅛	2⅛	34
Washington	Liverpool	....do	9	4¼	50¾	1	50⅛	2¼	48	6⅛	47⅛	3	48⅛	4	47¾	3¼	43¼	2	42¾	2	42⅛	1	42	1⅛	42	2	40¾	1⅛	34
Realm	Havre	....do	1	6¼	44¼	1¾	43⅛	2⅛	42¾	1¼	42⅛	1¼	41¾	1¼	41	1¼	40¾	1¼	40¼	1¼	40⅛	3	40½	1¾	40¾	1¾	40	1⅛	26
Damon	La Rochelle	....do	31	3	45¾	3	46¾	3	47½	3½	46	5½	43¾	2	45¼	3¼	44½	2¼	42¾	3½	43¾	3½	43	4	41¾	3¼	40¼	2¼	42
Sacsusa	Bremen	....do	5	7	46¼	5	49¾	2⅛	50	2½	49⅛	1¾	48¾	2¼	47½	5	46	5½	42¾	2	42	4¼	40¾	4	40⅛	3¼	40¼	2	47
Blanchard	Havre	....do	16	3	46¼	1⅛	43¾	2¼	39¾	5	40	1¼	39¾	1¾	39¾	2¾	39½	2⅛	39½	2	40¼	2	41	6	41¼	2	40⅛	3	35
Edwina	Rotterdam	....do	31	9	59	1	58	2⅛	57	2	54½	2⅛	51⅛	3⅛	50	3	48¼	2¾	46	4	43½	3	42	4	41	3	40	3	43¼
Means				4.2	49.4	1.6	49.3	2.1	48.3	2.7	47.4	2.1	46.1	2.2	45.3	2.5	44.5	2.5	43.3	2.4	42.7	2.4	42.1	3.0	41.4	2.2	40.2	2.1	32.0
Means of best 6				4.2	48.3	1.3	48.2	1.5	47.5	1.7	46.3	1.6	45.6	1.7	44.6	1.7	44.2	2.0	43.2	2.0	42.3	2.0	41.7	2.2	41.2	1.9	40.4	1.4	25.2

Crossings and Time from England and the North of Europe to New York and ports east.

JUNE.

Name of vessel.	Ports. From—	Ports. To—	Date of sailing.	D.	15° W.	D.	20° W.	D.	25° W.	D.	30° W.	D.	35° W.	D.	40° W.	D.	45° W.	D.	50° W.	D.	55° W.	D.	60° W.	D.	65° W.	D.	70° W.	Days from 70° W. to port.	Total days.
				Latitude of crossing the meridians of—																									
West Point	Liverpool	New York	June 1	7	48⅛	2¼	48¼	1¼	47	1¾	47	¾	47	1¾	46⅛	2	46¾	1¾	43⅛	2⅛	44	2⅛	43⅛	3	40⅛	1⅛	40¾	3	31
Ashburton	do	do	26	3¾	49¼	1¼	52⅛	2	49⅛	2	47	2	47	1⅛	48	2	47	3⅛	45	1⅜	43⅛	1¼	42⅛	1⅛	42	3	40⅛	3⅛	29
Do	do	do	24	2⅛	54	1⅛	53	1¼	51¾	1¾	49¼	2⅛	48¼	2¼	49⅛	3	47⅛	4	46⅛	1¾	44	2	42¾	3¼	41¾	5¼	40¼	2	33
Liverpool	do	do	9	3¾	48⅛	1	48⅛	3	47	1¾	45⅛	2¼	45⅛	2⅛	44⅛	1¾	43¾	2	44⅛	2⅛	42¾	2⅛	42⅛	1¼	41¾	2¾	40⅛	2	29
Do	do	do	11	3⅛	56	3	51	2	49⅛	2¾	47¼	2	44¾	3	43	3	43	2¼	43⅛	2	43⅛	3⅛	43	3	43¼	3¼	40¼	2	35
Do	do	do	9	6⅛	49¼	1¾	46⅛	1¾	45	2¾	44¼	1	44	2¾	43⅛	2¼	42⅛	2⅛	42¾	1⅛	42¾	2¼	42⅛	3	42¼	4	40¾	3	35
Do	do	do	8	7⅛	50	1¼	49⅛	2	49	1¼	48⅛	4	45¾	3¼	40¾	2¼	40¾	1¾	42¾	1⅛	42⅛	2¼	42¾	2⅛	42	3	41¼	3¼	36
Do	do	do	19	7	49	2	46¾	3	45¼	1⅛	42⅛	2¼	41⅛	2⅛	42	5	40	4¼	43⅛	2¾	43	2¼	42¾	3⅛	41⅛	2⅛	40⅛	1⅛	40
Do	do	do	10	4⅛	51⅛	1¼	50¾	2	50	1⅛	49¼	1¾	48	2⅛	47¾	4	46	1¾	44¾	1⅜	44	2¼	42⅛	2¾	42	1¾	40⅛	1¼	29
Driver	do	do	15	1⅛	53	3⅛	48	3¼	49	1	50	1¾	49	2	47	5	43	3¼	44	1¼	44¼	1¾	43	1¾	42¾	....	.....	2	28
Margaret Evans	London	do	15	5	47	2¼	47	1	44¼	2⅛	41	2	41⅛	1¾	43	1¾	42⅛	2¾	42⅛	1⅛	44⅛	2⅛	43⅛	4	42⅛	3	40¾	1	31
Toronto	do	do	17	3¼	46¾	2¾	46¼	1⅛	47⅛	2	48	1⅛	47¼	2¾	45⅛	2	45	3¼	44⅛	3¾	43	4¼	40¾	3	42	2¼	40⅛	1	33¼
New World	Liverpool	do	24	9¾	49⅛	2¼	50¼	2	48⅛	4	47¾	4	45¼	2⅛	44¼	3⅛	44⅛	5¾	43	2¼	43⅛	3	42	3	42	2⅛	40⅛	3⅛	48
Tamerlane	do	Boston	26	9	50¾	2	48⅛	1⅛	48	6⅛	46	3	44	3	42⅛	4	42⅛	2	40⅛	4	43¾	4	41¾	2¾	42¾	3¼	43	1	46
Mongolia	do	New York	27	5¾	50¾	1¾	51	1¾	49¼	2⅛	50⅛	7⅛	44	3	42¼	4⅛	43	2¼	40¾	4	43¼	4¼	42	3⅛	41¼	3¾	40¾	1⅛	46
Isaac Jeanes	Havre	do	10	3¾	51¼	1	51⅛	3	50⅛	4¼	43¾	2	40¼	1¼	40⅛	1	40¼	2	38⅛	3¾	37	3¾	39⅛	3	38	1¾	39¼	1¼	32
Dreadnought	Liverpool	do	13	5¼	46	1¼	42¾	2¼	42	1¼	41¾	4¼	41¾	1⅛	41¾	2	43	1⅛	44	2	43⅛	1¾	43	3⅛	41¾	2	40¾	1⅛	30
Garrick	do	do	21	5	52	2	52⅛	2	52	2⅛	51¾	7⅛	45¾	3	46⅛	2¼	44¼	2¾	44¼	2¼	42⅛	4¾	42⅛	5¼	41⅛	2¾	40¼	1	43
Princeton	do	do	23	3	49⅛	1⅛	48⅛	2⅛	47⅛	2	47¾	2¾	43¾	1⅛	40¾	4¾	40⅛	2⅛	41⅛	1¼	41¾	2⅛	42¼	3¾	41⅛	1⅛	40⅛	1	30⅛
Pristis	Bristol	do	21	8	45⅛	3⅛	45	3⅛	42⅛	4⅛	40⅛	3⅛	39	4	37¼	7	37⅛	4⅛	38	3⅛	39⅛	4¼	41¼	3¼	41¼	2	40⅛	2⅛	54
Tornado	Liverpool	do	20	1⅛	58⅛	1	59	2	59⅛	1⅛	57	2¼	54⅛	1¾	51⅛	3	48⅛	2	47	5	43¾	1	44⅛	4	42	2¼	40¾	1	28
M. Livingston	do	do	18	4⅛	48⅛	2	48⅛	3⅛	48⅛	2⅛	45⅛	2⅛	46⅛	3¼	44	3¾	45¾	5	45⅛	2¼	44	6	42¾	3¼	42¼	4⅛	40⅛	3	46
Lucy L. Hale	Cardiff	Boston	18	8	50¼	2	50¼	4	49¾	7	43¾	2⅛	40⅛	3⅛	39¾	2¾	40	2¾	41	3	42⅛	2⅛	42¾	2¾	42¼	3¼	42⅛	1	45
Leila	Rotterdam	New York	28	8¼	48¾	1¾	47⅛	1¾	44⅛	2¼	42	2	40¼	4¾	42¾	1⅛	44⅛	2⅛	43⅛	1¾	43	2⅛	43	2	41⅛	2⅛	40¼	1¾	35
John Knox	Liverpool	Eastport	17	8	50⅛	1⅛	51¼	2¼	50⅛	3	49	2¾	47	3¾	42¾	4¾	44	1⅛	44⅛	2⅛	44⅛	2¾	45	5¾	43	....	... .	3¼	42
E. Z	do	New York	12	5⅛	45⅛	2¼	44	2¼	43	1¾	41⅛	1⅛	41	1¾	39⅛	4¼	39¾	5⅛	37⅛	2	38	1¾	38⅛	3¾	41	5¾	40⅛	1	39
Means			.....	5.4	50.0	1.9	48.4	2.3	48.1	2.6	46.5	2.8	44.7	2.6	43.7	3.2	43.3	2.9	43.0	2.5	42.8	2.8	42.4	3.1	41.8	2.9	40.7	1.9	36.7
Means of best 6			.....	3.4	51.2	1.6	50.2	2.4	49.5	1.5	48.4	2.4	47.6	2.0	46.7	3.0	45.2	2.3	44.9	2.4	43.5	1.7	43.0	2.5	42.0	2.3	41.6	1.7	28.8

Crossings and Time from England and the North of Europe to New York and ports east.

JULY.

Name of vessel.	PORTS. From—	PORTS. To—	Date of sailing.	D.	15° W.	D.	20° W.	D.	25° W.	D.	30° W.	D.	35° W.	D.	40° W.	D.	45° W.	D.	50° W.	D.	55° W.	D.	60° W	D.	65° W.	D.	70° W.	Days from 70° W. to Port.	Total days.
				LATITUDE OF CROSSING THE MERIDIANS OF—																									
Bostonian	Liverpool	Boston	July 28	3	50	2	47¾	2	46½	1½	46	5	47	1¾	43	3¼	44	4	44	3	42½	4	42	1¾	42	1¼	42	.....	32½
Zephyr	do	do	21	8	47¾	2	50	2¾	46½	3¾	44¾	2½	45¾	3	44	3¼	41¾	2¾	42¾	3½	43¼	4½	42½	2	42	1½	42¼	.....	39½
Senator	do	New York	28	5	55	1¼	53½	1¾	53	2¾	51	1¾	50½	3½	49	3½	48	4	46¼	3¾	45¼	1¾	43½	2	41½	2	39¼	1	34
Tarquin	Havre	do	22	6¼	46¼	2½	44	2¾	42¾	2	42	2¼	43	3¾	42¼	2¾	44	3	42¾	1	42	1½	41	2	41	2½	40¼	1	33¼
Do	do	do	28	2½	47¾	2¾	44½	2	43½	1¾	44¾	3¼	44	2¼	44¾	4	43½	2¼	43¾	3½	42¾	2¼	42¼	2	42	5	40½	1¾	35¼
St. Patrick	Liverpool	do	18	5	57½	1¾	56½	4¼	53½	2¾	51½	4	46¼	1¾	45½	3	44	3	44	4½	44	4	42¾	1	41¾	1	....	.....	36
Bothnia	Newport	do	3	6¼	48½	2	48¼	3¾	46½	3¼	44	3	44½	2¾	46½	3½	44¾	3¾	44½	1¾	45¾	3	43¼	5¼	41¾	2	40½	2¾	43
E. Z.	Liverpool	do	1	5¾	57	2	57¼	1¼	56	4	49¾	3	47¾	4	46¼	7½	42¼	2½	41½	3	41½	2¾	43	1¾	42	6½	40¼	1	45
New York	Havre	do	9	3	49	3	49	1¾	46¾	1¾	44¾	2¾	44¾	3	42	2¾	42½	3	43½	2½	44¼	1½	43	1½	41½	2	40¾	2¼	31
Criterion	Cardiff	do	12	7	49	4	45¾	3½	47	2½	46¾	2¾	47	2¼	45	2	44	3½	41½	2¾	41¾	2¾	42¾	3	40¾	2½	40½	1½	40
Lion	Antwerp	Boston	15	7	44	4	43¾	4½	43½	3½	43½	3	42½	2	42¼	4	41¾	2	41½	2	41½	2	42¼	3½	43	2½	43	.....	40
Ratler	Havre	New York	5	5	47	3½	46¼	3½	43¾	3½	43	2½	45½	1	44¼	1¼	41	3½	42	3¾	41¾	3¼	40	3¾	39¼	2	39½	2	38½
Ashburton	Liverpool	do	10	10	50¾	2¼	50	3	47	2½	47¾	3½	46	1¾	43¼	3¼	42	1½	42½	1¼	42¾	3	42¼	4¼	41½	2¾	40¼	1	40
Robena	London	do	23	10	49¼	2	49	1½	50¼	1¾	48½	1¼	46½	1¾	42½	1¾	41½	3	43½	2	43¼	1	42	1½	41¼	3	39½	1½	32
Spencer Kirby	Cardiff	do	24	2½	49¼	2	48½	1¾	47¾	2	45¼	2	45	3¼	45½	3½	45	2¼	44¼	3¼	44	3¾	43	2¾	42¼	2	40¾	2	33
"Andrew Foster"	Liverpool	do	14	5	47	3	46	3	44	3	43	2	44¾	3	43¾	2	44½	2	44½	1	43½	3	41¾	6	42	1½	40	1½	36
Means				5.7	49.7	2.5	48.7	2.7	47.4	2.9	46.0	2.8	45.7	2.5	44.4	3.2	43.4	2.9	43.3	2.6	43.1	2.8	42.3	2.8	41.6	2.5	40.6	1.6	36.8
Means of best 6				5.0	50.0	2.1	48.6	1.8	47.8	2.0	46.2	2.5	46.1	2.7	44.0	2.9	44.2	4.5	44.0	2.6	43.5	2.2	42.4	1.9	41.6	2.1	40.4	1.3	32.6

Crossings and Time from England and the North of Europe to New York and ports east.

AUGUST.

Name of vessel.	PORTS. From—	PORTS. To—	Date of sailing.	LATITUDE OF CROSSING THE MERIDIANS OF— D.	15° W.	D.	20° W.	D.	25° W.	D.	30° W.	D.	35° W	D.	40° W.	D.	45° W.	D.	50° W.	D.	55° W.	D.	60° W.	D.	65° W.	D.	70° W.	Days from 70° W. to Port.	Total days.
Tarquin	Havre	New York	Aug. 2	6½	48¾	2¼	48½	1¼	48	1¼	47	¾	46	1	45½	2	45½	2	44½	1½	44	2¼	43¼	2½	41½	3	40	¾	27
Hendrick Hudson	Portsmouth	....do	11	3¾	50¼	2	48¼	3¼	49	3	47¾	2¾	45¼	1¼	44¾	3¼	45¼	2	44½	4¼	42½	2½	43	1¾	41¼	1¾	40¼	2½	34
Medford	Liverpool	Boston	23	8	50¼	2¼	50½	2	49¼	3¾	48¼	1¾	45¾	2¾	44	3¾	45½	1¼	44¼	1½	43¼	1½	42½	1¼	42½	1¼	42¾	1	32
Waterloo	....do	New York	28	3	50½	2	52	1	53¼	1¼	52¼	2¾	49¼	2¼	47¾	1¾	45¾	3¼	44	1¾	43¼	3	42	2¼	41¼	1¾	40	1	27
Margaret Evans	London	....do	26	6¾	48½	2¼	50	2¼	47¾	1½	45¼	2	43¾	2	43	2¾	41¾	1¼	41	2	40¾	1	41	2	40½	2	40½	.....	27½
Ringleader	....do	Boston	28	1½	48¼	1	47¾	2	47¼	1½	47½	1¼	47¼	2	47¾	3¼	45½	1¾	45	1½	43¾	2¼	43	1¼	42	....	.....	2¾	22
Normandy	Liverpool	New York	6	7	47¼	1¾	46½	2¼	45½	2	46¼	2½	45	2¼	42	2½	43¼	1½	42¾	1¼	42¼	4¾	42¾	1½	41½	4¾	39	2¾	37
Roscius	....do	....do	15	6	52½	2	51¼	2	48	3	46¼	3½	48	2	46½	3	45¾	2½	43¾	2	43	3	41½	3½	41¼	2	40¼	1½	36
Calcutta	Newcastle	....do	19	4½	57	1¼	54½	3¼	51¾	3	49¼	5	47¾	2	46	5	43¾	3	43½	3½	44¼	2½	43	4	40½	2	40	3	42
Albert Gallatin	Cardiff	....do	6	5¾	48	2¼	46	5	41¾	3	40	3¾	40½	2¾	41	1½	40¾	6½	37½	3	37	2¼	37	2½	36	3	35½	6¾	48
Ashburton	Liverpool	....do	30	2½	49	1¼	47¾	2¼	47	3	47	2½	46¾	2	46½	3	44½	2½	43	2	42¼	3	39¼	1½	39¼	1½	39	2	29
Yorktown	London	....do	.....	7¼	47¾	2	46¾	2¾	47	1½	46¾	2½	46¾	1½	45½	1¼	45¼	2	43½	1¾	42¾	1½	41¾	1¼	41	1	40½	¾	27
Sarah Park	Shields	....do	10	3½	58¼	2¼	58¾	3½	56	3¾	53¾	2¼	51	2¼	47½	4¼	47	2½	44	2½	43¼	3	42½	2	41½	2½	40¾	1½	36
Star of the West	Liverpool	....do	21	5	48¾	1½	48½	1½	48	1¼	46	1	45	1	44½	2	44½	1¾	44	2¼	43¼	1½	42½	2¾	41½	3¼	40½	1¼	26
Princeton	....do	....do	5	9	50¾	1	49¾	2	48¾	1½	47	1¾	46¼	1¾	47¼	3	48¼	5	44	2	43¾	2½	42½	1½	42¼	5	40¾	2	38
Speedwell	Archangel	Boston	1	4¼	63	1¼	61¾	1¾	59	1½	57½	1½	54	2½	51¼	4¼	47½	1¼	45½	1¾	44½	2½	42¾	4¼	43	1¾	42¾	.....	28½
E. Z	Liverpool	New York	18	3¾	54½	2¾	55¼	2¼	55¾	1¾	57½	3	55¾	4½	51¼	4	47¼	5	45½	4½	43¼	2	43¼	2	42¼	7	41½	1½	44
Fleetwood	London	Boston	6	5½	45	3¾	44¾	2¼	45¾	1¼	46	2¾	45¼	2	44½	2¾	43½	1¼	42¾	2	42¾	3¾	42¾	2¼	42¾	1¾	42¾	½	31¾
Southampton	....do	New York	29	2	47¾	1	46¾	2	45¼	3	46	2	45½	1¾	45½	2½	43½	1¾	43¼	2	41¾	1¾	41½	1¼	40¾	3	40	1	25
Harriet Hoxie	....do	....do	24	3¾	46¾	1¾	45¾	1½	44¾	2½	43½	2	43½	1½	42¼	2½	42½	3	41½	2	41½	4	39¾	2	41¾	2¼	41	2¼	31
Chimborazo	Liverpool	....do	7	9½	45½	4¼	45	2	45	2	46	2	46½	1½	45½	2	44½	1	43½	2	43	2	43	3	42	2	40½	1	34¼
Cyclops	Archangel	Boston	14	15½	63¾	1½	62½	3	61½	2½	61¼	4	57	2½	53	3	49¾	4	46¾	1½	44¾	2¾	43½	3	43	2	42¼	1	46¼
Means				5.6	51.0	2.0	50.4	2.3	49.3	2.2	48.6	2.4	47.3	2.0	46.0	2.9	45.0	2.5	43.5	2.2	42.8	2.5	42.0	2.2	41.3	2.6	40.5	1.8	33.1
Means of best 6				4.2	48.6	1.6	48.4	1.7	48.1	1.6	47.6	1.7	46.6	1.6	46.0	2.1	45.0	2.1	44.0	1.8	44.5	2.0	42.3	1.9	41.3	2.4	40.2	1.2	25.7

Crossings and Time from England and the North of Europe to New York and other ports east.

SEPTEMBER.

Name of vessel.	PORTS. From—	PORTS. To—	Date of sailing.	LATITUDE OF CROSSING THE MERIDIANS OF— D.	15° W.	D.	20° W.	D.	25° W.	D.	30° W.	D.	35° W.	D.	40° W.	D.	45° W.	D.	50° W.	D.	55° W.	D.	60° W.	D.	65° W.	D.	70° W.	Days from 70° W. to port.	Total days.
Waterloo	Liverpool	New York	Sept. 1	1¾	51	1	50	1¾	49	1½	48½	1½	48¾	1¾	48	1¾	46¼	3½	44½	2¼	41	3¼	41½	1¾	41½	2	40½	1¼	25
West Point	do	do	29	1½	50¼	1	50	¾	49½	1	48½	2	48	3¾	43¾	3	45½	1½	45	1	44	2	43¼	2	42½	1¾	41	1¾	23
Danube	Cardiff	do	13	4½	50¾	2	51¼	2¾	51½	2¾	49½	3¼	48	3	45¾	1½	44¾	1½	43¾	1¾	43	3	42¼	2¼	41¾	3	40¼	1¾	33
Margaret Evans	London	do	17	4	48¾	2	47¾	1¾	46¾	3¼	44	3	40¼	1½	40	1½	40½	2	41¼	2	40½	2¼	41	1¾	40¾	3	39½	1	29
Lucknow	New Castle	do	8	5	58¾	3½	57	5¾	54½	2¼	55¾	2½	52¾	4¾	47½	5½	42½	2¼	43½	1¼	43	3¼	43	1½	41¾	1½	40½	1	40
Ratler	Havre	do	14	5	48	2	48¼	1½	45½	2	43¼	4¼	43¼	2½	42½	1½	42	1	41½	1¼	41	1¾	40	4¼	41½	2½	40½	½	30
New World	Liverpool	do	5	4¾	49¼	1¾	48¼	2½	48¼	3	50	2¼	48¾	4	47	1¾	45¼	3¼	43	1¼	42¾	1¼	42	1¾	40½	3	39¾	1½	32
Princeton	do	do	29	5	48	2¼	45¼	1¼	43½	1½	43¼	2	43¾	3	43	1¾	43¾	1¼	42¾	1	42½	2½	41½	1	40¾	1	40¼	¾	24
New World	do	do	27	8¾	46¾	2¾	44¾	2	45¼	1¼	45	3	43	1¼	43	1	43¼	1½	43¼	1½	42¾	1	42¼	1	41¼	¾	40¾	¾	26½
John Rutledge	do	do	22	4¾	50¼	1½	48¼	2¼	45	2½	41½	2	41	1¾	41	1¼	41½	1½	41¾	2¼	42½	1¼	42¼	3	40¾	3¼	40	1	28¼
Means				4.5	50.2	1.9	49.1	2.2	47.9	2.1	46.9	2.6	45.7	2.7	44.1	2.0	43.5	1.9	43.0	1.5	42.3	2.1	41.9	2.1	41.3	2.2	40.3	1.1	29.1
Means of best 6				4.3	49.2	1.7	47.7	1.6	46.5	1.8	45.1	2.2	44.1	2.2	43.1	1.7	43.5	1.9	43.1	1.7	42.2	2.0	42.0	1.8	41.3	2.0	40.33	1.1	26.00

Crossings and Time from England and the North of Europe to New York and ports east.

OCTOBER.

Name of vessel.	PORTS. From—	PORTS. To—	Date of sailing.	LATITUDE OF CROSSING THE MERIDIANS OF— D.	15° W.	D.	20° W.	D.	25° W.	D.	30° W.	D.	35° W.	D.	40° W.	D.	45° W.	D.	50° W	D.	55° W.	D.	60° W.	D.	65° W.	D.	70° W.	Days from 70° W. to port.	Total days.
Ashburton	Liverpool	New York	Oct. 27	5⅛	50¼	2½	50¾	4¼	50½	2	49¼	3	48¾	1¼	48⅛	1¾	47¾	4	45¼	1¼	44¼	6½	41¾	3	41	1½	40⅛	2⅛	39
Do.	do	do	24	2¾	55¼	1¼	54⅛	3¾	51⅛	1¾	49	1⅛	47⅛	2¼	45	1¼	44¼	3⅛	44¼	5	43¼	2⅛	41¼	2⅛	41¾	1⅛	41	8⅛	38
Liverpool	do	do	8	4¼	48¾	1¼	48⅛	1	47¾	1¼	47	2¼	46¼	1	46	4	44¾	1⅛	44	2	43	1¼	42¾	1¾	41¾	2¼	40	2¼	26
Do.	do	do	11	6⅛	47¾	1¼	46	2	42¾	2⅛	43¼	1¾	42¼	3	38	2	39	3¼	43	3¼	42¼	3⅛	42¾	2	41⅛	2	40¾	3	36
Do.	do	do	7	5¼	50	1⅛	52½	2⅛	52¾	3¼	51	2¼	50¼	2¼	48¾	2	46¼	2¼	43¾	1¼	43	1¼	42¾	1⅛	43	2⅛	40¼	2¼	30
Do.	do	do	13	4⅛	47¾	2	46	2	45⅛	2¼	46¼	2⅛	46⅛	3¼	44⅛	2¼	44¾	2	41¾	4¼	41	1¾	39⅛	2¼	39	2⅛	40⅛	⅛	32
Do.	do	do	11	3¾	50	1	49⅛	1¾	49⅛	2⅛	46	3	46	4	45¾	2	43¾	1¾	43⅛	2¾	43⅛	1¾	42⅛	2¼	41¾	2	40⅛	2⅛	31
New World	do	do	26	8	50	1⅛	49	2	48¼	1⅛	48	4⅛	47	2¾	43	1¼	44	1	43¾	1¾	43	2	42	2	40¾	2¾	40¼	1	33⅛
Star of the W. st.	do	do	4	3	54¼	3	52¼	1¼	51¾	1⅛	49	2⅛	47¼	1¾	44¼	4¼	41⅛	2	41¼	2	41¼	2	42	2	40⅛	1⅛	40¼	2	30
Toronto	London	do	11	3	49⅛	3¾	49¾	1¼	51⅛	2	49⅛	1¾	48¾	1¼	47⅛	2	45¾	2	44¼	2¼	43	1⅛	42¼	1⅛	42	4⅛	40⅛	1¼	28
Margaret Evans	do	do	27	3	49⅛	2¼	50¾	3¾	48⅛	1¾	49	2	49¼	3⅛	48	1	46	1¼	44	2	43	1	42⅛	1¼	42	3⅛	40	2¾	29
Driver	Liverpool	do	18	5⅛	50¼	3	47⅛	1⅛	43¼	2	42⅛	1⅛	41⅛	1¼	40¼	1¾	41	2⅛	41⅛	2	42	1¼	42¼	1¼	41¾	....	.. ...	.....	23¾
Petra	Amsterdam	do	4	3¾	49	1⅛	48⅛	2	47¾	5	48¾	3⅛	46¾	1⅛	44⅛	6	44¼	4	47	1¾	45⅛	2	43	2⅛	41¼	1¼	40¼	1¼	36
A. Gallatin	Bristol	do	11	7⅛	46¼	1⅛	44¼	4	38⅛	7	35¾	2	33	1⅛	31⅛	3	30¾	4	30¼	1⅛	30¾	1⅛	31	4⅛	31	4⅛	32⅛	3⅛	46
Dreadnought	Liverpool	do	6	3	50¼	¾	50¼	1¼	49¾	1	49¾	2	45¾	4¼	43¼	¾	40¾	1¾	40¾	2¼	40⅛	2	40¼	2⅛	38	4	40¼	2⅛	28
Splendid	Havre	do	30	6	47¾	1	46¾	1	45¾	¾	45	1	44	1	43⅛	1	43⅛	2¾	41¾	5	42⅛	2	40⅛	1¾	40	2	39¾	1¼	26⅛
Senator	Liverpool	do	12	5⅛	55¼	2⅛	54¾	3	53¼	1⅛	51¾	1¼	50	7	45⅛	3¼	43¼	2	43⅛	1⅛	43	1⅛	42¾	2	40¾	2	39¾	1	34
Cultivator	do	do	30	7	.....	1¼	49⅛	1	48⅛	1	46¼	1	44¾	1	44	1¼	42⅛	2	40¾	4¼	42⅛	2	41⅛	2⅛	41	2	40⅛	2¾	29
E. Z.	do	do	15	4	48¼	2⅛	49⅛	2	48⅛	3¾	47¼	3¼	46¾	2⅛	45⅛	2⅛	45⅛	1⅛	44¾	2	44¼	1¾	43¼	2	41¾	1¾	40⅛	2⅛	32
Nabob	London	Boston	24	1¾	48	1	47¼	1⅛	46¾	1¼	46¼	1¼	46¾	1	45¾	2¼	44¾	1¾	44⅛	2	43⅛	1¼	43	1⅛	42¼	1⅛	41¾	¼	18¼
David Brown	Liverpool	New York	20	8	48	1⅛	46⅛	1⅛	43⅛	2⅛	42¼	1	42¼	1¼	42¾	2	47¾	1⅛	43¾	1⅛	43¾	1	42¾	1¾	41¼	1¼	40⅛	1¼	26
Sweepstakes	London	do	28	2	47⅛	1	47¾	1¼	48	1¾	49	1⅛	48⅛	1	46	3¼	43¼	2¼	44¼	1	43	1⅛	41⅛	1⅛	39¾	2⅛	39¾	2⅛	23
Means				4.7	49.7	1.8	49.2	2.1	47.9	2.3	46.9	2.1	45.9	2.2	44.2	2.3	43.2	2.3	42.8	2.4	42.3	1.9	41.5	2.1	40.6	2.3	40.0	2.2	31.0
Mean of best six				4.2	48.4	1.1	47.8	1.2	46.9	1.4	46.5	1.5	45.6	1.6	44.5	2.2	43.5	1.9	43.5	2.3	42.7	1.5	41.8	1.8	40.5	2.2	40.3	1.7	24.6

Crossings and Time from England and the North of Europe to New York and ports east.

NOVEMBER.

Name of vessel.	PORTS. From—	PORTS. To—	Date of sailing.	D.	15° W.	D.	20° W.	D.	25° W.	D.	30° W.	D.	35° W.	D.	40° W.	D.	45° W.	D.	50° W.	D.	55° W.	D.	60° W.	D.	65° W.	D.	70° W.	Days from 70° W. to port.	Total days.
Andrew Foster	Liverpool	New York	Nov. 17	6	58¾	6	57⅞	5⅛	56	4	52¾	3	52	1¼	49	1¾	47	2⅛	44	1⅛	44	2	43	2⅛	41¾	9	40¾	3	48
Hahneman	Antwerp	do	27	5¾	44	3	40	10¾	26	1¼	25¾	2⅛	26	3	24¾	3¾	25	1⅛	25⅛	1½	25¾	2	27	3¼	30	3¼	33	5	47
Sea Lark	Elsinore	do	3	13¾	59¾	8¾	56	9	54¼	3	50⅛	1¼	50⅛	1¾	47⅛	1¼	46	2	45	1⅛	44	1¾	43	1¾	43	1¾	40	2¼	50
Queen of the West	Liverpool	do	9	7¾	51¾	1¾	51¾	1¼	52⅛	2¼	50¼	3¾	45⅛	2¾	41¼	1¼	41⅛	2	41	1⅛	41⅛	1¼	40¼	3	40¾	1	40⅛	⅛	30
Margaret Evans	London	do	23	7	49	2	47¾	1	47½	1⅛	47	1⅛	46⅛	1¾	44¾	2¾	42½	1⅛	41⅛	1¼	41¼	1	41	1¾	40¾	2⅛	40¼	2⅛	28
Ashburton	Liverpool	do	24	7¾	47¼	3¼	47¾	3¾	44¾	3⅛	43¼	1¼	44	2⅛	42⅛	1⅛	41¾	1¼	41¾	3¾	41⅛	2	40¼	3	39¼	2	40¼	3⅛	39
Golden Eagle	Nantes	do	2	3⅛	45½	2⅛	45	2	44	1⅛	43¼	2	41¾	1¼	40	2	39⅛	2¼	41	2	42¼	2	41¾	1¾	42	3	39	2⅛	28¼
Arnold Boeninger	Rotterdam	do	5	2¾	48¾	1¼	48	1¼	47¼	1¼	46⅛	1¼	45¾	1	45¼	5⅛	44⅛	1⅛	43	1⅛	41¾	1¾	42¼	1	41¼	5	39¾	3	28
Sweden	Antwerp	Boston	18	7¼	50	1	50¾	1	50¾	1⅛	50⅛	2⅛	50	1½	48¾	1⅛	46¾	2	44¾	4⅛	45⅛	5	42⅛	2	42¾	....	.....	2	32
Vision	Havre	New York	14	4	42	1⅛	41	1¼	40¾	1	40¾	1¾	41	4	40¾	12⅛	35¼	1⅛	35	2	34⅛	2¼	36¼	2⅛	34⅛	2	36¾	9¼	45⅛
Ashburton	Liverpool	do	7	2¾	48¾	1	48	¾	47¼	⅛	46⅛	1⅛	45¼	2	45	3¼	44	1¾	43¼	1⅛	41¾	1⅛	41	2⅛	40¼	7	40	5	31
Cultivator	do	do	6	7	50	1	49¼	1	48¼	1	45	1	44⅛	1	43	1	42	3	41	4	42⅛	1¾	41	1¾	41	2	40⅛	1⅛	29
New World	do	do	15	4½	49¼	1¼	48⅛	2	47	2	46⅛	1⅛	45¼	3⅛	42¾	2⅛	41¼	2¼	40	2	40⅛	6⅛	39¾	3¼	41	3¼	39⅛	1⅛	36
Princeton	do	do	14	2¼	48	1⅛	46	3½	44	2¾	43	2¼	42¾	3¾	42	3	41⅛	2¼	41¼	2	43	3¾	42⅛	3⅛	41	2	40⅛	1⅛	34
Sheridan	do	.....	15	10	45	3	45⅛	2¼	46	4⅛	44⅛	2¾	43⅛	8⅛	43	2	43	4¾	42	1¼	41¾	4	42	4	41	3	40¾	3	53¼
Means	.....	.....	.....	6.2	49.2	2.6	48.2	3.1	43.5	2.1	45.1	1.3	44.3	2.6	42.7	3.0	41.4	2.1	37.9	2.1	40.8	2.6	40.2	2.5	40.0	3.1	36.7	3.1	37.2
Mean of best six	.....	.....	.....	5.1	48.7	1.4	48.1	1.6	47.5	1.2	46.5	1.6	45.6	1.4	44.5	2.6	43.2	2.0	42.4	2.4	42.5	2.2	41.6	1.7	41.3	3.2	33.2	2.8	29.3

Crossings and Time from England and the North of Europe to New York and ports east.

DECEMBER.

Name of vessel.	PORTS. From—	PORTS. To—	Date of sailing.	LATITUDE OF CROSSING THE MERIDIANS OF— D.	15° W.	D.	20° W.	D.	25° W.	D.	30° W.	D.	35° W.	D.	40° W.	D.	45° W.	D.	50° W.	D.	55° W.	D.	60° W.	D.	65° W.	D.	70° W.	Days from 70° W. to port.	Total days.
Hendrick Hudson	London	New York	Dec. 14	4	48¼	3	47	1¼	46¾	1⅛	46⅛	2¼	46¼	1⅛	45¾	1¾	46	2⅛	45¾	4¼	43¼	5	41	2⅛	41⅛	4¾	40¾	1¾	36
Fidelia	Liverpool	do.	6	5⅛	56	1¼	55⅛	¾	54¾	1¼	53	2	51¾	4¼	52⅛	1⅛	48⅛	1	46¼	1¼	44⅛	1¾	42¾	4	41	3	40⅛	⅛	28
Julius	Rotterdam	do.	19	5¼	47	4¾	36	2	34	1⅛	33⅛	2	33⅛	3⅛	35	3⅛	38	3	39¾	4	41⅛	4	39¾	4⅛	41	2⅛	40⅛	1⅛	42
Baltimore	Havre	do.	21	4⅛	51	3	49	1⅛	48	1⅛	47⅛	6	52	6	51⅛	4	50	1⅛	47	4	44	2	40	2⅛	40¾	2⅛	40	2	41
Montezuma	Liverpool	do.	19	4⅛	48	1¾	49	2	49	3.0	44⅛	2⅛	44	3⅛	40¾	1⅛	42⅛	1⅛	42	1	42	1⅛	40	2	41	1⅛	40	1⅛	27¾
Tarolinta	do.	Boston	25	4⅛	56	1¼	54	3	51¼	2	51	3	50	4⅛	47⅛	2	46	3⅛	43	1⅛	42⅛	1⅛	41⅛	5	41¾	4	42⅛	2	38
Guy Mannering	do.	New York	15	4	57¾	4⅛	57	3⅛	57⅛	4	54¾	2	53⅛	2⅛	51	1	47	1⅛	45	3	43¾	3	42¾	13	34¾	2	35⅛	4	48
Roscius	do.	do.	15	3¾	56⅛	2¼	57	3	55¾	2	55¾	3	54	2	52	2	49¾	3	44	1	43⅛	4	42¾	3	41	4	39⅛	2	35
Isaac Webb	do.	do.	26	3	50	2	49⅛	2	49	2	49⅛	4	47	6	44	9	42	6	43⅛	2	42¾	2	42	4⅛	42	3⅛	39¾	2	48
Bavaria	Havre	do.	11	5¼	49⅛	2¾	51⅛	5	52	4	52⅛	1	51⅛	1	49⅛	2	46¾	2	44⅛	1	44	1	42¾	3	41	3	40	6	37
New World	Liverpool	do.	12	4	51	1⅛	51⅛	2⅛	52	4	52	2⅛	51¾	1⅛	52⅛	1	50	3⅛	45	1	43⅛	1	40¾	2	41	3	40	2	29⅛
St. Patrick	do.	do.	Nov. 30	7	49	2⅛	47¾	1⅛	47⅛	4¾	51	2¼	49⅛	3	49⅛	3	46	1⅛	44	2	43	3⅛	42⅛	5	40¾	4	41	2	42
Means				4.6	51.7	2.6	50.4	2.3	49.8	2.3	49.3	2.6	48.7	3.2	47.6	2.7	46.0	2.6	44.2	2.2	43.2	2.5	41.4	4.3	40.6	3.2	40.3	2.3	37.6
Mean of best six				4.5	51.5	2.1	51.9	2.4	51.7	2.6	50.7	2.2	49.9	2.3	48.8	1.6	47.2	2.2	44.6	1.6	43.5	2.4	41.7	2.7	41.1	3.2	40.2	2.3	32.2

The routes to and fro, between Europe and the United States, do not require any further explanation. If the navigator will consult the foregoing tables and crossings, these pages and the Pilot Charts, he will never be at a loss as to his best course *on the average.* In projecting the computed tracks (pages 26 to 35) on his Chart, he will find them running sometimes inconveniently near the land or over shoals. Of course, he will not infer that he is recommended actually to stand over such places. The computed route of the tables being intended merely as a guide, from which the land, as well as the winds and currents, will sometimes turn him aside.

It is desirable that the practical navigator should have a proper understanding of these computed routes; for then when he undertakes to follow them he will be able to give them as much weight as they deserve, but no more than is due. By studying them beforehand, he will avoid perplexities, and be able to see his way more clearly. As an illustration, and by way of explanation, let us refer to the computed route for January, page 26. As a rule, a vessel sailing by one of these routes will find herself farthest from it in mid-ocean, say between the meridians of 40° and 45° W., for all the routes come together at the two ends. It is, therefore, in the middle that they may be expected to separate most widely. The best crossing of the meridian of 45°, for the January route going, (page 26,) appears, according to calculation, to be in latitude 45° 3′ on an east course. Now, according to the doctrine of chances, it is highly improbable that any one vessel should cross the meridians of 70°, 65°, 60°, 55°, 50°, and 45°, and so on, exactly at the computed intersections, and then steer through each field successively and exactly on the courses and distances of the computed route, as given in the tables. The chances are not one in many that any one vessel should do this for the entire route. But if the tracks of two or more vessels that are following the computed route be traced across any meridian, as that of 45° for instance, the chances are that the mean crossing place of the whole will be not far from that of the table, if that of the table be really the best route. Thus the computed route for January, (page 26,) intersects the meridian of 65° and 30° W. in latitude 42° 02′ and 46° 30′. Two vessels, A and B, may attempt to follow this route. A may cross 65° as much too far to the north as B does to the south of it; and yet their mean crossing will coincide with the calculation; but when they come to 30° W. the positions may be reversed, and B, instead of A, may now be too far north. Still, the average crossing in this case may also agree with the crossing of the tables, while the actual route of each vessel singly is quite different. Thus the Gladiator, (page 36,) crossed 65° W. in latitude 36½°, and 30° W. in latitude 49°; while the Splendid crossed the former meridian to the north of the Gladiator's track, viz: in latitude 40¼°, and the latter on the parallel of 44°, or 5° to the south of the Gladiator.

These computed routes, (pages 26 to 33,) both going and returning, have been before navigators for some years. Let us see how they have stood the test of experience:

It has been claimed that the computed routes would, on trial and the long run, actually prove the shortest. They have done so. The crossings of the "best six" passages for each month, going and coming are given in the tables. The extreme difference between the crossings on the meridians of 40° and 45° for each month, both going and coming, are also given in the subjoined table. For the sake of the comparison, the difference between the mean crossing of the best six and the computed crossings are there given also. The crossings of 40° and 45° W. are taken as the test, because, as already stated, they are about midway the ocean, where the departure of the actual from the computed route should be a maximum. It is a minimum at the ends, for there they all come together.

Thus, in January, on the route *from* Europe, (page 48,) the "London," the "Moneynick," and

the "Driver" are among the best six. They crossed the meridians of 40° and 45° on the extreme north and the extreme south, the rest of the six crossing between them. Thus the "Moneynick" crossed 40° west, 14° to the south of the London, and the meridian of 45°, 9° to the south of the "Driver;" whereas, the mean crossing of the best six is 1° to the south of the computed route on 40° W., and 0°, *i. e.*, coincident on 45° west.

Hence the following tabular statement showing the degrees of latitude between extreme crossing to the north and to the south, on the meridians of 40° and 45° W. by:

Months.	Meridians.	The best six.		Degrees of latitude between mean of best six and computed crossing.	
		Going.	Returning.	Going.	Returning.
January	40°	6°	14°	1°	1°
Do	45	2	9	0	0
February	40	5	5	1	0
Do	45	4	4	1	1
March	40	8	4	0	3
Do	45	6	3	2	4
April	40	2	8	3	1
Do	45	3	6	2	0
May	40	4	5	1	1
Do	45	4	5	0	0
June	40	7	10	4	7
Do	45	6	5	4	6
July	40	4	7	0	1
Do	45	5	7	0	0
August	40	5	3	2	4
Do	45	4	2	0	3
September	40	1	8	0	4
Do	45	1	6	0	4

Now, if we divide the ocean out into lanes, so as to include the tracks of the "best six" for each month, within the lane for that month, we may see by the Table of Crossings, (pages 36 to 59,) for any month, as for January, that the lane going would be 6° broad when it crosses 40° W., 2° broad when it crosses 45° W., and that the computed route (page 26) would cross 45° W. in the middle of this lane, and 40°, 1° N. of the middle; that the lane returning (page 48) would on 45° W. be 9° broad, and 14° broad when it crosses 40° W., while the computed route (page 31) would be in the middle of the lane at the crossing of the 45° meridian and 1° to the north of the middle at the crossing of 40° W.; and that for every month, going, and for every month, save June and August, returning, the lane traversed by the "best six," in the Tables of Crossings, includes the computed route.

This coincidence between the computed routes and the mean of the "best six," each way, may be taken as an indication that the computed routes are cast along that part of the ocean where winds, weather, and sea are, on the average, most favorable for quick passages.

It will be observed that the greatest difference between the computed route and the average of the "best six," both going and coming, is in June;—that in June calms and fogs

are most prevalent; and that June, July, and August have the highest average for the "best six," both coming and going.

Navigators who pursue these computed routes will confer a favor by making a note of the fact in their abstracts, accompanied with an expression of their opinion as to the advantages of them; mentioning also the distance logged, and whether they have had any longer or shorter passages than vessels sailing about the same time without the Wind and Current Charts on board.

Captain Oliver Eldridge, of the Roscius, writes: "In reply to your inquiries as to my opinion in regard to the New Sailing Directions and Routes, recommended by yourself, I would say, that, as far as I have had opportunity of judging, I think they will be of great advantage, and in particular to that part of the commercial community who depend upon wind as a propelling power.

"On my last passage to Liverpool, I think it was lengthened some *two* or *three days* by not following more closely the directions recommended by you, in your number for January, 1850; as a ship that left New York with us, kept in company, or nearly so, to the longitude of 25°. The wind then came out ahead; we stood on the southern tack, and she on the northern, (as recommended by you.) The wind afterwards came N.NE.; she brought up to Cape Clear, and we 200 miles south of it."

Captain Samuel Clark, of the James Wright, says: "As an instance of their use [the Pilot Charts,] after examining them in Liverpool, previous to the last passage to New Orleans, I made up my mind to take the northern route, *via* the Hole in the Wall, and the southern edge of the Banks of Newfoundland; and on stating my intention to several shipmasters of my acquaintance, they unanimously told me that I should miss it, and that they should take the trades for it. And although the most of them sailed from five to fifteen days before me, I arrived at New Orleans four or five days before the first of them, and, in several cases, ten to fifteen days. On the 3d of October, I dined in company with a New Orleans merchant, who was interested with my friends in the shipment of cotton, and he asked me about what time he might expect me in New Orleans. I told him that I expected to be there on the 10th November, and by the abstract that I presented you, you will see that on that day I was at the mouth of the Mississippi. It was my intention to have gone to the northward and westward of Bermuda, but was prevented by light westerly winds, when I had expected easterly winds; still, you will see that the daily distances sum up under 5,000 miles, which is near 1,000 less than the common route, *via* the trade-winds and the south side of Cuba. You will see by the enclosed abstract that I made the return passage to Liverpool in a little over 4,600 miles, which, I think, is about as short as a *cotton* loaded ship can well make it, as they have to make a free wind, of what a stiff heavy loaded ship would go by the wind. I have no abstract of my passage from Liverpool, as the weather on this passage has been so variable that I could not keep one to my satisfaction for want of observations."

So, also, Capt. Myrick, of the Diadem:—

"I am firmly convinced of the utility of the Pilot Charts of Mr. Maury in shortening passages across the Atlantic, and, had I not had one, should have probably prolonged the passage several days. In consulting the Chart for the prevailing winds for the month, I found that, from the Azores, the wind prevailed from the NE. quarter to the longitude of 10° west, and then from W.NW. to W.SW. After leaving the Islands, we had to brace sharp up, and had strong breezes, bringing us to two-reefed topsails; so that, in 12° west, we were to

leeward of the Straits of Gibraltar; and, had I not had a chart on board relating to the winds, should have tacked to avoid falling upon the African coast. But, having firm conviction that a different wind would be found in 10° west, I kept on the port tack and eventually found my anticipations correct, the wind hauling to the westward and carrying us through the straits with a fair wind. I think every master should provide himself with the Charts, as he thereby has the experience of many in a condensed form; and has an opportunity of placing his vessel on the weather side and avoid falling to leeward.

"N. B.—I am firmly of the opinion that there is a bank between the latitude of 39° 30′ and 37° 00′, and longitude 65° W., as I have always found the water much colder than the surrounding water. There appear to be very irregular currents between 60° and 55° longitude; some to the westward and others to E.SE. I think there must be some very irregular formations of the bottom in this vicinity, as the sea is always much agitated, streaks of very green water and blue."

SAILING DIRECTIONS FROM SEA TO SANDY HOOK.

THE better to show what excellent and safe landmarks nature has afforded the navigator for making Sandy Hook and its lights, I have resorted to the expedient of a colored chart. Plate VI has been constructed by Lieut. Porter and Professor Flye, who have for the purpose been furnished with the best data extant, which, though not as complete as I could wish, are nevertheless supposed to be sufficient, in the main, to bring out the most striking of these marks with truthfulness enough to enable one readily to recognize them.

By coloring the bottom instead of shading the depth, the excellent character of the landmarks which are afforded by the *kind* of bottom, when taken in connection with the depth, becomes very striking.

The coast line, the soundings, and the bottom, are, on the authorities of the charts of the Coast Survey, entitled *General Chart of the Coast from Gay Head to Cape Henlopen*, published in 1852, and *Preliminary Sketch of Davis' South Shoal and other Dangers*, 1853, *et al.* Where these do not apply, the chart of E. and G. W. Blunt, entitled *The Coast of the United States, Sheet No.* 1, *from Point Judith to Cape Lookout*, 1854, has been consulted. The lights have for their authority the publications of the Ligh-thouse Board; and the in-shore limits of the Gulf Stream are projected according to data derived from the Wind and Current Charts of this office. Where any of these authorities are wrong, Plate VI is also wrong.

With all the information to be derived from these sources collected together and spread out on a chart before him, the navigator who uses the lead, keeps his run, and pays attention to the water thermometer, will not be in much need of written sailing directions. To such an one Plate VI itself is sailing directions enough, for it shows that there are no hidden dangers to apprehend—that the leading marks make the way plain—and the log, lead, and look-out will not fail to point them out, or to certify him as to the position of his ship before she nears the land too closely.

As the navigator approaches the western shore of the Atlantic from any port beyond the Gulf Stream, he is or *may be* warned of the fact by the water thermometer. The inner edge of the Gulf Stream is, with rare exceptions, well marked. The eastern, or the outer, edge is not so well marked. But though the navigator may not be able always to say at what time his vessels entered the stream from the east, yet, when he gets well into it, he will generally have no difficulty in recognizing the fact. Being in it, he should, however good his chronometer and accurate his reckoning may be *supposed* to be, have frequent recourse to the water thermometer, for, by a little attention to it, he may often tell, within a few miles, when he leaves the inner edge of the stream, and enters the cold water between it and the shore.

Being thus put upon his guard, he has in the lead, and the look-out, and the water thermometer sure guides for conducting his vessel safely thence to the offings of Sandy Hook, and of placing her so near the entrance that when the fog lifts, or daylight appears, he will be in the fair way to port, and have no difficulty in recognizing his position.

I have traced in black and red, on Plate VI, the mean in-shore limits of the Gulf Stream, for the various months, and at different temperatures. Navigators, however, are cautioned not to regard these limits as *fixed* lines, for they are fluctuating. Sometimes they are much nearer to the shore, at others further from it than they are represented on the chart to be;

but the lines there drawn show the average limits of the inner edge, traced with a free hand, from the mean of a great number of observations, which limits are near enough to the actual mean monthly limits to put navigators on their guard, for they should be on the lookout for the inner edge of the stream *always*, and for a considerable distance before they reach the position assigned to it on the chart.

Being warned by the water thermometer and the deep-sea lead that he is inside the Gulf Stream, or that he has passed the forty and the thirty fathom curve, and is nearing Sandy Hook, the lead should be kept constantly going, especially in the night, or foggy or threatening weather; by referring to the soundings, his rate of sailing, and Plate VI, the navigator will be certified still more surely as to the position of his vessel—for the approaches are shown on this chart to be so well marked by the kind of bottom, and the depth of water, that nothing but stress of weather or the utmost recklessness should hereafter be regarded either as cause or excuse sufficient for putting a vessel ashore there. She may have lost her reckoning, and the weather may be never so thick, still, the marks underfoot are so plain that she cannot, if her master will try them, get into any danger from the shore without his knowledge.

As one approaches Sandy Hook from seaward, and shoals the water to less than fifty or sixty fathoms, the bottom is either mud, ooze, or sand—that is, these are its chief characteristics. The mud or ooze may be blue, black, or green; or it may be mixed with sand; or the sand may be gray, white, or yellow, and be mixed with shell—broken or whole, or with specks, black or yellow. These colors, shells, and mixtures are disregarded in the construction of Plate VI. It gives only the predominating character of the bottom, sand and mud being colored as sand; mud and sand, as mud; thus recognizing the *main* features *only*. Sometimes there are well-marked patches of pebbles, gravel, or rocks; in such cases the chart is so delineated as to bring them out also, and to show where they are.

Between the shore and the twelve fathom curve the *kind* of bottom is not given. This space is left blank, to warn navigators to keep out of it until they be certified by the lights, or other landmarks ashore, as to their position. There is some doubt, also, as to the kind of bottom in the neighborhood of Block Island, and thence towards the Nantucket Shoals, for the authorities do not give the kind of bottom there with sufficient distinctness to make my mind clear upon the subject. But that happens to be not very material to the purpose now in view, for this chart is only intended to illustrate the *approaches* to Sandy Hook FROM THE SEA, and it is presumed that no vessel from the sea will get upon the ground represented by this part of the chart without first crossing the Nantucket Shoals, or passing over muddy bottom, or recognizing some of the landmarks alluded to which will certify her as to position. There is a large space between these shoals and Block Island, in which there are no soundings, and in which I have *supposed* the bottom to be sandy, though, for aught that the charts consulted show to the contrary, it may be mud.

Though the depth and bottom are given with as much accuracy as the present state of our information will admit, nevertheless a caution is necessary; navigators are not to suppose that the sand and the mud, even in other parts of the chart where there is no want of soundings, are separated from each other as distinctly and sharply as the colors for mud and sand would indicate. The soundings, for a considerable extent, are occasionally a mixture of sand and mud, and the change from all mud to all sand is often so gradual, and the dividing line is in some places so jagged and irregular, and at others even uncertain as to place, that it is difficult to say exactly where the mud ends and the sand begins. These dividing lines, therefore, it

should be recollected, are not, by any means, as sharp as shore lines, nor are their positions as well determined; for they, like the forty, the thirty, twenty, and the twelve fathom curves, are necessarily drawn somewhat with a free hand.

Therefore, when the navigator, consulting this chart, finds his soundings to change from mud to sand, he is not to infer that he knows *exactly*, and to the very spot, where he is; but, on the contrary, he should proceed, even in the best certified cases, as though he had reason to doubt as to his position by several miles at least, and continue to feel his way cautiously until the rate at which he is shoaling his water, taken in connection with the course he has been steering, the distance he has run, or the mud-holes or the gullies which connect them, or the pebble or gravel banks which stand both as a beacon and fender to the Long Island and Jersey shore, or the lights, or the unmistakable landmarks ashore or at the bottom, make assurance doubly sure, and leave him no room to doubt where he is.

The navigator bound into New York is requested, before he reaches the offings of Sandy Hook, to make himself familiar with Plate VI and its leading features; and, that he may do this the more readily, he will perhaps allow me to call his attention to a few more of the striking characteristics that nature has placed as beacons at the bottom, to warn him of danger, and guide him safely where he would be.

The 40, 30, 20, and 12 Fathom Curves.—The 40 fathom curve, coming from the south and trending along with the Jersey shore pretty well, takes, upon reaching the parallel of Sandy Hook, a turn to the eastward, and runs off the chart where the bottom is very uneven.

The 30 fathom curve conforms more nearly with the Jersey and Long Island shore lines in its direction. Starting from the parallel of 39°, it runs along with the Jersey shore line until it approaches within 15 or 20 miles of the parallel of Sandy Hook. Here it turns to run irregularly with the Long Island shore line until Montauk Point is brought to bear northwest, where, in muddy bottom, it makes a turn east. After running some distance by irregular curves over muddy bottom, it dips down over sandy bottom to clear the Nantucket Shoals.

From Cape May to Barnegat, the water between the 20 and 12 fathom curves shoals so gradually that the depth is not a very good guide as to the distance from the shore, at least it should not be considered a nearer guide than 10 or 12 miles. Off Barnegat, the 20 fathom curve turns to the westward, gradually approaching the Jersey shore until it strikes that singular range of holes (they are shaded on the plate) which seem to be connected by a gully or channel-way—also shaded on the chart—not so deep as the holes, but deeper than the surrounding water. Here, at the distance of 24 or 25 miles due south from Hog Island Inlet, it turns and runs northeast towards Block Island, passing within 6 or 8 miles of Montauk Point, and so on above and beyond Block Island, where it becomes irregular, with sandy bottom all the way.

From Montauk Point, the 12 fathom curve runs along the shore until it gets off Fire Island Inlet; here, making a bight, it runs close in with the beach, thence it gradually recedes until it gets 6 or 8 miles off from it. Turning it front of the entrance to Sandy Hook, it sweeps down inside of the light-boat, and runs very nearly along with the Jersey shore, which it gradually approaches—except where it makes another bight marked on the chart—until you reach the head of Barnegat Bay, where it is close in; it then gradually recedes until you approach Cape May, where it is 10 or 12 miles from the land.

It may be well to call the attention of navigators to these two bights in the 12 fathom curve. They are very close in, one off Fire Island, and the other off Squam Beach—the most

famous places for wrecks. Do these two beaches owe their celebrity to this fact? Deep water so close in seems sufficient to explain why more vessels are lost at these particular places than elsewhere along the same shores. It is well, therefore, for the navigator to take warning, and make it a rule to feel cautiously along after getting in 15 fathoms, and *never* to get into *less* than 12, unless he *knows* where he is. The bebbly bottom off the Jersey shore affords warning of the approach to the Squam Beach bight; and the lead, with proper caution, even when the light cannot be seen, will enable any one to keep out of the Fire Island bight.

THE DEEP HOLES.—Lying to the southward and eastward from Sandy Hook are six remarkable holes—shaded on Plate VI—having in their deepest parts from 10 to 12 fathoms more water than is found immediately around them. Beginning with the outer one—for the one to the south of it, that is surrounded by pebbles, is not connected with it by the gully—and taking them in order from seaward, comes *first* the "38 fathom hole" of Blunt's chart, with mud in the deepest part surrounded by sand.*

Second and Third (or second and first 37 fathom holes of Blunt's chart;) the first named having from 28 to 37 fathoms of sand, the other from 25 to 39 fathoms of blue mud, surrounded by from 18 to 22 fathoms of sand. These two holes are connected by a gully having 26 or 27 fathoms in it, principally sand, with from 20 to 22 fathoms on the edges. This gully, with the two holes, lies northwest and southeast, and is 20 miles long by 2½ broad, the northwest extremity being about 20 miles, southeast by south from the light-boat.

Fourth (32 fathom hole of Blunt's chart.) Depth from 20 to 32 fathoms—sand or shells, pebbles, and gravel—surrounded by from 16 to 18 fathoms; length, north-northwest, 4 miles; breadth, 1 mile. This is connected, by a gully of from 18 to 19 fathoms, with the "first 37 fathom hole," and may be considered as a bight in the 20 fathom curve, reaching up towards Sandy Hook, and coming within about 12 miles southeast of the light-boat.

Fifth and Sixth (21 and 23 fathom holes of Blunt.) These two holes appear to be joined together. They lie north and south, and are 7 miles long, by 1½ broad; depth, from 19 to 32 fathoms, muddy bottom, with from 13 to 17 fathoms of sand or sand gravel near the edges. Fifteen fathoms may be carried nearly up to the light-boat. To repeat: this range of holes—with the light-boat at one end, and the 38 fathom hole at the other—is 55 miles long and 14 broad at the outer end, and the inner end only 1 or 2 miles broad. It has in it from 3 to 18 fathoms more water than is to be found on either side of it, and, therefore, in connection with the pebble banks to the southward and westward of them, constitute the best land marks possible for guiding in the dark and through fogs, safely into 12 or 15 fathoms, and within sight or hail of the light-boat.

Now, studying the peculiarities which mark the series of holes, and which are denoted by the kind of bottom as well as the depth, and observing also the fact that, with barely an exception, all the pebbly patches of note are off the Jersey shore, inside the 30 fathom curve, and to the southward or westward of this range of holes, and noting also the long gravel bed south of Montauk Point, it will be at once obvious to the navigator how well the approaches from the sea to the light-boat are marked. His guides here, log and lead, are better than any landmarks ashore, because landmarks ashore may be hidden in fogs and the dark; but here the navigator has them under foot, and can, by feeling, tell within a very little compass as to his true place.

When the navigator finds his vessel in 20 fathoms, and is still doubtful as to her position,

* Sand and mud are represented on the chart as sand; mud and sand, as mud; the *predominating* character giving the color.

let her always steer north or north-northeast, NEVER *west* of north. Now, noting the rate at which she shoals her water—for, if she be off the Jersey shore, she will shoal it slowly, if at all—and recollecting the course she has been steering, the water she brought along, and the bottom she has had, he will—generally before, but always by the time she gets into 12 fathoms—have no difficulty in judging pretty accurately where she is, no matter how thick the weather may be.

COMING FROM THE EASTWARD.—To a vessel coming from sea, with Sandy Hook bearing anywhere between NW. and W.SW., the Block Island soundings, (mud and ooze,) in blue on the chart, are an excellent guide. If she gets out of this mud and into sand in less than 40 fathoms, she will probably be somewhere to the north of latitude 40°. But if she have more than 40 fathoms when she gets out of the mud, then she is probably south of that parallel. The course and distance sailed through the mud, the depth and the distance run between the mud and the 30 fathom curve, and then the gravel beds, the 20 fathom curve, &c., will leave but little doubt as to position.

COMING FROM THE SOUTHWARD AND EASTWARD.—Suppose a vessel to be coming from the southward and eastward, so as to cross the parallel of 40° latitude somewhere between 71° and 73° W. Here, though she may not sound deep enough nor far enough out for the mud, yet supposing she misses also the long gravel bed south of the east end of Long Island, even then, her rate of shoaling from 40 to 30 fathoms, compared with that from 30 to 20, will leave but little doubt as to the bearing of Sandy Hook. But, suppose the navigator, when he gets into 20 fathoms from this direction, should still feel in doubt as to his position. In such a case, he must either have passed to the eastward of the shaded holes and their connecting gullies, and be somewhere between them and the Long Island shore, or he must be very much out of his reckoning, and is somewhere between these holes and the Jersey shore. Being in doubt and in 20 fathoms, let him steer N.NE., and he will, by keeping the lead going, soon find out upon which shore he is. If on the Jersey shore, a N.NE. course will take him along parallel with it, or divergent from it, and the water will shoal very gradually and slowly, if at all. But if he be on the Long Island shore, the bottom will be steeper. The distance that he carries water between 20 and 12 fathoms will indicate, beyond all doubt, when he is off that shore.

COMING FROM THE SOUTHWARD.—To a vessel coming from the southward, and crossing the parallel of 39° to the west of 73°, a north course or a course a little to the west of north, according to her distance from the shore, will carry her safely until attention to the lead shall have warned the navigator of her position, either by the pebble patches, or the shaded holes and their connecting channel. Suppose that all these marks escape detection, and leave the navigator still doubting as to his position, and in the dark, there is yet left a last and safe and decisive recourse: being between 12 and 20 fathoms, he has but to steer N.NE., as vessels coming from SE. have been recommended to do, and the lead and log together, in connection with the soundings and bottom, the distance run, and the course steered on soundings, will very soon make all clear.

Should the mariner, notwithstanding all these signs, marks, and beacons, find himself in 12 fathoms, and still be in any doubt as to his position, he should *never* venture into *less* than 12 fathoms, nor allow his ship to get into the space represented by the white band along the shore, until he *knows* exactly where he is. His only prudent or safe plan in such a case is to anchor, or to put the head of his vessel off shore and wait until the fog lifts, the pilot boards him, or until he learns, in some other way, exactly how Sandy Hook bears.

It is scarcely necessary to remind the commanders of steamers and of other vessels from Europe, of the excellent beacons which the Nantucket Shoals and light afford for them, nor of the unerring landmark which the mud from 30 to 40 fathoms, the long gravel bed, &c., make for them. The commanders of steamers coming in and running between the parallels 40° 30′ and 40° 50′, who take care to notice when they first get mud, and when they leave it, and where, and in what water they cross the gravel bed G, will have very little room to doubt as to their longitude.

In approaching Sandy Hook, the variation changes very rapidly, the total change from one part of the chart to another exceeding a quarter of a point. Vessels may have fallen into difficulty, and possibly been wrecked, by neglecting to allow for this change. The Roman numerals IV, VI, and VIII, show the degrees of westerly variation for the places they represent.

A chart of the whole coast, representing the bottom in colors after this fashion, would be very useful.*

To illustrate the importance of a careful lookout, and attention to the log and lead, when approaching the land when it cannot be readily seen, it may be well to state here that investigations made in France some years since showed that of the shipwrecks upon that coast for a term of several years, ninety-five in one hundred occurred in the night or in thick weather. And the statistics of wrecks about Sandy Hook would, I imagine, show that but very few are owing to stress of weather, but nearly all to neglect of the landmarks which it is the object of Plate VI to bring out. (May 1, 1855.)

This chart has been in use for several years; with it some navigators have not hesitated to run for the light-boat in the thickest and darkest weather, and always successfully; they find no difficulty whatever in the way. To use it, they cut a slip of paper, lay off on it the scale of the chart, and mark on the edge the soundings at the intervals at which they are taken. After they have taken several, they lay this paper upon the chart, according to the course, true, the ship steered from sounding to sounding. Then sliding it up and down, until the soundings, including the distance between them, the depth, and the bottom, all "hit," they find out exactly the position of the ship.

"I think the sailing directions from sea to New York," says Captain Ginn, of the John Knox, "are very good; but for me, I think the chart is sailing directions enough. I think there can be no sailing directions that can be equal to a good chart of the soundings. It may be my misfortune some day to lose a ship on the Jersey or Long Island shore, even with your charts on board; but I am not able to conceive of any ordinary circumstance in which I could exculpate myself, in my own opinion, from the charge of mismanagement after such an accident.

"The only improvement that I could suggest in the charts would be to enlarge the scale. I believe that, with the chart, you might place me anywhere within a line from Nantucket South Shoal to Cape May, in anything over 12 fathoms water, and I could find the light-ship off Sandy Hook in any ordinary thick weather; yet I might find myself mistaken."

* In 1839 I proposed to the National Institute to undertake the collection of materials for a colored chart of the approaches to our coast, and I am now happy to have an opportunity of showing the advantages of it to the navigator as well as to the geologist.

This matter is so plain and simple that it speaks for itself, and in its own quiet way tells of its usefulness as well as the power of the navigator in describing it; and therefore it is needless to quote other positive authority in favor of it.

NOTICE TO MARINERS.—ADMIRALTY OFFICE.

VARIATION OF THE COMPASS, 1858.

"The following information respecting the variation of the compass in the North and Baltic seas—in continuation of that relating to the British Isles, published by order of the lords commissioners of the admiralty, in August, 1857—is made public in order to apprize mariners of the decrease in the variation, which, in the North Sea, at present averages 7 minutes annually, and in the Baltic Sea about 5 minutes; as also to enable mariners and agents for the sale of charts to correct the numerous sailing directions and charts now in use, in which the variation is erroneously noted.

From the eastern coast of the British Isles to the Kattegat, the present general direction of the lines of equal variation is N. by E. and S. by W., (true,) ranging in amount from 25° to 16°; and from the Kattegat to the Gulf of Finland, the lines of equal variation are nearly north and south, (true,) ranging from 16° to 5° westerly.

EASTERN COAST OF BRITISH ISLES.

At Lerwick and Sumburg Head	25 ° W.	At Flamborough Head	22¾° W.
At Pentland and Moray Firths	25¾° W.	At the Wash and Dudgeon	22 ° W.
At Buchanness and Fifeness	24¾° W.	At Leman and Ower, Yarmouth and Orfordness	21¼° W.
At Holy and Farn Islands	24 ° W.	At River Thames	21½° W.
At Shields, Sunderland, and Hartlepool	23½° W.		

COASTS OF BELGIUM, NETHERLANDS, HANOVER AND WESTERN SHORES OF DENMARK.

At Ostende	20 ° W.	At Helgoland Island	18 ° W.
At River Schelde entrances and Texel	19½° W.	At Elbe River entrances, Cuxhaven and Tonning	17½° W.
At Ems River and Hantsholmen light	18½° W.		

S. W. AND SOUTH COASTS OF NORWAY, AND THE SKAGERRAK.

At Fens Fiord, to Bucke Fiord	21½ to 20½° W.	At Christiansand	18½° W.
At Eggersund	20 ° W.	At Christiania, Bohus Bay or the Sleeve and Skaw light	17 ° W.
At Naze of Norway	19¼° W.		

KATTEGAT, LITTLE AND GREAT BELTS, AND THE SOUND.

At Lœso Island	16½° W.	At Great Belt and Lubeck	16¼° W.
At Gottenburg and Anholt Island	16 ° W.	At Copenhagen and the Sound	15¼° W.
At Little Belt and Kiel	16¾° W.	At Bornholm Island	14 ° W.

COASTS OF SWEDEN.

At Carlskrona	13¾° W.	At Soderarm and Understen lights	11½° W.
At Öland Island and Nyköping	13 ° W.	At Gothland, south point	12 ° W.
At Landsort light and Stockholm	12¼° W.	At Farö and Gottska Sando	11½° W.

COASTS OF PRUSSIA.

At Bugen Island	14¾° W.	At Danzig	12 ° W.
At Stettin	14¼° W.	At Königsberg	11 ° W.
At Jershoft light	13 ° W.	At Memel	10½° W.

COASTS OF COURTLAND AND LIVONIA.

At Entrance to Gulf of Riga	9½° W.	At West Coast of Osel and Dago Islands	9¾° W.
At Riga	8½° W.		

GULF OF FINLAND.

At Hango Head and Odensholm light	8¾° W.	At Kronstat	5¼° W.
At Helsingfors and Revel	7¾° W.	At St. Petersburg	4¾° W.
At Hogland Island	6½° W.		

GULF OF BOTHNIA.

At Aland Islands	11 ° W.	At Tornea and Brahestad	8 ° W.
At Söderhamn	13 ° W.	At Gadd, and Norr Skär lights	10½° W.
At Umeä	11 ° W.	At Waso, Biörneborg, and Nystad	10 ° W.
At Biurö Head	10 ° W.		

STEAM LANES ACROSS THE ATLANTIC.

The disaster which befell the United States mail steamer Arctic, on her passage from Liverpool to New York, in the month of October, 1854, in consequence of her coming in collision with the French steamer Vesta, in a thick fog, forty or fifty miles to the eastward of Cape Race, first appalled the public mind with its enormity, and then aroused it. Men inquired of each other if science or ingenuity could not devise means or invent plans for preventing the recurrence of similar accidents; or, in case of their recurrence, of providing against the terrible loss of life which attended the foundering of that noble ship. Of passengers and crew—men, women, and children—there perished, on that occasion, with her, to the number of about three hundred, owing, in a great measure, to improper management, and to the dastardly conduct of a part of the officers and crew.

Among the many benevolent persons who favored the public with the results of their thoughts upon the subject, some suggested measures remedial, and some preventive. Life-boats and life-preservers, water-tight compartments, station-bills for passengers and crew to "save ship," were among the remedial plans; and among those for prevention were, fog-signals, true compasses, rate of sailing, lookout, and lanes, or a double track for the steamers crossing this part of the Atlantic, viz.: a lane for them to go in and another for them to come in.

All or any of these plans would, if adopted, tend more or less to diminish or mitigate the dangers of steam navigation, and the risk of life that passengers incur at sea; but those plans which tend to *prevent* accident, rather than those that look to affording relief after the occurrence of accident, seemed to come within the scope and objects of this work; and among these the lanes were most inviting. It will be found that by establishing a lane or strip of ocean for

the steamers to go in, and another for them to come in, the liability to danger from collision between steamer and steamer, as well as between steamers and sailing vessels, will not only be lessened, but a new resource upon the high seas will, in many cases of wreck and disaster, be afforded to those in distress.

By examining Plate V, carefully, any one may satisfy himself as to the extent to which the adoption of these lanes will lessen the liabilities—which now are very great—to collision in fog, between steamers and sailers. The curves on that plate show that fogs and calms are, along these lanes at least, almost correlative terms; that is, they often occur together, and in proportion as they do occur together just in that proportion accidents from collision between *sailing* vessels are lessened; for vessels moved by canvas cannot well run foul of each other in a calm, and in calms with thick fogs is precisely the time when such vessels are in the greatest danger of being run into by a steamer; for, being helpless then, they cannot get out of the way; consequently, if they will agree to avoid, as much as possible, the steam lanes as they are marked on the chart, by making it a rule never to attempt to beat along in them, but to cross them quickly, when they have to cross them, and to edge along out of them when, being in them, the wind changes and comes out fair. If those public spirited shipmasters who are co-operating with me will, in this way, lend a hand, by giving the force of their example and precept, to dedicate to the use of the steam navigation between Europe and America the very narrow slip of ocean included within these lanes, they will do much, in addition to what they have already done, toward improving navigation, and lessening the dangers of the sea. On the other hand, the captain of every steamer should as scrupulously aim to keep within the lanes, and never to suffer his vessel to get out of them, except she be compelled to turn aside on account of ice, or gales of wind, or unless she get out of them for want of observations after a succession of cloudy days.

I earnestly appeal to the fleets of observers, to whom I owe so much, and to whose enlightened zeal and generous labors for the advancement of science and the improvement of navigation this work bears witness, to second this recommendation, and make it a rule to observe the lanes. This appeal is made especially to those who are in the European trade. They will render a service to be most gratefully acknowledged, if they will always, whenever they enter the lanes, either make haste across them, or run obliquely out of them, according as their course may lie, or as the winds may allow; and, when they do find it necessary to enter one of these lanes, they will please note the fact in their abstract log kept for this office; and state also the time and distance sailed in each lane, with such remarks as circumstances may suggest.

The more sailing vessels will agree to keep out of the lanes the more will it concern the steamers to keep in them, and the greater becomes the danger at night, or in a fog, to the hapless sailing vessel that shall needlessly thrust herself into one of them. Practically, their adoption will be attended on one hand with so little inconvenience or loss of time either to sailers or steamers; while, on the other, it will be attended with so many advantages, and so much less risk to vessels, crews, and passengers, that I do not think it necessary to add another word to induce all, I hope, who follow the sea, but *certainly*, and at *least*, those who are co-operating with me, to favor the lanes, and do all that is proper to establish them.

I therefore content myself with laying before them, for their information, the following correspondence, and to say that the recommendation therein contained has met with favor from the right quarter, both in Boston and New York, and with every sea captain with whom I have had an opportunity of consulting.

From Messrs. John S. Sleeper, C. W. Cartwright, J. Ingersoll Bowditch, R. B. Forbes, and others, underwriters, ship-owners, and merchants of Boston.

JANUARY 8, 1855.

SIR: In connection with the discussion respecting the dangers of crossing the Atlantic, and the modes of diminishing them, we have observed a suggestion contained in your letter to Walter R. Jones, esq., of New York, proposing one route for steamers to go and another for them to come, of which idea you cite our fellow-citizen, R. B. Forbes, esq., as the original author.

Permit us to hope that this project may receive your further attention, and that you will prepare a chart, exhibiting the routes suggested, so laid off as may, in your judgment, best answer the purpose in view, of lessening the liability of collision, without materially lengthening the passage.

By thus carrying out a proposition which strongly recommends itself to many, you will add another important service to the many for which we would express our thanks.

Lieut. M. F. MAURY, *National Observatory, Washington.*

Reply to the above, dated February 15, 1855.

"GENTLEMEN: I duly received your communication of the 8th ult. requesting me to carry out the proposition contained in my letter of the 8th of November last, to Walter R. Jones, esq., of New York, by projecting the two steam lanes across the Atlantic, viz: one for the steamers to go in, and the other for them to come in.

"I at once addressed myself to the task, and after a careful examination of the somewhat ample materials afforded by this office, I have at length the pleasure to submit charts with the lanes projected on them, together with other matter bearing upon the subject.

"I have examined a number of the logs both of the Collins and the Cunard lines. The part of the ocean used by them in their voyage to and fro, between the meridians of 15° and and 65° west, is, for the American, 300 miles broad, and for the English, 150 miles broad. The American road-way overlaps and includes the English. Consequently there is a breadth of ocean 300 miles wide, in any part of which a sailing vessel, by night or in the fog, is now liable to be brought into collision with the steamers.

"Now, suppose we take this same breadth of ocean and lay off a lane twenty or twenty-five miles broad near its northern border, and another, fifteen or twenty miles broad near its southern border, and recommend the steamers, when coming westwardly, to use the former, and when going eastwardly, to take the latter; would not the adoption of the recommendation contribute to the safety both of steam and sailing vessels, of passengers and crews? I think so.

"I do not mean to create the impression, by anything I say or do, that the adoption of these lanes would *do away* with collisions, or call for less vigilance, or relieve in any manner the shipmaster from his obligations to look closely to the navigation of his vessel, to be watchful, prudent, cautious, and careful. On the contrary, he must never relax his attention to the seaman's three Ls, nor slight his water thermometer. The adoption of the lanes will simply lessen the *liabilities*, by dimishing the *chances* of collision, and to that extent make the navigation of the Atlantic *less* dangerous. So far from relaxing attention to the log, lead, and look-out, these lanes call for increased diligence on the part of the master, for that breadth only is given to them which will just make them broad enough to cover the probable errors in

latitude of a good, careful navigator, after he has been two or three days without an observation. A narrower lane would be forbidding, from the difficulties of keeping in it; a broader lane would be mischievous by relaxing its calls upon the attention of the master to keep his steamer in it, and by occupying so much of the ocean that sailing vessels would not so willingly, because they could not so conveniently, give it up to the steamers.

"If these lanes be adopted by the steamship companies, and engraved on the general charts of the Atlantic that are used by the vessels of the different nations, and marked as they are on the Track Charts, series A, of the North Atlantic, and as they are on Plates II and III, I have very little doubt that sailing vessels would, in the process of time, make it a rule to edge off from the lanes, especially at night and in thick weather. In the first place, the lanes are so narrow that if the sailing vessel has to cross them, as in head winds, and in the progress of her voyage she not unfrequently will, she will be but a little while in them, and her master will then know on which side to watch for the danger. In the next place, if his course lie along the lane, and the winds be fair, he will, as night comes on, or as the weather grows thick, begin to think of the steamers and collision, and his own responsibilities, and then feel much more comfortable by edging off to one side and leaving the steam track clear.

"The average route of the steamers coming, as determined by the abstract logs on file here, crosses the meridians of 40°, 45°, and 50°, from forty-five to sixty miles north of the lane to America, and joins it on the meridian of 55°, and then runs nearly along with it to Sandy Hook.

"The lane coming is, therefore, a better road than the average route at present used, and for these reasons, viz: It is thirty miles shorter; it runs so far south of Cape Race and the Virgin Rocks that no time need ever be lost in turning aside, when fogs prevail, to avoid these dangers, for it passes one hundred miles south of Cape Race.

"This statement, without any explanation, might appear paradoxical, for the nearer to Cape Race the shorter the distance; yet, practically, it has not proved so, because vessels, especially in the fog, as they near this cape, have frequently to run one, two, three, or more hours to the southward to be sure of clearing it. When they are so running they are not making much headway towards their port. So, on the long run, the attempt to shave Cape Race makes the average distance practically greater than it is by the lane. Indeed, it is greater than the statement above implies, for the distance which I have taken as the average by present routes is measured by straight lines from position to position, at noon.

"Congress has given the Secretary of the Navy authority to employ three vessels in assisting me in my researches, by testing new routes, and perfecting discoveries. They can be very usefully employed just at this time. Perhaps he may find it convenient in the spring to detail one or two of them for this service. If so, I shall urge upon his attention the importance of completing the deep-sea soundings across this part of the Atlantic, and also ask for an examination of the Virgin Rocks, with the view of planting on them, or just under their lee, a bell buoy. In that case, this lane might be lifted up so as to shorten the distance and save time, by bringing this buoy on the edge of it, and thus provide a landmark that would be very useful in all weather and to all classes of vessels.

"The shortest distance possible for a steamer between Liverpool and Sandy Hook is 3,009 miles; the average distance actually accomplished is 3,069 miles, and the distance by the middle of the lane coming is 3,038. There is also another recommendation in favor of this lane to the west, which is this: It lies along the northern edge of the Gulf Stream, where

there is an eddy setting westward often at the rate of a knot an hour. On the average, I assume that the set of this eddy will amount to twelve miles a day for three days and a half, or say forty miles. This makes the distance by the lane coming practically about 2,998 miles; or, allowing twenty miles for detour, we shall have 3,018 miles, which will shorten the average time of the passage this way three or four hours, with less risk of collision, and less danger from Cape Race by the way.

"It may be urged against this lane that it cannot always be followed on account of the ice, and that, inasmuch as it crosses the Grand Banks, the steamers that ply in it may now and then run down a fishing vessel. The reply is that, as far as the fishermen are concerned, they are now liable to be run down by the steamers both going and coming. Whereas, with the lane, that liability is incident to the steamers alone that are westwardly bound, and the fishermen will have the advantage of knowing pretty nearly where the steamer will pass, and which way she will be coming. And as for its being obstructed by ice, so as to compel the steamers, as it occasionally will, especially in May or June, to turn out of it now and then, the Erie Canal, of New York, is obstructed by ice the whole of every winter, but that does not prove it to be of no value; it only shows that it, like this lane, would be of more value to commerce if it were never obstructed by ice, or anything at all.

"You will observe, by looking at this lane upon Plates II and III, that the Grand Banks afford a pretty good landmark, which can be used in the thickest weather. Generally, the water thermometer is found to fall as soon as you near these Banks; it is generally a good landmark for them. The eastern edge runs north and south, and, therefore, affords an excellent correction for longitude. Having ascertained, by the lead, when the vessel first strikes this edge, then noting the soundings and the distance run before clearing the Grand Banks, the latitude will also be known with accuracy sufficient to enable the navigator to decide whether he be in or out of the lane, and if out, on which side. The lane crosses the Banks near their greatest width, 275 miles. If a steamer be crossing there in a fog, and in doubt as to her position, she can judge, by their breadth and the soundings, pretty nearly as to latitude. For instance, if the breadth of the Banks, when crossed, be less than 275 miles, but the soundings not less than forty fathoms, the vessel has crossed the Bank to the north of the lane; but if she find herself in less than thirty fathoms, then she has crossed to the south of it. Should she, however, find herself in water that suddenly shoals to less than twenty fathoms, and as suddenly deepens again, then she is near the Virgin Rocks, or the rock and Nine-fathom Bank to the east of them, and her position is immediately known.

"It should be recollected, however, that these lanes are not channel-ways in which steamers must keep or be lost. Gales of wind, ice, and other things, will now and then force a steamer out of them, and in such cases she will actually be where she is now, for she will then be in no more danger than she is now; only when she gets back into the lane she will be in less.

"You will doubtless observe the advantageous position of the fork to Halifax, in the lane from Europe. As this lane approaches Newfoundland, it edges off to the south, in such a manner as to render it impossible for a vessel so to miss her way as to get ashore. Suppose a steamer attempting this lane to be, when she nears the Grand Banks, 100 miles out in position, (a most extravagant case,) and that she be out on the Newfoundland side, she would, if behaving properly, be steering parallel with the lane, and if bound to New York, she would go clear of Cape Race. But she might be bound for Halifax, and by steering west too soon, might run upon the land; but recollect that the land to Halifax turns off *on soundings*, and a

west course from where the lane from England strikes soundings on the Grand Banks will take you clear of everything. So without the most gross neglect of the lead and all the proper precautions, which it is the duty of the shipmaster to take, it would seem impossible for him to run his steamer into danger here.

"In the longitude of the Grand Banks, the lane to Europe is 200 miles south of the lane to America. As a rule, this lane for the eastern bound steamers can be followed always, admitting that an exception now and then in practice will make the rule general. It will be observed that this lane runs E. 15° S. from Sandy Hook to the meridian of 70°, where it takes a course E. 12° N., towards its junction with the arc of a great circle, south of the Grand Banks. Though the distance by this lane, from Sandy Hook to this junction, is a few miles longer than the direct line, yet on account of the Gulf Stream it is in *time* the shortest distance that a steamer can take. From the Capes of Delaware it is obviously the shortest.

"The distance from Sandy Hook to Liverpool, by this lane, is 106 miles greater than it is by the lane coming. But the lane going is in the Gulf Stream, which of itself will nearly, if not quite, make up for this difference. The San Francisco steamer was wrecked in the Gulf Stream, and from the time she was disabled till she was abandoned she drifted at the rate of two knots an hour. When the Great Western steamship first came over she stemmed the Gulf Stream, and was set back in it 175 miles during the voyage. Now, from the Grand Banks west, the track of the Great Western was not as much in the strength of the stream as this lane is, for she passed to the north of it. This trip, too, was in April, when the middle of the stream is well south.*

"I may be excused for mentioning, in this connexion, an incident relating to the early history of ocean steam navigation. After this passage of the Great Western, I wrote a paper on the achievements of the New York packet ships, and pointed out on a chart the great circle route from New York to England, and commended it to the attention of those concerned in this new navigation. The paper, with the chart, was published in the *Southern Literary Messenger*, (Richmond, Va.,) for January, 1839. The editor sent a copy to Captain Hoskins, and he ever afterwards went by the route recommended on that chart. His competitors stuck to the old rhumb-line route, and from that time Hoskins generally beat them, this way, about a day; and here is the explanation: They were sent back, in the Gulf Stream, 150 or more miles; he was sent forward forty or more, by the eddy, and gained some fifty or sixty additional, by the great circle, which made altogether about one good day's sail in his favor. The great circle, or Cape Race route, was not generally adopted, however, even when he left the line; and it has been mischievous by tempting navigators to shave the cape too closely.

"The current of the Gulf Stream is not only in favor of the lane going, but the gales are more favorable, and the fogs less frequent than they would be by a more northerly route.

"In order to enable you to judge knowingly as to the relative merits of these two lanes in this respect, I have, with the help of the most willing, zealous, and able corps of assistants that one ever had, and such as can be formed only of navy officers, examined and discussed abstract logs containing observations for no less than 46,000 days, on the winds, weather, the sea, and the currents, in the parts of the ocean through which these lanes pass. The result of that discussion I submit herewith for information, on a chart of engraved squares, (Plate V.) The horizontal lines are there marked as per cents., each being counted as one, and every fifth

* The thread or axis of the Gulf Stream moves up and down in declination as the sun does, being furthest north in September, furthest south in March. Its limits are not accurately described on any general chart that I have seen.

one being a little more heavily ruled than the rest. The vertical lines, marked 70°, 65°, 60°, &c., are meridians of longitude between which the lanes pass. Between each two of these meridians are twelve columns for the twelve months, beginning always with December, the first winter month. Thus, the navigator wishes to see what is the most foggy month in the lane to America between the meridians of 70° and 75°. He finds on the plate the fog curve for that lane, and his eye is immediately attracted to the remarkable peak formed by this curve, in the July column between these meridians; the meaning of which is that, according to the averages derived from these 46,000 days, the probabilities are that if he were to pass along this part of that lane one hundred times, in the month of July, but in different years, he would find it foggy twenty-eight times; or, in other words, twenty-eight per cent. of the days in July are foggy along that part of the lane. Casting his eye further along, he will see that fogs, at certain seasons of the year, are astonishingly prevalent from long. 55° to long. 45°, (on the Grand Banks;) and when he comes to count the columns, he will find that June is the foggiest of months. But the relief and the consolation is, that that is precisely at the season of the year when daylight is the longest, so that even here there is compensation.

"Now he looks at the fogs for the lane going, and he is struck with the more modest flexures of the curve, and particularly with the fact that both the fog curves almost invariably come down to the zero (0) line near the meridians. In other words, that the fogs are less prevalent in both lanes, during the autumn and winter, when there is least daylight.

"In like manner, he wishes to know as to his chances for meeting with a gale of wind, as he passes along in the lane to Europe, and whether these gales will be adverse or fair; in other words, whether they will have easting or westing in them. Now, he sees, under the head of "Lane to Europe," (Plate V,) by the curve marked "fair gales," that the most stormy part along this line is between the meridians of 35° and 40°; that here, in January, it is blowing a gale of wind half the time, (fifty-two per cent.,) while at certain other seasons of the year gales seldom or never occur. But these gales all have westing in them, and are therefore fair. The preponderance of fair gales along the lane to Europe, viz., all gales having westing in them, is very striking. The vessel will be running with these gales, and therefore diminish their strength. In like manner the gentle flexures in the curve marked "head gales" denote how much less frequently gales with easting in them are to be met with in the regions through which this lane passes. Now he will be struck with another remarkable physical fact which experience has proved and these statistics have developed: that fogs and gales, in certain parts of the lanes, seldom come together; for instance, as the fog curves run up, the gale curves, both for coming and going, come down, and *vice versa*. This feature is very striking all the way from the meridian of 25° to that of 55°. These curves are both suggestive and instructive. Others have been added to show, also, the per cent. of calms, rains, and thunder and lightning, by each lane.

"That you may judge also as to the relative frequency with which the parts of the ocean in which these two lanes are traversed by sailing vessels, I have projected them also on series A of the Wind and Current Charts.

"You will observe by referring to this series, that the part in which the lane going lies is very much frequented, but it is frequented mostly by vessels going. (See also Plates II and III.) Those that are coming this way, that is, to the west, seek, for the most part, to avoid the Gulf Stream, either by going to the north or by taking what is called the southern route, which is very common, especially in winter. So that steamers, when in the lane going to

Europe, will find the vessels generally all bound the same way, and likewise in the lane coming to America, the vessels seen, though not so many, will, for the most part, be steering to the westward. And when all are bound the same way collisions are rare.

"According to the tables given, pp. 293 to 304, the best routes for sailing vessels to Europe, as there determined, run along, for the most part, south of the line going, until you reach the meridian of 45°, between which and 40°, they cross this lane and run along between it and the other. These are the tracks that are projected on Plates II and III.

"I will close this report with a recapitulation as to distances and courses by each lane, between New York, Halifax, and Philadelphia, on one side, and Cape Clear and the Scilly Isles on the other; first begging leave to say that, according to my computation, founded on such statistics as I have touching the velocity of the Gulf Stream, if two steamers bound for Cape Clear, and of exactly equal speed, were to start from Halifax, to see which should first get into the great circle part of the lane to Europe from New York, and if one were to go straight for it by steering east, and the other were to follow the European lane from Halifax as projected on the Chart, this one would reach the point of destination quite as soon as the other, the drift of the Gulf Stream compensating for the greater distance.

"DISTANCE BY LANE TO AMERICA.

		By Great Circle.
"From Scilly Isles to Halifax	2,351	2,305
" " Capes of Delaware	2,948	2,909
" " Sandy Hook	2,882	2,840
"From Cape Clear to Halifax	2,192	2,170
" " Capes of Delaware	2,789	2,765
" " Sandy Hook	2,723	2,695
" " Do. by actual average		2,754

"This statement shows that by the lane to America the distance is actually shorter, both to Sandy Hook, and, we may infer also, to the Delaware, than the average distance by present route; for the route actually pursued by the steamers now, both to Sandy Hook and the Delaware, may be considered the same from Cape Clear or the Scilly Isles, as far west as long. 70°.

"DISTANCE BY LANE TO EUROPE.

	To Scilly Isles.	To Cape Clear.
"From Halifax	2,436	2,285
" Capes of Delaware	3,024	2,873
" Sandy Hook	2,980	2,829

"Besides the detour from the great circle which a vessel from New York, Halifax, Boston, or Philadelphia would necessarily make by following the European lane to Cape Clear, it would require an *additional* detour of only 15 miles for vessels bound into the English Channel to use it also as far as Cape Clear. This lane, therefore, will, in consequence of the favorable currents of the Gulf Stream, put a vessel into Southampton quite as soon as she could reach that port from New York or Philadelphia by the great circle route. Vessels from Halifax will have to make the greatest detour of any by adopting the lane to Europe; but for them it is less than 100 miles out of their way as they now go, and it will prolong their average passage eastwards, perhaps, two or three hours. I say *perhaps*, because I am not sure but that the steamers from

Halifax and New England are set back by the cold current 20 or 30 miles on the route now used for the eastern passage. The Gulf Stream, even from where they will join it by this lane, will not set them forward, on an average, 40 or 50 miles at the least. It seems, therefore, that the attractions of this lane as it regards safety should more than outweigh the *probable* loss of an hour or two during the passage. When I speak of distances by the lanes, it should be recollected that the *middle* of the lane is meant, as per following table of courses and distances:

"LANE TO AMERICA.

	Course.	Distance.
"From Scilly Isles to Cape Clear,*	W. 33°.7 N.	159 miles.
" Cape Clear to lat. 51°.,23′, long. 15°.0	1°.55′ N.	187 "
" lat. 51°.23′, long. 15°.0 to lat. 51°.16′, long. 20°.0′	2°.17′ S.	187 "
" " 51.16 " 20.0 " 50.56 " 25.0	6.5	189 "
" " 50.56 " 25.0 " 50.23 " 30.0	9.50	193 "
" " 50.23 " 30.0 " 49.36 " 35.0	13.41	199 "
" " 49.36 " 35.0 " 48.33 " 40.0	17.45	207 "
" " 48.33 " 40.0 " 47.15 " 45.0	21.8	216 "
" " 47.15 " 45.0 " 45.38 " 50.0	25.10	228 "
" " 45.38 " 50.0 " 45 00 " 51.45	27.13	83 "
" "(*a.*)45.00 " 51.45 " 44.10 " 55.0	19.45	148 "
" " 44.10 " 55.0 " 42.40 " 60.0	22.27	236 "
" " 42.40 " 60.0 " 41.42 " 65.0	14.34	231 "
" " 41.42 " 65.0 " 40.30 " 70.0	17.45	236 "
" " 40.30 " 70.0 Sandy Hook,	0.43 S.	183 "
" " 40.30 " 70.0 to Capes of Delaware,	W. 22.8 S.	249 "
" "(*a.*)45.0 " 51.45 to Halifax,	3.53 S.	503 "

"LANE TO EUROPE.

	Course.	Distance.
"From Capes of Delaware to lat. 39°.40′, long. 70°.0′	E. 10°.46′ N.	236 miles.
" Sandy Hook to lat. 39°.40′, long. 70°.0′	E. 14.29 S.	192 "
" lat. 39°.40′, long. 70°.0′ to lat. 40°.31′, long. 65°.0′	12.24 N.	237 "
" " 40.31 " 65.0 " 41.9 " 60.0	9.39	227 "
" " 41.09 " 60 0 " 41.33 " 55.0	6.5	225 "
" " 41 33 " 55.0 " 41.53 " 50.0	4.57	232 "
" "(*b.*)41.53 " 50.0 " 43.55 " 45 0	29.6	251 "
" " 43.55 " 45.0 " 45.46 " 40.0	27.28	241 "
" " 45.46 " 40.0 " 47.18 " 35.0	24.4	226 "
" " 47.18 " 35.0 " 48.32 " 30.0	20.18	212 "
" " 48.32 " 30.0 " 49.30 " 25 0	16.21	206 "
" " 49.30 " 25.0 " 50.14 " 20.0	12.46	199 "
" " 50 14 " 20.0 " 50.45 " 15.0	9.17	192 "
" " 50.45 " 15 0 to Cape Clear,	E. 4.34 N.	189 "
" Cape Clear to Scilly Isles,	E. 27.39 S.	151 "
" "(*b.*)Halifax to lat 43°.30′ long. 60°.0′	E. 20.7 S.	163 "
" lat. 43°.30′, long. 60°.0′ to lat. 42°.30, long. 55°.0′	15.17	181 "
" " 42.30 " 55.0 " 41.53 " 50.0	9.28	225 "

*The courses and distances are for the *middle* of the lanes.—(See Charts.)

"Thus it appears that one lane will practically shorten the distance from Cape Clear to Sandy Hook and the Delaware, by 30 miles, while the other prolongs the distance going to Europe 75 miles; which prolonged distance, when measured not by safety, but *in time* alone,

the Gulf Stream, better weather, and diminished frequency of fogs, will more than compensate for. In my judgment, these lanes, if properly followed, will make the average length of passage, as determined by the mean of all for the year, probably less each way, certainly not more than an hour or two longer than it now is. Individual passages coming will, perhaps, not be made so quickly as they have been, but, on the average, trips will be shortened.

"For a better understanding of the whole subject, I beg to refer to Plates II, III, and V."

The increasing number of steamers tends still further to prove the importance of these lanes upon the commercial interests of the world. The merchant steamers plying between Europe and the United States, during the year 1857, made no less than 374 passages. This is exclusive of man-of-war steamers. There was, therefore, on the average, no less than 14 steamers in transit on the high seas during the whole year, which would give 7 for each lane all the time. These steamers transported, besides their own crews, 54,700 persons as passengers, which is more, by 24,500, than were transported by steam during the year 1856. One of these steamers, (screw,) the Tempest, sailed from New York for Glasgow, in February, 1857, and was never heard of. Now, if these lanes had been used by all of them, she could not—whatever it was that caused her loss—have survived her injury more than 48 hours without being passed by some other steamer.

Screw steamers are rapidly on the increase. They do not make as much noise with the propellers as the side-wheel steamers do with their paddles, consequently, in thick weather they do not give as much warning of their approach as the others with their paddles. In this circumstance I find another plea in favor of the lanes.

Three years have now (1858) passed since these lanes were projected. The shadows cast by the lights of experience from them are before us. Wrecks and collisions at sea have greatly increased, especially about the British islands. The crowded state of the sea renders the recognition and use of these lanes a matter of more and more importance every year.

The following summary of wrecks and collisions ought to plead, trumpet-tongued, in favor of our lanes. They are derived from the public statements made by a humane society in England, and is copied from the Wreck Register of the "Life Boat."

Year.	Wrecks.	Collisions.	Total.	Total lives lost.
1852	958	57	1,015	829
1853	759	73	832	989
1854	893	94	987	1,549
1855	894	247	1,141	469
1856	837	316	1,153	521
Total	4,341	787	5,128	4,348

Thus we find that no less than 220 ships were totally lost or stranded in 1856 from errors, unseamanship, or drunkenness, or other preventable causes, in addition to those from stress of weather.

Crossings and Time from Ports south of the Capes of Delaware to the North of Europe.

Name of vessel.	From—	To—	Date of sailing.	DAYS FROM PORT TO 75° W., AND CROSSINGS THENCE to 15° W.																											From 15° W.		Total passage.
				Days.	75° W.	Days.	70° W.	Days.	65° W.	Days.	60° W.	Days.	55° W.	Days.	50° W.	Days.	45° W.	Days.	40° W.	Days.	35° W.	Days.	30° W.	Days.	25° W.	Days.	20° W.	Days.	15° W.			
Actor	Mobile	Liverpool	Jan. 6, 1856	7¾	34	1	36	1	37	1¼	39	1¼	40	2	42	1¼	43	¾	45	¾	47	¾	48	¾	49	¾	50	1	50	1¾ days to	Liverpool.	22
Reporter	New Orleans	do	8, 1855	11	31	1¼	33	1¼	35	1½	40	1¼	41	1¾	44	¾	44	1¼	44	2¼	43	2¼	42	1¼	44	1	45	10	51	9¾	Liverpool.	47
Garrick	do	do	19, 1855	10	31	1¼	34	3	34	2	36	1¼	37	1½	42	1	43	1¼	43	2¼	44	8	46	4	51	1	50	¾	50	5	Liverpool.	42½
Diadem	do	Havre	1, 1854	11	31	2	36	1¼	37	1½	39	2¼	40	2¾	41	....	....	5	43	2	44	1½	45	1½	47	2½	46	1¼	48	3	Lizard	37½
Mary Hall	Baltimore	Liverpool	12, 1852	....	....	1	37	1	37	2	37	1¾	38	1¼	39	1¾	41	2	43	1¼	45	1¾	46	1¼	47	1½	48	1½	50	2¾	Liverpool.	20¾
Princeton	New Orleans	do	29, 1850	11¼	33	1	34	1¾	36	2	38	2¼	39	1	41	1	43	1	44	1½	47	1¾	47	1	49	1¼	50	1	51	1¾	Liverpool.	29½
Pyramid	do	do	21, 1851	14	32	1¾	38	....	....	3¼	39	2	40	1	40	1½	40	1½	44	1½	44	1½	14	1½	48	1¾	48	1¾	50	10	Liverpool.	43
Milford	Charleston	do	6, 1822	2½	34	2½	35	2	36	2	38	2	39	1	39	3	38	4	42	1	43	3	45	3	46	1	47	1½	48	4½	Liverpool.	33
Exchange	Mobile	Havre	27, 1848	15	33	3	34	2¼	37	1¾	39	1¼	39	2¾	42	1¼	43	1¾	45	2	45	2	47	2	48	1	49	1	49	3	Lizard	40
Mary Mitchel	Baltimore	Cork	19, 1849	1	37	2	37	1	37	3	38	1¾	39	1¼	39	2	40	2¼	40	2¼	40	2	43	2	46	1¾	49	2½	50	2½	.....	27½
Silas Richard	do	London	27, 1849	....	....	2	37	1¼	38	2¾	38	1½	40	1¾	41	2	43	1¼	44	1½	46	1¼	48	1¾	49	1¼	49	1¾	49	3	Lizard	23¼
Lebanon	New Orleans	Havre	22, 1850	13	34	1	33	3	33	2	35	2	39	2	40	1½	41	1½	44	1	45	1½	46	2½	48	1	49	1½	49	3½	Lizard	37
Rochelle	Charleston	Liverpool	27, 1842	1¾	32	2¼	36	2	38	2	40	2	40	2	41	2	43	1	45	1½	46	1½	48	1½	49	1½	50	2	51	3	Liverpool.	26
Argyle	Baltimore	do	27, 1839	¼	36	1	36	1½	37	1½	39	2	41	1½	42	1¾	43	1¾	42	2	44	1	45	2	47	1	48	1½	49	2½	Liverpool.	22¼
Kalamango	Mobile	do	25, 1843	7	32	1¼	32	2¾	33	1½	36	1½	39	1	40	2	42	1	42	3	44	4	45	2¼	47	1¾	48	3	51	6	Liverpool.	39
Badger	do	Havre	8, 1836	9	29	2	32	3	34	2	36	2	38	1	38	2	41	1	42	3	43	2	45	3	46	2	47	1	47	4	Lizard	37
Herarclide	New Orleans	Liverpool	10, 1833	14	31	2	34	2	36	1	37	1½	38	1	40	1½	43	1	44	2	46	1	48	1	49	2	50	1	51	2	Liverpool.	33
Walpole	do	Havre	8, 1844	10	31	2	33	3	34	2	37	2¼	38	1¾	40	3	44	2	45	1½	45	1	45	1	46	1½	46	2	47	5	Liverpool.	38
Tarolinta	Apalachicola	Liverpool	8, 1845	8¾	31	1¼	33	3	36	1	37	2	36	3	35	4	42	1	44	2	46	1	47	1¼	49	1	49	1¾	49	3	Liverpool.	34
Tarquin	Mobile	do	28, 1843	....	....	....	....	....	....	....	....	12	39	2½	40	3	41	2½	42	2½	41	2	41	2	44	1	41	2	47	7	Liverpool.	35½
Roscoe	New Orleans	do	14, 1844	9½	33	1¾	34	2½	34	1¼	37	2	39	2	41	6	40	2	44	1½	46	1	49	1	49	1½	49	1¾	50	2	Liverpool.	35¾
Apollo	Charleston	Nantes	22, 1845	....	....	3	33	3	34	3	34	2	36	2	37	3	40	2	43	2	44	2	45	2	46	2	46	1¼	46	6	Lizard	33¼
Sarah	Mobile	Glasgow	30, 1845	8	30	3	33	2½	35	2½	37	2	37	2	39	2	41	2	42	1	44	2	46	1	47	2	48	2	49	3	Lizard	35
Malabar	New Orleans	Liverpool	9, 1844	8	34	1½	35	1½	36	1	35	3	36	2	39	1	41	2	43	2	47	2	48	1	49	1½	50	1½	50	2	Liverpool.	29½
Envoy	Savannah	do	20, 1831	1	34	1	35	1¼	34	1¾	37	1	37	2	40	2	42	2	42	4	44	2	46	3	47	2	50	1	51	3	Liverpool.	27
Do	New Orleans	do	26, 1833	13	30	2	31	4	35	2	36	3	36	2	38	2	39	1¾	42	1¼	43	2	45	1	46	2½	47	1¾	50	5¾	Liverpool.	44
Mean of 6 best from Gulf ports				9.6	32	1.6	34	2.0	36	1.5	37	2.0	38	1.8	39	1.8	42	1.3	43½	1.5	46	1.4	47½	1.0	48½	1.4	48	1.4	50	2.2	Liverpool.	30.5
Mean of 6 best from Atlantic ports				1.0	35	1.6	36	1.3	37	2.1	38	1.7	39	1.6	40	1.9	42	1.7	43	2.1	44	1.6	46	1.9	47	1.5	49	1.7	50	2.8	Liverpool.	24.4

Crossings and Time from Ports south of the Capes of Delaware to the North of Europe.

Name of vessel.	From—	To—	Date of sailing.	Days from port to 75° W., and crossings thence to 15° W.																												From 15° W.	Total passage.
				Days.	75° W.	Days.	70° W.	Days.	65° W.	Days.	60° W.	Days.	55° W.	Days.	50° W.	Days.	45° W.	Days.	40° W.	Days.	35° W.	Days.	30° W.	Days.	25° W.	Days.	20° W.	Days.	15° W.		
Isaac Jeans	Mobile	Havre	Feb. 28, 1857	8¼	32	3⅛	34	1¾	37	¾	38	1¼	39	1¾	39	1⅛	40	1¼	40	¾	43	1⅛	45	1¼	47	3¾	51	2⅛	50	2 days to	Lizard	31¾
Criterion	do	Bremen	15, 1856	8	30	1¾	32	1⅛	33	1⅛	34	1⅛	35	1¾	37	2¼	39	2	41	4¾	45	1¾	48	3¾	50	1¾	50	1	49	3¾	Lizard	37
Senator	New Orleans	Havre	21, 1856	8¾	32	2¼	36	....	....	3	39	1⅛	39	2	41	1⅛	42	1¾	44	1½	47	1¼	47	2¼	48	1¼	49	1	49	4	Lizard	32
James Wright	do	Liverpool	15, 1853	9	33	1¾	35	1⅛	36	1¾	38	1	39	1¼	41	1¼	42	1¼	44	1⅛	45	1¼	46	2¾	46	1	49	1	50	7⅛	Liverpool	33¾
Ashley	do	London	11, 1849	12	31	3	31	8	35	2⅛	35	1¾	36	2¼	37	2	41	2	41	2	44	1¾	47	1½	47	5	48	3⅛	47	2⅛	Lizard	50
George A. Haxley	Charleston	Havre	12, 1849	2	33	1¼	34	1	35	1¾	35	1¼	36	2	36	2	40	3	41	2	43	1⅛	43	1½	47	1	48	2¼	48	2	Lizard	24⅛
Ashland	Mobile	Liverpool	4, 1851	10	35	1¾	38	1¼	40	2	41	2	42	2¾	42	1⅛	43	1	44	1¾	46	3¼	49	1¾	50	1¼	50	1¼	50	2⅛	Liverpool	34
Athens	do	Havre	10, 1849	12⅛	31	3⅛	33	5⅛	35	2⅛	35	1¾	36	2	38	1¾	40	2	41	2	44	1¼	45	1¼	46	3	46	1¼	47	2	Lizard	42¼
Cornelia	do	Liverpool	17, 1849	10	30	6¼	28	3	29	1¼	30	1¾	32	1¾	34	1¾	37	1⅛	39	1⅛	41	2	44	1¼	46	2	47	5¾	47	6¾	Liverpool	46¼
Woodside	do	Havre	12, 1849	10⅛	30	5⅛	31	8	32	3	34	1¼	35	1	36	1⅛	37	1¼	38	2	40	1⅛	41	3⅛	45	4	44	4	47	2	Lizard	49
Aberdeen	Apalachicola	Liverpool	27, 1849	9¼	33	2	36	1	37	1¾	39	1¼	40	1	40	1¼	40	2	42	1⅛	45	1	47	1¼	49	1	50	2	49	6	Liverpool	34¼
Mortimer	do	do	13, 1849	10⅛	33	2⅛	33	8	35	2¼	36	2	37	1⅛	39	2	40	1¾	42	1¼	44	2	46	1	47	1	48	1¾	49	11¼	Liverpool	48¾
John Marshall	Mobile	do	9, 1838	11	31	4⅛	33	2⅛	35	5	35	3	37	2	39	2	41	2	44	2	45	2	48	1	48	1¼	49	1¾	50	4	Liverpool	44
Romulus	Savannah	do	13, 1824	2⅛	33	1⅛	33	1¼	34	1¾	35	3	40	1¼	42	2¼	45	3	45	2¼	45	1¼	48	1	49	1¼	49	1¼	49	1⅛	Liverpool	25
Fanchon	New Orleans	do	25, 1848	7	31	5	33	2	36	1	36	2	36	2	39	2	41	2⅛	43	1⅛	44	1	45	1	46	2	48	¾	49	6¼	Liverpool	34
Sabine	Mobile	Greenock	22, 1837	8	31	4	31	3	33	2	31	5	33	4	40	4	45	4	47	3	31	7	55	1	51	1¼	56	1	55	3¾	Lizard	51
Walpole	New Orleans	Liverpool	4, 1843	10	34	1	36	2	37	2	38	1	39	2	42	1	43	1⅛	45	1	46	1⅛	47	1	48	2	50	2	50	5	Liverpool	33
Chaos	do	do	6, 1848	7	30	3	32	2	33	2	34	2	37	1	38	2	40	1	41	1	41	1⅛	43	1½	46	1	47	1⅛	48	1⅛	Liverpool	28
Washington	Savannah	do	18, 1819	2⅛	32	2	33	3¼	39	2	41	1⅛	42	2	43	2⅛	45	2	47	3	49	3	52	2	51	2¼	51	1	51	1¾	Liverpool	30
Ocean	New Orleans	do	2, 1842	10	33	2⅛	35	1⅛	35	8	37	1⅛	38	1⅛	40	1¼	41	1	42	1¾	44	1	44	2	47	1	48	1	49	4	Liverpool	33
Factor	Savannah	do	19, 1822	3	33	2	35	2	37	2	40	2	40	3	41	3	45	1	46	1	48	2	49	1	50	1⅛	51	2	51	2	Liverpool	27⅛
Tartar	Charleston	do	8, 1845	....	....	2⅛	36	1⅛	38	1	38	2	39	2	42	1	45	1	46	1⅛	47	¾	49	1	50	1	50	1	50	2¾	Liverpool	19
Envoy	do	do	26, 1839	3	34	2	35	1	35	2	35	2	39	2	42	2	44	1⅛	46	1½	47	1	48	1	50	1	50	2	50	2	Liverpool	25
Rajah	New Orleans	Cork	22, 1857	13¼	33	3	36	1¾	38	2	40	2	43	2	45	1½	46	1¾	46	1¾	47	2	42	2⅛	50	1¾	50	1	50	2¾	Cork	39
Winfield Scott	Mobile	Liverpool	11, 1855	10¼	30	2	31	1¾	31	1¾	34	1¼	35	2	36	1¼	37	1⅛	38	1¼	40	2	41	1¼	46	1⅛	46	1¼	47	2	Liverpool	31
Matilda	Charleston	Antwerp	18, 1854	2	32	1¾	36	1¾	37	1	38	1¼	39	2	40	1¼	41	1¾	42	2	45	1¾	46	1	47	1	48	1	48	2	Lizard	21⅛
Iconicum	Baltimore	Liverpool	11, 1854	1	36	2⅛	38	1¾	39	2	41	1⅛	41	1⅛	41	2	43	2¼	44	1	45	1⅛	46	1	48	2	48	2¼	50	4¾	Liverpool	27
Relm	do	do	25, 1854	....	37	2⅛	38	1¾	38	2	38	2¾	40	2¼	42	2	43	3	43	1¼	44	1	45	1¾	46	3	47	6¾	48	3	Liverpool	33
Albert Gallatin	Charleston	Antwerp	2, 1857	3	33	2¼	39	1⅛	40	1⅛	41	1¾	41	1⅛	40	2	41	2	4[illegible]	2	44	1⅛	44	1⅛	47	1¼	48	1¼	48	6¾	Lizard	29¾
Mean of 6 best from Gulf ports				9.0	32	2.4	34	1.8	35	2.1	37	1.4	38	1.7	39	1.4	40	1.3	42	1.2	43	1.4	44	1.5	47	1.7	48	1.5	49	3.1		31.5
Mean of 6 best from Atlantic ports				2.1	34	1.8	35	1.4	36	1.6	37	1.8	39	1.8	40	1.8	43	2.1	44	1.7	45	1.3	47	1.1	49	1.2	49	1.6	49	2.5		23.7

Crossings and Time from Ports south of the Capes of Delaware to the North of Europe.

Name of vessel.	From—	To—	Date of sailing.	DAYS FROM PORT TO 75° W., AND CROSSINGS THENCE TO 15° W.																												From 15° W.	Total passage.
				Days.	75° W.	Days.	70° W.	Days.	65° W.	Days.	60° W.	Days.	55° W.	Days.	50° W.	Days.	45° W.	Days.	40° W.	Days.	35° W.	Days.	30° W.	Days.	25° W.	Days.	20° W.	Days.	15° W.		
Marianne	Baltimore	Bremen	Mar. 24, 1856	⅛	37	1¾	38	1¾	39	1¾	40	1⅛	42	1⅛	43	1⅛	43	1¾	44	1¾	46	1⅛	47	1⅛	50	1¼	50	1¼	49	2¾ days to	Lizard	22
Lilia	do.	Rotterdam	24, 1856	1¼	36	1	36	2	36	2¼	38	1¼	39	2	40	1⅛	40	1¾	42	2¼	43	1¼	44	1¼	46	1¼	47	1¼	48	3¾	Lizard	23
Washington	Mobile	Liverpool	17, 1853	10	34	1¼	35	1¾	35	1	35	1⅛	37	2⅛	36	2¼	38	1¼	42	1⅛	43	3¾	46	2¼	47	1¼	48	1¼	50	2¾	Liverpool	34½
John Haven	do.	do.	15, 1852	9¼	30	2¾	34	2	35	2	35	2¼	37	1¾	40	1¾	42	1¾	43	1¾	45	1⅛	46	1⅛	48	1¼	49	7¾	52	9	Liverpool	46¼
E. G. West	do.	Rotterdam	22, 1849	11¼	31	2¾	31	2	31	1	32	1⅛	33	1¾	35	1¾	38	1¼	40	1¾	43	2	47	2	48	1	49	1	49	2	Lizard	33
Home	Baltimore	London	9, 1845	....	....	1	38	1	38	1⅛	38	1⅛	38	1¾	39	2¼	41	1¼	42	1⅛	43	1⅛	45	4¼	44	3	44	3	46	4¾	Lizard	28¼
Statia	Mobile	Havre	29, 1831	18¼	33	9⅛	40	3⅛	40	1⅛	40	2	41	4	39	2¾	41	1¼	41	1¾	43	1¼	44	2¾	46	2¾	45	3¾	44	10	Lizard	66
Do.	do.	do.	8, 1833	13	34	1¼	36	2	37	2	39	1¼	39	1½	41	2¼	40	1⅛	41	2	42	2	44	2	46	2	47	1⅛	49	4	Lizard	38¼
John Marshall	New Orleans	do.	15, 1839	16⅛	32	7⅛	35	4	37	2	40	3	42	1¼	43	3	44	1	45	2	47	1¾	48	2	48	2	49	2	48	4	Lizard	52
Wm. Moffit	Savannah	Liverpool	31, 1824	2¼	33	2¼	33	2	34	2	37	2	37	2	37	3	40	2	42	3	46	2	49	2	50	1¼	50	1¾	51	8	Liverpool	36
Olio	Apalachicola	Havre	25, 1849	9	31	3	34	2	35	1⅛	36	1⅛	37	2	38	2	40	2	42	2	45	1	46	2	46	1⅛	48	1⅛	48	2	Lizard	33
Vesper	Savannah	Hamburg	10, 1839	3	33	4	34	5	36	2	39	2	41	2	41	1⅛	41	1⅛	42	2	42	1	43	2	45	3	48	6	49	4	Lizard	39
Chesapeake	New Orleans	Liverpool	24, 1847	9	31	2	33	2	34	2	35	2	36	2	38	1⅛	40	2⅛	42	2	44	2	45	1¼	46	1¼	46	1¾	47	3	Liverpool	34¼
Catherine	Baltimore	Antwerp	28, 1846	....	....	¾	36	1	37	2	39	2	39	1	41	2	40	2	42	1	43	2	44	2	43	5	45	2	49	8	Lizard	30¾
Mexico	Mobile	Liverpool	22, 1830	12	36	2	38	2	39	1	40	1¼	40	3	41	1¾	43	3	46	1	48	1	48	1⅛	49	2⅛	51	3¼	51	1⅛	Liverpool	36¾
Do.	Hampton Roads	Cork	6, 1831	....	....	1	38	3	39	3	40	2	40	2	41	2	43	1¼	44	1¾	46	2	48	4	48	2	50	3	50	5	Cork	32
Do.	do.	Liverpool	11, 1833	....	....	3	38	2	38	4	38	4	40	1¼	41	2¾	43	2	44	2	46	2	47	2	48	1¼	49	1¾	50	2	Liverpool	30
Tarquin	Mobile	Havre	10, 1848	9¼	32	1¾	32	2	34	2	34	3	33	2	38	2	37	2	39	1¼	40	2¾	45	3	47	1¼	48	1¼	48	3	Lizard	36⅛
Milan	New Orleans	Liverpool	10, 1848	10	33	1¾	35	3¼	37	2	38	2¼	39	¾	40	2	41	1	43	3	47	2	50	3¼	52	1¾	51	2	51	4	Liverpool	39
Ocean	do.	do.	3, 1840	8	31	2	32	2	35	2	37	2	36	2	36	3	39	1	41	3	43	5	42	4	43	2	46	1¾	49	3¼	Liverpool	41
Do.	do.	do.	28, 1841	13	33	2	34	3	37	1¼	38	1¾	39	3⅛	40	1⅛	43	1¼	44	1¾	45	1¼	47	1¾	47	1¾	48	1¼	49	2	Liverpool	37
Do.	Apalachicola	do.	12, 1845	8	33	2	34	2	36	2	38	3	38	2	39	2	41	1⅛	43	1¾	45	1¾	48	1	48	1¼	49	1¼	49	4⅛	Liverpool	34
Do.	do.	do.	9, 1846	12	33	4	34	2	37	2	38	2	39	1	40	1⅛	41	1⅛	43	2	44	2	46	3	47	1	47	2¼	49	3¾	Liverpool	40
Apollo	New Orleans	Havre	29, 1841	12	33	2	34	2	36	2	37	4	38	3	39	3	40	2	42	2	43	3	42	3	43	1	41	2	48	3	Lizard	44
Roscoe	Baltimore	London	17, 1846	....	....	¾	36	1	36	2	37	2	38	2	40	1	41	4	40	1⅛	42	1¾	45	2	48	2¾	51	2¼	50	6¾	Lizard	29¾
Do.	New Orleans	Havre	22, 1848	17	32	3	32	2	34	2	37	1	37	4⅛	38	1	42	1	45	1⅛	46	1⅛	48	2	47	2	47	1	48	4	Lizard	43
Apollo	Charleston	do.	6, 1841	3	34	1	34	3	34	2	35	2	36	2	37	2	39	2	40	1⅛	41	1¾	42	1¾	44	1¼	44	2	45	4	Lizard	29¼
Albion	Mobile	Liverpool	16, 1833	17	34	2	38	2	38	2	38	3	41	3	43	3	45	1¼	45	1¼	48	1	49	1	49	1	50	1¼	51	4¼	Liverpool	43
Louisville	New Orleans	do.	15, 1840	13	32	2	35	1⅛	87	2	39	1	40	1⅛	42	1¼	43	2	45	1	47	1	48	1⅛	48	1¼	51	1¼	51	4¾	Liverpool	35
Paramatta	Baltimore	do.	25, 1854	1¼	36	1⅛	36	1¼	36	1¾	34	1¾	34	2¾	34	4	38	2¼	37	2	40	1¾	41	2¼	44	2	47	4	49	6¾	Liverpool	84½
George Keynes	Hampton Roads	Cork	4, 1855	1¼	37	1¾	38	3	38	2⅛	40	1⅛	32	1¾	42	3	43	1¾	45	1¼	45	1	46	2	46	2¼	47	2	48	3⅛	Cork	27½
Oracle	Mobile	Liverpool	6, 1854	9	33	2	36	1¼	37	1⅛	38	1¼	39	1⅛	40	2	43	1	45	1¾	48	1	50	1¾	50	¾	50	2	49	4¼	Liverpool	31
Princeton	New Orleans	do.	3, 1854	14¼	33	2	36	2	38	1	39	1	40	3¼	39	1¾	41	3	43	1	45	1	46	1¾	47	1¼	48	5	49	7¾	Liverpool	46
Montauk	Galveston	Antwerp	26, 1853	10	31	2	35	1¾	36	2	38	2⅛	39	1⅛	41	1¼	42	1	44	1	45	1⅛	48	1¼	48	1	49	1	49	2¼	Lizard	29⅛
Georgia	Savannah	Liverpool	14, 1857	2¾	32	2¼	34	1¼	36	1¼	38	1¾	38	2	39	1¼	41	1⅛	42	2	44	1⅛	46	¾	47	3¼	50	2⅛	51	5	Liverpool	29
Orion	New Orleans	do.	16, 1856	11¾	33	1	34	1	35	1¼	37	2¼	39	3	41	1¼	42	1¼	45	¾	45	1	46	1	47	¾	49	1	50	9	Liverpool	36¼
Juniata	do.	do.	11, 1856	9¼	32	2¾	35	1⅛	36	1¼	39	1¼	40	1⅛	41	2¼	43	1	45	1¼	46	1	47	1	49	1	50	1	50	2	Liverpool	28
Mean of 6 best from Gulf ports				9.6	32	2.4	34	1.7	35	1.5	36	1.7	37	1.7	39	1.8	41	1.5	43	1.6	45	1.4	47	1.5	48	1.1	49	1.4	49	2.6		31.5
Mean of 6 best from Atlantic ports				1.3	35	1.5	36	2	37	1.9	38	1.6	37	1.8	40	1.9	41	1.7	43	1.7	44	1.4	45	1.9	46	2	47	2	48	4.0		26.5

Crossings and Time rom Ports south of the Capes of Delaware to the North of Europe.

Name of vessel.	From—	To—	Date of sailing.	DAYS FROM PORT TO 75° W D CROSSINGS THENCE TO 15° W.																												From 15° W.	Total passage.
				Days.	75° W.	Days.	70° W.	Days.	65° W.	Days.	60° W.	Days.	55° W.	Days.	50° W.	Days.	45° W.	Days.	40° W.	Days.	35° W.	Days.	30° W.	Days.	25° W.	Days.	20° W.	Days.	15° W.		
Zephyr	New Orleans	Liverpool	April 1, 1855	15¾	33	2¼	33	3¼	34	2	34	5¼	35	2¾	36	3	39	1⅛	44	1⅛	44	1¼	45	1	47	1	48	1¼	49	5¼ days to	Liverpool.	47
Pride of the Sea	Baltimore	do	30, 1854	1¼	37	1¾	37	1¼	38	1	39	1	40	¾	41	¾	42	¾	42	¾	44	¾	45	1	47	¾	47	¾	49	10	Liverpool.	22½
Macaulay	do	do	2, 1857	1¼	36	3	37	1⅛	38	2	42	2	42	3	41	4	44	2¼	42	1⅛	44	2¼	40	2	48	2¾	49	2¼	51	8¾	Liverpool.	39½
Thomas Perkins	New Orleans	Falmouth	11, 1856	13⅛	33	2	35	3	36	1	38	2	39	2	39	2	41	2	43	1	45	2	46	1	47	1	47	1	48	3	Falmouth.	36⅛
Albert Gallatin	Charleston	Havre	18, 1855	1¼	33	1¾	36	1⅛	38	2	39	1⅛	42	1⅛	42	1⅛	41	4¼	46	1⅛	47	1	49	1¼	50	1	50	1	49	2	Lizard	23
Garrick	New Orleans	Liverpool	12, 1856	14	30	2¼	30	4	30	1¾	34	1¾	34	1¾	36	1¼	37	2¾	45	1⅛	47	1⅛	48	1¾	49	1¼	50	1	51	3⅛	Liverpool.	40
Georgia	Savannah	do	22, 1856	1⅛	33	1¾	35	2	36	2¾	35	1¼	36	1¾	39	2	42	1¾	43	1¼	45	1¼	46	1¼	47	1	48	1¼	48	3¾	Liverpool.	24½
Relm	New Orleans	Hamburg	1, 1852	11¾	32	2⅛	36	2	38	2¾	40	3¼	41	1¾	41	1¼	42	1⅛	43	1⅛	43	1	44	1⅛	45	1	46	4⅛	46	2	Lizard	38
Diadem	Mobile	Havre	20, 1853	14¼	33	1⅛	38	1¼	38	4	38	3⅛	39	1¾	40	2⅛	40	1⅛	40	1¾	40	2¼	40	1⅛	39	1⅛	39	1	37	4¾	Lizard	43
John Haven	do	do	24, 1853	10¼	33	1¼	35	1¼	37	4¼	39	2⅛	39	1¼	42	1	43	1⅛	44	1¼	45	1	46	1	47	1¼	47	2⅛	47	3	Lizard	33½
M. Livingston	New Orleans	Liverpool	11, 1853	13	31	4	33	4⅛	33	3¼	34	1¾	37	1¼	40	2	42	1¼	43	1¼	45	2	46	1¾	47	1¼	49	2¼	50	7¾	Liverpool.	47
Richard Alsop	Apalachicola	do	12, 1849	7⅛	29	3¾	30	3¼	34	3	35	1⅛	36	1¾	37	2⅛	38	1¾	40	1⅛	42	1¾	45	1¼	46	2	48	¾	49	4	Liverpool.	36¼
Colchis	Baltimore	Glasgow	9, 1847	....	....	¾	37	2	37	1¾	38	2	38	1¼	40	2	41	2	44	2¾	47	1¼	48	2	50	2¾	52	3	54	8	Glasgow	31⅛
Milan	New Orleans	Liverpool	6, 1849	14⅛	31	3¾	33	2	36	2¾	38	1¾	39	2¼	41	1⅛	42	1⅛	43	1¾	45	1¼	47	1¾	49	1⅛	50	2	51	2¼	Liverpool.	40¾
Virginia Packet	Charleston	Havre	18, 1833	4	34	2	37	2¼	36	2	35	3¾	36	2	38	3	38	2¾	42	1¼	43	2	45	1¾	46	1⅛	46	2	48	14	Lizard	44½
Sea	Baltimore	Liverpool	24, 1846	....	....	3	37	2	37	1⅛	38	1	40	1	41	1	44	1⅛	45	1	46	1	47	1	48	1	49	1¼	50	2¾	Liverpool.	19
Mexico	New Orleans	Havre	15, 1825	11	34	2	37	2¾	39	1¾	39	2	40	1⅛	40	1¾	41	1¾	43	3	46	2	46	2	47	1⅛	48	1⅛	49	5	Lizard	39½
Tuscarora	Philadelphia	Liverpool	6, 1848	....	....	1	38	1	38	1	39	1⅛	39	2	38	1¾	39	1¾	42	1	44	1⅛	45	1⅛	47	3	50	5	49	2	Liverpool.	24
Caledonia	Baltimore	Rotterdam	1, 1846	....	...	4	34	5	35	2	36	1	37	1¾	39	2	40	1⅛	41	1¼	43	5	47	4	48	¾	49	1¼	49	3⅛	Lizard	34½
Herald	New Orleans	Liverpool	15, 1837	19	31	2⅛	33	3⅛	36	2	38	3	39	1	39	2	39	1⅛	40	4⅛	38	5⅛	42	2	45	1⅛	49	3	51	6	Liverpool.	57
Barbara	Mobile	do	25, 1840	16	30	7	34	3	36	1⅛	38	1⅛	39	4	40	2	41	1	41	3	42	2	43	1¼	44	2¾	46	1¼	48	1¾	Liverpool.	48
Sheperdess	New Orleans	Amsterdam	29, 1832	18	33	3⅛	36	1⅛	39	1	40	2	40	2	42	2⅛	45	1	45	1¾	46	1⅛	48	1¼	49	1¼	49	1¾	49	4	Lizard	43
S. Baldwin	do	Liverpool	13, 1845	18⅛	33	2	35	1⅛	39	2⅛	40	1⅛	42	1	43	2	45	5	51	1¼	51	1⅛	52	1¼	52	1⅛	51	3	50	7	Liverpool.	49½
Walpole	do	do	20, 1842	8¼	33	4	36	1¾	39	1⅛	39	1⅛	39	3	40	1⅛	41	1	43	1¼	45	1¼	46	1¼	48	1¾	49	2	50	2	Liverpool.	32
Tarolinta	Apalachicola	do	6, 1843	7	32	2	35	2	36	2	38	3	39	3	37	3	39	2	42	3	45	2	44	3	42	1¾	44	1⅛	48	2	Liverpool.	37½
Walpole	New Orleans	Havre	14, 1846	11⅛	33	3⅛	38	2	39	1¼	39	1	39	1	39	1¼	41	1¾	42	1¾	44	1	45	1⅛	46	1¾	47	1	47	2¾	Lizard	33
Niobe	do	do	27, 1848	14¼	34	1¾	36	1	38	1	40	2	42	2¼	42	1	42	1¼	42	1⅛	46	1⅛	47	1	47	1¾	48	1⅛	48	2⅛	Lizard	34¼
Great Britain	Mobile	Liverpool	7, 1845	9	31	2	32	2	34	2	36	5	35	2	36	4	40	4	42	3	44	2	45	1¼	46	1¾	49	7⅛	50	9⅛	Liverpool.	55
Roscoe	New Orleans	Havre	18, 1847	14	32	1	33	2	35	2	37	1	38	1¼	39	1¼	38	1⅛	39	2	40	2¼	41	2	42	2¼	43	2	43	3	Lizard	37½
Apollo	Charleston	Liverpool	28, 1842	1	33	2	33	1	33	2	35	2	36	3	36	3	39	1	40	2	42	1	43	5	47	1	48	2	50	3	Liverpool.	29
Do	do	Amsterdam	27, 1843	¾	34	2¼	33	3	35	5	37	1	37	2	38	1⅛	39	1⅛	41	2	42	1	44	2	45	2	46	2	48	5	Lizard	31
Scotia	Mobile	Liverpool	1, 1841	15	34	2	37	1	39	2	38	3	40	2	39	1	39	1⅛	40	1⅛	42	3	42	2	42	2	45	2	49	2	Liverpool.	40
Gulnare	Baltimore	Rotterdam	30, 1844	....	....	2	38	1	39	1⅛	40	1⅛	41	2	41	1	41	1¼	42	1¼	44	1⅛	45	4	48	3	49	2¾	48	9	Lizard	31¼
Paoli	do	London	21, 1846	....	....	2	38	2	39	2	40	2	42	2	42	1	43	1	44	2	44	1⅛	45	1⅛	46	1¼	47	1⅛	48	2⅛	Lizard	32¼
Commerce	Charleston	Rotterdam	24, 1832	4	32	6	34	4	36	2	38	5	39	2	39	3	40	2	41	2	41	4	42	1⅛	44	1¾	46	2	48	3⅛	Lizard	37¾
Mean of 6 best passages from Gulf ports				10.9	32⅛	2.7	35	2	37	2	38	1.8	39	1.9	40	1.5	41	1.5	42	1.4	44½	1.4	46	1.2	47	1.6	48	1.5	48	2.9		34.3
Mean of 6 best passages from Atlantic ports				1.2	34	1.8	36	1.5	37	1.7	37⅛	1.4	39	1.7	39⅛	1.7	41	1.8	43	1.2	45	1.1	46	1.8	48	1.3	49	1.9	49	3.9		23.7

Crossings and Time from Ports south of the Capes of Delaware to the North of Europe.

Name of vessel.	From—	To—	Date of sailing.	Days from port to 75° W., and crossings thence to 15° W.																												From 15° W.	Total passage.
				Days.	75° W.	Days.	70° W.	Days.	65° W.	Days.	60° W.	Days.	55° W.	Days.	50° W.	Days.	45° W.	Days.	40° W.	Days.	35° W.	Days.	30° W.	Days.	25° W.	Days.	20° W.	Days.	15° W.		
Nabob	New Orleans	Liverpool	May 8, 1854	12½	33	2½	36	3¼	35	1¼	37	1¾	39	1¼	39	2½	41	1½	41	¾	43	1	43	3¼	47	2	48	1	49	2¼ days to	Liverpool.	37¾
Georgia	Savannah	do	13, 1855	3	34	1½	36	2¾	39	1¾	41	2½	43	1¼	43	1	43	1¼	45	1	46	1¾	47	1	48	1½	49	1	50	3¼	Liverpool.	25
Normandy	New Orleans	do	28, 1855	10¼	33	3	36	1¼	40	1	41	1	42	¾	43	1	46	1	46	¾	47	1	48	¾	49	1	49	2	49	1¾	Liverpool.	27
Bostonian	do	do	7, 1854	11	33	1½	34	2¼	36	3	37	3	37	2	38	1½	39	1¾	41	2	43	1	44	4	47	2	47	1¼	49	1¾	Liverpool.	38
Senator	do	do	20, 1855	12	33	1½	36	1	40	1	41	1½	42	1	42	2½	43	1½	46	2	46	1¾	47	¾	49	1	49	2¾	49	3¾	Liverpool.	34
Panther	do	do	6, 1854	12	34	1	36	2	36	4	37	3	38	2	39	1¼	40	1¼	43	2	45	1	46	1	48	3	47	2	48	1½	Liverpool.	37
Chimborazo	do	do	18, 1854	12¼	33	3¾	35	3½	37	1¼	38	1¼	38	1¼	41	1½	42	1½	44	1¾	46	1¾	48	1¾	49	1½	49	1¼	50	3¾	Liverpool.	37½
Huguenot	Mobile	do	6, 1854	9	33	2	36	1¼	37	1½	38	1¼	39	1½	40	2	43	1	45	1¾	48	1	50	1¾	50	¾	50	2	49	4¼	Liverpool.	31
Roebuck	New Orleans	Havre	3, 1856	16¼	32	3¾	34	2¼	36	1½	38	1	39	1	40	1	42	1¼	43	1	44	1½	45	1¾	46	1	47	2	47	2¼	Lizard	37½
Undaunted	do	Liverpool	11, 1854	16	34	1¼	34	1¾	36	3	39	3	38	1½	41	1¾	45	1¼	46	1	47	¾	48	¾	49	¾	49	1½	50	3½	Liverpool.	38
R. H. Dixey	Mobile	Havre	26, 1855	14	33	1¾	35	1¾	36	1	37	1¼	38	1	39	1¼	40	1	43	¾	44	1¼	46	1¼	46	3	47	1¾	48	3½	Lizard	34½
Calcutta	New Orleans	do	20, 1853	14	34	2¾	35	3¼	36	4	38	5	40	2	41	1¼	42	1¼	44	1¼	46	1¾	48	1¼	49	1	49	1	50	2¾	Lizard	4[illegible]½
Albert Gallatin	Baltimore	London	16, 1853	....	....	¾	38	1½	40	1¼	41	2¾	41	1¾	40	3	43	2	45	1¼	46	2¾	45	3¼	47	1½	48	1	49	4	Lizard	26¾
Chesapeake	do	Amsterdam	20, 1849	....	....	2½	37	1	39	2¼	39	2¼	41	3½	41	1½	42	2	46	2	48	2	50	3½	49	1¾	49	2¼	49	2½	Lizard	[illegible]9
George A. Haseley	Charleston	Havre	13, 1849	1½	33	2¾	34	5¾	37	1¼	38	1¼	39	1¼	40	1¾	40	1¼	41	1¾	42	2	44	2¼	45	3	46	5½	48	3½	Lizard	35
Fanshon	Mobile	Liverpool	17, 1849	12	33	2	37	2½	38	2½	40	1¼	40	1¼	41	3¾	40	3¾	45	3	46	2	47	1	48	1	49	1½	50	2½	Liverpool	40
Susan E. Howell	New Orleans	do	5, 1849	16½	33	1½	36	1½	37	1½	38	1¾	40	2¼	38	2½	38	3¾	46	1¾	49	2	49	3¾	48	1¾	48	1	49	3¼	Liverpool.	44¾
Burmah	Mobile	Havre	6, 1835	15	34	3	34	2¼	36	2½	40	1¼	40	1	41	2	41	1½	42	1¼	44	1½	45	2	47	3	49	4½	48	4½	Lizard	45¼
Havre	Hampton Roads	Glasgow	13, 1835	¼	37	2¾	36	2¼	37	1½	38	1½	38	1½	39	1½	39	2	42	2	43	1¾	46	2	47	2¼	47	6	50	4¾	Lizard	32
America	Charleston	Liverpool	5, 1849	1¼	34	2¾	39	3¼	38	1¾	39	1	40	1	42	2½	44	1½	47	¾	48	1½	49	1	48	1	49	¾	50	2¾	Liverpool.	22¾
Nicholas Biddle	Mobile	do	31, 1848	18½	33	2	37	1	39	1½	40	1¼	42	1¾	43	1½	44	2	45	2½	46	1¼	48	1	49	1	49	1	50	2¼	Liverpool.	38½
Europe	Philadelphia	do	5, 1848	....	....	2	38	2	39	1¼	39	1	41	1	42	1	43	2	44	1¼	46	1½	48	1	49	1	49	1	49	7	Liverpool.	23
Wisconsin	New Orleans	do	18, 1848	11½	33	1½	34	1	35	1	36	1¾	38	1¼	39	1	40	1	42	2	43	2	45	2	47	1	48	1¼	48	4¾	Liverpool.	33
Palestine	Mobile	Havre	29, 1846	17½	32	3	33	3½	34	1½	36	1	37	2	39	2	40	2	41	1½	42	2	44	2	45	1½	47	1¾	48	5¼	Lizard	46½
Arlington	New Orleans	Liverpool	30, 1849	25	34	1½	36	1½	39	2	41	3	42	2	44	2	45	1½	46	1¾	47	1¼	48	1½	49	2	50	2	50	3	Lizard	50½
Alleghany	Philadelphia	do	31, 1843	....	....	1½	38	1½	39	1	40	1	41	1½	42	2½	44	1	45	1¼	47	1	48	1½	50	1¾	51	1¼	51	4	Lizard	19¾
Walpole	New Orleans	do	19, 1845	20	33	2	38	1	38	2	39	1	40	1	41	2	43	2	45	1	45	1	46	1	47	1	48	1½	49	2½	Lizard	39
Thomas Wright	do	Glasgow	9, 1848	11	35	1	37	3¼	39	2½	40	3	39	3½	40	3	42	2	43	3	46	2	46	4	46	2¼	46	2	47	6	Glasgow	48¼
Cabot	do	Dieppe	10, 1844	19½	34	1½	36	2	37	2	38	2	39	2	39	2	40	1	41	1	44	1	45	4	41	1	47	2	48	2	Lizard	42
Burlington	Philadelphia	Liverpool	21, 1847	...	....	1	37	3	37	2	39	1	39	1	40	2	41	1½	41	2	44	2	41	5¼	42	1¾	45	1½	48	4	Liverpool.	28
Mary Ann	New Orleans	do	6, 1848	11	34	2	36	2	39	1	40	2	40	2	39	2	41	2	41	5	47	4	49	2	49	1	49	1	49	3	Liverpool.	40
Farewell	Baltimore	do	24, 1846	....	....	1	37	1	37	2	38	2	39	1½	39	1½	40	3	42	1	44	1	45	1½	46	1½	48	4	49	2	Liverpool.	23
Tarquin	Mobile	Havre	10, 1844	7	34	2	37	2	39	2	39	2	39	3	40	1½	42	1	42	2	43	1½	46	1½	46	1	46	1½	47	2½	Lizard	30½
Do	do	do	27, 1845	12	34	2	38	1¼	39	1¾	39	1	39	2	41	2	42	1	43	1¼	44	1	45	1	46	1¾	47	1½	47	2	Lizard	31½
Do	do	do	1, 1846	11	33	3	43	3	37	2	38	2	37	3	37	2½	38	1¾	40	2¼	42	1½	44	1½	48	2	48	2¾	47	2½	Lizard	40¾
Arcole	Apalachicola	Cork	22, 1848	9	32	5	38	1¾	39	1½	39	1¾	40	1	40	1¼	41	1½	42	1¾	43	2	44	1	46	1	48	1	49	2¾	Cork	32
Commerce	Charleston	Liverpool	21, 1830	3¼	32	1¾	35	4	39	2	40	1½	40	1½	42	1½	43	1½	45	1	46	1¼	47	5¼	49	4	49	2	50	8½	Liverpool	39
Do	do	do	27, 1831	2¼	33	2¾	36	2	38	3	39	5	41	2	42	2	42	1½	43	1½	44	1¾	45	1¼	47	2	48	1¼	49	2¾	Liverpool.	31
Sarah	New Orleans	Antwerp	19, 1844	13	34	3	36	2	38	1½	38	1½	39	1¼	39	1	40	2½	42	3	43	1¾	46	1	47	1¼	48	1	48	6	Lizard	39¾

Crossings and Time from Ports south of the Capes of Delaware to the North of Europe.

Name of vessel.	From—	To—	Date of sailing.	DAYS FROM PORT TO 75° W., AND CROSSINGS THENCE TO 15° W.																													From 15° W.	Total passage.
				Days.	75° W.	Days.	70° W.	Days.	65° W.	Days.	60° W.	Days.	55° W.	Days.	50° W.	Days.	45° W.	Days.	40° W.	Days.	35° W.	Days.	30° W.	Days.	25° W.	Days.	20° W.	Days.	15° W.		
Sarah	Baltimore	Havre	May 30, 1847	¾	36	2¼	37	2	38	1	39	1⅛	40	2⅛	39	4	41	2	42	2	43	2	45	1¼	46	1¼	47	1⅛	48	3 days to	Lizard	27
Scotia	Mobile	Liverpool	22, 1840	11	33	2	38	1	39	1	40	2⅛	40	1⅛	40	2	41	1⅛	44	1½	46	1	48	2	48	1	49	1	50	3	Liverpool.	32
Macedonia	New Orleans	Cork	21, 1847	20	36	1¼	37	1¾	39	2	40	1¼	41	1	40	1¾	40	2	42	4	43	1½	45	1⅛	48	1	49	6	52	5	Cork	50
Malabar	do	Liverpool	30, 1844	18	32	3	33	1¼	36	1¾	36	1	36	6	41	3	42	2⅛	43	1⅛	45	1¼	45	1½	47	1⅛	49	1½	50	3	Liverpool.	46½
Do	do	do	8, 1845	14	35	1¼	37	2¼	38	1½	38	2	39	1¼	39	2	41	1¾	43	1	44	2	45	1¼	46	1	48	1½	50	5¼	Liverpool.	38
Fame	do	do	28, 1827	7	31	4	32	2	35	3	38	2	39	4	40	2	42	4	43	1½	44	1½	46	1⅛	46	2⅛	46	1½	49	5	Liverpool.	41½
Envoy	Charleston	Cowes	31, 1829	2	32	1	37	1	38	2	40	2	41	3	42	5	44	1¼	45	2¾	46	3	47	2	47	1½	48	1½	49	2	Cowes	30
Do	Savannah	Liverpool	20, 1831	2⅛	33	2	34	1½	37	2	40	2	41	1	42	2	43	1	43	2	46	1	47	2	49	1	49	1¾	50	2	Liverpool.	23¼
Mean of 6 best from Gulf ports				9.7	33	2.7	37	1.4	39	1.5	39	1.6	40	1.6	40½	1.6	42⅛	1.2	43½	1.5	45	1.2	47	1.3	48	1.1	48	1.5	48¼	2.7		30.7
Mean of 6 best from Atlantic ports				2.2	34	2.1	37	2	38	1.6	39½	1.6	41	1.3	41½	1.7	43	1.6	44½	1.2	46	1.3	47½	1.3	48½	1.6	49	1.5	50	3.5		22.8

Crossings and Time from Ports south of the Cape of Delaware to the North of Europe.

Name of vessel.	From—	To—	Date of sailing.	Days from port to 75° W., and crossings thence to 15° W.																												From 15° W.	Total passage.
				Days.	75° W.	Days.	70° W.	Days.	65° W.	Days.	60° W.	Days.	55° W.	Days.	50° W.	Days.	45° W.	Days.	40° W.	Days.	35° W.	Days.	30° W.	Days.	25° W.	Days.	20° W.	Days.	15° W.		
Reporter	New Orleans	Liverpool	June 17, 1854	14¼	34	2¾	37	1¼	39	1	40	1½	40	2¼	40	2¾	41	2¼	42	1	44	1	45	1	46	1¾	48	1	49	8¾ days to	Liverpool.	43
Calcutta	do	Glasgow	22, 1854	16¼	34	1½	38	1½	39	3¾	41	3	43	2¼	44	2¼	46	2½	47	1¼	47	1¾	47	3	46	2	46	5¼	51	1¾	Glasgow	47
Lilia	Baltimore	Rotterdam	16, 1854	¼	37	2¾	39	2	41	3½	42	1½	43	2	45	2¼	46	1¼	47	1½	48	2	49	1¾	50	2¼	49	1¼	49	2	Lizard	26¼
Bremen	New Orleans	Bremen	5, 1857	16¼	34	1½	37	1	39	1¼	41	1	40	2	40	2½	40	1½	42	2½	43	2	46	1¾	47	1½	48	1¾	49	3¾	Lizard	40¼
Do.	do	do	28, 1856	14	34	1¼	36	1½	37	1	40	1½	41	1	41	1	41	1¾	43	1¼	44	1¾	47	1¼	47	1	48	1	49	4¾	Lizard	34
Restitution	do	Havre	28, 1828	16	32	4	35	3	37	1	39	2	40	1¼	40	2¾	40	1¾	42	1¼	43	1½	44	1½	44	4	47	1½	47	2	Lizard	43¼
John Marshall	do	London	18, 1836	20	33	5	41	7	42	2	42	1¼	43	1½	44	1½	44	2	46	1½	46	1¼	47	1½	48	1	48	1¼	49	3¼	Lizard	50
Herald	Charleston	Liverpool	4, 1830	1½	34	1½	36	1	37	1¼	39	2½	40	1½	41	2	43	3	45	1	47	2	49	1	50	4	51	3	51	3	Liverpool	28¼
Creole	New Orleans	Havre	2, 1849	19	33	2	35	2	37	1	38	2	39	1	39	1½	41	1½	43	1	46	1½	46	¾	47	1	48	1¼	49	5½	Lizard	41
Diadem	do	do	7, 1849	16	35	1	37	2	39	1	39	1	40	2	42	2	43	1½	44	1	46	1	47	1	48	1¾	48	5¼	50	4	Lizard	40½
Washington	do	Liverpool	26, 1817	14½	33	1¾	37	1¾	39	3	40	2	42	2	43	2	44	1¼	45	1	46	1¾	48	1	49	1¼	50	1	50	3¾	Liverpool	38
Saranac	Philadelphia	do	29, 1848	....	....	1	39	2	39	1½	40	1	40	1½	41	2½	42	1½	43	2	44	2	47	1	48	2½	49	1	49	3½	Liverpool	23
Rockingham	Mobile	do	14, 1848	19	35	2	36	3	38	3	40	2	40	2	42	1	43	2	45	1	46	1¼	47	1¼	47	1¾	49	1¼	50	4¾	Liverpool	45¼
Palestine	do	do	3, 1844	19	33	3	37	2½	38	1½	39	1½	40	1½	40	2	43	1¼	44	2¼	45	1½	47	2	49	1	50	1	50	3	Liverpool	43
Do.	do	do	14, 1845	26	36	3	38	3	40	2½	41	2½	41	3	44	5	46	3	49	2	49	1½	50	1½	50	1½	50	1½	50	6	Liverpool	62
Kalamango	Charleston	Havre	6, 1842	2½	34	1½	38	1½	39	1½	39	1	39	3	40	3¼	42	1¼	43	1½	46	1	45	1	46	1½	46	1½	48	3½	Lizard	25½
Hobart	New Orleans	do	30, 1835	11	35	2	36	2	38	2	40	1½	41	1½	43	2	45	3	46	3	49	1	49	1	49	2	49	2	49	4	Lizard	41
Roscoe	Charleston	Liverpool	16, 1843	....	....	¾	34	5	35	1¼	39	1¾	40	1¾	42	1	43	1¼	44	1¾	46	1	47	1¼	48	1	49	2¼	49	3½	Liverpool	23½
Walpole	New Orleans	do	2, 1844	15	35	1	37	1	38	1	39	1½	39	1¼	40	1¼	42	1	43	2	45	1	46	1½	47	1½	49	1	50	2	Liverpool	32
Mary Francis	Mobile	Cork	10, 1845	....	....	....	....	16	36	1	39	3	40	1	40	2	43	1½	44	1½	47	1	48	1	49	1	49	1¼	50	2¾	Cork	33
Albania	New Orleans	Liverpool	7, 1848	21	34	2	38	1	39	2	40	2	41	2	41	2	42	2	42	2	44	2	47	2	48	1	48	1¾	49	2¼	Liverpool	45
John Cadmus	Charleston	Havre	3, 1847	2¾	34	2¼	33	4½	37	1½	40	2	41	1	42	1	43	1	45	1½	44	1½	45	1¼	45	1¼	45	1½	47	9	Lizard	32
Ocean	do	Liverpool	6, 1844	1	35	2	37	2	38	2	37	3	39	2¼	40	2	41	1½	44	1¼	46	1	47	3	48	1	48	4	50	5	Liverpool	31
Jessore	New Orleans	Havre	29, 1846	16½	35	2½	37	2	39	3	40	2	41	1½	41	3	43	1½	43	1½	44	1½	44	1	45	2½	44	1½	46	3	Lizard	43
Commerce	Charleston	do	27, 1832	1¾	33	3½	36	2¾	39	4	40	2	41	2¼	43	2¼	45	1½	46	2	47	3	47	7	46	4¾	48	1¾	48	5	Lizard	43½
Letitia	Baltimore	England	29, 1847	....	....	3½	38	1½	38	1½	39	1½	40	2	41	1	42	1½	43	1½	44	2	45	2	46	2	47	1½	47	2½	England	24
Factor	Savannah	Liverpool	19, 1823	4	34	2	38	2	39	1	40	2	41	1	42	2	44	1	46	1½	47	1½	49	2	50	1½	51	1	51	2½	Liverpool	25
Envoy	New Orleans	do	26, 1832	20	34	4	36	1½	37	1½	38	3	41	1½	43	2¾	44	1¾	45	2	47	1	48	1	49	1½	50	1¾	50	2¾	Liverpool	46
Plymouth	Charleston	do	4, 1834	1	33	2	34	2	35	2	37	2	39	1½	40	2½	43	2	45	1¼	46	1¾	48	1½	48	1	49	1½	50	2	Liverpool	24
Byron	Savannah	do	18, 1835	3	33	6	36	2	38	3	40	3	43	2	50	2¼	45	1¾	46	1¼	47	1¼	47	2	48	1	49	1	49	2	Liverpool	31½
Do.	Mobile	Havre	15, 1837	18	31	3	34	2	34	1¾	34	4¼	35	2¼	38	2	40	3	41	2	43	3	43	1	45	2	46	1¼	47	2¾	Liverpool	48¼
Mean of 6 best from Gulf ports				15.2	34	1.3	37	1.5	38	1.4	39½	1.7	40½	1.5	41	1.8	42	1.4	43½	1.5	45	1.4	47	1.2	48	1.3	49	1.9	49½	3.5		36 3
Mean of 6 best from Atlantic ports				1.2	34	2.1	36½	2.2	37½	1.8	39½	1.7	40	1.7	41½	1.9	43	1.8	44½	1.5	46	1.8	47½	1.4	48½	2.1	49	1.7	49	2.8		24.8

Crossings and Time from Ports south of the Capes of Delaware to the North of Europe.

Name of vessel.	From—	To—	Date of sailing.	DAYS FROM PORT TO 75° W., AND CROSSINGS THENCE TO 15° W.																											From 15° W	Total passage.
				Days.	75° W.	Days.	70° W.	Days.	65° W.	Days.	60° W.	Days.	55° W.	Days.	50° W.	Days.	45° W.	Days.	40° W.	Days.	35° W.	Days.	30° W.	Days.	25° W.	Days.	20° W.	Days.	15° W.		
Senator	New Orleans	Liverpool	July 6, 1854	17	32	3	37	1	38	1	40	1	40	3	42	1	43	2	46	1½	46	1¾	47	1¾	48	1¼	49	¾	50	4	days to Liverpool.	40
Bremen	do	do	5, 1855	14	34	2	36	1¼	37	1¾	38	1	38	2¼	39	2	38	4¼	42	1	43	1	45	¾	47	¾	48	¾	49	4	Liverpool.	37
Gifion	Cape Henry	England	10, 1853	....	....	½	38	1¼	38	1½	41	1	43	1	43	2	44	1¼	44	1	44	1¼	47	1¼	47	1	47	1¼	48	2	Lizard	16¼
Columbo	Mobile	Liverpool	2, 1849	9¼	34	2	37	1¾	38	2	39	3¼	40	1¾	40	3	42	2	43	2	45	3	47	2¼	47	4	50	3	50	2¾	Liverpool.	42
Romulus	New Orleans	Falmouth	27, 1824	17	33	7	37	3	39	3	40	3	43	1	44	1	44	2	46	2	48	1	49	1½	49	1¾	49	1	49	4	Falmouth.	48
Mexico	Hampton Roads	Rotterdam	30, 1824	....	....	1	37	2	40	2	39	2	41	3	41	3	43	3	44	1	45	2	46	2½	46	1½	47	2	48	3	Lizard	28
Ocean	do	Liverpool	26, 1843	¼	37	2	37	3½	37	1½	40	1½	41	1½	42	2	43	1½	43	2½	44	2	46	1¼	46	1¾	47	2	48	6	Liverpool.	29¼
Mean of 4 best from Gulf ports				14.3	33	3.5	37	1.7	38	1.9	39	2.0	40	2	41	1.8	42	2.6	44	1.6	45	1.7	47	1.5	48	1.9	49	1.4	49½	3.7		41.8
Mean of 3 best from Atlantic ports				0.2	37	2.0	37	2.2	38	1.7	40	1.5	42	1.8	42	2.3	43	1.9	44	1.5	44	1.7	46½	1.7	46½	1.4	47	1.7	48	3.7		24.5
Marianne	Baltimore	Bremen	Aug. 16, 1855	¼	37	1½	38	5	39	1¼	42	1¼	41	2¼	42	2¼	41	2¼	43	3	43	2	46	1¼	47	3	48	1¼	48	3¼	Lizard	30
Raritan	New Orleans	Liverpool	18, 1851	14	33	4	37	3¼	39	1¾	40	2	39	1½	40	1½	42	2	43	3¼	44	1¾	46	1½	46	1½	48	2	49	4	Liverpool.	44
Sheperdess	do	Bremen	17, 1831	24	34	2	37	2	38	2	40	2	41	2	43	2	44	1	45	2	47	1	47	2	48	2	49	1	49	2	Lizard	47
Helen McCloud	Baltimore	Antwerp	4, 1845	....	....	4	37	2	36	3	36	2	37	3	38	4	41	2½	42	2½	43	2	44	2	46	4	44	6½	46	4½	Lizard	43
Edgar	New Orleans	Liverpool	24, 1847	10	34	2	37	2	38	5	38	1	39	2	40	2	42	3	43	2	44	1½	47	1	48	1¾	49	1½	49	14	Liverpool.	48¾
Mean of 3 best from Gulf ports				1.6	34	2.7	37	2.4	38½	2.9	39	1.7	39½	1.8	41	1.8	43	2	44	2.4	45	1.4	47	1.5	47	1.7	48½	1.5	49	6.7		46.6
Mean of 2 best from Atlantic ports				0.3	37	1.5	37½	3.5	37½	2.1	39	1.6	39	2.6	40	3.1	41	2.4	42½	2.8	43	2	45	1.6	46½	3.5	46	3.9	47	3.8		36.5
Lelia	Baltimore	Rotterdam	Sept. 26, 1855	¼	37	1½	37	1	38	1¾	40	4	40	3½	44	2¼	46	2¼	47	2¼	46	1½	47	1½	46	2	47	1	48	2¾	Lizard	27¼
Weymouth	do	Liverpool	12, 1856	1	37	3¼	37	2	38	1¾	41	3	42	1¾	45	2½	47	1¾	48	1½	49	1	49	1	49	1½	49	1¾	48	8¾	Liverpool.	32
Mongola	New Orleans	do	22, 1856	12¼	34	1¾	36	4	38	2	40	1¼	40	1¼	40	2	44	1½	45	2	48	2¼	49	¾	51	¾	51	¾	51	3¼	Liverpool.	35½
George A. Hopeley	Charleston	do	9, 1848	6	33	2	34	1	35	1	36	3	38	5	39	2	41	2	43	1	43	2	47	1	48	1	49	1½	50	3½	Liverpool.	32
Silas Richards	Baltimore	Rotterdam	1, 1848	....	....	1	39	1	40	2	41	1	42	2	43	2	44	3	48	1	49	1	49	2	50	1	50	1	50	5	Lizard	23
Stephen Lurman	do	do	26, 1847	....	....	...	....	4	39	1¼	39	1¾	40	3	43	2	43	1½	44	1½	45	1	45	1¼	46	1¾	47	4	46	2½	Lizard	25
Leopard	do	Amsterdam	22, 1847	....	...	4	37	3¼	39	1¼	40	2	41	2	40	2	44	2	45	1¼	45	1¼	47	2	48	1¼	48	1¼	48	4½	Lizard	28
Chesapeake	do	Rotterdam	15, 1845	....	....	2	38	3	40	2	40	1½	40	1½	41	1	42	2	43	1½	44	1¾	43	2¼	43	1¾	44	2¼	46	2½	Lizard	25½
Do	do	Havre	27, 1847	....	....	¾	37	1¼	38	1	40	2	42	2	42	2	44	1	44	1	45	1½	46	1½	47	2	48	3	47	3	Lizard	22
Montreal	New Orleans	Liverpool	5, 1848	12	30	3	33	2	35	1½	36	3½	39	1	41	2½	42	1½	44	¾	45	1	45	1	47	1¾	48	2	49	10		43½
Apollo	Baltimore	Rotterdam	29, 1842	....	....	3	38	1	38	2	39	3	39	3	40	2½	40	2	42	7½	45	1¾	46	3¼	46	4	48	3	48	6	Lizard	42½
Mean of 2 best from Gulf ports				12.1	32	2.4	34½	3	36½	1.7	38	2.4	39½	1.1	40½	2.2	43	1.5	44½	1.4	46½	1.6	47	0.9	49	1.2	49½	1.4	50	6.6		39.5
Mean of 8 best from Atlantic ports				2.4	36	2.2	37	1.8	38½	1.5	40	2.3	40½	2.6	42	2.0	44	1.9	45	1.4	46	1.4	46½	1.6	47	1.5	48	2	48	4		26.9

Crossings and Time from ports south of the Capes of Delaware to the North of Europe.

Name of vessel.	From—	To—	Date of sailing.	DAYS FROM PORT TO 75° W. AND CROSSINGS THENCE TO 15° W.																											From 15° W.	Total passage.
				Days.	75° W.	Days.	70° W.	Days.	65° W.	Days.	60° W.	Days.	55° W.	Days.	50° W.	Days.	45° W.	Days.	40° W.	Days.	35° W.	Days.	30° W.	Days.	25° W.	Days.	20° W.	Days.	15° W.		
Garrick	New Orleans	Liverpool	Oct. 21, 1855	12¼	32	4	34	4	38	5	41	1	41	1¼	41	1⅛	44	2	46	1¾	47	1⅛	48	1	49	2⅛	51	7⅛	52	6 days to Liverpool.	51¼
Relm	do	do	19, 1850	16	33	5½	37	2½	38	1	39	3	40	2	39	1½	42	1¼	43	1½	44	1	45	1⅛	46	1	47	1¾	48	7½ Liverpool.	47
Mexico	Hampton Roads	Havre	29, 1824	....	....	1	38	3	37	2	39	2⅛	40	2⅛	43	3	46	3	46	2	47	1¼	48	1¾	49	1¼	49	3½	49	2½ Lizard	29
Chesapeake	Baltimore	Rotterdam	1, 1846	....	....	3	39	3	38	3	38	2	40	2	40	2	40	2	44	2	46	1	47	1	45	1½	48	1	49	3⅛ Lizard	27
Mexico	Hampton Roads	do	11, 1830	2¼	37	1¾	39	2	40	5	42	2	43	2	44	2	45	1	45	1½	46	1⅛	47	2	48	1	48	2	49	4 Lizard	30
Ocean	Charleston	Liverpool	31, 1844	½	33	4	34	1½	35	2	38	1	39	2	41	1¼	42	1¾	43	1¼	44	1¾	46	1	47	1¾	48	1¾	49	4¼ Liverpool.	25¾
Scotia	Baltimore	Amsterdam	13, 1840	....	35	2½	38	1½	38	2	38	3	37	2½	38	4½	40	4	41	1¼	42	1⅛	45	1½	46	¾	47	1¾	48	3⅛ Lizard	32¾
Mean of 2 best from Gulf ports				4.1	32½	4.8	35½	3.3	38	3	35	2	40	1.6	35	1.5	43	1.8	44	1.6	45	1.2	46	1.2	47	1.8	49	4.6	50	6.6	49.1
Mean of 5 best from Atlantic ports				1.4	35	2.7	38	2.2	38	2.8	39	2.1	40	2.2	41	2.5	43	2.3	44	1.6	45	1.4	46½	1.4	47	1.2	48	2.0	49	3.5	28.9
Lelia	Baltimore	Rotterdam	Nov. 17, 1854	¼	37	1	38	1¾	41	1⅛	41	1½	44	1¾	45	1	47	2	47	¾	48	1¼	48	¾	48	1⅛	49	1¼	49	2 days to Lizard	18
Macaulay	do	Liverpool	5, 1856	¼	36	3	37	3	39	2	40	1¼	42	1¾	42	1⅛	44	1¾	45	2	47	1¾	49	1⅛	49	1	49	1	49	7½ Liverpool	29⅛
*Georgia	Savannah	do	29, 1856	....	....	...	....	....	....	....	....	....	....	....	....	14¼	43	2	44	1¼	45	1¼	47	1	40	1	49	1½	50	2¾ Liverpool	25
Montauk	Galveston	do	23, 1855	17	33	2¼	34	2	38	1⅛	40	1½	40	1¼	42	1½	43	1	45	2¾	46	2	48	2⅛	49	1½	50	1¼	51	1¾ Liverpool.	40
Georgia	Savannah	do	14, 1855	7	31	3	33	2¼	34	1¾	37	1¾	39	1¾	39	1	40	2⅛	41	2	41	3	44	2⅛	46	3¾	48	1½	50	5¼ Liverpool	39
John Haven	New Orleans	do	15, 1852	12	31	1¾	31	7	37	1	38	2	40	1¼	41	1½	43	1¼	44	2	45	2¼	45	1¾	47	1¼	48	1	49	4¼ Liverpool.	40¼
Ellen	Baltimore	do	21, 1852	....	....	1¼	36	2¼	36	1⅛	35	2¾	36	3¾	37	3	37	2¾	42	1½	44	2¾	45	2¼	48	1¾	49	2¼	50	4¾ Liverpool.	32⅛
Mary Hale	do	do	21, 1850	¼	36	4	37	1¾	38	1¾	40	1¼	40	1½	41	1¼	45	2	42	3	42	2	44	1¼	44	2	47	1¼	48	6½ Liverpool.	29¾
Kalamango	New Orleans	do	28, 1841	7	30	1½	31	1½	34	2	35	2	34	1	40	3½	44	2½	45	1½	45	1	46	1	46	1	47	1	48	2½ Liverpool.	28¾
Champlin	do	do	13, 1841	9	34	2	37	1½	37	1½	40	1	41	2	42	1¼	43	1½	44	2¼	44	1½	46	1	47	1½	49	1	51	2 Liverpool	29
S. Baldwin	do	do	13, 1844	10	35	1	37	1	37	1	37	1½	39	1½	41	2½	43	1½	44	2	46	1	48	1¼	50	1¼	51	1¼	51	13 Liverpool.	30¾
Walpole	do	do	28, 1845	10	32	2	36	1½	37	2½	38	2	40	1¾	40	1¼	44	2	46	1	46	1	50	1	47	1	48	1	50	2 Liverpool.	30
John Cadmus	do	do	26, 1847	6½	32	2½	35	5	36	3	38	1½	39	1½	42	1	41	2	43	1	43	2	45	2	46	2	47	2¼	48	3¾ Liverpool.	36
Ocean	Charleston	do	4, 1845	1	34	1¼	35	1¾	37	2	38	1¼	39	1¾	40	1½	40	1½	42	1½	44	1½	45	1	46	1	47	2	48	3 Liverpool.	22
Mean of 4 best from Gulf ports				8.1	32	2	34½	2.4	36	2.3	38	1.6	38.5	1.5	42	1.7	43	2	44½	1.5	44⅛	1.4	47	1.3	46½	1.4	48	1.3	49	2.5	30.9
Mean of 4 best from Atlantic ports				0.5	36	2.3	37	2.0	37	1.8	39½	1.3	41	1.7	42	1.3	44	1.8	44	1.8	45	1.6	47	1.1	47	1.4	48	1.4	48⅛	4.8	24.8

* Not included in the average.

Crossings and Time from ports south of the Capes of Delaware to the North of Europe.

Name of vessel.	From—	To—	Date of sailing.	DAYS FROM PORT TO 75° W. AND CROSSINGS THENCE TO 15° W.																											From 15° W.	Total passage.
				Days.	75° W.	Days.	70° W.	Days.	65° W.	Days.	60° W.	Days.	55° W.	Days.	50° W.	Days.	45° W.	Days.	40° W.	Days.	35° W.	Days.	30° W.	Days.	25° W.	Days.	20° W.	Days.	15° W.		
Palestine	Mobile	Liverpool	Dec. 20, 1844	8	38	2	32	3	35	1½	35	1⅛	37	2	38	2	41	1	42	1⅛	43	2	45	1	47	1	49	1⅛	50	3½ days to	Liverpool.	32½
Casilda	Baltimore	do	25, 1856	1¼	36	1¼	38	1¼	38	2	40	6¼	43	1⅛	44	1⅛	45	1⅛	46	1⅛	47	1¼	47	1¼	48	1¼	48	1⅛	50	3¼	Liverpool.	26¾
Bremen	New Orleans	Bremen	23, 1855	10¾	32	1½	33	2	35	2	36	1⅛	37	1½	38	2	39	2¼	40	1¼	41	1¼	44	2¾	48	1¾	48	1	49	1¼	Lizard	33
Richard Andrews	do	Liverpool	5, 1855	11¾	35	1¼	36	4	37	2¾	40	2¼	42	1¼	43	1	44	2	45	2	45	1	47	2¼	47	3¾	48	4¼	50	11	Liverpool.	51
Reporter	do	do	10, 1853	9¼	33	1	35	2¾	37	1	38	1¾	41	1⅛	40	1¾	44	1¼	45	1	46	1	47	¾	47	2	48	1¼	49	3¾	Liverpool.	30
Arcole	Baltimore	do	13, 1853	1¼	36	1¾	36	3	39	2	42	1¼	42	2¾	46	4	50	2	51	2	50	2	49	1¼	50	1	50	3	50	4¾	Liverpool.	32
Calcutta	New Orleans	do	9, 1852	9	33	2	35	2	38	2¾	38	1¾	39	1¼	41	2	41	1	41	1¼	45	1⅛	46	1¾	48	1¼	49	1¼	50	3¼	Liverpool.	32
Colonel Cutts	Mobile	do	1, 1853	10¼	30	3¾	33	3½	34	1¼	35	1¼	38	1¾	39	1⅛	41	....	....	4	43	1¼	44	1¼	45	1⅛	47	1¼	49	3¾	Liverpool.	36
Ticonderoga	do	do	8, 1849	14¼	31	2	33	1⅛	35	2¼	38	1¼	39	1¾	42	1⅛	43	1¼	49	1¾	47	1	48	1	49	1	49	1	50	10½	Liverpool.	41¾
Tuscarora	Philadelphia	do	26, 1848	....	....	1⅛	39	1	39	2	40	1	41	1	42	1⅛	44	1¼	46	1¾	47	1¼	48	1	49	1	49	¾	50	1	Liverpool.	16
Ocean	Charleston	do	19, 1842	....	....	2	34	1⅛	36	2½	37	2	37	3	36	3	39	2	40	2	43	3	47	1	46	1	46	2⅛	50	2	Liverpool.	27⅛
Apollo	Baltimore	Havre	4, 1843	....	....	1⅛	37	2⅛	38	2	39	2	39	1	41	4	44	2	44	4	45	2	46	2	47	3	49	2¼	48	3¾	Lizard. .	32
Commerce	Charleston	Liverpool	16, 1830	1	33	3	35	3	37	4	39	1¼	41	1¾	42	1⅛	43	2⅛	44	2	45	3¾	45	6¼	51	2⅛	51	4⅛	50	5	Liverpool.	42
Gulnare	Baltimore	do	31, 1843	....	....	2	37	2	39	1	39	2⅛	40	1⅛	40	2	42	1	42	2	45	2	47	1⅛	48	1	49	1¾	50	2	Liverpool.	22⅛
Warwick	New Orleans	London	5, 1846	13	31	2	33	1	32	2	35	2	38	2	39	1	40	1⅛	41	2¼	43	2	44	2	46	2	47	1¼	48	7¾	Lizard	42
Malabar	do	Liverpool	31, 1844	18	32	3	33	1¼	36	1¾	36	1	36	6	41	3	42	2⅜	42	1⅛	45	1¼	45	1¼	47	1⅛	49	1¼	50	3	Liverpool.	46⅛
Plymouth	do	do	8, 1833	9	30	1⅛	32	1⅛	31	3	32	3	34	1⅛	36	2⅛	39	2	43	2¼	45	1¾	47	1	47	1⅛	49	1⅛	49	2	Liverpool.	34
Byron	do	do	28, 1834	15	29	2	29	3	30	2⅛	31	1¾	34	2¾	34	2	36	2	37	2	40	2	43	3	46	2	48	1⅛	49	3⅛	Liverpool.	45
Do	do	do	23, 1835	13	32	3⅛	35	1⅛	35	2	36	1¼	36	2	37	2	39	2	42	¾	43	1¾	45	2	46	1¼	48	1½	49	2½	Liverpool.	36¾
Do	Charleston	do	6, 1836	4	31	2	33	3	34	1	36	2	36	1½	37	1⅛	38	3	38	12⅛	45	1¼	46	1¼	48	1	49	1⅛	49	2⅛	Liverpool.	38
Cincinnati	New Orleans	do	25, 1838	18	31	2	33	2	35	3½	33	1¾	36	2	38	2	41	2	41	3	46	1	47	1	48	1	49	1¼	50	2¾	Liverpool.	43
Mean of six best from Gulf ports				9.4	32½	2.0	33⅓	2.5	35	1.9	35⅛	1.8	38	1.6	39	2.0	41	1.5	42	1.5	44	1.5	45⅛	1.4	47	1.5	48	1.3	49	3.0	.....	32.9
Mean of six best from Atlantic ports				1.4	36	1.0	37	1.9	38	1.9	39½	2.5	40⅛	1.8	41⅛	2.7	44	1.6	45	2.2	46	1.9	47	1.3	48	1.4	48⅛	2.1	49⅛	2.8	.....	26.1

The crossing at the meridian of 15° W. is the same for all vessels, whether from the Atlantic or the Gulf ports; and the route from 15° into port is also the same.

The average crossing of 70° W. for the "best six" of each month is in latitude 36° 12′ from the Atlantic, and in 34° 42′ from the Gulf ports.

Mean crossing of 70° W. by the "best six" for each of the following named months:

Months.	From the Atlantic ports.		From Gulf ports.	
	Crossing of 70° W.	Days to 15° W.	Crossing of 70° W.	Days to 15° W.
January	36° N.	19.1	34° N.	16.9
February	35	17.3	34	16.7
March	36	19.9	34	16.9
April	36	17.4	35	17.6
May	37½	17.3	37	16.2
June	35	19.6	36	17.6
September	37		34½	17.8
November	37	18.4	34½	18.1
December	37	21.2	33	19.5
Average	36° 17′	18.9	34° 40′	17.5

Thus we are suprised to find that the average passage to the chops of the channel, or to Liverpool, is from the meridian of 70° W., one day nine hours less when you cross 70° W. in 34° 40′, than it is when you cross it in 36° 17′. The difference between the two crossings is a degree and a half, and the longest passage is from the northern crossing in 36° 17′. This difference is worth tracing up. Therefore we make from the "best six" for each month the following statement showing the crossings and the time between longitude 70° and 15°:

MEAN CROSSINGS AND TIME OF "BEST SIX" FROM NEW YORK.

Months.	70° W.	Days.	55° W.	Days.	35° W.	Days.	15° W.	Days.
January	40° N.	3.9	43° N.	5.4	46.8° N.	4.2	49.7° N.	13.5
February	39.9	4.8	40.6	5.8	45.4	4.7	49.2	15.3
March	40.1	5.1	41.7	4.7	46.4	4.1	49.2	13.9
April	38.8	3.7	40.3	5.0	46.0	5.4	50.9	14.1
May	39.6	4.8	40.3	6.5	45.2	5.0	48.4	16.3
June	39.8	4.7	40.8	5.2	45.8	4.8	48.9	14.7
September	39.9	4.3	41.1	5.7	46.8	4.4	49.7	14.4
November	40.0	4.2	41.3	5.6	46.6	5.8	50.5	15.6
December	39.8	4.1	42.2	5.3	47.0	4.5	50.1	13.9

MEAN CROSSINGS AND TIME OF "BEST SIX" FROM ATLANTIC PORTS SOUTH.

Months.	70°.	Days.	55°.	Days.	35°.	Days.	15°.	Days.
January	36°	5.1	39°	7.3	44°	6.7	50°	11.2
February	35	4.9	39	7.5	46	4.9	49	11.4
March	36	5.5	37	7.1	43	7.3	48	12.0
April	36	4.5	39	6.4	44½	6.1	49	13.6
May	37	5.2	41	6.2	46	5.9	49½	12.4
June	35	5.7	40	6.9	46	6.0	49	17.2
September	37	5.7	40½	7.8	48	6.5	48	14.3
November	37	5.1	41	6.6	45	6.4	48½	10.1
December	37	6.1	40	8.3	46	6.8	49½	11.7

MEAN CROSSINGS AND TIME OF "BEST SIX" FROM GULF PORTS.

Months.	70°.	Days.	55°.	Days.	35°.	Days.	15°.
January	34°	5.4	38°	6.4	46°	5.1	50°
February	34	4.9	37	5.7	43	6.1	49
March	34	4.6	37	6.5	45	5.8	49
April	35	5.8	39	6.2	45½	5.6	48
May	37	4.5	40	5.8	45	5.1	48½
June	36	4.5	40	6.0	45	5.1	49½
September	34½	7.0	39½	6.1	46½	4.7	50
November	34½	6.1	39	6.7	44½	5.3	49
December	33	6.7	38	6.6	44	5.7	49

TOTAL DAYS FROM 70° TO 15°.

Months.	New York.	Atlantic Ports South.	Gulf Ports.
January	13.5	19.1	16.9
February	15.3	17.3	16.7
March	13.9	19.9	16.9
April	14.1	17.0	17.6
May	14.7	17.3	15.4
June	14.7	18.6	15.6
September	14.4	20.0	17.8
November	15.6	18.1	18.1
December	13.9	21.2	19.0

To what is this difference of time from 70° to 15° W. by the vessels from New York, from ports south, and from the Gulf, due? Can it be due to the sailing qualities of the vessels, or to the skill of masters, or to a difference of winds?

From the crossing of 70° to that of 15° W. the shortest distance is 2,365 miles by the New York route; 2,485 by the route from the Atlantic ports south; and 2,530 by the route from the Gulf. That is, the New York vessels, the best six for each of the months above named, average from 70° to 15°, 162 miles a day; those from the Gulf, 148; and those from the Atlantic ports south, 133.

The New York vessels in the above quotations ought to make the best time because the "best six" on this route were selected from a greater number than for either of the other routes. For the other two routes there is no such difference as to selection, and the anomaly remains to be accounted for.

The best route from Europe to the West Indies, to the Spanish main, the Gulf of Mexico, and ports south of the Chesapeake.

Get your offing and proceed as though you were bound to Rio, until you get into the NE. trades. Then steer west until you fall in with the track of homeward bound Rio traders, and then take that.

Shipmasters, bound as above, should study the trade-wind chart carefully, in order to ascertain the extreme northern parallel near which they may rely upon finding the NE. trades. The limits of these for the month should then be marked on the chart for every day reference and use. Having reached the mean polar limits for the month, it will, as a rule, be wise to go 2° or 3° further south in order to be sure of a good time in "running down the trades."

The average time from Liverpool or the chops of the channel, or from the Atlantic ports of France, Portugal, and Spain, to 30° N. in 20° W. may be thus stated:

January,	12 days,	the shortest 7 days.
February,	13 days,	the shortest 7 days.
March,	15 days,	the shortest 6 days.
April,	11 days,	the shortest 7 days.
May,	12 days,	the shortest 7 days.
June,	14 days,	the shortest 8 days.
July,	12 days,	the shortest 9 days.
August,	13 days,	the shortest 8 days.
September,	13 days,	the shortest 9 days.
October,	13 days,	the shortest 7 days.
November,	14 days,	the shortest 7 days.
December,	14 days,	the shortest 6½ days.

Having reached the parallel of 30°, between 20° and 25° W., the best course is still a little to the west of south, until the parallel of 20° N. be reached. Do not care to make more than 5° of westing between these two parallels. From 30° N. to 20° N. by this route, the average time will be six days in fall and winter; five in spring and summer; thus putting you fairly within the trades in 18 days, on the average, from the Channel. It will be less from Lisbon, the ports of Spain, and Gibraltar.

Now, suppose you enter the trades at a mean between the meridians of 25° and 30° near the parallel of 20° N.; you should then "run them down" on that parallel to 60° W. It will take two weeks to do this; total, so far, from the Channel, 32 days. Arrived here, you are in the fair way of homeward bound Indiamen and Rio traders; and from this point every navigator knows the way to his port. If it be on the Atlantic, south of the Chesapeake, 10 days, on the average, will put him into it—total, 42 days from the chops of the Channel, and from Liverpool a day or two more, from Spain and Portugal a day or two less, to our Atlantic ports.* By this route Savannah is brought nearer than Charleston; and Fernandina, made for the voyage *from* Europe, our nearest southern port. If, on the contrary, he be bound into the Gulf, it will take him 15 days, from the homeward bound Rio track to put him into New Orleans or Mobile—total to Gulf ports, 47 days. These times are for ordinary sailers. A smart ship, with a smart captain, will always make the run in less time.

This is a mere general sketch of the average route. Clever navigators will know from the charts how to vary it according to the season, and smart ships will gain upon the time, especially in reaching and "running down the trades."

The sketch supposes the ship to enter the trades near the intersection of the meridian of 25° with the parallel of 20° N. There is no particular advantage in entering the trades either on that meridian or upon that parallel, or of entering them at all, if you happen to find good winds before you get to the trades.

Thus, suppose a vessel to be off the Lizard, bound to Charleston, and that she have a 7 or 8 knot breeze that will enable her to lay up direct for port; why should she, as long as that wind lasts, run out of her way to find one that will not enable her to do any better? On the contrary, let her take advantage of it to make westing as fast as possible, and when it grows lighter or becomes adverse, as it will, then let her master stick her away south in search of a better wind.

By doing this, the voyage, as I have sketched it, may be considerably shortened. The

* See "Tables of Crossings" and time from Straits of Gibraltar to the United States.

trade-wind chart will show the navigator exactly how far south he ought to go to look for the trades in each month. A reference to this, with the injunction to make the most of a good wind wherever he finds it, seems to be almost the only sailing directions that are required for the ports above named, especially in winter and spring.

In the fall of 1856, Captain Macloon, of the "Georgia," asked to have pointed out to him a better route from Liverpool to Savannah, stating that he had tried three, and had had by them two passages of sixty days each, and one of fifty-four. The reply was, in substance:

"When you come out of Liverpool, make the best of your way to the parallel of 30° N., proceeding as though you were bound to Brazil, or some other place in the southern hemisphere. You will have fourteen days to this place."

The Georgia did so. She cast off from the steam-tug, which towed her out of the harbor of Liverpool, December 24, 1856, and on the fourteenth day she crossed the parallel of 30° N.

"Now stand SW. for five days, when you will be on the parallel of 20° N."

The Georgia did so; and at the end of the fifth day she had crossed the parallel of 20°, and was eleven miles beyond.

"Now stand due west for ten days, when you will be about the meridian of 60° W."

The Georgia did so; and at noon of the day mentioned she was on the meridian of 61° W.

"Now haul up for Savannah, and if the 'Georgia' were a clipper she would be in in seven days."

She did so; and at noon of the ninth day anchored in Tybee Roads.

The "Georgia" is a sailing vessel, but she accomplished this voyage with the precision of a steamer, gaining from thirty to forty per cent. in time over her previous voyages.

The following is extracted from Capt. Macloon's abstract log:

"Having made three passages to the westward by three separate routes, two of which exceeded sixty days each, and the third one of fifty-four days, I would feel extremely obliged to Lieut. Maury if he would point out a route by which a more speedy passage might probably be made, and I would endeavor to follow it faithfully, satisfied that I should not be the loser, at any rate. It seems to me that each time I have taken the wrong route at the wrong season."

To which I replied:

"SEPTEMBER 9, 1856.

"You ask for a new way to come from Liverpool to Savannah. I have often thought that if I were in that trade, considering the passage is a long and tedious one, I should try it on the trades; that is, when you come out of Liverpool, proceed as if you were going to cross the line, for which you will find sailing directions at page 475 *et seq.*, 6th edition. Aim to cross the parallel of 30° N. in about 25° W., and then steer SW. till you get well into the trades, even if you have to go as far as the parallel of 20° N. Now steer west till you get about the meridian of 60°, and then haul up for your port. If you have a smart ship, and will try this passage next November, you will make something like this run: From Liverpool to the parallel of 30° N., fourteen days; thence into the trades, say 22°—20°, five days; thence to the meridian of 60°, ten days; thence to Savannah, seven days; total, thirty-six days.

"Within that time this passage *can* be made by this route; but as I suppose the 'Georgia' is not a clipper, I will give you a week longer, or forty-three days; and if you do not make it in that time, I shall be disappointed.

M. F. MAURY."

From abstract log of ship "Georgia," from Liverpool to Savannah, after she had tried this route:

"*At noon, January* 31, 1857.—Anchored in Tybee, outer roads, ending a remarkably pleasant passage of thirty-nine days; and I would here express my warmest thanks to Lieut. Maury for directions, furnished me about a year since, how to make a winter passage from England to this place in less than sixty days. I have endeavored to conform to those directions, and the result has been most gratifying; and I would feel greatly obliged if he would furnish me with some hints to make a speedy summer passage, as I have been singularly unfortunate heretofore in all my western passages. I should be glad also of any publications relative to the road we travel; for, although I do not understand them as well as I ought, I take great pleasure in studying them, and am satisfied that up to this time, when the directions have been followed, it has in every intance shortened the passages materially."

Captain Macloon continued to follow this route; and as I was preparing these pages for the press, I received the following note (February, 1858) with his abstract log:

"You will perceive that I had a very severe time in the Channel and off to the northwest of Ireland; but after getting to the southward of Cape Clear, had a most magnificent passage through the trades, following your instructions as nearly as practicable, and can only say that the oftener I try that route the more I prefer it, and I take this opportunity again to express my thanks for your very valuable directions."

The following table of crossings was compiled by Lieut. Young. It will be observed by them that no vessel bound to Charleston or the Chesapeake has taken the southern route. Indeed, the table affords no instance of any vessel, except the "Georgia" (Macloon,) attempting the trade-wind route from Europe to one of our Atlantic ports.

Crossings and Time from North of Europe to the United States, (south of the Delaware.)

Name of vessel.	From—	To—	Date of sailing	LAT. OF CROSSING THE MERIDIANS; DAYS FROM DATE OF SAILING TO 15° W., AND TIME BETWEEN EACH 5° OF LONG.																											Days from 75° W. to port.	Total passage.
				Days.	15° W.	Days.	20° W.	Days.	25° W.	Days.	30° W.	Days.	35° W.	Days.	40° W.	Days.	45° W.	Days.	50° W.	Days.	55° W.	Days.	60° W	Days.	65° W.	Days.	70° W.	Days.	75° W.		
Montauk*	Liverpool	Galveston	Jan. 23, 1855	7	48	6½	41	13½	30	6½	26	2¼	25	3¼	26	2	25	3	25	3	24	3	26	2¾	25	2¼	26	3	27	16	74
Echo*	Glasgow	New Orleans	28, 1857	6½	41	1¼	38	2¼	32	2½	27	1½	24	2	23	1¾	21	1¾	21	1¼	20	1¾	18	3¼	18	1¾	17	1½	18	10	39½
Macaulay	Liverpool	Baltimore	15, 1857	14	45	2½	44	4½	39	5	38	7	27	3	26	3	27	4	29	4	21	2	22	3	23	3	25	2¼	28	4¾	62
Fides†	Antwerp	New Orleans	5, 1856	2¾	46	2¾	38	2½	32	8¾	23	1¾	21	2½	20	3¼	19	1¾	19	2½	19	1½	19	2	19	2	18	2	18	9	45
Georgia	Liverpool	Savannah	15, 1857	14	45	2½	44	4½	39	5	38	7	27	3	26	3	27	4	29	4	21	2	22	3	23	3	25	2¼	28	4¾	62
John Haven*	....do..	Mobile	28, 1852	8	37	1½	34	1¼	31	2¼	28	2½	26	3¼	29	7¾	20	3¼	20	2¼	20	1¾	20	1¼	20	1¾	20	2¼	20	9	48
Mortimore Livingston*	London	New Orleans	17, 1853	8¼	39	2¼	34	1½	30	2	27	1½	26	1½	24	3	22	1¼	22	3½	24	3½	23	2	21	1¾	20	3¼	20	6¾	42
Colonel Cutts*	Liverpool	Mobile	26, 1853	6½	41	2¾	34	2	30	1¾	26	2	24	2	23	4	22	5	17	3	17	2½	17	2	17	2	17	2¾	18	11	49¼
Arvum	Cork	Baltimore	28, 1853	4¾	47	3½	45	1½	43	2¾	39	2	38	2¼	37	2½	38	2¼	38	2¾	37	2½	36	7¾	33	6	34	3¼	37	1	44¾
Relm	Havre	New Orleans	3, 1850	8	48	4	46	7½	36	6	32	3	30	3	29	2	26	2¾	26	1¼	26	1¼	26	1	26	1½	26	1½	26	10¼	53
Mexico*	....do	....do	8, 1824	2½	45	2½	39	6	30	2	25	2	23	1¾	22	2½	22	2¼	22	2	22	4¾	21	2½	21	2¼	23	1¾	26	12½	47¼
Stephen Baldwin*	Liverpool	....do	14, 1845	13	39	4½	32	2	30	2	25	1½	25	1	25	1¾	25	1¼	25	3	24	1¾	24	1¼	25	2	26	2	26	10	47
Walpole	....do	...do	17, 1846	7	49	11	45	1½	44	1½	42	3	39	5	38	11	23	2	23	2	23	2	23	2	23	4	24	2	26	7	60½
Chesapeake*	Rotterdam	....do	11, 1845	3½	48	5½	43	11¾	37	2¼	33	4	25	4	24	5	20	5	19	3	19	1½	20	1½	19	2½	20	3	20	11	63½
Mean by southern route from port to 75° W. longitude				6.4	43	3.3	37	4.7	31	2.2	29	2.1	24	2.4	24	3.4	22	2.7	21	2.9	21	2.4	21	2.2	20	2.0	20	2.4	19	10.6	50.6
Mean by all others from port to 75° W. longitude				9.3	47	4.7	45	3.9	40	4.	37	4.4	32	3.2	31	4.3	28	3.	29	2.8	26	1.9	26	3.3	26	3.5	27	2.2	29	5.5	56.4

* Southern routes.

† The date of sailing and time to 15° W. is taken from the arrival of the vessel off the Lizard when she comes from any port to the eastward of that meridian.

Crossings and Time from North of Europe to the United States, (south of the Delaware.)

Name of vessel.	From—	To—	Date of sailing.	DAYS FROM PORT TO 15° W., AND CROSSINGS THENCE TO 75° W.																											Total days to 75° west.	Days from 15° W. to port.	Total passage.
				Days.	15° W.	Days.	20° W.	Days.	25° W.	Days.	30° W.	Days.	35° W.	Days.	40° W.	Days.	45° W.	Days.	50° W.	Days.	55° W.	Days.	60° W.	Days.	65° W.	Days.	70° W.	Days.	75° W.			
Marianne	Bremen	Baltimore	Feb. 14, 1856	2½	57	3½	56	2	55	3¼	50	6	46	1¾	43	4	42	1⅞	42	1⅛	41	3¾	42	5	41	1⅛	40	2¾	37	.....	1¼	40¼
Crisilda	Liverpool	do	26, 1857	6	56	3⅛	50	3⅛	49	9	40	6	44	4	44	3¾	41	3	40	1¾	40	2	39	3½	39	3½	38	2⅛	37	.....	2	54
Ellen	do	do	4, 1853	5¼	50	1¼	48	1¼	48	1⅛	47	1⅛	47	1¼	46	1¼	46	2¾	44	2¼	42	5	43	2	42	6	39	2¾	39	.....	1¼	35¼
Warwick	London	Hampton Roads	24, 1847	3	46	2¼	44	1¼	44	1½	42	2¾	43	14	42	2¾	40	1¾	41	2¼	41	4⅛	42	2½	41	3	39	3⅛	37	.....	⅛	45⅛
Commerce	Liverpool	Charleston	28, 1831	12	47	8	45	2	44	2⅛	44	4¼	39	2	37	4	35	6	29	2¾	30	2	30	2	31	4¼	33	12	31	.....	6	70
Ocean*	do	New Orleans	7, 1843	3	44	3	38	5	29	3	25	3	24	3	23	2⅛	23	1⅛	23	5¾	23	1¾	22	1½	20	2	20	3	20	.....	9	46
Champlain	do	Philadelphia	21, 1842	4	55	15½	50	3⅛	50	3¼	47	1⅛	45	2½	43	2⅛	43	3½	41	2¼	42	2	41	2¼	42	2	40	3¾	38	.....	.....	48½
Palestine*	do	Mobile	14, 1845	4	46	3	42	5	36	3	29	2	26	1⅛	24	1¼	24	2¼	22	2	21	2	20	2	20	1⅛	20	2⅛	20	.....	9	41
Scotia*	London	do	18, 1840	3	47	3	44	5	33	1¾	30	2¼	27	2	24	1⅛	23	1½	23	2⅛	18	2⅛	18	2	17	1½	17	2½	18	.....	9	40
Byron*	Liverpool	do	25, 1837	5⅛	45	2½	42	1¾	38	2¼	34	3⅛	29	3½	25	2⅛	22	5⅛	17	4	17	2½	17	2½	17	4	17	2½	18	.....	11½	54
Means by southern routes from port to 75° W. long				3.8	45	2.8	44	4.2	34	2.5	29	2.7	27	2.2	24	1.9	23	2.7	21	3.5	19	2.2	19	2	18	2.2	19	2.6	19	35.3	9.6	44.9
Means by northern routes from port to 75° W. long				5.4	52	5.7	49	2.2	48	3.5	45	3.7	44	4.2	42	3.0	41	3.1	40	2.1	39	3.2	39	2.9	39	3.3	38	4.5	36	46.8	1.8	48.6

* Southern routes.

Crossings and Time from North of Europe to the United States, (south of the Delaware.)

Name of vessel.	From—	To—	Date of sailing.	DAYS FROM PORT TO 15° W., AND CROSSINGS THENCE TO 75° W.																											Total days to 75° West.	Days from 75° W. to port.	Total passage.
				Days.	15° W.	Days.	20° W.	Days.	25° W.	Days.	30° W.	Days.	35° W.	Days.	40° W.	Days.	45° W.	Days.	50° W.	Days.	55° W.	Days.	60° W.	Days.	65° W.	Days.	70° W.	Days.	75° W.			
Bremen*	Bremen	New Orleans	Mar. 22, 1857	5	42	5	31	4½	24	2½	22	2	20	2	19	2	19	3	19	5	20	1¾	20	2	20	1½	20	1¾	19	38	10	48
Do*	do	do	28, 1856	6¾	39	4¼	32	3¾	25	1¾	23	3	22	3¼	21	1¾	20	1¼	20	1¼	20	2	20	2	20	2	20	1¾	19	33¾	11	44¾
Chimborazo*	Havre	do	4, 1854	1½	47	2¼	49	14¼	36	6½	31	2½	27	2	25	1½	24	1	22	1½	21	2	21	2	20	1¾	20	1½	20	40¼	9½	49¾
Malabar*	Liverpool	do	9, 1844	8	40	4	32	2	28	2	25	2	23	1½	22	1½	21	1	20	1½	20	1½	20	2¼	20	1¾	20	1¼	20	30¼	5¾	36
Richard Anderson	do	Baltimore	12, 1856	2½	50	4	50	3½	49	4	45	4	43	5½	39	3½	40	3½	37	2½	37	3	37	1¾	37	2¼	36	3	38	44	¾	44¾
Reporter	do	New Orleans	17, 1855	4½	50	1¼	48	2¾	42	3	39	4	38	2	32	2¾	28	3	25	2½	24	1½	23	1½	23	1¼	24	2	26	32	11	43
Mary Hall	do	Baltimore	7, 1852	2½	49	1	49	1¼	47	1¼	46	1¼	46	1½	45	2½	44	2	43	3¼	44	2¾	42	2¼	41	1¾	40	2	38	25¼	2	27¼
Arlington	London	New Orleans	10, 1849	3½	44	1½	43	6¼	37	1¾	32	1¾	28	2	27	1¾	25	2¼	23	2	22	1¾	21	2¾	19	1¼	20	¾	20	29¼	12½	41¾
Franconia	Liverpool	Apalachicola	19, 1845	4¾	52	7½	44	3¼	40	2½	34	2¾	33	1½	30	1¾	28	1¾	27	2	26	2	26	2	26	4	21	1¾	19	37½	8	45½
Palestine	do	New Orleans	28, 1847	3½	46	1¼	43	1¼	41	3½	35	2	32	1½	31	4	30	2½	27	1½	26	1½	25	2½	25	2½	25	2½	26	30	11	41
Kalamago	do	Mobile	23, 1843	4	48	2	46	5	42	2½	40	2½	38	2	35	2	30	2	28	1¾	27	2	27	3¾	26	2½	20	2½	20	34½	7½	42
Heraclide	do	New Orleans	8, 1833	2	47	2	42	1¾	37	1½	30	2¾	30	3	27	3	25	8	22	3	24	3	24	2	24	2	23	3½	22	37½	9½	47
Walpole	Havre	do	7, 1844	4½	46	1½	43	2¼	40	3½	38	1¼	37	2	36	1	37	5¼	33	1¾	22	1¼	31	1½	30	1¾	29	1½	26	29	4	33
Do	Liverpool	do	23, 1843	3	36	3	46	5	41	3	42	2¾	38	2¼	36	1¼	34	2¾	42	2	29	3	28	2¾	24	3¼	25	2¼	26	36¼	7¾	44
Envoy	do	Savannah	8, 1831	9½	51	1¾	51	2¾	48	2½	47	3	42	2	42	1½	38	3	34	4¾	27	2	26	2	26	2	26	1½	27	38¼	4¾	43
Byron	do	do	3, 1835	14¾	49	2½	48	1¾	49	2	47	4¾	44	1½	43	3¾	40	3¼	40	3	38	3	36	3¾	30	2¾	30	2	30	48½	3½	52
Cincinnati	do	New Orleans	3, 1839	3	48	1	48	3½	48	3	42	2½	39	1½	37	1½	33	4	31	1½	37	1	27	1½	27	3	23	¾	26	27¾	7¼	35
Means by southern routes from port to 75° W. longitude				5.3	42	3.8	36	6.1	28	3.2	25	2.3	23	2.2	22	1.7	21	1.5	20	2.3	20	1.8	20	2.0	20	1.6	20	1.5	17	35.5	9	44.5
Means by northern routes from port to 75° W. longitude				5.0	42	2.4	46	3.1	43	2.6	40	2.7	38	2.2	36	2.3	33	3.3	32	2.4	30	2.2	28	2.3	27	2.3	27	2.0	26	34.6	6.9	41.5

* Southern routes.

Crossings and Time from North of Europe to the United States, (south of the Delaware.)

Name of vessel.	From—	To—	Date of sailing.	Days from port to 15° W., and crossings thence to 75° W.																											Total days to 75° west.	Days from 75° W. to port.	Total passage.
				Days.	15° W.	Days.	20° W.	Days.	25° W.	Days.	30° W.	Days.	35° W.	Days.	40° W.	Days.	45° W.	Days.	50° W.	Days.	55° W.	Days.	60° W.	Days.	65° W.	Days.	70° W.	Days.	75° W.			
Senator*	Havre	New Orleans	April 21, 1856	5	46	7½	32	2	28	1¾	27	2¼	24	1½	22	2½	20	1	20	2	21	1½	21	1½	20	1¼	20	3	19	32¾	9	41¾
Franconia*	Bremen	do	15, 1848	7	39	4	23	3	26	2	26	2	25	2	24	1¼	24	¾	24	2	24	2	24	1¾	24	2	24	1¾	25	31¼	10½	42
Paul Jones*	Liverpool	Mobile	3, 1845	6½	37	2	35	1½	30	2	26	1½	23	2½	20	1¼	19	1¼	17	2	18	2½	18	1½	17	2	17	2	18	28½	10	38½
Macaulay	do	Baltimore	25, 1857	4	50	1¾	50	1½	48	1¾	49	2	47	5	49	5	45	3¾	44	3¾	44	2¼	43	4	41	3¾	40	6	38	44½	1	45½
Bremen	Bremen	New Orleans	29, 1855	2	47	1	45	1	43	1¼	42	1¾	41	1¾	41	2½	38	1¾	36	2½	34	2½	30	2¾	30	5	25	6	19	31¾	11	42¾
Romulus	Liverpool	do	7, 1824	3	45	3¼	41	1½	40	8¼	32	2½	39	1¾	26	1½	26	2	26	1¼	26	1¾	26	1¾	26	3	26	3½	26	35	9	44
Factor	do	Savannah	24, 1823	4	49	2	47	2	47	1	47	2	46	2	44	2	44	2½	40	4	36	5	35	5½	34	2¾	34	1¾	32	36¼	2½	38¾
Means by southern routes from port to 75° W. longitude				6.2	41	4.6	33	2.2	28	1.9	26	1.9	24	2	22	1.6	21	1	20	2	21	2	21	1.6	20	1.7	20	2.2	21	30.9	9.8	40.7
Means by northern routes from port to 75° W. longitude				3.3	48	2	46	1.2	44	3.1	42	2.1	43	2.6	40	2.8	38	2.5	37	2.9	35	2.9	44	3.5	33	3.6	31	4.3	29	36.9	5.8	42.7
Lelia	Rotterdam	Baltimore	May 29, 1856	7	48	2	49	3	46	4	46	2	47	2	49	3	49	4½	44	1¼	42	2¾	41	4¼	40	2¾	39	1¾	37	40¼	¾	41
Margaret	Havre	Philadelphia	3, 1856	7¼	42	1½	42	1	41	1¾	40	2½	38	2	36	3	37	4¼	35	2¾	36	3	36	4	38	3	39	4	39	40	¼	40¼
Marianne	Bremen	Baltimore	29, 1855	2¾	49	3¼	50	4	46	3	45	5	44	1¾	44	3¾	44	4	43	5	44	4	43	3	42	4	40	4	38	47½	1	48½
Georgia	Liverpool	Philadelphia	22, 1857	5	49	1¾	47	2¾	47	5½	46	4¼	45	2¾	45	6¼	42	1¾	38	7¾	40	3¾	39	5	42	6½	38	3	38	56	¾	56¾
Tuscarora	do	do	23, 1848	2½	50	2¾	50	1½	51	2¼	49	1¼	46	1¼	46	¾	45	1¾	44	2½	43	2½	42	5	42	2¾	40	3¾	38	31½	0	31½
Catherine	Antwerp	Baltimore	27, 1842	6	46	2	43	2	41	1½	39	2	37	4½	33	3	32	3½	34	5	37	2	35	6	35	2	34	1½	36	41	¼	41¼
Means by northern routes from port to 75° W. longitude				5.3	47	2.2	47	2.3	45	3	44	2.8	43	2.4	42	3.2	41	3.2	39	4	40	3	39	4.5	39	3.5	38	3	38	42.7	.5	43.2
Julius	Bremen	Baltimore	June 14, 1856	5¼	58	2¾	55	2¼	53	4¾	52	2¼	50	6½	46	1½	45	1¼	43	1½	42	6	43	8½	37	4½	37	6¾	38	53¾	½	54¼
Home	London	do	2, 1849	3	47	2	46	2	44	3	42	2¼	43	5¾	41	1½	41	2½	40	4	39	3¾	39	2	38	2¼	39	2	38	36	½	36½
Milan	Liverpool	Philadelphia	17, 1849	6½	51	2½	51	3	51	3	51	4	47	3	47	4	46	3	46	2	43	3	43	3	41	2½	41	2¾	39	42¼	¼	42½
Europe	do	do	15, 1848	4½	50	1¾	51	1	49	2¼	48	4½	47	1½	47	2½	44	2	43	3	41	2½	42	3½	41	3	39	4	39	36	0	36
Roscoe	London	Baltimore	12, 1846	4¾	48	1¼	48	2	46	2	44	4	42	2¾	37	2¼	39	2¼	40	1¾	40	2¼	42	2¾	42	6¼	39	1¾	37	36	¼	36¼
Shepherdess	Liverpool	New Orleans	2, 1831	5½	48	1½	48	3½	47	2½	42	9¼	33	3¾	28	2	27	1½	26	2½	26	1½	26	1¾	26	1¼	26	2	26	38½	5	43½
Caledonia	Rotterdam	Baltimore	7, 1846	3½	53	1½	54	3	55	2½	54	2½	50	8	36	6½	31	2½	34	2½	36	4½	40	2½	40	1¾	40	3	37	44¼	¼	44½
Chesapeake	Liverpool	Philadelphia	1, 1847	3½	50	1	49	3¼	50	3	51	3	47	3	48	2	46	2	44	1	44	4	43	3	42	2	39	1	39	31¾	0	31¾
Paoli	London	Baltimore	27, 1846	5½	50	1¾	52	2¾	50	2	48	2	49	3	47	7	46	3¼	46	1¾	45	2	42	3	42	3	39	4	38	41	2	43
Means by northern routes from port to 75° W. longitude				4.6	51	1.8	50	2.5	49	3.7	48	3.7	45	4.1	42	3.2	40	2.2	40	2.2	39	3.2	40	3.3	38	2.9	37	3.	37	40.4	1	41.4

* Southern routes.

Crossings and Time from North of Europe to the United States, (south of the Delaware.)

Name of vessel.	From—	To—	Date of sailing.	Days from port to 15° W., and crossings thence to 75° W.																											Total days to 75° west.	Days from 75° W. to port.	Total passage.
				Days.	15° W.	Days.	20° W.	Days.	25° W.	Days.	30° W.	Days.	35° W.	Days.	40° W.	Days.	45° W.	Days.	50° W.	Days.	55° W.	Days.	60° W.	Days.	65° W.	Days.	70° W.	Days.	75° W.			
Macaulay	Liverpool	Baltimore	July 28, 1856	10¼	49	1¼	50	2¼	52	3	50	1¾	51	1¼	45	1½	45	5¼	45	1¾	44	1¼	44	1	42	¾	42	2	37	33½	1½	35
Georgia	do	Savannah	6, 1856	8½	47	2	48	2	49	2	50	1½	53	4	45	4	42	2	41	2¼	40	1¾	38	5	38	11¼	33	4¾	33	51	2	53
Huguenot	do	Philadelphia	14, 1854	6½	50	4	46	1½	45	3½	45	1½	43	3¼	44	3	43	1¾	44	3	42	3	43	5	41	3	40	1½	39	40½	½	41
Georgia	do	Savannah	28, 1855	8¾	49	6	42	2	39	3¼	35	2	33	3	32	3	32	3	33	4	33	2	33	4	32	6	31	9¾	31	56¾	2¼	59
Susan E. Howell	do	Baltimore	14, 1849	5½	49	3½	46	3	44	3	43	4	43	4	38	2	38	6	40	2	41	3	41	2	42	3	40	3½	37	44½	1	45½
Mexico	do	Hampton Roads	25, 1830	3	57	1¼	55	2½	53	2¾	49	3½	48	2	47	3½	46	3	44	2¼	44	3	43	2¼	43	1¾	40	3½	38	34¼	¼	34¾
Station	Havre	Philadelphia	6, 1831	6	45	1¾	44	1½	42	3¾	42	4	43	5	44	5	43	6½	44	1½	43	6	41	3	39	5	41	1¾	40	50¾	¼	51
Alleghany	Liverpool	do	19, 1843	6¾	51	3¼	52	2	51	4	48	2	47	4	46	2¾	46	2¼	46	2¾	46	4¼	43	3	42	4	41	4	39	45	.....	45
Envoy	do	do	26, 1837	8¼	52	4	52	1¾	50	1¾	49	4½	44	3	45	1¾	46	2½	47	8½	42	2¾	43	1¾	42	3¼	40	2	39	46	.....	46
Tom	do	do	9, 1845	4¼	54	2½	55	3	53	1½	51	2	49	2½	49	4	47	2½	44	3	43	2½	42	3½	42	3	42	5½	40	40	3	43
Stephen Baldwin	do	do	7, 1845	5	50	3¼	50	1¾	53	2¼	52	3	49	2½	49	1½	45	3	43	1½	42	3	43	3½	41	3½	40	2½	39	36½	.....	36½
Means by northern routes from port to 75° W. long				6.7	42	3	49	2.1	48	2.8	47	2.7	46	3.1	44	2.7	43	3.4	43	3	42	3	41	3.1	40	4	39	3.7	38	43.3	9	44.2
Luna	Bremen	Baltimore	Aug. 28, 1857	6	46	4	42	4½	38	3½	43	3½	43	2	43	2	42	1¼	42	5¼	40	2¾	40	1¼	40	1¼	40	¾	39	38	¾	38¾
Roland	do	do	28, 1856	7½	50	2	52	1½	51	3	50	1½	50	1½	49	3¼	48	3	45	1½	43	1	42	2	42	3½	40	1¾	37	33	¼	33¼
*Hartley	Havre	New Orleans	4, 1848	12	40	5	37	2¾	31	2¼	27	2	24	2	23	1¾	22	2	21	2	21	2	21	2	20	2	20	3	20	40¾	9	49¾
Saranak	Liverpool	Philadelphia	13, 1848	6½	49	3½	44	2	47	3	45	2¼	44	2	44	3	43	2	43	1¾	43	1½	42	2	42	1½	40	1¾	39	33	¼	33¼
Ocean	do	Charleston	27, 1844	4½	49	1¼	48	2	45	2¼	44	1¾	43	1¾	43	1¼	43	4	40	2½	38	1¾	38	4	37	2	35	2	35	31	1	32
Byron	do	New Orleans	29, 1835	5	46	3	42	3	39	3½	35	4½	34	3½	31	1¾	30	2	28	2	28	3	27	6½	25	1¾	24	7	25	46½	8¾	55¼
Means by northern routes from port to 75° W. long				5.9	48	2.7	45	2.6	44	3	43	2.9	43	2.1	42	2.2	41	2.4	39	2.6	38	2.0	38	3.1	37	2	36	2.6	35	36.1	2.2	38.3

* Southern route.

Crossing and Time from North of Europe to the United States, (south of the Delaware.)

Name of vessel.	From—	To—	Date of sailing.	DAYS FROM PORT TO 15° W., AND CROSSINGS THENCE TO 75° W.																											Total days to 75° west.	Days from 75° W. to port.	Total passage.
				Days.	15° W.	Days.	20° W.	Days.	25° W.	Days.	30° W.	Days.	35° W.	Days.	40° W.	Days.	45° W.	Days.	50° W.	Days.	55° W.	Days.	60° W.	Days.	65° W.	Days.	70° W.	Days.	75° W.			
Bremen*	Liverpool	New Orleans	Sep. 14, 1855	11¼	42	1¾	37	2½	32	5½	26	3¼	25	2¾	28	9	24	3	22	2¾	22	2¼	21	2¾	21	1½	20	2½	20	50¾	12¼	63
Palestine*	do.	Mobile	19, 1844	3¼	42	2¾	35	4	29	4	24	2½	22	3½	20	2½	19	2½	18	2½	18	2½	19	2	19	6	20	3	19	41	10½	51½
John Cadmus*	Havre	New Orleans	1, 1847	3	43	2½	38	2½	36	2	33	4	27	2	25	3	22	3	22	3	22	2	22	1¾	23	2½	23	4	25	35	13	48
Bremen	Bremen	do.	27, 1856	1¼	59	1½	56	1½	55	2¾	51	1¼	45	2	42	4¾	36	2¾	32	3½	27	2½	24	4	21	2½	21	2½	20	32¾	8	40¾
Calcutta	Glasgow	do.	14, 1854	11½	48	2¼	43	3	40	2	38	1¼	36	2¾	34	5	29	4	27	5	25	6	23	2¼	22	2½	21	2	20	49¾	8	57¾
Colombo	Liverpool	Charleston	10, 1849	4½	50	1	47	1½	46	2	43	1½	42	1½	40	3¾	38	1¼	38	3¼	36	2¾	36	2¼	34	4½	34	3¼	34	33	1	34
Herald	Stockholm	do.	25, 1829	4½	56	6½	51	3	47	2¾	46	2	45	1	37	1	37	1½	37	2½	36	1½	35	2	34	1½	32	3½	32	33¼	8	41¼
Creole	Havre	New Orleans	6, 1849	2	47	1	45	2	40	2½	40	2	36	1	35	2½	32	2½	30	4	29	3	38	5	27	3½	26	1½	26	32½	6	38½
Malabar	Liverpool	do.	2, 1846	8	43	3	40	2	41	4¼	41	1¾	34	6¾	27	3¾	24	2	22	3	20	2	20	3½	21	2½	20	2¾	20	45¼	6¼	51½
Means by southern routes from port to 75° W. longitude				5.8	42	2.3	33	3.0	32	3.8	28	3.2	24	3.1	24	4.5	22	2.8	21	2.7	21	2.2	21	2.2	21	3.2	21	3.2	21	42.0	11.9	53.9
Means by northern routes from port to 75° W. longitude				5.5	50	2.5	47	2.2	45	2.8	43	1.6	40	2.5	36	3.4	32	2·3	31	3.5	29	2.8	29	3.2	26	2.8	26	2.6	25	37.7	6.2	43.9
Raritan*	Liverpool	New Orleans	Oct. 27, 1851	3½	42	2½	40	5	35	3	31	3	30	10½	22	2½	21	2	21	2½	20	3¼	21	2¼	20	1½	20	1¼	20	43	13	56
Aetos?	do.	Mobile	30, 1851	3½	42	1	41	1	40	1	37	1½	29	2	26	1¼	24	1¾	23	1¼	22	1¾	21	1¼	21	2	20	1½	20	20¾	4¼	25
Washington	Amsterdam	Savannah	24, 1818	3½	46	2	46	3	49	4	42	7¾	30	4¾	25	2	24	2½	23	4	23	1¼	23	1¾	23	1¼	24	3	25	40¾	8¾	49½
Gertrude	Liverpool	New Orleans	29, 1856	8	47	1¼	44	1½	40	1¼	38	1¼	36	3¾	33	2	30	7	21	1¾	20	2	18	1¾	17	1½	17	1¾	18	34¾	8½	43¾
Marianne	Bremen	Baltimore	30, 1855	3¼	57	6¾	51	4	49	3	47	5	49	5	46	3	42	3	41	4½	41	6	41	3	40	4	39	4	37	54½	½	55
Catherine	Antwerp	do.	15, 1845	4¼	45	2	43	2¾	40	1½	39	1½	38	3	39	3	34	3	32	3	32	5	35	3	34	4	35	3	37	39	½	39½
James Wright	Liverpool	New Orleans	4, 1852	4	48	1¼	48	1	47	1¾	47	2	44	5	37	2¾	34	1	33	2¼	34	2½	31	1½	29	1½	28	2½	26	29	8	37
Means by northern routes from port to 75° W. longitude				4.4	47	2.4	46	2.2	44	2.1	42	3.1	38	3.9	34	2.3	31	3.0	29	2.8	29	3.1	28	2.0	27	2.3	27	2.6	27	36.2	5.1	41.3

* Southern passages.

Crossings and Time from North of Europe to the United States, (south of the Delaware.)

Name of vessel.	From—	To—	Date of sailing.	DAYS FROM PORT TO 15° W., AND CROSSINGS THENCE TO 75° W.																											Total days to 75° west	Days from 75° W. to port.	Total passage.
				Days.	15° W.	Days.	20° W.	Days.	25° W.	Days.	30° W.	Days.	35° W.	Days.	40° W.	Days.	45° W.	Days.	50° W.	Days.	55° W.	Days.	60° W.	Days.	65° W.	Days.	70° W.	Days.	75° W.			
Carnatic*	Liverpool	New Orleans	Nov. 18, 1856	5	47	8	39	18	24	2	21	4½	17	2½	16	3½	16	2	16	2	16	2	16	2	17	2	17	3	17	56½	13½	70
Ashley*	Lizards	do	3, —	4½	45	1½	47	4¼	38	2	32	2¾	26	2	23	2	20	2	18	2	17	2	17	2¾	17	2½	17	3¼	18	33½	11	44½
Chesapeake*	Havre	do	21, 1847	8	42	6	37	2	34	3½	30	1¼	27	1¼	26	1¼	25	1½	24	1¼	24	2	22	2	20	2	20	2¾	19	34¾	5½	40½
Tarolinta	Antwerp	Charleston	7, 1856	2½	47	1½	44	1	43	1½	40	2	39	1½	37	2	36	5	32	6½	28	3½	30	3	31	3	31	2¼	32	35	4¾	39¾
Lelia	Rotterdam	Baltimore	26, 1855	1½	48	1	48	1	48	1	47	1	47	1½	46	2	45	1¾	43	2¼	44	3	41	3¼	40	2¾	39	2	37	24	¾	24¼
George A. Hapley	Liverpool	Charleston	3, 1848	5	43	2	39	3	35	2	32	2	28	2	27	1¼	26	1¾	26	3	26	2¼	26	3	28	2	28	2	30	31¼	1½	32¾
Silas Richards	Rotterdam	Baltimore	12, 1848	1½	47	3	44	2¾	42	3	39	2	35	1¼	34	1¼	33	1¾	33	1¼	32	1¼	31	1¼	31	1¾	32	3	35	25¼	¼	25½
Franconia	Liverpool	New Orleans	1, 1844	4¾	46	3	43	3¾	38	2¾	36	1¼	35	3	32	1¼	30	2	28	3	26	2	25	1¼	26	2½	26	2	26	32½	12¾	45¼
Ocean*	do	do	1, 1840	13½	45	4	41	2½	35	2	30	3	27	3½	26	1½	26	2	26	2½	26	2½	26	2	26	2	26	2½	26	43½	9	52½
Means by southern routes from port to 75° W. long				7.7	45	4.9	41	6.7	33	2.3	29	2.9	24	2.3	23	2.0	22	1.9	21	2.0	21	2.1	20	2.2	20	2.1	20	2.9	20	42	9.8	51.8
Means by northern routes from port to 75° W. long				3.8	58	2.6	54	2.9	51	2.5	48	2.0	46	2.2	44	1.8	42	3.0	40	4.0	39	3.0	38	2.9	39	3.0	39	3.0	40	36.9	4.9	41.8
Senator*	Liverpool	New Orleans	Dec. 7, 1855	5	43	2	37	2	33	3	29	1	27	3	24	2	22	1	21	1¼	21	1½	21	1¼	21	1¼	20	1¾	29	26	8½	34½
Livingston*	do	Apalachicola	9, 1855	5	41	2	37	5	28	2½	25	1½	22	2	20	1¼	18	1¾	17	1¼	17	1½	17	1¼	17	1¾	18	2	17	28¾	12¼	41
Georgia*	do	Savannah	24, 1856	5¼	42	9¼	28	2¾	22	1¾	21	1¼	19	2	18	1½	18	1½	18	2	18	1½	19	2½	21	1½	22	1½	27	34½	3½	38
Leopard*	Amsterdam	New Orleans	22, 1847	3½	47	4	43	7	29	1½	27	1¾	26	1¼	25	1¾	23	2	22	1½	21	1½	20	2	19	4	20	1¾	19	33½	8	41½
Ocean*	Liverpool	Apalachicola	15, 1844	5½	46	2½	39	3	36	6	26	2	24	2	24	2	23	2	23	1¾	23	1¼	23	2	24	3	24	1¾	26	29¾	8¼	38
Chesapeake*	Rotterdam	New Orleans	11, 1846	2½	44	1½	41	2	36	3	29	2	25	2	22	2	20	2	19	3	17	1½	17	1½	16	1¾	17	1¼	18	26	7	33
Garrick	Liverpool	do	29, 1856	10½	49	2	47	1½	43	2	40	10	30	10	22	3	20	2	20	1½	20	2	20	2	20	3	20	4	20	53½	11	63½
Ocean*	do	Apalachicola	14, 1845	6	43	2	38	2	35	2	31	2	28	1	27	2	26	1	26	2	25	3	24	2½	25	2	25	3½	26	32	8	40
Diadem	do	New Orleans	30, 1849	3	50	2	48	2	46	4	45	5	42	6½	30	4½	27	1¾	25	1¼	25	3	25	2	26	2	25	3	24	40	10	50
Do	London	do	2, 1851	3½	48	6½	48	2	47	11	39	3¼	36	4¾	31	4¾	25	1¾	25	3½	25	4	27	2¼	26	1¾	26	2	25	51	8	59
Mexico	Rotterdam	Hampton Roads	2, 1830	7	47	3¼	43	1½	43	1	42	2	49	1½	40	2	37	1½	35	1½	36	2	35	1½	35	1½	35	3	36	29¼	1¼	30½
Tarolinta	Liverpool	Charleston	13, 1845	6¾	42	1¼	40	2	40	2¼	41	1½	41	3¼	41	2½	39	1½	38	2¾	35	2¼	35	4	35	3	33	3	33	36	¼	36¼
Gulnare	do	Baltimore	28, 1843	9	49	5	47	3	46	2½	45	1	41	1½	41	3	38	6½	38	4	35	2½	34	4	34	5½	34	8	34	55½	½	56
Means by southern routes from port to 75° W. long				4.7	46	3.3	45	3.4	31	2.8	27	1.6	24	1.9	23	1.7	21	1.6	21	1.8	20	1.6	20	1.8	20	2.1	21	1.9	23	30.2	7.9	38.1
Means by northern routes from port to 75° W. long				6.6	47	3.3	45	2.0	44	3.8	42	4.1	44	4.6	34	3.3	31	2.5	30	2.4	29	2.6	29	2.6	29	2.8	29	3.8	29	44.4	5.1	49.5

* Southern routes.

Let us analyze these tables a little. Most of the vessels—indeed all except one—by the southern route, are bound into the Gulf; whereas most of those of the northern route are bound into some of the Atlantic ports; therefore, by comparing the average length of passage of the southern route into New Orleans or Galveston with the average length of passage by the northern route into Baltimore or Charleston, we can draw no correct conclusion whatever as to the relative advantages of the two routes. Let us therefore compare the two routes only for so much of the way as is common, and that will be from port on the other side to the meridian of 75° on this. We shall then have the following averages to 75° W:

For—	Northern route.	Southern route.	Thence to New Orleans.
	Days.	*Days.*	*Days.*
January	50.9	40	9.6
February	46.8	35.3	9.5
March	34.6	35.5	8.8
April	36.9	30.9	10
September	37.7	42.0	9.1
November	36.9	42.0	10.2
December	44.4	30.2	9

Assuming the above averages to be derived from sufficient numbers, and for some months they are not, we shall see that the southern route has the decided advantage from December to April, inclusive. The 12 monthly plates (Gales of the Atlantic, Vol. I) will explain this at a glance. The most stormy months are from December to April, and vessels bound as far south as the Capes of Virginia cannot go amiss by avoiding the northern and taking the southern route during those months. If they will not in every instance make shorter passages, they will at least have better weather, and that is worth something, especially in the winter months.

From June to October, inclusive, there is not much choice of routes. On the one hand the NE. trades are uncertain at that season of the year—the hurrican season; while to the north, calms are most prevalent, and gales less frequent. During these months, therefore, the best route is the straight course, for the Atlantic ports especially, taking advantage of the winds as they present themselves, for they are too unstable for one to go either to the north or south to look for them.

At this season of the year the calm belt of Cancer is far north, and vessels that attempt to make westing between 28° and 34° will find the winds more baffling than they will either to the north or the south of those parallels. I caution navigators to avoid the belt between these parallels as much as possible; and when they *have* to cross it I advise them to cross it nearly on a meridian. The trade-wind chart shows the position of this calm belt for each month.*

Transient vessels, bound into Philadelphia and New York, would find the southern route, in the winter months, the most desirable on account of the weather, but the passage by it would, at that the most favorable season for it, be prolonged about a week on the average. The mistake that has been generally made by vessels taking the southern route is in their not going far enough south to get well into the trades. The trade-wind chart will leave no one in doubt upon that point, and no vessel attempting the southern route should think of steering north, whatever be her port, until she falls into the great track followed by the homeward bound vessels from the other hemisphere. They cross 25° N. in about 65° W.—(See the Track Charts.)

Before deciding on your route turn to the time and crossings to and from the Straits of Gibraltar, (pp. 105-14,) and see the exhibit that is made at pp. 117-119.

Dull sailing passenger ships from the north of Europe would do well, especially from December to March, inclusive, by taking the southern route, even though they be bound to New York. If they cannot gain time by this route, they will gain at least smooth water and pleasant weather until they reach the offings of our own coasts.

In summer the Great Circle route is the best to all the Atlantic ports. Even for the Gulf ports and Cuba the route in the summer time should be decided upon according to the wind one meets with while gaining an offing from Europe, rather than by considerations growing out of any fancied preference as to winds by the way. If they be such as to force you to the south, make as much westing as you can before crossing the parallel of 38°. Having crossed that parallel it is then advisable to go south in search of the northeast trades to carry you into the Gulf.

The reason why the north or Great Circle route is recommended to vessels bound into any of the Atlantic ports during the summer and fall months, from May to October, inclusive;—the reason why no preference is given to the southern route over the Great Circle during that period, even for Gulf bound vessels;—and the reason why such decided preference is given to the southern route, from December to March, may be gathered from a little reflection as to the course of the trade-winds, and a careful examination of the twelve Plates, Vol. I, illustrative of the "Gales of the Atlantic."

From December to March gales of wind are most frequent along the northern route. These are mostly from the westward. This circumstance therefore is against the Great Circle route in the winter time. But from May to October the case is different. The gales along the Great Circle are much less prevalent, as the same plates conclusively show.

On the other hand, the trade-winds being a flow of air from colder to warmer latitudes, the difference of temperature between the calms of Cancer, from which, and the calm belt of the equator, into which, the trade-winds flow, is greater in the winter than in the summer time. Consequeutly the more rapid, constant, and steady is the winter flow.

In the summer, however, the air in the calm belt of Cancer, though it be as far north as 35°, attains as high a temperature, especially on the continents of Africa and America, as it does in the belt of equatorial calms. Then why should not the air flow towards those continental heated places as well as to that of the equator? It does; and thus the trade-winds are frequently broken up in the summer time, and therefore they cannot be relied on as in winter. There is another reason why the winter trades should be fresher, more steady, and constant than the summer trades, and it is this: In the winter time the calm belt of Cancer, out of which the trade-winds flow, is some 500 or 600 miles nearer than it is in the summer time to the equatorial calm belt into which the trade-winds blow—the places of high and low barometer are then closer to each other—and no one engaged in the business of commerce need be told that the closer the place of demand and supply be together the more certain and steady will be the supply.

And there is also another reason why the southern route, even by the Gulf bound ships, should be abandoned, and why the Great Circle route should be preferred in the summer time, which is this: From July to October the hurricane season rages in the West Indies, while from June to October the gale charts show the Great Circle route to be the least stormy.

These remarks about the southern route, for vessels bound in winter as far north as the Chesapeake and New York, are intended especially for the passenger ships from Bremen, Hamburg, and other ports in the north of Europe, and they are earnestly commended to the attention of the masters of such ships.

Crossings and Time from the United States to the Straits of Gibraltar.

Name of vessel.	From—	Date of sailing.	DAYS FROM PORT TO 70° W., AND CROSSINGS THENCE TO 15° W.																								Days from 15° W. to Gibraltar.	Total days.
			D.	70° W.	D.	65° W.	D.	60° W.	D.	55° W.	D.	50° W.	D.	45° W.	D	40° W.	D.	35° W.	D.	30° W.	D.	25° W.	D.	20° W.	D.	15° W.		
Henry Mathews	New York	Jan. 1, 1857	2½	38	3½	36	1¼	36	2	37	2	39	3	40	3	40	1	41	8	41	1½	41	2½	39	3	38	3	36¼
Hollander	do	3, 1854	1	40	1½	40	2	40	2	40	1½	40	2½	40	1¼	39	1¼	39	1½	38	2	37	2	37	2	36	6	26½
Sachem	Boston	1, 1819	....	.....	1¼	42	1¼	41	1¾	41	1¾	41	1¼	41	1¼	41	1¾	41	3	40	1¼	39	1¾	38	1½	37	9	26¾
Means of routes from port to Gibraltar			1.2	39	2.1	39	1.5	39	1.9	39	1.7	40	2.2	40	1.8	40	1.3	40	4.2	39½	1.6	39	2.1	38	2.2	37	6	29.8
Gilbert	New York	Feb. 10, 1854	1	39	2	38	2	37	3	37	4	37	3	38	2	38	3	36	3	36	2	37	3½	37	2	36	6½	37
Raritan	New Orleans	9, 1852	14	32	1½	34	2	35	1½	35	1¼	35	1¾	36	2	36	1¼	37	2	37	1¾	36	2	36	2	37	12	45
Means of routes from 70° W. to Gibraltar			....	35½	1.7	36	2	36	2.2	36	2.6	36	2.4	37	2	37	2.1	36	2.5	36½	1.8	36½	2.8	36½	2	36½	9.2	40.8
Azof	New York	Mar. 18, 1857	2½	39	1½	39	3	39	2½	40	1½	40	2¼	41	¾	41	4¼	44	2¼	42	1¾	42	1½	42	1½	41	5½	30¾
Panchita	do	16, 1856	2	39	1½	38	2	9	3½	39	3	39	1	39	1½	41	1½	41	1	41	2	40	1¼	39	2	37	5½	27¾
Iona*	New Orleans	10, 1853	11½	33	1½	35	2	36	1	36	1	36½	1	37	1¾	37	1½	37	1½	37	1¾	36	1¾	37	6	38	10	42¼
Commodore	New York	3, 1853	1	39	1½	40	1½	40	1¼	40	1¾	40	2½	39	1½	40	1¾	41	1¼	40	1¼	40	1¾	39	2	37	4	23
Panama	Boston	12, 1854	....	.....	1	42	2	42	1½	43	1½	44	4	42	2	41	1¼	41	2¼	40	1½	40	3	40	5	36	7½	32½
Rover	New York	1, 1849	2	37	2	36	2½	36	1½	37	1½	37	1½	38	1½	37	1½	37	1	37	1	37	2	37	1¼	37	3¾	23
Dispatch	Boston	27, 1812	....	.....	8	41	5	39	3¼	40	1¾	41	2	41	2	40	3½	39	2½	40	5	41	1	40	1½	39	7½	43
Means of routes from port to Gibraltar			1.3	39	2.6	39	2.7	39	2.3	40	1.8	40	2.2	40	1.5	40	2.3	40½	1.7	40	2.1	40	1.7	39½	2.2	38	5.6	30
Hannibal*	New Orleans	April 9, 1857	10	35	2	35	1¼	36	1¾	36	2¼	36	3¾	38	2¼	38	1½	37	1½	35	1¼	35	1½	36	1¼	36	5	35¼
Rebecca	New York	13, 1855	1	40	2	39	3	37	2	38	1	39	2¼	40	2¼	40	2	41	3¼	43	3¼	39	1¾	40	1½	38	1½	26
Marian	do	13, 1854	2	40	3	39	2½	38	1½	37	1	37	1¼	37	2	38	2	40	3	36	2½	37	1½	36	1¼	36	3	26½
Race Horse	Boston	4, 1854	....	.....	1½	42	1	42	1	42	1	41	1	41	1	40	1	39	1	38	1½	37	1¼	37	1¾	37	3¾	16¾
Restitution	do	24, 1824	¼	42	1½	42	1½	42	1	42	3	43	1	42	2	40	1	40	3	40	1	40	2	39	1	38	3½	22
Leprato	New York	18, 1855	1½	40	2½	40	1	40	2	41	1½	41	1½	41	1	41	2	41	2	41	1	40	2	40	1¾	38	4	23¾
Means of routes from port to Gibraltar			1	40	2.1	40½	1.8	40	1.5	40	1.5	40	1.4	40	1.6	40	1.6	40	2.5	40	1.8	39	1.7	38	1.4	37	3.1	23

* Not included in the average.

Crossings and Time from the United States to the Straits of Gibraltar.

Name of vessel.	From—	Date of sailing.	DAYS FROM PORT TO 70° W., AND CROSSINGS THENCE TO 15° W.																								Days from 70° W. to Gibraltar.	Total days.
			D.	70° W.	D.	65° W.	D.	60° W.	D.	55° W.	D.	50° W.	D.	45° W.	D.	40° W.	D.	35° W.	D.	30° W.	D.	25° W.	D.	20° W.	D.	15° W.		
Australia	New York	May 10, 1857	1¾	40	1¾	39	1¾	38	2	39	1⅛	40	2¼	40	1¾	42	1¾	41	1¾	40	1¾	39	2	39	2½	38	9	31½
Commodore	Boston	30, 1857	....	.....	2¼	42	2	41	2	40	1¼	40	1¾	41	1⅛	42	1⅛	41	1⅛	41	1½	39	1¼	39	1¼	37	3½	21¼
Do.	New York	30, 1856	1	39	2	39	¾	39	1¾	39	1½	40	2½	39	1½	40	1¼	41	1	42	1¾	42	2¼	41	1¾	40	13	32
Kate Anderson	do	23, 1854	2½	40	2½	40	3	39	4	42	2	41	3	42	1½	42	2	41	1	41	1¼	40	1¾	39	3	38	5	32½
John Curtis	do	16, 1835	1	40	1½	39	1¼	38	1½	38	1¼	38	¾	37	2½	39	2¾	39	1¼	39	2¾	38	2	38	2	37	5	25½
Perseverance	do	26, 1827	1	40	2	40	3	39	1¼	40	2¾	40	4	38	2	38	2¼	39	4¾	39	3½	40	2	40	2½	41	7	38
Means			1.4	39¾	2	39¾	2	39	2	40	1.7	40	2.3	39½	1.8	40½	1.9	40½	1.9	40½	2.1	40	1.9	39	2	38½	7.1	30.1
Greyhound	New York	June 18, 1856	5¼	33	1¾	33	2¼	34	3¾	35	3½	36	2½	40	2½	42	1	42	1	42	1	42	1½	41	2	40	7	35
Timaleon	Boston	5, 1855	....	.....	2	42	1½	42	1½	42	3	44	1½	44	1¾	43	1¼	43	1¾	42	3¼	43	4½	35	3	36	7	32
Fides*	New Orleans	23, 1856	18½	35	1½	37	1½	37	1½	37	1¼	38	1¾	38	2	38	2½	38	2½	39	2	40	4½	38	2	37	3	44½
Garland	New York	17, 1855	5½	39	1½	39	2	40	2	40	1½	41	1½	41	1½	41	1½	40	2	40	2	40	1¼	39	1¼	38	4	28
T. A. Ward	do	4, 1857	1	39	2	35	1¼	35	2	36	1¾	36	1¼	36	2½	36	1¼	36	2	35	7	35	2	34	3	34	4	31
Defiance	do	23, 1855	2	40	1	40	1	40	1¼	40	1¼	40	1	40	1½	40	1¼	41	2	40	1¾	39	1¼	39	1¾	37	4	21
Theoscena	do	17, 1855	2½	37	1¾	38	1	39	1¾	39	2	39	2¼	39	1¾	39	1	40	1	40	1¼	40	2¾	39	2¾	37	5¼	27
Meletia	Boston	16, 1853	....	.....	1½	42	1½	43	1¼	42	1¾	43	1¼	42	1¼	42	1½	42	1	42	1	42	2	40	2	38	7	23
Relm	New York	9, 1849	2	38	2	37	2	36	3	38	6	39	2	40	1	41	1	42	2	41	5	41	1½	40	2½	37	5	35
Summer	Boston	17, 1805	....	.....	1½	43	1½	42	2	41	2	40	2	41	1	41	2	40	2	40	2	40	2	37	3½	36	4½	26
Means			2	38	1.7	39	1.5	39	2.1	39	2.5	40	1.7	40	1.6	40	1.3	40	1.6	40	2.7	40	2.1	38½	2.5	37	5.3	28.6

*Not included in the average.

Crossings and Time from the United States to the Straits of Gibraltar.

Name of vessel.	From—	Date of sailing.	DAYS FROM PORT TO 70° W., AND CROSSINGS THENCE TO 15° W.																								Days from 15° W. to Gibraltar.	Total days.
			D.	70° W.	D.	65° W.	D.	60° W.	D.	55° W.	D.	50° W.	D.	45° W.	D.	40° W.	D.	35° W.	D.	30° W.	D.	25° W.	D.	20° W.	D.	15° W.		
Pride of the Sea	New York	July 12, 1856	1⅛	40	1¾	40	¾	40	1⅛	41	1½	40	2	40	2¼	40	1¾	40	1	40	1¾	40	4	41	2¼	40	3½	25½
Globe	do	19, 1855	2	39	2	38	1	38	3	38	5	38	1½	38	1½	39	2¼	39	1½	40	1½	40	5¾	37	4	36	6	37
U. S. ship Levant	Norfolk	13, 1852	3	38	1½	38	1	38	2¼	39	1¾	40	1½	41	1	42	1½	42	1	40	3	38	2	37	2¼	36	4	25¾
Eastern Star	Boston	21, 1854	2¼	42	1¾	42	2	43	1	43	1¼	44	1	45	1¼	45	2	45	1	46	2	46	1⅛	45	1¼	42	3	21¼
Jennett	Wilmington	2, 1851	2½	37	1½	37	1¼	38	1¼	39	1½	39	2	39	1½	39	2¾	40	1¾	40	2	39	1½	38	2	38	4½	26½
Ariana	New York	11, 1852	1	40	2½	41	1½	42	2	42	1	42	3	42	1¼	42	1¾	41	2	41	2	40	1¼	39	1¾	37	4	25
Commodore	do	19, 1852	1	39	2	39	1	40	2	40	2	42	2	43	2	43	1½	43	1½	43	1¾	42	1¼	41	1½	41	4½	24
Greyhound	do	9, 1852	1½	39	2	40	2	41	1½	41	1½	41	2	40	1¼	40	1¼	40	1	40	2½	39	2	36	3	36	6	27½
Tremont	Boston	24, 1852	....	.....	2½	42	1¼	43	2¾	43	1¼	43	1¾	43	2	43	1¼	43	1¾	43	1½	42	1¼	42	2¼	39	5	24½
Maria Jewett	New York	23, 1853	2	40	1½	40	1½	41	1	42	1	42	1½	41	1½	40	3	40	2	40	4	40	2	39	3	37	5	29
Diadem*	Mobile	2, 1852	19	36	3	37	2	37	2	39	1	39	1¼	39	5¾	39	3	37	2	39	2	38	3	38	1	37	3	48
Helen Fielder	New York	16, 1848	1	40	3½	40	1½	40	1½	41	1	41	2	39	2½	40	1¾	40	2	40	1¾	39	2	38	6	37	5	31½
Stephen Brewer	do	12, 1844	1	39	1¼	39	1¾	38	1½	38	1	38	1	38	1½	38	2	39	1½	40	1¾	40	1¾	40	3	38	4	23
Citizen*	New Orleans	27, 1840	21	33	5	35	3½	36	2	37	3½	38	3	38	4	39	2½	39	5½	36	3½	36	4½	36	5	35	5	68
Cornelia	Philadelphia	3, 1850	2½	39	1½	40	2	41	2¼	41	2	42	1¼	42	1½	42	3½	42	1½	42	1	42	1	41	2	39	5	27
Wakulla	New York	14, 1849	2	39	2	41	1½	41	1½	42	1½	41	2½	42	2	42	2	41	1	42	1¼	41	1½	40	1½	38	5	25¼
Means			1.6	39	2	40	1.4	40	1.8	40½	1.8	40½	1.8	41	1.6	42	2	41	1.5	41	2	41	2	39½	2.5	38	4.6	26.6
Means of six best			1.1	39	2	40	1.5	41	1.9	41	1.4	41	2	41	1.7	41	1.6	41	1.4	41½	1.8	41	1.5	40	2.2	38	4	24
Supply	New York	Aug. 1, 1856	1	39	2½	38	4½	41	1½	43	3½	42	3	41	1	42	2	43	1	43	1	42	1½	42	3	41	5	30½
Andrea Corney	Boston	17, 1856	2	41	4	42	1¼	42	1½	42	1	42	2¼	43	2	39	1½	41	1¼	41	1¾	41	1¾	41	1¾	38	8	30
Panchita	New York	22, 1855	2½	40	2	40	2	40	3½	40	1¼	40	2¼	40	1½	42	1¼	43	1¾	43	2	43	3	43	2	40	6	31
Telegraph	do	9, 1857	1¼	40	1¾	40	2	40	1	41	2	40	4	40	2	40	1¼	40	2	41	3	40	2	39	2	37	4	28¼
Montague	do	22, 1852	½	40	1½	40	2½	40	1¼	40	1½	41	2	41	5	41	1½	40	1½	40	2	39	1¼	39	2½	38	3¼	26¼
Race Horse	Boston	5, 1853	¾	43	3¾	42	1½	42	2	41	1½	40	1½	41	1	40	2	40	1	40	1	40	1¼	40	1½	38	3½	22¼
Marcella	New York	2, 1848	2	38	2	37	5	40	1	40	2	40	3	41	1½	41	1½	41	2	40	1	40	2	39	3	38	5	31
Dispatch	Boston	7, 1811	1	41	2	42	2	42	1¼	42	3¾	41	4	42	4	42	1	42	1½	42	1½	41	1¾	40	3	38	4	30¾
Means			1.4	40	2.4	39	2.6	41	1.7	41	2.1	40½	2.7	41	2.2	41	1.5	41	1.5	41	1.6	41	1.9	40	2.3	38½	4.9	28.8

* Not included in the average.

Crossings and Time from the United States to the Straits of Gibraltar.

Name of vessel.	From—	Date of sailing.	DAYS FROM PORT TO 70° W., AND CROSSINGS THENCE TO 15° W.																									Days from 70° W. to Gibraltar.	Total days.
			D.	70° W.	D.	65° W.	D.	60° W.	D.	55° W.	D.	50° W.	D.	45° W.	D.	40° W.	D.	35° W.	D.	30° W.	D.	25° W.	D.	20° W.	D.	15° W.			
U. S. ship St. Louis	Norfolk	Sept. 1,1852	1½	37	1½	36	2	36	2	37	1½	37	3½	37	3	36	2	36	2	35	1	35	1	35	1	35	3	25
Panchita	New York	1,1853	2	40	3	40	2	41	2	41	2	41	1	42	3	42	1	42	2	42	2	42	2	41	4	40	4	30
Marcello	do	2,1849	1	38	3	39	4	40	4	38	3	37	3	38	2	36	2	36	2	35	2	36	1	36	2	36	5	34
Hollander	do	6,1849	1	40	2	39	2	37	5	36	2	36	2	36	2½	36	2½	36	2	37	1	37	1½	37	3	37	3½	30
Wagram	Boston	1,1848	1	42	2¼	42	2¾	42	2	41	2	41	2	41	1¼	41	1¾	41	2	41	3	39	3	38	1¼	37	3¾	28
Stieglite	Hampton Roads	28,1842	3	37	1½	37	2½	36	4	36	2	37	2	36	2½	37	1¾	36	2	36	2	36	8	34	2	35	5	38
Barbara	New York	1,1838	1½	39	2	40	1	40	1	40	1¾	41	1¾	42	1	42	1	42	1¼	42	3	41	1¾	40	3	38	4	24
Means			1.6	39	2.2	39	2.3	39	2.9	38	2	39	2.2	39	2.1	39	1.7	38	1.9	38	2	38	2.6	37	2.3	37	4	29.8
Atalaya	New York	Oct. 9,1856	2	39	6	39	2	38	2	37	2	37	6	37	5	37	3	36	5	36	3	36	3	37	2	37	6½	47½
Statia	do	7,1846	1¾	40	1¼	40	3	37	2	39	2	40	2	40	2	41	2	40	2	40	2	40	3	37	3	36	9	35
Dispatch	Boston	1,1812	¼	42	1½	42	1½	42	3	42	4	40	2¼	40	2½	39	1	39	2	37	1	37	3	37	2	38	7	31
Carroll	Baltimore	24,1835	4	32	6	35	2	35	2	36	1½	37	1½	37	3	37	3½	39	1½	38	3	36	2¼	37	1¾	36	5	37
Barbara	New York	1,1839	1	40	2	39	1¼	39	2	40	2	40	1¾	41	1½	41	1½	41	1¼	41	2¾	41	2½	39	2	38	3½	25
Means			1.8	39	3.3	39	2	38	2.2	39	2.3	39	2.7	39	2.8	39	2.2	39	2.3	38	2.4	38	2.8	37	2.1	37	6.2	35.1
Ellen Morrison	Baltimore	Nov. 30,1855	3¼	36	2¾	36	1¾	35	1½	35	1¾	34	4	35	1¾	35	1½	37	1¾	37	1¼	36	1¾	36	2	35	4	29
Commodore	Boston	24,1855	....	.....	2	42	1¾	41	1¼	42	1¾	40	1¼	42	2	41	2	40	4¼	40	3¾	37	2	37	2¾	37	3	27¾
Theoscena	Hampton Roads	16,1854	1	35½	2	38	2	37	4	37	4	39	2	40	2	41	2	42	3	42	2	42	5	40	3	39	7	39
Lepanto	Baltimore	10,1853	4	38	3	38	2	38	2	40	2	40	2	40	6	40	3	42	2	42	6	36	5½	34	1½	35	4½	43½
Winthrop	New York	7,1854	1	40	1¼	40	1¾	41	2	43	1¼	43	2	44	1¾	43	1½	44	2	45	1¾	43	1¾	41	2	40	4	24
Panama	Boston	10,1853	....	.....	2½	43	3	43	1	42	2½	47	2	46	2	47	1½	46	1	42	1½	40	1	39	1	38	10	29
Samuel Edwards	New York	20,1853	½	40	3½	39	2	39	1½	39	2	39	2	39	3	42	2	43	1	44	1¼	43	1¾	41	3	39	4	27½
Apollo	Charleston	1,1849	8	35	2	37	2	39	1	40	2	40	1	40	2	40	1	41	1	41	3	40	1	39	2	38	5	31
Means			2.2	37	2.4	39	2	39	1.8	40	2.1	40	2	41	2.6	41	1.8	42	2	42	2.6	40	2.4	38	2.1	37½	5.2	31.4

Crossings and Time from the United States to the Straits of Gibraltar.

Name of vessel.	From—	Date of sailing.	DAYS FROM PORT TO 70° W., AND CROSSINGS THENCE TO 15° W.																								Days from 15° W. to Gibraltar.	Total days.
			D.	70° W.	D.	65° W	D.	60° W.	D.	55° W	D.	50° W.	D.	45° W.	D.	40° W	D.	35° W.	D.	30° W.	D.	25° W.	D.	20° W.	D.	15° W.		
Talbot	New York	Dec. 10, 1855	1¾	38	2	38	2½	38	1½	39	1	40	1	40	2¼	41	1	41	1	42	1¼	40	3¼	39	5	35	4	27¾
Commodore	do.	14, 1856	....	....	2¾	41	2¼	38	1¼	37	2¾	32	4	30	4	33	3¼	35	1¾	36	1	36	1	36	2¾	34	4	30¾
Race Horse	Boston	9, 1853	¼	43	2¾	41	3	39	2	37	3¼	37	1¼	38	1¼	38	1¼	37	4	35	2½	34	3½	36	1	36	2½	28½
Nueva Granada	Norfolk	4, 1842	1	37	2	37	1¼	38	1½	39	1½	39	1½	39	1¼	37	2	37	1¼	37	3¼	36	4½	34	2	35	9	32
Garland	New York	2, 1850	2	37	2	37	2	37	1	38	1¼	38	2	39	1½	39	1½	39	2	40	3	40	4	39	3	37	5	30¼
Kate Anderson	do.	11, 1853	¾	38	3½	36	4	36	2	36	3	38	2	40	4	41	3	42	1½	40	1½	39	1¼	38	1¾	37	3	31¼
Forrester	do.	9, 1848	3	39	3	37	2	36	2	36	1	37	2	37	1	37	2	36	3	36	2	36	1	36	1	36	6	29
Summer	Boston	11, 1805	....	.....	1	42	2	41	2	40	6	38	2	37	4	37	2	37	6	37	1	37	3	36	3¾	33	9	41¾
Means			1.1	39	2.4	39	2.4	38	1.6	38	2.5	37½	2	37½	2.5	38	2	38	2.3	38	1.9	37	2.7	37	2.5	35½	5.3	31.2

Mean Time and Crossings from 70° to 15° W. of 313 vessels bound to the North of Europe and to Gibraltar.

	Month.	CROSSINGS AND TIME FROM 70° W. TO THE STRAITS AND TO THE CHANNEL.																							Total.
		70° W.	D	65° W.	D.	60° W.	D.	55° W.	D.	50° W.	D.	45° W.	D.	40° W.	D.	35° W.	D.	30° W.	D.	25° W.	D.	20° W.	D.	15° W	
32 vessels to the North of Europe	January	37	1.6	38	1.7	39	1.6	40	1.7	41	1.7	42	1.5	44	1.6	45	1.4	47	1.3	48	1.3	49	1.4	50	16.8
3 vessels to Gibraltar	do	39	2.1	39	1.5	39	1.9	39	1.7	40	2.2	40	1.8	40	1.3	40	4.2	39½	1.6	39	2.1	38	2.2	37	22.2
24 vessels to the North of Europe	February	37	1.4	37	1.7	38	1.6	39	1.5	40	1.5	43	1.5	44	1.4	45	1.2	46	1.3	48	1.4	49	1.6	49½	16.1
2 vessels to Gibraltar	do	35½	1.7	36	2	36	2.2	36	2.6	37	2.4	37	2	37	2.1	36	2.5	36	1.8	36	2.8	36	2	36	24.1
31 vessels to the North of Europe	March	37	1.8	37½	1.4	38½	1.4	39	1.7	40½	1.8	41½	1.6	43½	1.4	44½	1 5	46	1.7	47	1.4	48	1.6	48½	17.3
7 vessels to Gibraltar	do	39	2.6	39	2.7	39	2.3	40	1.8	40	2.2	40	1.5	40	2.3	40½	1.7	40	2.1	40	1.7	39	2.2	38	23.1
38 vessels to the North of Europe	April	37¼	1.5	38	1.6	39	1.5	39½	1.6	40½	1.5	41½	1.5	43¼	1.2	44½	1.3	46	1.4	47½	1.4	48½	1.6	49¼	16.1
6 vessels to Gibraltar	do	41	2.1	40½	1.8	40	1.5	40	1.5	40	1.4	40	1.6	40	1.6	40	2.5	40	1.8	39	1.7	38	1.4	37	18.9
28 vessels to the North of Europe	May	38½	1.6	39½	1.5	40	1.5	41	1.2	41	1.6	43	1.5	44¼	1.4	46	1.4	47	1.4	48	1.3	48½	1.6	49	16
6 vessels to Gibraltar	do	40	2.0	39¾	2	39	2	40	1.7	40	2.3	39½	1.8	40	1.9	40½	1.9	40½	2.1	40	1.9	39	2.0	38½	21.6
29 vessels to the North of Europe	June	39¾	1.8	39	1.6	40	1.5	40½	1.5	41	1.6	43	1.3	44	1.5	46	1.5	47	1.3	48	1.5	49	1.4	49¼	16.5
9 vessels to Gibraltar	do	38	1.7	39	1.5	39	2.1	39	2.5	40	1.7	40	1.6	40	1.3	40	1.6	40	2.7	40	2.1	38½	2.5	37	21.3
23 vessels to the North of Europe	July	38½	1.8	38½	1.8	40	1.6	41½	1.8	42	1.7	43	1.8	44½	1.4	46	1.4	47	1.3	47½	1.3	48¼	1.3	49	17.2
14 vessels to Gibraltar	do	39	2.0	40	1.4	40	1.8	40½	1.8	40½	1.8	41	1.6	42	2.0	41	1.5	41	2.0	41	2.0	39½	2.5	38	20.4
25 vessels to the North of Europe	August	38¼	2.5	39	2.1	40	1.6	40	1.9	41	2.0	43	1.8	44	2.0	45	1.4	46½	1.5	47½	1.9	48	1.8	49	20.5
8 vessels to Gibraltar	do	40	2.4	39	2.6	41	1.7	41	2.1	40½	2.7	41	2.2	41	1 5	41	1.5	41	1.6	41	1.9	40	2.3	38	22.5
34 vessels to the North of Europe	September	37¾	2.2	38½	1 7	40	2.0	41¼	1.5	42	1.8	44	1.5	45¼	1.4	47	1.3	47½	1.3	48½	1.2	49¼	1.4	49½	17.3
7 vessels to Gibraltar	do	39	2.2	39	2.3	39	2.9	38	2.0	39	2.2	39	2.1	39	1.7	38	1.9	38	2.0	38	2.6	37	2.3	37	24.2
25 vessels to the North of Europe	October	38½	2.0	39	2.1	39	1.8	41	1.8	41	1.7	43½	1.8	44½	1.6	46	1.4	46¾	1.2	47½	1.3	48¾	2.3	50	19
5 vessels to Gibraltar	do	39	3.3	39	2.0	38	2.2	39	2.3	39	2.7	39	2.8	39	2.2	39	2.3	38	2.4	38	2.8	37	2.1	37	27.1
19 vessels to the North of Europe	November	38½	1.7	39	1.7	40	1.5	41	1.6	42½	1.5	44	1.6	44½	1.4	46	1.5	47½	1.4	48	1.3	49	1.4	49½	16.6
8 vessels to Gibraltar	do	37	2.4	39	2.0	39	1.8	40	2.1	40	2.0	41	2.6	41	1.8	42	2.0	42	2.6	40	2.4	38	2.1	37½	23.8
32 vessels to the North of Europe	December	37¼	1.9	38½	1.6	39¾	1.8	41½	1.7	42	1.8	43½	1.6	44½	1.6	46	1.4	47	1.3	48½	1.3	48½	1 6	49½	17.6
8 vessels to Gibraltar	do	39	2.4	39	2.4	38	1.6	38	2.5	37	2.0	37½	2.5	38	2.0	38	2.3	38	1.9	37	2.7	37	2.5	35½	24.8

Time and Crossings from Gibraltar to the United States.

Name of vessel.	To—	Date of sailing.	DAYS FROM PORT TO 15° W., AND CROSSINGS THENCE TO 70° W.																									Days to Port.	Days to 70° W.	Total days.
			D.	15° W.	D.	20° W.	D.	25° W.	D.	30° W.	D.	35° W.	D.	40° W.	D.	45° W	D.	50° W.	D.	55° W.	D.	60° W	D.	65° W.	D.	70° W.				
Globe	New York	Jan. 23, 1856	6½	35	4⅛	35	5½	31	4	32	3	32	4	33	6	32	5	33	24†	38	2	39	5	37	7	40	2	76½	78½
Atalaya	do	2, 1856	13	31	7	27	4	26	5	25	8	20	2	20	2	20	2	20½	2	19½	4	19	5	20	12	29¾	10	66	76
Winthrop	do	22, 1855	8	36	3	34	4	26	4½	20	3½	23	6	24	2	26	4½	29	2	30	2½	33	6	36	4	36	3	50	53
Panama	Boston	22, 1854	3	36	1¾	35	2¼	35	2	34	1	35	2½	34	1½	34	4	33	2	33	4	32	4	34	8	42	2	36	38
Apollo	New York	6, 1852	5	33	6	36	5	32	4	33	3	30	2	29	3	29	2	29	3	29	4	32	3	34	6	35	7	46	53
Marcello	do	23, 1850	5	32	3	29	2	28	2	27	1	27	2	27	4	25	4	24	3½	26	5½	30	2	31	5	36	7	39	46
Barbara	do	9, 1840	5½	32	2	30	2	27	1½	26	2½	24	1½	23	2	23	1¾	22	1½	22	1¾	24	3	28	3	30	5	28	33
Average time and crossings			6.6	33½	3.9	32¼	3.5	29¼	3.3	28	3.1	27¼	2.9	27	2.9	27	3.3	27	5.4	28	3.4	30	4	31	6.4	35½	5.1	48.7	53.8
Astoria	New Orleans	Feb. 25, 1856	5	34	3	32	8	23	6	23	4	22	4	20	3	17	2	18	2	19	2	17	2	18	4	17	14	45	59
Race Horse	Boston	15, 1854	3¼	35	1¾	34	1	34	1¼	33	1½	32	1½	32	1½	32	1½	32	1¾	31	1½	31	5	36	3¾	42	¼	25¼	25½
Sarah Boyd	New York	16, 1853	7	35	1½	35	1½	34	1	33	2	33	4	33	2	34	3	35	3	34	4	34	3¾	34	8	39	3	40¾	43¾
Apollo	do	25, 1850	3	36	2	36	2	35	2	35	1	35	2	35	4	37	4	37	2	36	6	37	6	36	3	39	2	37	39
Average time and crossings			4.5	35	2	34½	3.1	31½	2.5	31	2.1	30½	2.9	30	2.9	30	2.6	30½	2.2	30	3.4	29¾	4.2	31	4.7	34¼	4.8	37.1	41.9
Ellen Morrison	Boston	Mar. 7, 1856	9	32	3½	32	2¾	32	8¾	30	6½	31	3	32	3½	32	2	32	3	35	2	36	3	40	3	43	½	50	50½
Suliate	New York	3, 1857	3	36	3	36	4	33	5	35	4	36	6	41	3	41	3	40	3¼	40	1½	40¾	1¼	41	2½	41	2½	40¼	42¾
Talbot	do	7, 1856	4	37	4	35	3	36	4	37	3	37	3	40	4	40	3	37	1¾	39	3¼	36	2	36	3	38	2	38	40
R. H. Dixey*	Mobile	24, 1856	4½	32	1½	28	2	25	2	23	1	22	2	20	1	19	2	18	2	17	1	17	2	16½	2	17	11	23	34
Commodore	Boston	6, 1857	8½	36	1¾	36	4	39	3	41	1¼	41	2	41	1¾	42	2¼	43	1¾	42	2	43	2	43	2	43	1	32¼	33¼
Reindeer	New York	20, 1856	9	34	2	33	4½	30	2	29	4½	29	2	29	3	27	5	28	2	31	3	33	3	36	2½	39	1	42½	43½
Commodore	do	16, 1856	4	37	2	38	6	35	5	37	3	36	3	40	3¾	39	2¼	39	3	39	4	41	4	42	1¾	41	2¼	41¾	44
U. S. ship Levant	Norfolk	31, 1855	2½	33	1½	29	1¾	25	1½	24	1½	24	1¼	24	2	23	2	23	1¾	23	1½	23	2	26	5¼	30	4¾	24½	29¼
Kate Anderson	New York	16, 1854	2½	35	1¾	35	4¾	34	4	35	3	35	1	34	2½	33	2½	34	5	35	4	34	6	34	6	38	3	43	46
Garland	do	26, 1850	3	36	1½	36	2½	36	2½	37	1½	37	1½	36	2	36	4	39	2	41	3	41	3	41	6½	41	1½	33	34½
Forrester	do	27, 1849	8	35	2	34	4	32	4	34	3	35	4	36	2	36	2	36	2	37	1	37	3	38	2	38	2	37	39
Friendship	Salem	4, 1801	4	35	1¼	35	1¾	35	1	35	2	35	2	35	2	35	1¼	35	1¾	34	3¾	35	2¾	39	3¼	42	1	26¾	27¾
Average time and crossings			5.2	35	2.2	34½	3.5	33¼	3.7	34	3	34	2.6	35¼	2.7	35	2.6	35	2.5	36	2.6	36	2.9	38	3.6	40	1.9	37.1	39.1

* Not included in the average. † Gale.

Time and Crossings from Gibraltar to the United States.

Name of vessel.	To—	Date of sailing.	DAYS FROM PORT TO 15° W., AND CROSSINGS THENCE TO 70° W.																									Days from 70° W. to port.	Days to 70° W.	Total days.
			D.	15° W.	D.	20° W.	D.	25° W.	D.	30° W.	D.	35° W.	D.	40° W.	D.	45° W.	D.	50° W.	D.	55° W.	D.	60° W.	D.	65° W.	D.	70° W.				
Canvasback	Boston	April 2, 1856	6	34	4	34	3	32	2	33	3	34	3	36	4	36	2	38	2	39	4	39	4	40	2⅛	42	½	39½	40
T. A. Ward	New York	17, 1857	3⅛	36	1¾	37	1½	38	1¾	40	1¾	40	2¼	39	4	40	5½	41	2½	41	3	40	3½	41	1⅛	40	1	32⅛	33½
Henry Mathews	do.	2, 1857	3⅛	36	1⅛	35	2	35	1½	35	1⅛	35	3	34	2	34	2	34	3	35	3	35	4½	36	7	40	1⅛	34⅛	36
Theoscena	do.	6, 1855	4½	36	2½	35	1	35	3	35	3	35	3	36	3	37	3	37	3	35	6⅛	37	4⅛	40	5	40	2	42	44
U. S. ship St. Louis	Philadelphia	6, 1855	4	34	2	34	2	34	1	34	3¾	34	3½	36	2	36	1	36	2½	36	2	35	2½	35	2	35	3	28	31
Commodore	New York	19, 1853	3	36	2	35	1⅛	35	1½	35	3	32	2¾	32	3¾	32	2½	33	3	34	3	36	3	38	3	40	3	32	35
Havre	do.	13, 1856	3	36	2	36	1	36	2	36	2	36	2	37	2	36	4	35	4	35	3	35	2	36	2	37	3	29	32
Average time and crossings			3.9	35¼	2 2	35	1.7	35	1.8	35¼	2 6	35	2.7	36	3	36	2.9	36¼	2.9	36⅛	3.5	37	3.4	38	3.3	39	2	33.9	35.9
Meletia	Boston	May 15, 1855	7	36	2	37	3	34	3	34	2	34	2	25	5	36	2¼	37	1¾	39	1¼	40	3¼	41	1¾	42	1	34¼	35¼
Hollander	New York	26, 1854	4	35	3	33	3	33	4	34	5	38	3	31	2⅛	42	3	41	1¾	41	3¾	42	2	42	3	40½	3	38	41
Rover	do.	19, 1849	2¾	36	2¼	37	2	36	2	36	3⅛	37	1⅛	37	2	38	3	38	3	38	2	37	2	35	4	38	3	30	33
Summer	Boston	1, 1806	2¾	36	2¼	36	1	36	6	36	4	37	3	38	2	39	3	40	3	40	3½	40	2½	42	3½	43	3½	36½	40
Marcella	New York	12, 1848	6	35	4	36	3	35	3	33	3½	34	3⅛	36	3¾	38	6	40	4	41	2	42	3	41	4⅛	40	2⅛	46¼	48¾
Average time and crossings			4.5	35¾	2.7	36	2.4	35	3.6	34½	3.6	36	2.6	35⅛	3	38½	3.5	39	2.7	40	2.5	40	2.6	40	3.3	40¾	2.6	37	39.6
Starlight	Boston	June 14, 1857	13	38	5½	43	2¼	45	2½	44	9¾	44	3⅛	44	2	43	9	43	3	44	2½	44	4½	42	5	42	0	62½	62½
Azof	New York	25, 1857	5	34	1¾	34	4¾	35	3½	37	4	37	3	38	5	38	5	38	3	38	5	42	5	41	2¾	40	1¼	47¾	49
Hannibal	Boston	24, 1857	3	36	3	34	3	35	3	35	4	36	2	39	2	38	3	41	3	42	2	43	1¾	43	1¼	42	½	31	31½
Panchita	New York	21, 1856	4	36	1½	35	1¼	35	2¼	35	4½	36	2½	36	2	36	2	36	4	35	5	37	5	36	6	34	5	40	45
Gilbert	do.	22, 1854	3	36	2	36	3	37	4	36	4½	37	2¾	39	2⅛	38	1½	39	1¾	40	6¼	42	5	41	5	40	1	41¼	42¼
Raritan	Boston	18, 1852	4	36	2	36	3	36	3	36	6	35	4	37	5	39	5	41	2	41	3	42	3	42	4	43	¼	44	44¼
Ionia	do.	16, 1853	3	36	3	35	6	36	2	36	2	37	3	38	3	38	3	39	2	41	2	42	1	43	2	43	½	32	32½
Race Horse	do.	14, 1854	5	35	1¾	34	2	34	4¼	35	4	36	3	36	2½	37	2½	37	3	38	3	40	3	42	3	42	0	37	37
Restitution	Salem	1, 1825	3	37	3	38	3	41	2	42	2	42	2	42	3	42	3	43	2	42	2	42	3	42	3	42	2	31	33
Panama	Boston	15, 1854	4	35	2	36	4	37	2	37	9	36	2	36	2	37	2	36	2	37	2	39	2	40	2	42	1	35	36
Average time and crossings			4.7	35¾	2.5	36	3.2	37	2.8	37¼	5	37¾	2.8	38½	2.9	38½	3.6	39¼	2.6	39¾	3.3	41	3 3	41	3.4	41	1.2	40.1	41.3

Time and Crossings from Gibraltar to the United States.

Name of vessel.	To—	Date of sailing.	DAYS FROM PORT TO 15° W., AND CROSSINGS THENCE TO 70° W.																									Days from 70° W. to port.	Days to 70° W.	Total days.
			D.	15° W.	D.	20° W.	D.	25° W.	D.	30° W.	D.	35° W.	D.	40° W.	D.	45° W.	D.	50° W.	D.	55° W.	D.	60° W.	D.	65° W.	D.	70° W.				
Marian	New York	July 17, 1854	3	36	2⅛	36	3¼	36	4½	40	2⅛	40	2½	41	3	41	2	43	2	43	3	42	4	41	3	41	1¼	35½	37
Lepranto	Boston	23, 1853	7	35	3¾	35	8¼	36	5	38	5	38	5	40	3	40	3	41	4	42	4	43	2	42	5	42	0	55	55
Kate Anderson	New York	21, 1854	5	37	3	39	3	40	5	41	6	41	4	44	5	44	11	42	1¾	41	2¼	41	5	41	2	40	2	53	55
John Marshall	Baltimore	20, 1837	6	32	2½	30	1½	30	2	29	2	29	3	28	4	28	3	27	3	29	4	30	5	31	5	32	8	41	49
Average time and crossings			5.2	35	2.9	35	4	35½	4.1	37	3.9	37	3.6	38	3.8	38	4.8	38	2.7	39	3.3	39	4	39	3.8	39	2.9	46.1	49
Commodore	Boston	Aug. 4, 1857	3¾	36	3¼	35	4	37	4	38	2	40	2	41	1½	42	2½	42	2⅛	43	1½	43	3	43	4	44	0	34	34
Lepanto	New York	12, 1854	2¾	36	2¼	36	2	36	4	37	2	37	3½	38	5½	39	4	38	4⅛	40	3	41	2	41	2½	40	3	38	41
Ariel	do	12, 1852	8	35	2	34	2	35	3	35	2	35	2	34	3	36	2	35	2½	33	4⅛	34	3	36	4	38	5	38	43
Perseverance	do	14, 1827	5	37	6	41	2	43	2	43	3	43	2	43	2	43	3	42	5	45	6	43	3½	41	6½	40	1	46	47
Montivideo	do	7, 1836	4½	35	3½	34	2	34	1	34	2	33	2	34	2	34	2	35	3	36	4	39	3	40	4	39	1	33	34
Average time and crossings			4.8	36	3.4	36	2.4	39	2.8	37½	2.2	37½	2.3	38	2.8	39	2.7	38	3.5	39	3.8	40	2.9	40	4.2	40	2	37.8	39.8
Australia	New York	Sept. 2, 1857	6	36	4	36	3	36	2	36	2½	35	4	36	2	35	1¼	35	1¼	35	3½	37	5½	35	3	38	3⅛	38	41½
Pride of the Sea	do	6, 1856	6	34	1¾	36	1	36	1	36	2	36	1½	37	1½	37	1¾	38	2	39	2	39	2	38	1½	39	¾	23½	24¼
Greyhound	do	22, 1856	4½	33	2	33	1¾	33	4½	34	2½	34	2½	34	3½	32	2½	33	2	34	3	35	2	34	6	36	5	36½	41½
Commodore	Boston	17, 1855	5	37	4¾	35	3¼	34	1¾	35	1¼	37	2½	38	1½	39	1½	40	5	43	2½	43	3	43	5	43	0	37	37
Defiance	New York	21, 1855	8	37	2½	34	3½	34	3	35	2	35	1	35	1	35	1	35	2¾	36	1½	36	1¾	36	2½	37	1	30½	31½
Winfield Scott	Boston	7, 1855	6¼	37	1¾	39	3	38	7	37	5	38	2½	41	1	40	1½	40	2	39	2	41	2	41	3	41	1	37	38
Jennett	New York	5, 1851	5½	34	2	34	2½	33	3¾	32	1½	31	1¼	31	1½	31	1¾	31	1	31	1	32	1¾	34	4¼	38	3½	27¾	31¼
Commodore	do	12, 1852	7	36	1½	35	1½	34	3	35	3	34	2	33	3¾	34	2¼	33	4	34	2	34	2	35	3	36	3	35	38
Greyhound	do	23, 1852	3½	36	1½	36	2	36	2	36	3	38	2	37	4	35	2	36	2	36	2	36	3	37	3	37	3	30	33
Peerless	do	14, 1852	7	39	1	40	1½	41	1½	42	1¾	42	2¼	43	2	43	2½	42	2½	42	3	41	1¼	41	2	40	2¾	28¼	31
Maria Jewett	do	28, 1853	4	37	2½	38	2½	39	4	42	1¾	42	1¼	42	2½	44	3½	42	2	41	2¼	40	4½	41	2	40	1	33	34
Average time and crossings			5.7	36	2.3	36	2.3	36	3	36¼	2.4	36½	2	37	2.2	37	2	36	2.4	37	2.3	38	2.6	38	3.2	39	2.2	32.4	34.6

Time and Crossings from Gibraltar to the United States.

Name of vessel.	To—	Date of sailing.	DAYS FROM PORT TO 15° W., AND CROSSINGS THENCE TO 70° W.																								Days from 70° W. to port.	Days to 70° W.	Total days.
			D.	15° W.	D.	20° W.	D.	25° W.	D.	30° W.	D.	35° W.	D.	40° W.	D.	45° W.	D.	50° W.	D.	55° W.	D.	60° W.	D.	65° W.	D.	70° W.			
Commodore	Boston	Oct. 17, 1856	3	38	3	39	3	40	2	42	4	40	2	40	4	40	2¾	40	1	42	3¼	40	3	41	4	42	1	35	36
Garland	New York	14, 1855	7	30	4½	29	2½	24	3	24	2	23	2	23	2	23	2	23	1½	24	2½	25	2	27	3	31	11	34	45
Race Horse	Boston	21, 1853	9	36	5	35	1¾	34	1¼	35	2	35	1	36	1	36	3	36	1	37	1½	38	1½	40	1	42	0	29	29
Meletia	do.	24, 1853	6	38	5½	40	2	39	1¼	40	1¾	41	1¾	41	1¼	42	1½	43	2	43	1¼	43	1¾	43	2¾	42	½	28¾	29¼
Ariana	New York	5, 1852	7	33	6	32	2	31	2	31	2	31	4	31	3	30	4	30	6	31	6	33	7	30	3½	32	3½	52½	56
Tremont	Boston	8, 1852	4	33	3	33	1¾	31	1¾	30	1½	30	2	30	2	32	2	34	2	34	3	34	3	39	4	42	½	30	30½
Wakulla	New York	2, 1849	8	34	2	32	2	30	2	29	2	30	2	29	2	29	3	29	2	30	2	32	2	34	7	39	2	36	38
Wagram	Boston	25, 1848	9	36	3	36	2	36	5	36	2	36	1½	36	1½	36	2	38	3	38	4	38	3	39	3	42	1	39	40
Helen Fielder	New York	5, 1848	4	35	3½	36	1	35	5	34	2½	33	3½	33	3	33	2	34	3	35	2	36	2	37	3	40	3	34½	37½
Average time and crossings			6.3	35	3.9	35	2	33¼	2.6	33½	2.2	33	2.2	33	2.2	33½	2.5	34	2.4	35	2.8	35½	2.8	37	3.5	39	2.5	35.4	37.9
Andrew Corney	Boston	Nov. 5, 1856	6	36	2¾	36	2	37	11	35	2½	36	2½	35	2½	36	3½	35	1¾	36	2¼	38	7½	42	3½	40	5	47¾	52¾
George Keynes	do.	6, 1855	4½	34	4	32	6	26	2	26	2	26	6	24	4	21	4	22	2	22	2	23	2	26	3	33	7	41½	48½
Telegraph	New York	6, 1855	3	35	7	31	6	28	4	28	6	25	4	25	1	25	3	26	3	26	2½	27	1½	27	2	30	7	43	50
Azof	Philadelphia	23, 1856	3½	36	2½	36	3	36	13	32	2	30	2	27	2	26	5	21	2½	23	2½	24	5	28	4	27	14	47	61
Albert Gallatin	Charleston	13, 1856	4½	33	1½	32	1¼	31	1¼	30	1½	30	2	30	3	26	3	25	7	23	3	24	3	25	1½	25	7½	32½	40
Realm	New York	8, 1849	6	36	1½	36	1½	36	3	38	2	37	1½	37	1½	38	1	37	5	38	3	37	13	37	3½	37	7½	42½	50
Montevideo	do.	1, 1832	3	35	2	33	1½	33	1½	32	2	33	4	36	3	37	3	37	3¼	37	1¼	37	1½	38	3	40	5	29	34
Barbara	do.	28, 1838	7	32	5	30	2	27	2	24	2	24	2	24	1	23	2	24	2	24	6	26	2	28	6	33	7	39	46
Average time and crossings			4.7	34¼	3.3	33¼	2.9	32	4.7	30½	2.5	30	3	30	2.3	29	3.1	28¼	3.3	29	2.8	29½	4.4	31¼	3.3	33	7.5	40.3	47.8
Supply	New Orleans	Dec. 7, 1856	5	31	2½	27	2	24	2	22	1½	21	2½	20	2	20	2	20	1½	20	2	20	2½	20	2¼	18	8	27¾	35¾
Meletia	Boston	18, 1854	6½	36	1½	37	2	38	1¼	38	1½	38	1	38	3	38	1½	38	1¼	37	1½	38	2½	39	3	40	2	27	29
Restitution	Salem	21, 1822	6	37	4	35	3	34	2	31	2	28	2	27	3	27	6	27	4	31	5	30	4	34	3	37	9	44	53
Rosario	New York	4, 1852	6½	37	5½	32	4	30	3	27	1	26	1½	26	1½	26	1	26	2	26	2	26	2	27	3	31	4	33	37
Diadem	do.	11, 1852	7½	31	3½	27	1	26	2	25	2	25	2	25	2	25	1	25	2	25	2	25	2	26	2	27	13	29	42
Panchita	do.	18, 1853	8½	33	1½	34	1½	34	1½	33	2	33	2	33	3	33	2½	34	1½	34	3	35	4	35	8	38	4	39	43
Average time and crossings			6.7	34	3.1	32	2.3	31	2	29¼	1.7	28½	1.8	28	2.4	28	2.3	28¼	2.1	29	2.6	29	2.8	30	3.5	32	6.7	33.3	40

REMARKS ON THE ROUTES.

The time which vessels that are bound into the other hemisphere take from the "Chops of the Channel" to reach the NE. trades is 16 days on the average. Gibraltar is not quite half way, and, allowing for an offing, we may give from the "Straits" to the trades two days more than half, *i. e.*, 10. Thus, an American bound vessel, sailing fairly, well managed, and skillfully navigated, coming out of Gibraltar and taking the trade-wind route, ought to make something like this passage:

From the Straits to the trades	10 days.
Running down the trades to 60° W. in latitude 20°	16 "
Thence to New York	16 "
Average passage by the trade-wind route	42 "

The average passage by the present route, as exhibited in the forgoing table of "Time and Crossings," is also 42 days. I think, with the figures that are before us, it can be proven that the trade-wind route will, at least from November to April, inclusive, give the shortest average; and clever navigators, who will post themselves up as to the winds for the season, will make it regularly within 40 days. It appears that it is a rare thing for a Mediterranean trader to attempt the trade-winds. The only vessels that, according to these tables, have tried that route are the Atalaya, with a passage of 76 days; the Winthrop, with a passage of 53 days; and the Barbara, with a run of 33 days;—all sailing in January and bound into New York;—in March, the Levant had a run of 29 days into Norfolk, and the R. H. Dixy one of 34 days into Mobile; in December, the Supply, had a passage of 35¾ days to New Orleans.

Now, let us examine with attention the routes of these several vessels, taking them in the order named: First, the January routes and the Atalaya:—she had 76 days, and the Globe, which sailed the same month and year, taking the usual route, had 78½ days. But the Atalaya did not consult the Trade-Wind Charts. Instead of making the best of her way south, in order to get the trade-winds as soon possible, and she was in search of these winds, she went to 35° W.—half way across the ocean before reaching the parallel of 20°. To this point she was, from crossing to crossing, after having reached 15° W., 7, 4, 5, 8 days, *i. e.*, 24 days in making 20° of longitude. The reason of this is she was attempting to make longitude in the calms of Cancer, and that too with unfavorable winds,—an attempt that is calculated to bring discredit on any navigator and ruin his voyage. Having reached 20° N., she just touched the polar limits of the NE. trades. But they wafted her along at the rate of 120 miles a day, on the average, for 12 days, when she fell in with the track of the homeward bound Rio trades, which crosses 28° N. between 55° and 60°.—(See the Crossings from the Equator to the United States.) She was now only 11½ days of average sailing, with average winds, from New York, but, instead of hauling up for her port, she continued to poke along west for 17 days, at the end of which time she had, in consequence of this course, really neared her port not more than two days.

The mistake of the Atalaya therefore was: she did not, after gaining an offing, take the shortest cut for the trades, from which she was to derive her propelling power. She did not, considering the time of the year, go quite far enough south to get the strength of them, which in winter is about 18°, and she did not haul up for her port soon enough; she evidently ran to get into the Gulf Stream, thinking it would help her. In other words, she ran west to get into a current that would drift her back to the eastward:

Next comes the Winthrop: she did better at first, but worse, if possible, in the latter half

of the voyage. She reached the parallel of 20° N. in 30° W. instead of in 35°, and that too after a run of 19½ days instead of 37. But from 30° W., instead of steering to the south a little further, she turned about and attemped to make westing in the Horse latitudes, being as much as six days from crossing to crossing.

The Barbara did well; she found good winds on the polar side of 20° N., and having found them she did not neglect to use them then and there. Had they begun to die away, her plan would have been to run as far as 18° to look for them in case she did not find them before. But they held on and she made a fine run.

The R. H. Dixey, in March, is unexceptionable. Her route is comely She ran down with good winds, found them steady before going to the extreme south, and used them wisely. The United States ship Levant did the same, and ran into the Capes of Virginia after a passage of 27¼ days from Gibraltar. These are the only two of the dozen vessels of the table that attempted to take the trade-wind route in November, and they made the run from port to 70° W. in 23¾ days, while the others took upwards of 38 on the average.

No other vessel attemped the trade-wind route till October, when the Garland made a pass at it. The NE. trades are now nearer the pole than they are in the winter, and, consequently, it is not necessary to go so far south to look for them, but they are weaker than they are in spring. She was 45 days, or a week behind the average for the month.

In November we have the Barbara again, with the George Keynes; the latter evidently did not find the regular trades, for she had four days between the crossings; the former, though not so far south, was more fortunate. She found the trades good and strong in 24°, and ran them down with two days between the crossings.

For further illustration of the trade-wind route see tables Time and Crossings from Europe to Ports south of the Delaware, pp. 96 *et seq.;* also the following tabular statements:

Time and Crossings from Gibraltar to the United States by various routes.

NORTH OF 40° N. LATITUDE.

Name of vessel.	To—	Days.	15° West.	Days.	20° West.	Days.	25° West.	Days.	30° West.	Days.	35° West.	Days.	40° West.	Days.	45° West.	Days.	50° West.	Days.	55° West.	Days.	60° West.	Days.	65° West.	Days.	70° West.	Days to 70° W.	Days from 70° W. to port.	Total passage.
			N.		N.		N.		N.		N.		N.		N.		N.		N.		N.		N.		N.			
Lepanto	Boston	7	35°	3½	35°	8¼	36°	5	38°	5	38°	5	40°	3	40°	3	41°	4	42°	4	43°	2	42°	5	42°	55	0	55
Kate Anderson	New York	5	37	3	39	3	40	5	41	6	41	4	44	5	44	11	42	1¾	41	2¼	41	5	41	2	40	53	2	55
Commodore	Boston	3¼	36	3¼	35	4	37	4	38	2	40	2	41	1½	42	2½	42	2½	43	1½	43	3	43	4	44	34	0	34
Perseverance	New York	5	37	6	41	2	43	2	43	3	43	2	43	2	43	3	42	5	45	6	43	3½	41	6½	40	46	1	47
Winfield Scott	Boston	6½	37	1¾	39	3	38	7	37	5	38	2½	41	1	40	1½	40	2	39	2	41	2	41	3	41	37	1	38
Peerless	New York	7	39	1	40	1½	41	1½	42	1¾	42	2¼	43	2	43	2½	42	2½	42	3	41	1¼	41	2	40	28¼	2¾	31
Maria Jewett	....do	4	37	2½	38	2½	39	4	42	1¾	42	1¼	42	2½	44	3½	42	2	41	2½	40	4½	41	2	40	33	1	34
Commodore	Boston	3	38	3	39	3	40	2	42	4	40	2	40	4	40	2¾	40	1	42	3¼	40	3	41	4	42	35	1	36
Militia	...do	6	38	5½	40	2	39	1¼	40	1¾	41	1¾	41	1¼	42	1½	43	2	43	1¼	43	1¾	43	2¾	42	28¾	½	29¼
Suliote	New York	3	36	3	36	4	33	5	35	4	36	6	41	3	41	3	40	3¼	40	1½	41	1¼	41	2½	41	40¼	2½	42¾
Talbot	....do	4	37	4	35	3	36	4	37	3	37	3	40	4	40	3	37	1¾	39	3¼	36	2	36	3	38	38	2	40
Commodore	....do	4	37	2	38	6	35	5	37	3	36	3	40	3¾	39	2¼	39	3	39	4	41	4	42	1¾	41	41¾	2¼	44
Do	Boston	8½	36	1¾	36	4	39	3	41	1¼	41	2	41	1¾	42	2¼	43	1¾	42	2	43	2	43	2	43	32¼	1	33¼
Restitution	Salem	3	37	3	38	3	41	2	42	2	42	2	42	3	42	3	43	2	43	2	42	3	42	3	42	31	2	33
Marian	New York	3	36	2½	36	3½	36	4½	40	2½	40	2½	41	3	41	2	43	2	43	3	42	4	41	3	41	35½	1½	37
Starlight	Boston	13	38	5½	43	2¼	45	2¼	44	9¾	44	3½	44	2	43	9	43	3	44	2½	44	4½	42	5	42	62½	0	62½
Mean crossing north of 40° lat.		5.3	37	3.2	38	3.4	39	3.6	40	3.5	40	2.8	41½	2.7	42¼	3.5	41½	2.5	41¾	2.8	41½	2.9	41¼	3.2	41.2	39.4	1.3	40.7

CROSSING BETWEEN 30° AND 40° N. LATITUDE.

Henry Mathews	New York	3½	36	1½	35	2	35	1½	35	1½	35	3	34	2	34	2	34	3	35	3	35	4½	36	7	40	34½	1½	36
Ariel	... do	8	35	2	34	2	35	3	35	2	35	2	34	3	36	2	35	2½	33	4½	34	3	36	4	38	38	5	43
Montevideo	....do	4½	35	3½	34	2	34	1	34	2	33	2	34	2	34	2	35	3	36	4	39	3	40	4	39	33	1	34
Australia	....do	6	36	4	36	3	36	2	36	2½	35	4	36	2	35	1¼	35	1¼	35	3½	37	5½	35	3	38	38	3½	41½
Greyhound	....do	4½	33	2	33	1¾	33	4¼	34	2½	34	2½	34	3½	32	2¼	33	2	34	3	35	2	34	6	36	36½	5	41½
Jeannett	....do	5½	34	2	34	2½	33	3¾	32	1½	31	1¼	31	1½	31	1¾	31	1	31	1	32	1¾	34	4¼	38	27¾	3½	31¼
Commodore	....do	7	36	1½	35	1½	34	3	35	3	34	2	33	3¾	34	2¼	33	4	34	2	34	2	35	3	36	35	3	38
Globe	....do	6½	35	4½	35	5½	31	4	32	3	32	4	33	6	32	5	33	24	38	2	39	5	37	7	40	76½	2	78½
Panama	Boston	3	36	1¾	35	2¼	35	2	34	1	35	2½	34	1½	34	4	33	2	33	4	32	4	34	8	42	36	2	38
Racehorse	....do	3¼	35	1¾	34	1	34	1¼	33	1½	32	1½	32	1½	32	1½	32	1¾	31	1½	31	5	36	3¾	42	25¼	¼	25½
Sarah Boyd	New York	7	35	1½	35	1½	34	1	33	2	33	4	33	2	34	3	35	3	34	4	34	3¾	34	8	39	40¾	3	43¾
Ellen Morrison	Boston	9	32	3½	32	2¾	32	8¾	30	6½	31	3	32	3½	32	2	32	3	35	2	36	3	40	3	43	50	½	50½
Kate Anderson	New York	2½	35	1¾	35	4¾	34	4	35	3	35	1	34	2½	33	2½	34	5	35	4	34	6	34	6	38	43	3	46
Friendship	Salem	4	35	1¼	35	1¾	35	1	35	2	35	2	35	2	35	1¼	35	1¾	34	3¾	35	2¾	39	3¼	42	26¾	1	27¾
Tremont	Boston	4	33	3	33	1¾	31	1¾	30	1½	30	2	30	2	32	2	34	2	34	3	34	3	39	4	42	30	½	30½

Time and Crossings from Gibraltar to the United States.

CROSSING BETWEEN 30° AND 40° N. LATITUDE.

Name of vessel.	To—	Days.	15° West.	Days.	20° West.	Days.	25° West.	Days.	30° West.	Days.	35° West.	Days.	40° West.	Days.	45° West.	Days.	50° West.	Days.	55° West.	Days.	60° West.	Days.	65° West.	Days.	70° West.	Days to 70° W.	Days from 70° W. to port.	Total passage.
			N.		N.		N.		N.		N.		N.		N.		N.		N.		N.		N.		N.			
Helen Fielder	New York	4	35°	3⅛	36°	1	35°	5	34°	2⅛	33°	3⅛	33°	3	33°	2	34°	3	35°	2	36°	2	37°	3	40°	34⅛	3	37⅛
Montevideo	do	3	35	2	33	1⅛	33	1⅛	32	2	33	4	36	3	37	3	37	3¼	37	1¼	37	1⅛	38	3	40	29	5	34
Militia	Boston	6⅛	36	1⅛	37	2	38	1⅛	38	1⅛	38	1	38	3	38	1⅛	38	1⅛	37	1⅛	38	2⅛	39	3	40	27	2	29
Realm	New York	6	36	1⅛	36	1⅛	36	3	38	2	37	1⅛	37	1¼	38	1	37	5	38	3	37	13	37	3½	37	42⅛	7⅛	50
Andrew Corney	Boston	6	36	2¾	36	3	37	11	35	2⅛	36	2⅛	35	2⅛	36	3⅛	35	1¾	36	2¼	38	7⅛	42	3⅛	40	47¾	5	52¾
Wagram	do	9	36	3	36	2	36	5	36	2	36	1⅛	36	1⅛	36	2	38	3	38	4	38	3	39	3	42	39	1	40
Racehorse	do	9	36	5	35	1¾	34	1¼	35	2	35	1	36	1	36	3	36	1	37	1⅛	38	1⅛	40	1	42	29	0	29
Defiance	New York	8	37	2⅛	34	3⅛	34	3	35	2	35	1	35	1	35	1	35	2¾	36	1⅛	36	1¾	36	2⅛	37	30⅛	1	31⅛
Panama	Boston	4	35	2	36	4	37	2	37	9	36	2	36	2	37	2	36	2	37	2	39	2	40	2	42	35	1	36
Racehorse	do	5	35	1¾	34	2	34	4¼	35	4	36	3	36	2⅛	37	2⅛	37	3	38	3	40	3	42	3	42	37	0	37
Panchita	New York	4	36	1⅛	35	1¼	35	2¼	35	4⅛	36	2⅛	36	2	36	2	36	4	35	5	37	5	36	6	34	40	5	45
Rover	do	2¾	36	2¼	37	2	36	2	36	3⅛	37	1⅛	37	2	38	3	38	3	38	2	37	2	35	4	38	30	3	33
Militia	Boston	7	36	2	37	3	34	3	34	2	34	2	35	5	36	2¼	37	1¾	39	1¼	40	3¼	41	1¾	42	34¼	1	35¼
St. Louis	Philadelphia	4	34	2	34	2	34	1	34	3¾	34	3¼	36	2	36	1	36	2⅛	36	2	35	2⅛	35	2	35	28	3	31
Theoscana	New York	4⅛	36	2⅛	35	1	35	3	35	3	35	3	36	3	37	3	37	3	35	6⅛	37	4⅛	40	5	40	42	2	44
T. A. Ward	do	3⅛	36	1¾	37	1⅛	38	1¾	40	1¾	40	2¼	39	4	40	5⅛	41	2⅛	41	3	40	3⅛	41	1⅛	40	32⅛	1	33⅛
Commodore	do	3	36	2	35	1⅛	35	1⅛	35	3	32	2¾	32	3¾	32	2⅛	33	3	34	3	36	3	38	3	40	32	3	35
Summer	Boston	2¾	36	2¼	36	1	36	6	36	4	37	3	38	2	39	3	40	3	40	3⅛	40	2⅛	42	3⅛	43	36⅛	3⅛	40
Marcella	New York,	6	35	4	36	3	35	3	33	3⅛	34	3⅛	36	3¾	38	6	40	4	41	2	42	3	41	4⅛	40	46¼	2⅛	48¾
Azof	do	5	34	1¾	34	4¾	35	3⅛	37	4	37	3	38	5	38	5	38	3	38	5	42	5	41	2¾	40	47¾	1¼	49
Hannibal	Boston	3	36	3	34	3	35	3	35	4	36	2	39	2	38	3	41	3	42	2	43	1¾	43	1¼	42	31	⅛	31⅛
Gilbert	New York	3	36	2	36	3	37	4	36	4⅛	37	2¾	39	2⅛	38	1⅛	39	1¾	40	6¼	42	5	41	5	40	41¼	1	42¼
Raritan	Boston	4	36	2	36	3	36	3	36	6	35	4	37	5	39	5	41	2	41	3	42	3	42	4	43	44	¼	44¼
Ionia	do	3	36	3	35	6	36	2	36	2	37	3	38	3	38	3	39	2	41	2	42	1	43	2	43	32	⅛	32⅛
Greyhound	New York	3⅛	36	1⅛	36	2	36	2	36	3	38	2	37	4	35	2	36	2	36	2	36	3	37	3	37	30	3	33
Commodore	Boston	5	37	4¾	35	3¼	34	1¾	35	1¼	37	2⅛	38	1⅛	39	1⅛	40	5	43	2⅛	43	3	43	5	43	37	0	37
Pride of the Sea	New York	6	34	1¾	36	1	36	1	36	2	36	1¼	37	1¼	37	1¾	38	2	39	2	39	2	38	1⅛	39	23⅛	¾	24¼
Lepanto	do	2¾	36	2¼	36	2	36	4	37	2	37	3⅛	38	5⅛	39	4	38	4⅛	40	3	41	2	41	2⅛	40	38	3	41
Apollo	do	3	36	2	36	2	35	2	35	1	35	2	35	4	37	4	37	2	36	6	37	6	36	3	39	37	2	39
Forester	do	8	35	2	34	4	32	4	34	3	35	4	36	2	36	2	36	2	37	1	37	3	38	2	38	37	2	39
Mean crossing between 30° and 40° N. lat		4.9	35¼	2.4	35	2.4	34¾	3	35	2.8	35	2.5	35⅛	2.7	35¾	2.6	36	3.1	36¾	2.9	37⅛	3.5	38¼	3.7	40	36.5	2.2	38.7

Time and Crossings from Gibraltar to the United States.

CROSSING BETWEEN 25° AND 30° N. LATITUDE.

Name of vessel.	To—	Days.	15° West.	Days.	20° West.	Days.	25° West.	Days.	30° West.	Days.	35° West.	Days.	40° West.	Days.	45° West.	Days.	50° West.	Days.	55° West.	Days.	60° West.	Days.	65° West.	Days.	70° West.	Days to 70° W.	Days from 70° W. to port.	Total passage.
			N.		N.		N.		N.		N.		N.		N.		N.		N.		N.		N.		N.			
Winthrop	New York	8	36	3	34	4	26	4½	20	3¼	23	6	24	2	26	4¼	29	2	30	2½	33	6	36	4	36	50	3	53
Apollo	do	5	33	6	36	5	32	4	33	3	30	2	29	3	29	2	29	3	29	4	32	3	34	6	35	46	7	53
Marcello	do	5	33	3	29	2	28	2	27	1	27	2	27	4	25	4	24	3½	26	5½	30	2	31	5	36	39	7	46
Reindeer	do	9	34	2	33	4½	30	2	29	4½	29	2	29	3	27	5	28	2	31	3	33	3	36	2½	39	42½	1	43½
Arina	do	7	33	6	32	2	31	2	31	2	31	4	31	3	30	4	30	6	31	6	33	7	30	3½	32	52½	3½	56
Wakulla	do	8	34	2	32	2	30	2	29	2	30	2	29	2	25	3	29	2	30	2	32	2	34	7	39	36	2	38
Azof	Philadelphia	3½	36	2½	36	3	36	13	32	2	30	2	27	2	26	5	21	2½	23	2½	24	5	28	4	27	47	14	61
Albert Gallatin	Charleston	4½	33	1½	32	1¼	31	1¼	30	1½	30	2	30	3	26	3	25	7	23	3	24	3	25	1½	25	32½	7½	40
Restitution	Salem	6	37	4	35	3	34	2	31	2	28	2	27	3	27	6	27	4	31	5	30	4	34	3	37	44	9	53
John Marshall	Baltimore	6	32	2½	30	1½	30	2	29	2	29	3	28	4	28	3	27	3	29	4	30	5	31	5	32	41	8	49
Mean crossing between 25° and 30° N. lat.		6.2	34	3.2	33	2.8	30¾	3.5	29	2.3	28¾	2.7	28	2.9	27¼	3.9	27	3.5	28¼	3.7	30	4	32	4.1	34	43	6.2	49.2

CROSSING SOUTH OF 25° N. LATITUDE.

Garland	New York	7	30	4½	29	2½	24	3	24	2	23	2	23	2	23	2	23	1½	24	2½	25	2	27	3	31	34	11	45
George Keynes	Boston	4½	34	4	32	6	26	6	26	2	26	6	24	4	21	4	22	2	22	2	23	2	26	3	33	41½	7	48½
Telegraph	New York	3	35	7	31	6	28	4	28	6	25	4	25	1	25	3	26	3	26	2½	27	1½	27	2	30	43	7	50
Barbara	do	7	32	5	30	2	27	2	24	2	24	2	24	1	23	2	24	2	24	6	26	2	28	6	33	39	7	46
Supply	New Orleans	5	31	2½	27	2	24	2	22	1½	21	2½	20	2	20	2	20	1½	20	2	20	2½	20	2½	18	27¾	8	35¾
Diadem	New York	7½	31	3½	27	1	26	2	25	2	25	2	25	2	25	1	25	2	25	2	25	2	26	2	27	29	13	42
Barbara	do	5½	32	2	30	2	27	1½	26	2½	24	1½	23	2	23	1¾	22	1½	22	1¾	24	3	28	3	30	28	5	33
Astoria	New Orleans	5	34	3	32	8	23	6	23	4	22	4	20	3	17	2	18	2	19	2	17	2	18	4	17	45	14	59
R. H. Dixey	Mobile	4½	32	1½	28	2	25	2	23	1	22	1	20	1	19	2	18	2	17	1	17	2	16	2	17	23	11	34
Levant	Norfolk	2½	33	1½	29	1¾	25	1½	24	1½	24	1½	24	2	23	2	23	1¾	23	1½	23	2	26	5¼	30	24½	4¾	29¼
Mean crossing south of 25° N. lat.		5.1	32½	3.4	29½	3.3	25½	3	24½	2.4	23½	2.6	23	2	22	2.2	22	1.9	22¼	2.3	23	2.1	24¼	3.2	26½	33.5	8.8	42.3

THE BEST ROUTE FROM GIBRALTAR.

With a view of canvassing more fairly the different routes across the Atlantic, Lieutenant Young compiled for me the foregoing tables. For a thorough discussion of their merits the navigator should examine the crossings from Europe to the ports north and to the ports south, (pp. 48—102.) Those tables give the time and crossing of every 5° of long. between 15° and 70° W. The time from meridian to meridian, or from "crossing" to "crossing," gives great value to them. I owe this feature to Jansen, and borrow it from the Meteorological Institute of Holland. All the Dutch crossings have it. And now a navigator with these tables before him, which show the crossing of every 5° of long. and the time between the "crossings," may tell, in any part of the voyage, how much he is behind or ahead of time, where he lost and where he gained. These tables afford, without comment, the most reliable sailing directions that can be drawn. The charts show the direction of the winds; and the time between the crossings, as shown in the tables, gives an expression which conveys practically the best idea as to force of wind that it is possible to convey to the navigator. Distance and time from 15° to 70° W.: By the route north of 40°, 34.1 days, and 2,500 miles—northern route:—By the route between 30° and 40°, 31.6 days, and 2,600 miles—middle route:—By the route between 30° and 25°, 36.8 days, and 2,700 miles—calm belt route:—By the route south of 25°, 28.4 days, and 3,150 miles—trade-wind route.

These averages as to *time* are not derived from a sufficient number of passages to give this conclusion final weight. Such, however, as they are, they may be studied with advantage. Assuming them to be relatively correct, it appears that the daily distance made good from 15° to 70° W. is on the average: Seventy-three miles by the northern, eighty-two by the middle, seventy-two by the calm belt, and one hundred and eleven by the trade-wind route.

Hence, we may infer also, after consulting the pilot, the storm and rain, and the Trade-Wind Charts:

That the northern route is most boisterous; that though its averages are large, the quickest runs may now and then be made by that route, though it will, from May to October, probably yield the best averages as to time for all ports east of New York:

That the middle route will, on the long run, afford, except perhaps in the winter months, the shortest averages to New York and ports south as far as the Capes of Virginia:

That the calm belt route ought to be *tabooed*, so that no ship during summer or winter, spring or autumn, should ever attempt it:

That the trade-wind route affords the best breezes, the smoothest sea, and the finest weather;—and that by it the best passages, under certain circumstances, will be accomplished in winter to New York and Philadelphia,—in winter and March to Norfolk and Baltimore; and from November to April, inclusive, to all Atlantic ports between Fernandina, Florida, and Beaufort, North Carolina; while it will be the best for all the Gulf and Central American ports the year round. A word of caution may not be out of place here, though it may involve repetition: When a vessel turns from her direct course for a shorter route, it may be inferred that she so turns in search of better winds. Suppose, therefore, that a ship master makes up his mind to take the trade-wind route, but that on entering the Atlantic he finds the winds fresh and fair—say a six knot breeze—for a direct course to his port; why should he not avail himself of such a good breeze, and why, having so good a one, should he turn out of his way to look for one no better? Thus, in the case supposed, the good breeze should be made the most of while it lasts, and when it begins to fail the skillful navigator will know whether to turn aside and run toward the trade-winds for better breezes or not. Therefore, notwithstanding the recommendation already given advising ship masters to run down to 20° or 18° in search of good fresh trades, if they be found at the north, why go south and out of the way to look for them?

Time and Crossings from the United States to the Cape Verdes.

Name of vessel.	From—	To—	Date of sailing.	DAYS FROM PORT TO 70° W., AND CROSSINGS THENCE TO—																									Days from 25° W. to port.	Days to 25° W.	Total passage.
				Days.	70° W.	Days.	65° W.	Days.	60° W.	Days.	55° W.	Days.	50° W.	Days.	45° W.	Days.	40° W.	Days.	35° W.	Days.	30° W.	Days.	25° W.	Days.	20° W.	Days.	15° W.			
Bonito	New York	Cape Verdes	Sept. 19, 1855	1¾	37	2¼	37	3	35	3¼	35	2	35	4¾	37	10½	34	4¼	34	2	34	2	34	....	....	....	....	10¾	35¾	46½
Maria	Salem	do	June 2, 1857	0	42	1⅛	42	1⅛	42	1⅛	40	1⅛	40	2	39	1	37	2	36	6	36	1⅛	34	....	....	....	....	11	18⅛	29½
Ann Maria	do	do	Sept. 13, 1856	¼	42⅛	3	42	¾	42	2	41	5⅛	39	2¾	36	1¼	36	4	35	3½	30	10	17	....	....	....	....	1	33	34
Ida	do	do	Nov. 21, 1855	¼	42⅛	2¾	42	1	40	2⅛	38	1½	37	2	36	2	35	2	33	2	29	4⅛	23	....	....	....	....	5⅛	20½	26
Elizabeth Fulton	do	do	Jan. 8, 1852	0	42⅛	4	41	2	38	2	37	1	36	1¼	35	2	33	2	33	1¾	32	2⅛	30	....	....	....	....	5¾	18½	24¼
Sarah Chase	New York	do	Aug. 23, 1853	2	38	1⅛	31	1⅛	35	3	34	2¾	33	2¼	32	2	31	6	24	11	22	5	21	....	....	....	....	3	37	40
Godfrey	do	do	Mar. 8, 1849	1	39	1	38	1	37	1¼	36	1	35	1⅛	32	1⅛	31	6¾	24	2¾	21	1¾	20	....	....	....	....	2½	19½	22
Harmony	Boston	do	July 21, 1847	¼	42	¾	41½	1¼	41	2¼	40	3	40	4	42	3	43	3	43	2¾	38	2	35	....	....	....	....	13¼	22¼	35½
Joseph Meigs	do	do	Oct. 10, 1847	¼	42	1¼	41	1⅛	39	1¾	40	1½	39	1¾	38	3	35	5⅛	29	2⅛	25	7⅛	20	....	....	....	....	2⅛	26½	29
Recovery	Salem	do	Dec. 10, 1800	¼	42	1⅛	42	3¾	40	1¾	38	1½	34	2¼	31	4	31	1¾	31	2¼	28	3⅛	27	....	....	....	....	5⅛	22⅛	28
Saratoga	New York	do	June 5, 1843	1	40	¾	39⅛	1¼	40	2	40	1	40	1½	39	1	39	1	38	2¾	35	2¾	33	....	....	....	....	10¼	14¾	25
Columbia	do	do	July 23, 1842	1	38⅛	2⅛	35	2⅛	32	5	34	15⅛	26	6⅛	30	3⅛	33	3	36	3	36	7	21	....	....	....	....	7	50	57
Truxun	New Castle	do	June 28, 1844	1¾	38⅛	2¾	38	1⅛	38	3	38	1⅛	39	1	39	1⅛	39	4	39	2	38	3⅛	36	....	....	....	....	7¼	22½	29¾
Means of routes from port to 15° of W. long., and to port				0.7	40⅛	2	40	1 7	38	2.4	38	3	36	2.6	36	2.8	35	3.5	33	3.4	31	4.1	27	....	...	....	....	6.6	26.2	32.8
																												From 15°	To 15°	
Isle de Cuba	New York	Benguela	Oct. 11, 1855	1⅛	39	2¼	37	3¼	35	2	35	2⅛	35	5⅛	36	3¼	35	7⅛	19	8¼	5⅛	8	6	8	6	5	5	10	57	67
Sea Mew	Salem	Ambriz	Mar. 10, 1857	....	....	....	....	1¼	36	1¾	34	1¼	33	3¼	31	5⅛	29	2¼	29	1¼	27	5¼	15	2⅛	10	4¾	6	37	29	66
Reindeer	New York	Benguela	July 10, 1852	1	39	2	39	1¼	37	2	35	3	33	4¾	29	8	11	5¼	8	2	6	2	5	2	5	1¾	5	46	35	81
Tam O'Shanter	Salem	Loando	July 22, 1847	¼	42	1¾	42	3	40	1¼	39	9	34	10¾	16	7	8	3	7	2¼	7	2¾	8	2¼	7	2¼	5½	22¾	45½	68¼
Means of routes to 15° W., and to port				0.7	40	1.5	39	2.2	37	1.7	36	3.9	44	6	28	5.9	21	4.5	16	3.4	11	4.5	8½	3.7	7	3.4	5	28.9	41.4	70.3

Time and Crossings from the United States to Liberia and Sierra Leone.

Name of vessel.	From—	To—	Date of sailing.	DAYS FROM PORT TO 70° W.; AND CROSSINGS THENCE TO 60° W.																									Days from 15° W. to port.	Days to 15° W.	Total passage.
				Days.	70° W.	Days.	65° W.	Days.	60° W.	Days.	55° W.	Days.	50° W.	Days.	45° W.	Days.	40° W.	Days.	35° W.	Days.	30° W.	Days.	25° W.	Days.	20° W.	Days.	15° W.			
H. N. Gambrill	New York	Sierra Leone	Oct. 12, 1856	3⅛	59⅛	2⅛	38	3	40	1¼	40	2⅛	39	2¾	38	1¾	37	1¼	37	1⅛	35	13	26	11½	11	3	8	2	37	39⅛
Calvert	Philadelphia	do	Nov. 2, 1856	1⅛	38	1⅛	36	1⅛	36	1⅛	34	1⅛	33	2	33	1¾	33	2⅛	29⅛	6¼	24	8	14	2¼	11	4¾	9	2	35	37
Maria Jewett	New York	do	Mar. 11, 1854	1⅛	38	1⅛	37	1⅛	36	1¾	34	1¼	34	1⅛	34	1⅛	33	1¾	32	3	30	3⅛	22	2⅛	15	4	9	1	25	26
Hermitage	do	do	Aug. 20, 1854	1	40	2	39	2	38	2	38	2¾	37⅛	3⅛	38	1⅛	37	1⅛	37	1¾	36	5¼	30	5¼	20	....	....	4	28⅛	32⅛
Western Sea	Boston	Liberia	Jan. 6, 1857	0	42	1¼	42	1¼	41⅛	1⅛	39	1¼	39	1	39	1¼	39	1⅛	38	2	37	4	31	5⅛	14	3	9	10	23⅛	33⅛
Joseph Maxwell	Wilmington	Monrovia	Nov. 24, 1852	2¾	36	1¾	37	2⅛	35	2	35	2	35	2⅛	35	1¼	35	1	34	1¾	33	1¼	28	4¾	20	3¼	14	10⅛	26¾	37¼
Star of the East	Boston	Liberia	Nov. 6, 1856	¼	42	¾	42	2	40	1¾	39	2¼	37⅛	2⅛	34	3¼	33	2	33	4¾	35	6⅛	31	5⅛	11	4	4¼	15	35⅛	50⅛
Cortez	New York	do	July 30, 1854	2	40	1⅛	40	1¾	40	1	38	2¾	36	2¼	37	6¾	29	4	22	2¾	17	3	13	3	10	2⅛	8	3	33¼	36¼
Lamartine	do	do	Dec. 25, 1855	1	38	1	37	2	37	1¼	33	2⅛	33	1⅛	32	2	29	2	25	2¾	20	3	15	3	12	3	9	5	25	30
Bancher	Baltimore	do	May 3, 1853	1⅙	37	1¼	36⅛	¾	36	1¾	36	2¾	38	1¼	39	2	40	2¾	36	5	26	3⅛	16	1¾	11	3¾	7	4	28	32
Huma	Savannah	do	May 15, 1849	7⅛	35	1⅛	36	1⅛	36	1	37	1⅛	36	2	36	2	33	1¼	32	5¾	27	4⅛	22	2¼	14	6	9	6	36¾	42¾
John Adams	Norfolk	do	April 25, 1851	2⅛	35	1⅛	34⅛	1¼	34	1	35	2¾	33	2	31	6¼	32	1¾	33	2	35	6	34	2¾	25	17	9¼	2⅛	46¾	49¼
La Fayette	Baltimore	do	Dec. 12, 1832	2¾	36	1⅛	35	2	33	1¼	33	1⅛	33	1¾	32	1⅛	31	1¾	31	9	17	4⅛	12	4⅛	8	2¼	7	4¾	33¼	39
Liberia	do	do	April 14, 1848	2	36	2	36	2	39	1¼	39	1¼	39	1	39	2	36	5	27	4⅛	17	4	11	2	9	2⅛	8	1⅛	29⅛	31
Sukey	Salem	Sierra Leone	Mar. 29, 1806	¼	43	3	41⅛	1¼	40	4⅛	39	2⅛	36	1⅛	36	1¼	35	2	34	1¾	33	4	34	5	32	9	16	1	36	37
Means of routes to 15° W. and to port				2	39¾	1.6	37¾	1.7	37¼	1.7	36¾	2	36	1.9	35⅛	2.4	34	2	32	3.6	28	4.8	23	4	15	4.5	9	4.8	32.2	37

Time and Crossings from the Cape Verdes and Africa to the United States.

Name of vessel.	From—	To—	Date of sailing	DAYS FROM PORT TO 15° W.; AND CROSSINGS THECE TO 60° W.																				Days from 60° W. to port.	Days to 60° W.	Total passage.
				D.	15° W.	D.	20° W.	D.	25° W.	D.	30° W.	D.	35° W.	D.	40° W.	D.	45° W.	D.	50° W.	D.	55° W.	D.	60° W.			
H. N. Gambrill	Aqui	New York	April 22, 1857	17⅛	2	2	2	1¼	2	1½	2	2	2	3	2	2¾	8	2	12	1⅛	15	3¾	21	13	37	50
Sea Mew	Congo River	Salem	Aug. 24, 1857	13¾	5 S.	2	4 S.	1⅛	4 S.	1¾	4 S.	2	2 S.	2	1 N.	3¼	6 N.	4¼	13	3	22	3¼	27	12	36½	48½
Star of the East	Accro Roadstead	Boston	May 21, 1857	11	0	2	0	1¾	0	9	6 N.	3¾	9	2	13	2	15	2⅛	20	4	24	6	31	14	44	58
Cortes	Cape Lopez	New York	Mar. 23, 1855	15⅛	3 S.	2	1⅛ S.	3⅛	0	8	3⅛ N.	1¾	7	2	10	1¾	12	4	15	3¼	18	4¼	24	9	46	55
Means of routes from port to 60° W. and to port				14.4	2⅛	2	2	2	1½	5	4	2.4	5	2.2	6⅛	2.4	10	3.2	15	2.9	19¾	4.3	26	12	40.8	52.8
Calvert	Sierra Leone	Philadelphia	Mar. 19, 1857	2¼	9	7⅛	8	1⅛	9	2	10	1¼	12	1¾	14	1¾	16	3	20	2	21	2⅛	24	18⅛	25¾	44¼
Maria Jewett	do	New York	April 26, 1854	1	8¾	4	8	1¾	9	1¼	10	1¾	13	1¼	14	1¾	17	1⅛	19	1¾	22	1¾	24	9¼	17¾	27
Hermitage	do	do	Dec. 27, 1854	1¾	10	4	11	1¼	12	2⅛	15	2¾	16	4¼	19	1¾	19	1¼	19	1¾	20	3¼	20	23	25	48
Ann Maria	Bisan	Salem	April 8, 1857	. .	.....	1¼	10	2¾	11	2	12	3	16	5⅛	21	2⅛	23	4	25	2	30	2⅛	34	5⅛	25⅛	31
Ida	Cape Verdes	do	Feb. 24, 1856	....	.....	....	.....	⅛	15	2	15	1¾	16	2¾	17	2⅛	19	1⅛	20	4	23	6	30	22	21	43
U. S. ship John Adams	Porto Praya	Hampton Roads	Feb. 16, 1850	....	.....	. ..	.....	⅛	14	2	14	2⅛	16	3	19	2	20	5	21	1¾	21	2¾	20	19	19⅛	38⅛
La Fayette	Liberia	Baltimore	Feb. 6, 1833	8⅛	6	12¼	10	2¼	12	2	13⅛	1¾	15	1¾	16	1⅛	17	1¾	18	1⅛	18	2¾	18	16	36	52
Liberia	Monrovia	do	July 7, 1848	1⅛	7	1¾	10	3¾	12	2	14	1¾	15	1¼	16	1½	18	1¾	20	3	24	2¾	29	5	21	26
U. S. ship Saratoga	Sierra Leone	Hampton Roads	Oct. 19, 1844	1	9¾	3	13	4	14	1¼	14	1⅛	16	1¾	17	1½	19	2	21	2	22	2½	23	11¾	20⅛	32¼
Means of routes from port to 60° W. and to port				1.8	8¾	3.7	10	2	12	1.9	13	2	15	2.6	17	1.8	19	2.4	20	2.2	22	3	25	14.4	23.4	37.8

REMARKS ON THE ROUTE TO THE CAPE VERDES AND COAST OF AFRICA.

The foregoing tables of time and crossings between 15° and 70° W., on the routes to and fro across the Atlantic, cannot be studied too well. They are most instructive. As before remarked, they, the pilot and the trade-wind charts, are in themselves the best sailing directions that can be written. The times and crossings between New York and the north of Europe (pages 36, 48, 81, and 96) throw light upon the passage to and from the Straits of Gibraltar; while the times and crossings between the United States and "the Straits" (page 105) throw light upon the passage to and from the coast of Africa.

The average time from 70° to 15° W. is:—along the route to the north of Europe, 15.7 days; to the Straits of Gibraltar, 20.6 days; and along that to Africa, 30.2 days. There is this difference, however, in latitude:—the mean crossing place of 15° W. being for the route to the north of Europe about 49° N.; for the Gibraltar route, 37° N.; and for the African route, 9° N. The average distances being 2,400, 2,550, and 3,600 miles, respectively, and the mean daily distance made good being 153 to Europe, 123 to Gibraltar, and 120 miles to the coast of Africa.

The old route to Rio coincides for most of the way with the Cape Verde and African route. The old rule of the route was to cross 30° N., between 25° and 30° W. But the trade-wind charts will teach the navigator how to vary this crossing according to the time of the year. In summer and fall the belt of Horse latitudes may be crossed further to the west than they may in the winter and spring, for in summer and fall there is the belt of SW. monsoons, which may be taken anywhere to the east of 25°. In that season of the year there is no fear of not being able to fetch your African port.

In winter and spring, however, there are no monsoons to fall back upon. And it is advisable to run as far as 35° W. to the north of 38°, then edge off, and when you reach the calms of Cancer cross them on nearly a due south course, and then, getting the NE. trades, haul up for your port.

Passage from the Cape de Verdes to the southwest Coast of Africa, with Remarks upon that Section of the Coast.

"In the season of February, March, April, and May," says Lieut. W. C. B. S. Porter, United States navy, of the United States brig Perry, "there is no difficulty in making the passage from Porto Praya to Ambriz in thirty days, provided the run from Porto Praya to Monrovia takes not more than eight days.

"The direct route, and that which approaches the Great Circle, leads along the coast, touching the outer soundings of St. Ann's Shoals, thence to Half-Cape Mount, to allow for a current when steering for Monrovia. From there, follow the coast along with the land and sea breezes, assisted by the current, until you arrive at Cape Palmas; keep upon the starboard tack, notwithstanding the wind may head you in shore, (the land breezes will carry you off,) and, as the wind permits, haul up for 2° west longitude; cross the equator here, if convenient, but I would not recommend going to the westward of it; you will encounter westerly currents from thirty to fifty miles a day. In the vicinity of Prince's Island, the SW. wind is always strong. In the latitude of about 1° 30′ N., there is a westerly current. Should it not be practicable to weather the island of St. Thomas, stand on, approach the coast, and you will meet with north winds to carry you directly down the coast. Our Salem vessels make the

passage from the United States in 56 days, arriving at Ambriz in May. I have made three different cruises to this coast in the same season, in the Marion, John Adams, and Perry.

"The impulsive desire to attain the object of our duty will, as much in nautical matters as others, mislead our better judgment, when there is a prospect, or any temptation to success, without experience to forewarn us. Thus, our vessels, after arriving at Cape Palmas, have generally gone upon the port tack, because the wind carried them towards the coast or Gulf of Guinea, and seemed to favor them for the port tack the most; which, on the contrary, although slowly veering towards the SE., was hauling more ahead, and leading them off into a current, which, under a heavy press, it is impossible to work against. The consequences were, they had to go upon the starboard tack, and retrace the ground gone over. On the starboard tack, as you proceed easterly, the action of the wind is the reverse, and it allows you to pursue the Great Circle course.

"It employed the Marion eighty odd days to Kabenda, a port 200 miles nearer than Ambriz; to which port (Ambriz) from Monrovia in this vessel (the Perry) we went in 23—making 31 from Porto Praya. In the John Adams, 10 to Monrovia, and 46 to Ambriz, by the way of Prince's Island; about 10 of which was lost working to the south of Cape Palmas. From Cape Palmas to the point of crossing the equator the current is easterly—south of that westerly.

"The practice along the coast in this vessel (the Perry) was to keep near enough to the land to have the advantage of a land and sea breeze, and to drop a kedge whenever it fell calm, or we were unable to stem the current. Upon this part of the coast, near the Congo, the lead line does not always show the direction of the current which affects the vessel. On the bottom there is a current in an opposite direction from the surface; therefore, before dropping the kedge, the better way is to lower a boat and anchor her, which will show the drift of the vessel. Between Ambriz and the Congo, I have seen the under current so strong to the SE. as to carry a 24-pound lead off of the bottom, while the vessel was riding to a strong SW. current; but the under current is the strongest.

"In crossing the Congo, I would always suggest crossing close to its mouth, night or day; going north, with the wind W.NW., steer N.NE., with a five or six knot breeze; when you strike soundings on the other side you will have made about a N. ½ E. course in the distance of 9 miles, by log from 11½ fathoms off Shark Point. The current out of the river sets west, about two knots the hour. With the land breeze it is equally convenient, and may be crossed in two hours. In coming from the north, with Kabenda bearing NE., in 13 fathoms, or from the latitude of 5° 48′, wind SW., a S.SE. course will carry you over in four hours outside of Point Padron; and by keeping along shore the current will assist you in going to the south. Vessels which cross to seaward from latitude of 5° 45′, and 9° W., are generally six days or more to Ambriz; by the former method it occupied us (the Perry) only two days."

The homeward route from Africa is through the trades till you fall in with the track of the homeward bound Indiamen, when all is plain sailing.

THE VOYAGE TO THE WHITE SEA.

Vessels bound to Archangel, and other ports beyond North Cape, should pass to the north of the British Islands, and make the best of their way to their port. The advantages of keeping close to the Iceland or the European shore depend more upon currents than upon winds.

Commodore Irminger, of the Royal Danish Navy, has made the currents of the North

Atlantic and Arctic Oceans the subject of patient investigation. He calls attention to a warm summer current to the coast of Iceland, which I have not seen mentioned before, and he has been kind enough to translate and send me the following very interesting and instructive paper on currents:

COPENHAGEN, *May*, 1856.

"The currents of the ocean, which properly may be called the arteries of our globe, running through the different regions, heat the cold regions, and cool the tropical ones, are, until the present time, in proportion to the navigation extended to every part of the ocean, generally not paid the due attention to.

The currents at the surface of the ocean, though somewhat put in system, are, generally speaking, examined imperfectly; the submarine currents of the ocean are nearly unknown.

Meanwhile, knowing that the currents in the depth are often running in quite a different direction from those on the surface, which often has been ascertained on observing heavy icebergs moving rapidly against the wind and the current on the surface, and it must be presumed that the currents in the depths of the ocean have their regular circulation through the different zones as well as the currents on the surface, and are reciprocally dependant on each other, it would be desirable to obtain more knowledge concerning the currents in the depth of the ocean. Having means to procure the desirable knowledge of the direction of these currents, their temperatures, &c., &c., it would certainly not be so difficult to put them into system, because they must be supposed to be much more constant than the currents of the surface, which so often are submitted to irregularity on account of the influence of winds, tides, the melting of ice and snow in high latitudes, the flowing out of large rivers, hurricanes, and storms, which pile up the water in certain places, and by calm weather bring the water in equilibrium, &c., &c., &c.

In the "Annals de Chimie et de Physique for the year 1845" is the description of an instrument, invented by Mr. Aimé, which, under certain circumstances, may be used for finding out the direction of the current in any depth of the ocean, and which instrument, with the description of it, is represented in the accompanying printed treatise.

If this instrument were more known and used by seafaring men wanting to study the currents of the ocean, I think that much, which is at present obscure, would be made plain.

In 1847, on leaving Copenhagen, as commander of a man-of-war brig, the Eagle, on a cruise to the coast of Guinea and the West Indies, I had this instrument with me. It was made by Mr. Nissen, instrument maker, in Copenhagen. During the voyage I made several observations with it, and found it well fit for practical use.

I refer to the following observations:

The 14th September, 1847, in the forenoon, calm; in sight of Madeira in 31° 58′ latitude N., and 17° 12′ W. of Greenwich. The instrument (the indicator of the current direction) was lowered down to the depth of 1,980 feet. To the instrument was tied a thermometrograph in a solid cylinder of metal, with a cover screwed upon it, to protect the thermometrograph against the heavy pressure of the water in the depth.

In the said depth the instrument marked the current to be true W.SW. On the surface of the ocean nearly no current was found. According to very minute observations the ship only moved 2′ to the eastward from 7 A. M. to 5½ P. M. The line by which the instrument was lowered down was entirely perpendicular.

		Fahr.
The temperature, in shade, on deck was	*19°.6	(76°.1)
The water at the surface was	20°	(77°.0)
The water at the depth of 1,980 feet was	8°.8	(51°.8)

At this place the current usually carries to the eastward towards the African coast.

Nearly in opposition to this the indicator showed the current true W.SW.

I leave it to more experienced men to judge, if it might not be presumed that the powerful current from the Davis' Strait, which so often carries those huge icebergs along the banks of Newfoundland to the lower latitudes in the Atlantic Ocean, runs in a SE. direction; passing below the Gulf Stream, which is heated from the Mexican Gulf, and is, consequently, made specifically lighter than the mentioned cold current from the north, setting in its submarine march towards the Southern Europe and Northern Africa, then turning to the southward, and next taking a more westerly direction in that region where the observation was made.

Future observations concerning the currents in the depths will show if this supposition be right or not.

Further: The 17th of March, 1849, calm; 25° 4′ latitude N., and 65° 41′ W. of Greenwich. The current indicator, as well as the thermometrograph, were lowered down to a depth of 2,934 feet. The lowering down took 15′, and the hauling up 16½′.

In this depth the instrument indicated the current to be NW. true.

		Fahr.
The temperature, in shade, on deck was	20°.8	(78°.8)
Surface of the ocean	19°.75	(76°.4)
In the depth of 2,934 feet	6°.2	(46°.0)

To assure myself of the veracity of the instruments I ordered them to be lowered down to the same depth, directly after the former observation was made, and this second examination gave exactly the same result as above mentioned.

Like observations made on different places and different depths will give us a more precise knowledge of the submarine currents, (currents in the deep of the ocean,) and though the currents on the surface only seem of practical use to seafaring men at present, I think it probable that frequent observations concerning the submarine currents and their temperatures may in future be of practical use, by teaching us the causes and reasons for the migrations of cetaceous animals and different species of fish, which undoubtedly are dependent on the currents, which carry with them the food which these animals are in search of in the depth as well as in the surface.†

Page 6, 7, 8, and 9, is a description of some currents between the coast of Guinea and the West Indies, which I find it superfluous to translate, supposing you have many observations from that part of the globe; therefore I continue with my translation, page 9.

The currents in the northern part of the Atlantic are still less known. The reason of which must be presumed to proceed from the circumstance that this part of the ocean is less

* All mentioned temperatures are calculated to the thermometer of Rèaumur.

† My honorable friend, Professor Eschricht, had asked me on my leaving Copenhagen to note the direction which the cetacees, falling in with on my voyage, were taking; these observations I ordered to be taken down in the log-book. Although it is usual to fall in with such animals, it was surprising, between the 21st and 27th of September, 1847, between 15° and 11° latitude N., and 19° and 21° longitude W. of Greenwich, frequently to meet with a great many, sometimes several hundred together, with great speed running to the N. or NE., though most commonly in the N.NE. direction.

On this mentioned place the surface of the water was between 22½° (82°.6) and 23¾°, (85°.5,) which is about 2° (4°.5) more than the usual temperature of the ocean at the surface in the mentioned latitude.

frequented by vessels,—that frequent gales succeeding from different points of the compass disturb the regularity of the current, usually not being violent in this part of the ocean. Besides, frequent fogs and cloudy weather make it often impossible to ascertain the place of the ship by exact observations, and therefore it is *more difficult* to ascertain the currents *in these regions* than in lower latitudes, where the weather and atmosphere permit a greater regularity in ascertaining the ship's position by observations. Still it is evident that a current from a more southwardly latitude continues its run through the Atlantic between Shetland and Iceland to the Northern Icy-Ocean, (the ocean which surrounds Spitzbergen.)

With the examination of this current I have been occupied for several years, and used partly my own observations during several voyages to and from Iceland, and partly the log-books of several of our men-of-war, where the dead reckoning, as well as the observations, with the celestial bodies were made with great accuracy.

I principally mention the voyages to and from Iceland and the Faroe Islands by the following men-of-war: Line-of-battle-ship Queen Maria, 1834; Corvette Najaden, 1834; brigs Mercurius, 1845; St. Croix, 1846; St. Thomas, 1847; Corvette Najaden, 1850; Saga, 1851; &c., &c.

The observations of the temperature of the water on the surface were usually taken down every four hours. The observations to and from Greenland have been given me by Captain Halball and Lieutenant Ulrich.

The above mentioned men-of-war have, between April and September, been 87 days* between the meridian of Fair Island, (Fairhill,) and 18° west of Greenwich, and 58½° and 66° latitude north.

In this track I often found the current very irregular, now running in one direction, and then in a contrary one; still a medium of these 87 days gave the current to run 2.4 nautical miles per day true N. 52° E.

From 18° W. of Greenwich (very near the longitude of the southernmost point of Iceland) and between 62° latitude and the south coast of Iceland to Cape Reikianess, (the SW. cape of Iceland,) a mean of 32 days gave the current to run 1.91 nautical miles per day true N. 33° W.

To examine if the current has the same rapidity across the whole distance between Fairhill and Iceland, I have divided this part of the ocean in four squares, and the result gave the following:

Square 1, between 59½° and 61½° latitude N., and 2° and 6° W. of Greenwich: a mean of 17 days gave per day 4.7 nautical miles true N. 72° E.

Square 2, between 60° and 62° latitude, and 6° and 10° longitude: 11 days gave per day 2.5 nautical miles true N. 60° E.

Square 3, between 60½° and 62½° latitude, and 10° and 14° longitude: 18 days gave per day 0.8 nautical mile N. 32° E. true.

Square 4, between 61° and 63° latitude, and 14° and 18° longitude: 25 days gave per day 3.1 nautical miles N. 47° E. true.

Between Fairhill and Greenland, the weather often prevented the making of minute observations for ascertaining the place of the vessels, still the voyages made by Capt. Halball and Lieut. Ulrich gave the result, that a current in the month of April, between 32° and 39° W. Greenwich, and 57° and 58° latitude N., according to a mean of 13 days was 3.2 nautical miles per day to the northward, and in the month of September, between 43° and 9° W. Greenwich and 60° and 58° latitude N., to be about 5 nautical miles per day, likewise in a northerly direction.

* Equal 24 hours.

On taking a view of the plan it will be seen: 1. That the ocean between the meridian of Fairhill and 30° W. of Greenwich, in a line towards Cape Farewell, has no great difference in the temperature, but that the ocean to the westward of 30° longitude is more and more cooled the nearer it is to Greenland; 2. That the ocean in spring by no means is cooler in the neighborhood of South Iceland than it is at Fairhill, though Iceland's situation is several degrees more to the north; 3. On the contrary, the temperature is somewhat higher near Shetland during summer or the beginning of spring; and 4:—That the temperature of the ocean is 2°, (4°.5 Far.,) or 3°, (6°.7 Far.,) cooler in spring than in the beginning of autumn.

On several voyages I have found, in the beginning of May, the temperature of the water in the northern part of the North Sea 2°, (4°.5 Far.,) and even more, cooler than the ocean on the west side of Shetland Islands, but later in summer I have found it more equal.

From the 19th of June to the 13th of July, 1844, I never found the temperature around and between the Faroe Islands less than 7¾°, (49°.5, Far.) and never more than 8¼°, (50°.5 Far.;) and by diurnal observations made by my friend, Mr. Müller, three times per day in 1846 and 1847, the temperature at Thorshaon (principal place at the Faroe Islands, situated on Stromoe) was:

	R.	Far.
October, 1846	7°.27	(48°.4)
November, 1846	6°.79	(47°.2)
December, 1846	4°.91	(43°.1)
January, 1847	4°.90	(43°.0)
February, 1847	4°.05	(41°.1)
March, 1847	5°.08	(43°.4)
April, 1847	5°.10	(43°.5)
May, 1847	6°.28	(46°.1)
June, 1847	7°.39	(48°.6)

In the month of December an uncommonly cold spell of weather, with storms from NE., was prevailing, and this is undoubtedly the cause of the considerable cooling of the water in this month, in the inclosed and not deep bay of Thorshaon, and it can be supposed that temperature of the deep ocean around the islands has been more constant. Still, the Faroe Islands, being about midway between Shetland and Iceland, the above noticed temperatures may give an approximate idea about the temperature of this ocean in the winter season.

In the ocean between Iceland and Shetland there are found cooler and warmer stripes with a difference of temperature from 1°, (2°.2 Far.,) to 2° R, (4°.5 Far.,) but these stripes are not limited to constant places. On the plan I have marked some of these stripes in pointed lines, running in about the direction of the current.

On mentioning these stripes of cooler and warmer water, I make the observation that a great difference of the temperature of the ocean frequently is found between 40° and 45° latitude N., and 40° and 50° longitude W. In this region the ocean has often a temperature of 7° R. (47°.8 Far.) and 7½° R. (48.9 Far.) below the usual temperature of the ocean, and at other times several degrees above the usual ocean temperature, caused by the Gulf Stream sometimes finding its way here.*

The considerable difference of temperature proceeds undoubtedly from the current coming from the Strait of Davis. If this current be so very strong the northern limit of the Gulf Stream must be drawn back, or more southerly; and if the current from the Davis' Strait is

* Rennell, pages 244 and 248.

weak, the Gulf Stream extends more northerly. On this same place there are often immense quantities of icebergs, carried down from Davis' Strait,* which naturally contribute considerably to cool the temperature of the ocean.

As it can be taken for granted that a great deal of the water which runs in a northeasterly direction between Iceland and Shetland comes from the mentioned place,† where the temperature of the ocean is so changeable, it seems probable, that this must have a great influence on the temperature of the ocean between Iceland and Shetland, and as changeable as the limits with their temperatures of the Gulf Stream are found in the above mentioned place, as impossible it would undoubtedly be to ascertain the limits for the warmer or colder stripes running in the ocean between Iceland and Shetland, because these stripes will vary or draw more eastwardly or westwardly more or less cold, as the current or the ice from the Davis' Strait acts more or less on the Gulf Stream and causes a change of its limits.

I have mentioned that the current to the southward of Iceland from 18° W. of Greenwich runs in a northwestwardly direction against Cape Reikianess, (SW. Cape of Iceland.)

On the western side of Iceland, between 64° 15′ and 65° 50′ latitude N., and 23° 51′ and 25° 48′ W. of Greenwich, a mean of 5 days in May and June, 1846, gave the current to be true N. 15° west, with a rapidity of 4.3 nautical miles per day

During a long stay on the western part of Iceland, I have often convinced myself, and what is generally known by fishermen, that the current running along the west coast of Iceland, though there is a regular tide, is considerably prevailing to the northward.

The temperature of the water in the road of Reikiavik (the principal place of Iceland—situated on the west side of the island) is found from the 30th of May to the 16th of June, 1846, per mean 6°.85 R., (47°.4 Far.,) from 1st to the 14th of July, 9°.47, (53.3 Far.,) and from the 11th to the 31st of August, 8°.71, (51°.6 Far.,) while the temperature of the ocean on the coast of Greenland, opposite this place, generally varies between 1°.8 ÷ R. (28°.0 Far.) and 0°.9 + R.‡ (33°.9 Far.)

At Patrix Fiord, which is situated a little to the northward of 65½° latitude, and less than 1° from the Arctic Polar Circle, a medium, from the 18th to the 23d of June, gave the temperature of the ocean in surface 6°.7 R. (47°.2 Far.)

By these high temperatures, combined with the current running to the northward, it is evident that the current, coming from more southerly regions, proceeds its way along the west coast of Iceland, and to show it more clearly how far this warmer current proceeds to the north, I cite the following:

1846, 23d of June, 6 afternoon, the Danish man-of-war brig St. Croix, Captain E. Suenson, was in—

	65° 54′ lat. N.,	and	25° 5′ W. of Greenwich,	and found the temperature	of the ocean		7.6 R.*	(49.1 Far.)
24th of June, 6 A. M.	66 22	do	26 13	do	do	do	1.6 R.†	(35.6 Far.)
9 A. M.	66 30	do	26 14	do	do	do	0.2 R.	(32.4 Far.)
Noon	66 17	do	25 39	do	do	do	2.5 R.	(37.5 Far.)
4 P. M.	65 53	do	25 11	do	do	do	6.4 R.	(46.4 Far.)
8 P. M.	65 38	do	24 47	do	do	do	6.9 R.	(47.5 Far.)

* This high temperature is, according to the log-book, *only found once.*

† Drifts of ice in sight in NE.

During the brig's being in the cold current no observation could be had, by which the direction of the current was to be calculated, but by many facts, and which likewise is shown in my annexed treatise of the Arctic current, it will be seen that the current from the ocean

* Rennell, 245.

† On account of many floating objects from the Gulf being found in North Europe, Iceland, Greenland, and other northern places. (The "mimosa scandens" is thrown ashore in all these places.)

‡ Voyage of exploration along the east coast of Greenland by Captain Graah, Royal Danish Navy, 1828–'31.

which surrounds Spitzbergen runs in a westerly and southwesterly direction towards the coast of Greenland.

By this sudden change of the temperature, the limit between the warmer and the cooler current, found in the above observation, will be where the northwest land of Iceland ends; where the mighty current from the ocean around Spitzbergen stops the warmer current, which runs to the northward along the western coast of Iceland.

According to the temperature found between the meridians of Cape Farewell and Iceland, shown by the plan, as well as the current towards the north, found on the different voyages to and from Greenland, it is probable that a current to the north runs over the greatest part of the ocean between West Iceland and Greenland, except only on that track, where the much stronger current from the ocean around Spitzbergen proceeds on its way to the SW. and along the coast of Greenland.

The current which, as before mentioned, runs to the north along the west coast of Iceland is the cause of the Greenland ice never being seen in Faxe Bay, (the large bay on the west side of Iceland,) and the climate being proportionally mild on the west coast of Iceland.

If this current did not exist the ice from the ocean around Spitzbergen, which is carried to the SW. along the Greenland coast, would come over to Iceland with the frequent predominating heavy westerly gales, and cover the great bays and firths on the west side of Iceland, where the climate in that case would be very little different from that on the east coast of Greenland, where the cold is so intense that almost nobody can live there, and where the ice nearly always is found screwed together in such a way, even many leagues off, that it but very exceptionally is possible to approach this coast.

During violent westerly gales, this range of ice is at times forced somewhat away from the coast, but as soon as the storm ceases it immediately turns back to the coast.*

The current from the ocean around Spitzbergen carries the ice around Cape Farewell and into the Davis' Strait. In spring particularly this ice is very abundant, and stretches sometimes more than 60 or 80 miles off from the cape.

This ice is usually not carried further north than to the parallel of 64° latitude, whereupon the current takes it to the westward. This current probably afterwards joins the current coming from the Hudson's and Baffin's Bays, and the western part of Davis' Strait, and proceeds on along the coast of Labrador to the southward and increases the enormous masses of ice, which only by this route are carried from the Strait of Davis southward to Newfoundland and further down in the Atlantic Ocean, frequently endangering the navigation between Europe and North America.

On observing the temperature of the ocean in its surface and the air it is surprising to learn how much equality generally is found between these temperatures.

The before mentioned warm current, which runs along the western coast of Iceland, is undoubtably the cause of the annual mean temperature of Reikiavik being 3°.2 + R., (39°.2 Far.,) proportionally a mild climate in comparison to Godthaab, (west side Greenland,) 1°.86 ÷ R., (27°.9 Far.,) in about the same latitude.

The warm current along the west coast of Iceland is a still more convincing cause of the mild climate here, because the eastern coast of Greenland, along which the cold current from the ocean around Spitzbergen has its run, just opposite to Iceland and even more to the southward than Iceland, is uninhabitable on acount of the extraordinary coldness of the climate there.

* Voyage of Graah, page 154.

Many similar examples could be mentioned, but the clearest facts about the influence on the climate of the colder or warmer currents will be found by a look on a map where the isothermes are noted.

The principal currents, the colder as well as the warmer ones maintain, by the perpetual renewed affluence of colder or warmer water, their cooler or warmer temperature, at very considerable distances through the ocean, and cool or heat the atmosphere far from those regions from which they have their origin.

A remarkable proof of the circulation of the waters is given by that quantity of tropical productions which frequently are driven ashore on different points of the northern part of the globe. Several kinds of mimosas are usually found on the coasts of Norway, the Faroe Islands, Iceland, and Greenland, where drift wood is likewise frequently thrown ashore. This happens in many places, and is of great utility for the inhabitants on those places, where no vegetation of wood is found. By inundations the trees are removed from the banks of the rivers and carried out into the ocean. The trees of a lighter specific weight maintain their floating quality, having been driven about in the ocean for a long time, and this is the reason of the prevailing part of drift woods consisting of pine species.

The drift wood consists generally only of the trunks with some roots, while the branches usually are rubbed off. At the Faroe Islands the drift wood is most frequently thrown ashore at Kirkeboe, on the SW. side of Stromoe, and sometimes of considerable size. In 1844 I saw in this place between the drift wood a trunk of a fir tree, which, a few feet above the roots, measured five feet six inches in circumference, whereof excellent planks were sawed. The owner of the place told me that the drift wood arrived most frequently in February and March; it gave him an annual revenue of 50 or 60 dollars, still, he added, it was diminishing every year.

Very considerable quantities are carried to the shores of Iceland, namely, in the northern part of the island, and principally on the western sides of Langeness, Meelrakke Slette, and between Cape Nord and Adelvig. In my different travels in Iceland I frequently heard the inhabitants in North Iceland saying that a great deal of the drift wood was cedar. Though it be probable that cedar sometimes is thrown ashore in Iceland, which then is going the same way as the different mimosas, and other productions from the tropical regions, which are thrown ashore here. As for me I believe, by what I have seen in the north of Iceland, that the far greater part of that wood which the inhabitants call cedar is larch tree, carried from the Siberian rivers in that ocean which arounds Spitzbergen; and the larch tree, after having been exposed a longer time to the water, takes a reddish color like that of the cedar, what may perhaps be the reason of the mistake of the inhabitants.*

The larch trees, after having been carried by the rivers of Siberia into the ocean, are afterwards, by the southwesterly current prevailing there, brought to the coasts of Iceland,† &c.

In the Faroe Islands I only saw fir trees; and I was told that nearly all drift wood here

* In "Le Nord de la Siberie" by Wrangel, Kozmine, and others, it is noted that the larch trees, growing in the north of Siberia, on the northern side of their trunks are black, but on that side which turns against the south of a red color; it is further mentioned that the banks of several rivers, particularly of the Lena, are covered with considerable wood, particularly *larch trees;* and page 308, Wrangel says: "Parmi les grands amas de troncs de mélèzes et de trembles, que l'on rencontre sur la côte, entre la Lena et l'Indiguirka, et est rare que l'on trouve des pins et des sapins."

† On the north side of Iceland I saw, in 1834, in a house belonging to a property called "Geitaskard," situated on the bank of the "Blanda river," that the window shutters were made of the stern of a whaler called "Margrethe von Glückstadt," (the name was still to read on the shutters.) This vessel, a few years before, was left by her crew near Spitzbergen, and some time after the hull of this vessel was driven ashore at the mouth of the Blanda river.

was white. This is a further proof that the red wood which comes to North Iceland generally is not cedar, or comes from the south, because it in such case likewise frequently would be found on the Faroe Islands.

By the circumvolution of the waters, the drift wood which is found in these northerly regions can come from many places of our globe, and even a tree grown at New Zealand could, after a certain time, following the different currents, land in Iceland, but it is probable that the greatest part of drift wood which comes to these northern coasts is carried hither from the great American rivers, and brought out into the Mexican Gulf by the Mississippi; from here by the Gulf Stream, and the current between Shetland and Iceland, to the ocean around Spitzbergen; part of it is, of course, likewise brought to the west side of Iceland with the currents already mentioned, which run to the northward along the western shores of Iceland. At the northern part of Faxe Bay, between Sneefiäls, Jokul and Budenstad, I likewise saw a good deal of drift wood thrown ashore.

It is probable that the woods on the banks of the American rivers are considerably diminishing, partly by the great consumption of fire wood for the great quantity of steamers on these rivers, and partly by the great number of settlers who clear away the woods in the later time, and I think it probable that the observation made in the Faroe Islands on diminishing of drift wood is arising from the destroying of the wood on the banks of these rivers, and the result will be that the drift wood accordingly in future time will be more and more scarce.

THE ARCTIC CURRENT.

Several hydrographers* mention that a current from the ocean around Spitzbergen continues its run along the east coast of Greenland, and *in a nearly straight line* towards the banks of Newfoundland.

In this opinion I do not agree, and I give my reasons in the following lines:

Considerable masses of ice are annually brought with the current from the ocean around Spitzbergen to the S. and SW. along the east coast of Greenland,† around Cape Farewell, and into the Strait of Davis.

These enormous masses of ice are frequently so close around the southern part of the coast of Greenland that the navigation through it is impossible. Experience has learned the captains who every year navigate between Copenhagen and the Greenland colonies (which are all situated on the west side of Greenland) that on going to the colonies in order to avoid to be beset, or coming in the ice, they must steer a couple of degrees to the southward of

* Berghaus, A. Petermann, Kerhallet, and others.

† See Graah, Scoresby, &c., as well as the accounts of the whalers in the year 1777, by Larens Hansen, director at the school at Ribe, (a town in Denmark.) These last mentioned accounts indicate ten whalers, with their captains, and printed letters from several of these captains to the above mentioned L. Hansen give a striking proof of the current and its rapidity from the ocean, around Spitzbergen, to the SW., along the east coast of Greenland. The said ten vessels w re inclosed in the ice June, 1777, in about 76° latitude north, between Spitzbergen and San Mayen Island, and were carried, always inclosed by the ice, in a southwesterly direction, between Iceland and Greenland, very often in sight of the Greenland coast. By degrees, all vessels were lost between the pressed ice—the last vessel, the 11th of October, in 61° latitude N., in sight of Greenland, and of the crew of these vessels, which consisted of about 450 men, only 116 (whose names I have before me) were so fortunate as to save their lives, and got ashore from the ice in the month of October and beginning of November, on the coast around Cape Farewell By calculating the distance between Cape Farewell and that place where the vessels were inclosed in the ice between Spitzbergen and San Mayen, it gives a distance of about 1,400 nautical miles, and the time the ice required in coming from the mentioned place to Cape Farewell, being about four months, the rapidity of this current gave as a mean at least between eleven and twelve nautical miles per 24 hours.

Cape Farewell, as well as after having crossed the meridian of Cape Farewell, generally not steer much to the northward before having reached the 50° or 52° of longitude W. of Greenwich, and even sometimes more westerly what depends on wind, weather, or ice, and by this proceeding to obtain a more navigable sea where either no ice is to be met with, or where the ice generally is found more spread, than, if they approached the coast nearer, where the vessels would be exposed to be inclosed in the ice brought along the coast by the current.

On the home passage from the colonies a like prudence is used by the captains; trying, firstly, to get away from the land, and afterwards to steer a southerly direction, to find as soon as possible a more safe navigation, where no ice is found.

To be enabled to give an idea about the limits of ice in these regions I examined a set of log-books, which were kindly given me for perusal, from the directors for the "Royal Greenland Commerce," viz: two log-books from every one of the last five years, which gives two voyages to the colonies and two home-bound voyages every year, consequently in all twenty voyages, which, not to make my researches too vast, I found sufficient.

It is undoubtedly beyond question, that great changings in the limits of the situation of the ice sometimes may happen; but still it is probable that the result of these researches, for a period of five years, will not be very much deviating from the usual.

From these log-books I noted at which latitude the meridian of Cape Farewell had been crossed on the passage to the colonies, and on which place the first ice was seen, and on which latitude the meridian of Cape Farewell was crossed on the home passage, and where the last ice was seen.

In the joined table A these annotations are made, and to make the view still clearer, the places where the first and last ice was seen are marked in the likewise joined plan B.*

By this examination it is proved that the meridian of Cape Farewell, according to a medium of the voyages on the passage to the colonies, is crossed in 57° 46′, and on the home passage in 58° 2′ latitude N., which gives 123′ and 107′ south of Cape Farewell,† where the ocean, relating to the log-books, has been quite clear of ice, and where, under usual circumstances, it can be taken as a safe passage to avoid the ice, which generally is carried round the coast of Cape Farewell, by the current coming from the ocean around Spitzbergen.

On the voyages from the colonies to Copenhagen the navigation has been somewhat nearer Cape Farewell, (16′;) the cause of this is, first, because the captains in coming from the Strait of Davis have a better knowledge of the situation of the ice and its distance from the land, which they cannot have on going up to Greeland in coming from the Atlantic Ocean, where no ice was seen; and secondly, because the home passages are made in a season when the ice generally is not quite so abundant as in spring, the season for the voyages to the colonies.

* I likewise join the copies of three current charts, showing how the current of the above mentioned hydrographers is marked to be in that part of the ocean, the opinion of whom I do not share.

C. Carte vom Atlantischen Ubersicht zer Krönunger am, Berghaus Physical Atlas, 1837.

D. Polar Chart illustrating A. Petermann's paper on the opening into a Polar Sea, between Spitzbergen and Nowaia Zembia, in further correspondence and proceedings connected with the Arctic expedition, presented to both Houses of Parliament by command of her Majesty, London, 1852.

E. Carte des courants généraux dans l'océan Atlantique dépot général de la marine, by Ch. P. de Kerhallet, capitaine de vaisseau, &c., &c., Paris, 1852.

† According to the observations of Capt. Graah, Cape Farewell is situated at 59° 49′ latitude N., and 43° 54′ west of Greenwich.

The joined table shows that the brig "Lucinde" fell in with ice furthest to the east, (4th of October, 1851, in 58° 30′ N. and 39° 30′ W. of Greenwich,) which gives 79 nautical miles south and about 135 nautical miles east of Cape Farewell. This ice consisted only of a quite isolated flake of very little extent, and it is very seldom in this latitude to meet ice so far to the eastward.* On the passage from Julianehaab to this place very little ice had been in sight.

On these voyages the first and the last ice seen generally only consisting of isolated icebergs or flakes, which can be considered to form the very extremity of the ice, coming from the NE. around Cape Farewell and going into the Strait of Davis, is a consequent cause that the great and more accumulated masses of ice carried by the current from the ocean around Spitzbergen, whereby this current really is indicated, are between these named utmost limits and the coast of Greenland.

The southerly and southwesterly coasts of Greenland are most exposed to be overfilled with these drifts of ice in spring, whilst these coasts generally, on the contrary, are pretty clear of ice from September to January, but in the end of this month the ice generally begins to come again in great abundance to go round Cape Farewell.†

Still further to prove the existence of this ice drift, I mention the following extract from the log-book of the schooner "Actio," Capt. J. Andersen. This vessel belongs to the colony Julianehaab, and is used as a transport in this district:

"In 1851, 7th of April, the 'Actio' left Julianehaab, bound to the different establishments on the coast between Julianehaab and Cape Farewell. The same day the captain, forced by the ice, was obliged to take refuge in a harbor. Frequent snow storms and frost. On account of icebergs and great masses of flake ice inclosing the coast, it was impossible to proceed on the voyage before the 23d, when the ice was found to be more spread, but after a few hours sailing the ice obliged the captain to put into a harbor again. Closed in by the ice until the 27th. The ice was now spread, and the voyage proceeded until the 1st of May, when the ice forced him to go into a harbor.

"In this month violent storms, snow and frost. From the most elevated points ashore very often no large sea in sight; now and then the ice spread, but not sufficiently for going on.

"At last, the 6th of June, in the morning, the voyage was continued, but the same evening the ice inclosed the coast, and the schooner was brought into 'Blaschullet,' a port in the neighborhood of Cape Farewell. The following day the voyage was pursued between the ice, now being spread, and, the 18th of June, the schooner arrived again at Julianehaab. Whilst the masses of ice, as mentioned, inclosing the coast between Julianehaab and Cape Farewell, the brig 'Lucinde' crossed the meridian of Cape Farewell, the 26th of April, in 58° 8′ latitude N., (101 nautical miles from shore,) *and no ice was seen from the brig* before the 2d of May, in 58° 26′ latitude N. and 50° 9′ W. Greenwich."

Further, Captain Knudten, commanding the "Neptune," bound from *Copenhagen* to *Julianehaab*, was obliged, on account of falling in with ice, to put into the harbor at Frederikshaab, (see the plan—it is further to NW. than Julianehaab,) the 8th of May, 1852, and was not able to continue his voyage to Julianehaab before the middle of June, because of the continued

* On the voyage to Greenland, in 1828, Capt. Graah fell in with the first ice in 58° 52′ latitude N. and 41° 25′ W. of Greenwich, which is only 57′ south and about 77 nautical miles miles to the eastward of Cape Farewell, and he mentions: "Since 1817, I do not know that the ice has been seen so far to the eastward of the Cape."—(Captain Graah, page 23.)

† Captain Graah, page 59.

strong drifting of ice, icebergs as well as very extensive fields of flat ice, with rapidity was carried along the coast to the northward.

Captain Knudten, a very trusty man, testifies that during the whole time he was closed in at Frederikshaab he did not a single day discover any clear water, even from the elevated points ashore, from which he could see about 28 nautical miles at sea.

Whilst the Neptune was inclosed by the ice at Frederikshaab, the brig "Baldur," on the home passage from North Greenland to Copenhagen, (see the joined table,) crossed the meridian of Cape Farewell, the 9th of June, in 58° 9′ latitude N. (100′ from shore) *in clear water, and no ice in sight.*

Of the above noticed it is evident that the current from the ocean around Spitzbergen, running along the east coast of Greenland, *turns Cape Farewell,* continues its run along the western coast of Greenland to the north, and carries in this manner the masses of ice from the ocean around Spitzbergen into the Strait of Davis.

Provided that the current existed, which the named hydrographers mention to have its run in a straight line from east Greenland to the banks of Newfoundland, then the ice likewise would be carried with that current from East Greenland, (if it were submarine, the deep going icebergs, if only in the surface, the enormous extended masses of flat ice,*) and the vessels would consequently cross the ice drift of this current, how far they even steered to the southward of Cape Farewell, *but this is not the case;* experience has learned that vessels, on coming from the eastward, *steering their course about* 2° (120 nautical miles) *to the southward of Cape Farewell, very seldom, or rather never, fall in with ice* before they have reached the Strait of Davis, (passed the meridian of the cape,) which is a certain proof that there does not exist even a branch of the Arctic current, which from East Greenland, in about a straight line, takes his run towards the banks of Newfoundland.

Along the east coast and around the southern and southwestern coast of Greenland, denominated the district of Julianehaab, the ice is generally much more accumulated† than is the case more northerly on the west coast, and further out in the Davis Strait, where the ice generally is found more spread; and consequently it often happens that vessels bound to Julianehaab from Copenhagen are obliged, first, to put in for a harbor more northerly, for waiting here until the ice is so much spread round the south coast that they may continue the voyage to Julianehaab.

In the warmer season, when the ice and snow melts ashore, it occasions the waters from the different fiords or inlets to move towards the sea, and cause the ice to remove a distance off the coast in such a manner that navigation close ashore can be executed in clear water. However, continuing gales, according to their direction to or from shore, have an influence on the situation of the ice.

Another proof, showing that the current from East Greenland does not run in a straight line towards the banks of Newfoundland, can likewise be derived from the observations of the temperature of the surface, made on many voyages to and from Greenland, of which I have noted the observations of two voyages in the joined plan B.

* An observation which will be of interest to be mentioned here, and which gives a proof of the very little difference of the temperature between the surface and the depth, and which proves that there does not exist any cold submarine current on the following place in a southeasterly direction from Cape Farewell, is mentioned in the voyage of Capt. Graah, page 23, he says: "The 5th of May, 1828, in 57° 35′ latitude N. and 36° 36′ W. of Greenwich, the temperature in the surface was found 6°.3, (46°.2 Far.,) and in a depth of 660 feet = 5°.5 + R., (44°.4 Far.)"

† Capt. Graah, page 11, 14, 25, 60, &c., &c.

One voyage by Capt. Graah to Greenland, in May, 1828, and the other from Greenland to Copenhagen, in September, 1844, by Captain Holball.

Captain Graah, who, during his researches in Greenland, passed two summers and one winter on the east coast of Greenland, between Cape Farewell and 65½° latitude, has never found the temperature of the sea here higher than 0°.9 + R., (34°.0 Far.*)

Suppose that the Arctic current from East Greenland took its run in about a straight line towards the banks of Newfoundland, it would be crossed on the voyages from Copenhagen to the Danish colonies in Greenland, between 38° and 45° W. of Greenwich; and so high a temperature in the surface of the ocean as from 4° (41°.0 Far.) to 6° R., (45°.5 Far.,) as it is found on this way and marked in the plan, would, according to my opinion, be impossible—only 1° or 2° to the southward of the parallel of Cape Farewell—as it is a well known fact that the principal currents, the cold as well as the warm ones, by the constant renewal of colder or warmer waters, maintain their temperatures through very considerable distances of the ocean.

By this comparatively high temperature in the surface of the ocean, so close to the limits of that current, which carries such enormous masses of ice from the ocean around Spitsbergen, turning Cape Farewell, the idea is affirmed that the Atlantic Ocean has here a moving in a northwesterly or northerly direction towards the eastern and southern coast of Greenland, by which the cold spreading from the ice is prevented from extending through the waters contrary to the mentioned moving of the ocean,† and this draught towards the land is undoubtedly the cause that the ice on these parts of the coast of Greenland appears so close pressed, which on the south coast happens so frequently, and on the east coast, in some manner, constantly, that such screwing of ice makes it impossible for vessels to force through the ice to reach the land.

The log-books which I examined, to have a proof of any predominating current existing on the mentioned track between 38° and 45° W. of Greenwich, do not give any positive information in that respect. Sometimes the result of the observations was to the northward, and at other times to the southward of the estimated place, and, I confess, it being very difficult to obtain a positive result, even after having examined a great deal of log-books, because this region is exposed to gales and fogs, frequently preventing observations for ascertaining the place of the ship to be made for many days.

This examination, consequently, neither gave any proof of the existence of an Arctic current from East Greenland in a straight line towards the banks of Newfoundland, and this with the mentioned facts, the drift of the ice and the observed temperature of the ocean, gives a conviction of such a current not existing, at least not between March and November, the period of my examinations.

During the other season no navigation goes on here, and there is no reason to believe that any particular change might take place during the said season.

After this above mentioned, it seems to me a fact that the current from the ocean around Spitsbergen, which carries such considerable masses of ice, after its run along the east coast of Greenland, turns Cape Farewell without detaching any branch, running in about a straight

* Captain Graah, page 152, mentions: "The temperature of the sea was frequently observed during the whole voyage, and was always found between 28° and 34° Fahrenheit."

† Graah cites in his research voyage, page 26: "In the mouth of the Strait of Davis I found the temperature of the surface of the ocean from 4° (41°.0) to 3°.1 R, (38°.7,) though we were in the proximity of the ice. From this I concluded that a current from south predominated here, because I never before, in the vicinity of ice, had found the temperature of the water exceeding 1°.8 R., (36°.0,) and this conclusion was affirmed when, coming to the northward of the ice, I found the temperature of the water 1°.1 + R. (34°.5.)

line towards the banks of Newfoundland. This current runs along the southwest coast of Greenland until about the 64° or 65° of latitude, and exceptionally even up to Holsteinburg, which is in about 67°.

The said current afterwards, in turning to the westward, undoubtedly joins the current coming from the Baffin's and the Hudson's Bay, running to the southward on the western side of Davis' Strait, along the coast of Labrador, and increases in this way that enormous quantity of ice which *only by this track* is brought towards the south to Newfoundland and farther down in the Atlantic Ocean, frequently disturbing and endangering the navigation between Europe and the Northern America."

C. IRMINGER.

NOTE.—Commander Irminger was kind enough to illustrate this interesting and valuable paper by charts and diagrams, which I regret to be compelled to omit.

GENERAL REMARKS ON THE PASSAGE FROM THE UNITED STATES TO PORTS BEYOND THE EQUATOR.*

It has now [January, 1858,] been about ten years since I first proposed a new and shorter route hence to the equator, for all vessels, whether bound around the Cape of Good Hope, Cape Horn, to Rio, or to any of the ports of South America. The tracks of all such are the same until Cape St. Roque be cleared.

The W. H. D. C. Wright, (Jackson,) of Baltimore, was the first vessel to try the new route. In 24 days from Hampton Roads, she crossed the line in 31° W., and had a passage of 13 days thence to Rio. This was in February, 1848.

In May, she went out again, had 33 days to the line, which she crossed in 33° 41′ W. In three days after, she cleared St. Roque. On this passage, she was detained six days by calms between 8° 30′ and 5° N. But she had no difficulty, it may be observed, in weathering Cape St. Roque. This trip it took her 11 days to clear the equatorial calms, which she found between 9° N. and 3° N.

In the spring of 1849, she went out again. She had 32 days to the line in 28°, after having been delayed nine days by calms between 5° N. and the line; whence, in three days, she again cleared Cape St. Roque. The average, therefore, of Captain Jackson's passages to the line, by the new route, was 30 days, against 41 by the old route.

The Chicora, the Helena, and the Midas tried this route about the same time, and all with equal success; their average to the line being 26 days only.

These practical demonstrations of the advantages of the route which I had pointed out were not wanting to satisfy me of their value, for I had consulted many thousand records as to the winds encountered in this part of the ocean by different vessels on different occasions. These records showed the number of times on which the winds had been found to blow from each point of the compass in different parts of the ocean. And knowing the prevailing winds for each 5° square, the navigator could tell what course it was practicable for a vessel to steer through these squares, as well before as after the trial had actually been made.

For instance, in a certain square of 5° I obtained the records of 700 vessels during the month of August in different years. Vessels bound south, by the old route, were in the habit of passing through this square, always aiming to make a S.SW. or a South course through it. And of these 700 records, as to the wind, 600 gave the wind directly ahead for a South or S.SW. course. To convince any one, then, who believes in the records examined, that a vessel in this part of the route to Rio would *generally* find the winds ahead, did not require

* Originally submitted in 1849.

that a vessel should be sent there actually to try it, for here was the experience of 700 vessels, 600 of which had found the winds adverse for a southerly course.

But certain navigators were not disposed to look upon my investigations in this light. Forgetting that they were the results of actual observations, these persons were disposed to consider those results, thus announced, as theories, or matters of opinion of my own; whereas, they are no more matters of opinion than the fact that the trade-winds blow is a matter of opinion. They are nothing more or less than the sum of the experience of some thousands of navigators, as to winds and calms.

The effect has been that though many shipmasters have at once perceived the bearing of these results, and the correctness of the conclusions derived from them, and have readily adopted them, still, others have rejected them altogether, or only partially adopted them.

It has not unfrequently happend, as I perceive by the log-books returned to me, that occasionally a navigator will put to sea, and stand boldly out for the new route. But after awhile, the wind comes out ahead. He then gets frightened, abandons it, has a long passage, and lays the blame to the new route.

I have never claimed for any of these routes an exemption from liability to head winds. On the contrary, I expressly show that a vessel, by any of the routes proposed by me, is liable both to head winds and calms; and not only so, I have shown the chances of both against her. The best navigators, even in smart ships, may now and then have tedious passages by following these routes. It is not claimed that they will, invariably and for each ship, give short passages; but it is claimed and has been proved that, in the long run, they will give very much the shortest passages.

I may here remark that I have never yet heard of a navigator complaining of the new route, and a long passage by it, but what, when his abstract log came to be examined, it showed that the fault was quite as much with him as with the route. For instance, I have drawn (Plates II and III) certain lines or tracks to explain the route recommended. These lines are intended to show the route that vessels should take, not the *track* that they should make. Vessels taking such routes should be guided by these lines as to the general direction which they ought to pursue. It was never intended that, with fair winds, they should make the zigzags of these lines. But some navigators have inferred that there was virtue in these lines themselves; that they must be followed as rigidly and as closely as though they marked out a channel-way, on either side of which if a vessel should fall, she would find herself in difficulty. Accordingly, abstracts that have been returned to me show frequent instances wherein vessels, after having been headed off from the projected track, have had the winds perfectly fair for pursuing their straight course onward; yet they have, nevertheless, proceeded to make a head wind of such, and to beat back out there on the open sea, for the purpose of getting back on the track projected.

Suppose that ship A makes an uncommonly quick run to a given port, and that she gives her track to B; B attempts it but is headed off. Now B, from this new position, will not attempt to go out of his way to get actually in the wake made by A; but B will shape his course by that of A, and run by it; and consider that he is following it when he is near it. This is what I wish vessels to do with regard to the routes that I have projected for them. Do not go out of your way to get on those tracks, but consider yourself, unless specially directed otherwise, to be in good position, according to the quantity of sea-room, when you are within one or two hundred miles of the projected track.

Therefore, when you are *near* the projected track, consider yourself in as good a position as though you were actually on it.

The greatest average by the old route is for July, which is 48 days; the most tedious month by the new route is August, which gives 37 days as the average.

When a vessel finds herself pinched for room, she should never hesitate to pass inside of Fernando de Noronha, and vessels bound around the Cape of Good Hope will not find it to their advantage to cross the equator any further to the east than they would if bound to South America or around the "Horn."

The most pertinent question for the navigator to ask, with regard to the route hence to the southern hemishere, is not "Where shall I cross the equator?" but "Where shall I lose the NE. and where get the SE. trades?"

Hence, it will be observed that, by following these Sailing Directions, vessels will occasionally be compelled to go as far east as longitude 25° W.; but this is north of the equator, and in those regions and months when and where the NE. trades usually fail.

I give, with all their mistakes, the passages of upwards of 1,000 vessels that have attempted the new route, compared with those taken at random that have gone by the old route. The result is, that the routes which I have proposed, and which were followed by this large fleet of vessels—many of them doubtingly—had, when the preceding edition of this work went to press, reduced the average sailing distance, from the ports of the United States to the equator, as much as two weeks for some months, and from 8 to 10 days on the average the year round.

The average passage to the line, the year round, by the old route, is 41 days; but since the old route navigators have begun to use the charts and to "split the difference," the old route passages have been shortened somewhat; it is now about 40 days; by the new it is 31;* thus exhibiting a saving of nearly 25 per cent. of the usual time under canvas hence to the equator; which saving is among the first fruits of the Wind and Current Charts, and of that system of investigation, with regard to the winds and currents of the ocean, that the patriotism, intelligence, and public spirit of American ship-owners and masters have enabled me to pursue with such signal advantage to the commerce of the country, and which is now attracting the attention and labors of the maritime world.

Since the first publication of the Wind and Current Charts, the materials for improving them have increased with great rapidity. These materials have been so discussed and arranged, by the officers at the Observatory, that, with the aid of the Pilot Charts, the navigator may now calculate and project the path of his ship on an intended voyage, very much in the same way that the astronomer determines the path of a comet through the heavens. There is this difference, however: the Chart with its data shows the navigator that, in pursuing his path on the ocean, head winds and calms are to be encountered, which will turn him aside, or retard him on his way; and that, therefore, he cannot predict with certainty the place of his ship on a given day. He therefore, in calculating his path through the ocean, has to go into the doctrine of chances, and to determine thereby the degree of probability as to the frequency and extent with which he may anticipate adverse winds and calms by the way.

Thus, in the five degrees square of the ocean, between latitude 35° and 40° N., longitude 70° and 75° W., the log-books of 4,387 vessels, or the records of vessels for 4,387 days in this

* This was written and published several years ago. Since that time navigators have learned to follow the new route better. Twenty days is now not an uncommon passage from New York to the line, and some of the new ships talk of making it in 16.—(Note to 7th edition.) It has been done in less than 16 days. The average now (1858) is 30.

square, have been examined; 323 of which were there in the month of February of different years.

Now, supposing (and there is no reason to suppose otherwise) that these observations give a fair average as to the prevalence of calms and the direction of the winds; we are led to the conclusion that if one of these vessels had attempted to sail through this square one hundred times on an E.SE. course, in the month of February, for a series of years, she would have had 6.2 calms, fair winds 85.5, and 1.3 wind *dead ahead*, or at E.SE.; that she would have been headed off on the larboard tack, or by "slant" winds from the northward and eastward, 7.3 times; and on the starboard tack, or by "slant" winds from the southward, 5.9 times.

From this, the navigator will see, also, that, along this part of the February route, the northern side is rather the windward side; and that, therefore, when winds are *free*, it is better to keep along this part of the route somewhat to the north of the projected line.

After crossing latitude 20° N., longitude 40° W., he will likewise see that he is there still liable to be headed off by winds from the northward and eastward; and that, consequently, when the wind comes out *dead* ahead, he should stand off on the starboard tack; and that, when the winds are fair, he should keep the projected track to the southward and westward of him, say generally 40 or 50 miles.—(See Tables, COMPUTED ROUTES.)

He is recommended to steer straight from *d* to *d* when the winds are fair; and when he gets thrown off his course, instead of getting out of his way to get back to the projected track, he should be guided by the Pilot Chart, and run parallel to this track, or otherwise, according to the Pilot Chart.

Those who desire to try these routes, should project the route for the month on the Chart as far as the equator; arrived there, let a line be drawn from the point of *actual* crossing to Cape St. Augustine; and then aim to keep this line under the *lee*, so as to have it at least 20 or 30 miles to the westward when the ship crosses the parallel of 6° or 7° south.

After that the winds haul more to the eastward, and there will be no difficulty in laying up S.SW., or even as high as south.

If the ship be headed off to the west of her course or to the west of said line to St. Augustine, she should take advantage of the first "slant," tack, stand east, and make short and long legs until she can clear the land.

This part of the route is the turning point of the passage. By studying the Charts as well as the tables, navigators will see that, with attention and management between the equator and 6° south, they will have little or no difficulty in making either a S.SW. course good on one tack, or an east course on the other; and when they find it necessary to stand to the eastward, they should never stand farther, unless they can make southing also, than to bring, 20 or 30 miles to the leeward of them, a straight line, drawn from 31° on the equator, just so as to clear the land about Cape St. Augustine. In this part of the route, more than in all others, the navigator should study the *slants*, and take advantage of all of them.

I recommend these routes, it should be undertood, only to vessels which can sail within six points of the wind. I would not advise any vessel that cannot do this to attempt them, for she will be apt to fall to leeward, and then she will find it difficult and tedious to get up again.

There are other parts of the routes in which it is also necessary to study the "slants." For instance: take that part of the February route which lies between the parallels of 20° and 15° N. It will be observed that though but one of the 25 observations from which this part of the route is determined, gives the wind *directly ahead*, yet that 8 per cent. of them are

"slant" winds from the eastward, which will prevent a vessel 8 times in 100 from lying S.SE., the course prescribed.

After crossing 15°, it will be seen that the navigator will have, if the observations consulted give a fair average as to the direction of the wind, neither head winds nor "slants," until he gets to 5° N. Thence to the equator he is liable to be headed off to the westward 14.7 times in 100. He should, therefore, in this month aim, if the winds allow, to keep this part of the route under the lee, so as to cross 5° N. to the east of 31°.

By *slants*, I mean winds that, though not *dead* ahead, will, nevertheless, head a ship off her course; thus, for a vessel that wishes to head E., a wind at N.NE. or NE. would be what here is called a *slant* wind.

The route for each month is computed according to the doctrine of chances; the number of observations from which each part of the route is calculated is stated in the last column, "Total number of observations."

It will, therefore, be perceived that some parts of each route are entitled to more weight than others. Thus, the percentage of fair and adverse winds for the first course on the December track is derived from 364 observations, whereas that for the fifth course is derived from only 26. All will admit that 364 give a better average than do only 26 observations.

It must be farther presumed and admitted that vessels may expect, in following any one of these routes, *sometimes* to encounter head winds and calms, and have long passages.

But, taking the average length of passage by these routes, the data of the Charts lead us to the conclusion that a fair sailer, under good management, will require in December from 20 to 30 days to run from the Atlantic ports to the equator, averaging 26; in January, from 19 to 30 days, averaging 25; and in February and March, from 19 to 31 days, against 40 days by the old or usual route, as now followed.

Navigators who are disposed to try these routes should have the Pilot Charts on board; which Pilot Charts will be furnished to them on application, either at the National Observatory at Washington, or to A. G. Seaman, No. 44 Ann street, New York; provided the applicant will agree to furnish this office an abstract of his log according to the form with which he will also be gratuitously supplied, and which form may be found in another part of these Directions.

Vessels from other ports of the United States, besides New York, are recommended to make the best of their way to the track from New York. They should generally be governed by the winds they happen to meet as to where they will intercept this track. If vessels from southern ports aim to intercept it to the S. of 33° N., they will be liable to encounter the calms of the horse latitudes.

NATIONAL OBSERVATORY, *Washington, December* 14, 1849.

In the above, the first edition of the Pilot Charts is referred to for illustration. The third edition, which is now (January, 1858) out, contains more observations for this part of the route.

In coming out, especially from New York and Boston, with *fair winds*, the navigator who is bound into the southern hemisphere will do well, as long as the winds are fair, to stand east, and not to attempt to make any latitude until he reaches the meridian of 55° or 50° west. This should be done only when the winds are fresh and fair.

FROM THE UNITED STATES TO THE FAIR WAY OFF ST. ROQUE.

Off St. Roque, in Brazil, the tracks of all vessels bound out of the North Atlantic ocean into the southern hemisphere fall in with each other. This is the great pass-way between the North Atlantic and the other great oceans of the world. Here the tracks of vessels, both from Europe and America, come together, whether their destination be around either Cape Horn or the Cape of Good Hope. Passing the offings of this great promontory of Brazil, the highway then forks. All vessels for India, China, or Australia, hugging the wind, turn off to the east; those that are bound around Cape Horn keep straight on; while those that are bound to the La Plata, to Rio, or any of the South American ports, being restricted in their courses by the winds on one hand and the land on the other, make the best of their way south, and turn off to the right as they reach the proper parallel. For these last, no further sailing directions are required after passing St. Roque. Their way is plain.

After discussing the route from America to St. Roque, the route from Europe thither will be taken up; and then sailing directions from the fair way of St. Roque to the offings of the Cape of Good Hope, or of Cape Horn, will answer for every vessel bound that way, whatsoever be the port out of which she may have sailed.

The following time table, by the new route, the old and the middle, is derived from the logs of one thousand one hundred and sixty voyages, and it therefore may be held to embody the experience of 1,160 navigators touching the best route hence to the "fair way of St. Roque." The meaning of this table is so plain that analysis and discussion can add but little to the force of its own silent story. This table shows, for each month, the average time from port to 30° N.; the place of crossing that parallel, and the time thence to the equator, and the place of crossing it, also, by each of the three routes. It shows, also, the distance from 30° N. to the Equator, and the average number of miles "made good" daily for so much of each route as is included between these parallels.

The daily distances give to the navigator practically the best idea possible as to the difference in the winds by these several routes as they cross the NE. trade-wind belt, supposing that belt to lie all the year round between the equator and the parallel of 30° N. Thus, in some months, as in October, for instance, there appears to be practically no difference in the winds, the average rate of sailing being 87 miles per day by the old route, 88 by the new, and 90 by the middle; a difference purely accidental, for the NE. trades are, at this season, pretty nearly broken up. The gain by the new route, for this month, is not in crossing the trade-wind belt, but in reaching it. It takes, from our Atlantic ports, 12.6 days to reach it by the new route, 19 by the old, and 16 by the middle; and having crossed 30° N., the trade-winds thence to the equator, at this season, are the same for all routes. Not so at other seasons.

In illustration of this, let us glance at the winter months. At this season the gain is for the new route, both in reaching the trades and in running through them, the average winter gain by the new route being, from port to 30° N., 3.6 days over the middle, and 6.3 over the old; while through the trades the average run per day is, by the old route, 92 miles; by the middle, 114; and by the new, 134. This statement is based on facts derived from comparing the records of no less than 294 ships that have actually tried these routes in winter; they are therefore the results of actual experience.

In the monthly tables of crossings to the "fair way off St. Roque," the tracks of all the vessels that have returned their abstract logs to this office have been coördinated by Lieuts.

Kennard, Carter, Forrest, Young, and Van Zandt. This was done especially for the benefit of those dullards and the luggards of the sea, who doubt whether voyages can be shortened by spreading before them the experience of others. If these pages should meet the eye of any such, I beg leave to refer him to the following tables of monthly crossings, and to those also of crossings by the old and middle route.

A few vessels with the Charts on board still stick to the old route. A large number attempt to "split the difference," and to pursue a middle course between the old route and the new. The numbers, however, who do this will, it is hoped, with the facts now presented, rapidly diminish.

Time Table by the different routes.

		LONG. OF CROSSING—		DAYS FROM—		Distance from 30° N. to Line.	
		30° N.	Line.	Port to 30° N.	30° N. to Line.		
		Long.	*Long.*	*Days.*	*Days.*	*Total miles.*	*Average per day.*
		°	°				
December...	Old route	32.2 W.	25.5 W.	18.9	20.4	1835	= 89
"	Middle "	36.6	29.1	12.5	20.5	1860	= 90
"	New "	44.7	31.5	10.8	15.0	1965	= 131
January.....	Old "	34.3	24.4	17.1	17.4	1885	= 108
"	Middle "	34.5	28.1	16.2	14.9	1830	= 125
"	New "	43.2	30	10.9	14.3	1960	= 137
February....	Old "	29.5	22.6	16.6	23.2	1835	= 79
"	Middle "	35.1	25.6	15.7	14.6	1870	= 128
"	New "	42.5	30.2	11.8	14.3	1940	= 135
March.....	Old "	31.2	23.7	16.4	20.9	1860	= 89
"	Middle "	33	28.2	14.2	17.2	1820	= 106
"	New "	42.5	29	11.5	16.3	1970	= 121
April.....	Old "	32.4	25.6	17.2	18.1	1835	= 101
"	Middle "	33.2	28.1	16.7	17.2	1825	= 106
"	New "	40.6	29.9	13.7	15.8	1910	= 121
May.....	Old "	33	24	22.8	19.4	1865	= 86
"	Middle "	36.4	29.1	19.5	20.2	1855	= 92
"	New "	41.2	31	12.9	16.5	1890	= 114
June.....	Old "	32.7	26.4	21.1	23.6	1830	= 78
"	Middle "	39.5	28.2	17.6	21.4	1920	= 90
"	New "	43.5	30.7	13.8	21.2	1945	= 92
July.....	Old "	31.6	24.2	24.6	20.3	1850	= 91
"	Middle "	42.1	27.7	15.8	24.4	1990	= 82
"	New "	45.2	30.5	13	20.5	2000	= 97
August.....	Old "	31.6	25.3	22	22	1830	= 83
"	Middle "	41.4	26.7	16	22.2	2000	= 90
"	New "	45.7	30.4	14.2	24.4	2010	= 82
September...	Old "	33.8	25.2	19.3	23.0	1867	= 81
"	Middle "	38.8	29	16.8	25.6	1880	= 73
"	New "	41.7	31.5	15.8	16.4	1890	= 115
October.....	Old "	28.9	26.7	19	20.7	1810	= 87
"	Middle "	33	29.5	16	20	1815	= 90
"	New "	43	31.7	12.6	21.9	1930	= 88
November...	Old "	32	25.8	17.7	18.9	1830	= 97
"	Middle "	34.4	28.9	20.2	19.8	1825	= 94
"	New "	42.5	30.7	11.8	18.7	1940	= 104

These figures are enough to challenge attention and to startle all those who decry this system of research, or who deny the advantages of the new route. From 30° N. to the line, the average distance sailed daily during the winter months is 92 miles by the old route against 134 by the new. To what is this difference owing? Are the ships that take the new route the faster? That can hardly be. They are better navigated I have no doubt, for, as a rule, the log-books show that. But still that is not sufficient to account for all this difference. In

winter a ship that takes the new route from 30° to the line will go nearly as far, on the average, in one day as she could go in a day and a half by the old route. This is owing, in a great measure, to the fact that the new route lies through a region of the ocean where the breezes are brisk, and brisk breezes always help to make both officers and crew brisk. This great difference of time and speed is probably owing to this circumstance more than to any other.

The further from the Coast of Africa, both in the North and South Atlantic, the fresher blow the trade winds. This fact will be treated more fully when we come to give sailing directions for the South Atlantic. It will then appear that longitude has much to do with the "trades," and the average difference of a day's sail on routes differing only a little in longitude is there made very striking.

The tables of crossing and time to the "fair way" off St. Roque, of which the above statement is only a synopsis, appear to be sufficiently ample to remove from the mind of the most "old fashioned" and anti-progressive seaman all doubts as to the advantages of the new route to Rio.

These tables show the tracks of more than a thousand vessels, and give the time of each one from crossing to crossing. They are arranged not only according to the season and the month, but the day also. The tracks of the "ten best" for each month are marked with a star (*), and the means of their time and crossing are stated. Thus we have to guide us the experience, and to spur us on, the tracks, of 120 vessels, which, on the average, ran to the line in 23.5 days, and to St. Roque in 26 days. Their mean crossing of 30° N. is in 43° 18′ W. and of the line in 31° 12′ W.; the most westerly crossings being in July, August, November, and December, for 30° N.; and of the equator in July, September, October, and November.

For the winter months the best crossing, on the average, of 30° N. and of the line is, by computation, between 43° and 45° for the former; and between 31° 20′ and 32° 4′ for the latter; by mean of "ten best" for each month the crossing of 30° N. is between 42° and 46° of the line, between 30° 15′ and 32° 15′ W. Thus the best routes, according to computation, for December, January, and February, are included within the breadth of ocean along which the vessels that made the best 30 winter passages actually ran.

Since the best route to the line from any point between the meridians of 42° and 46° on the parallel of 30° is so well settled, it remains to see what is the best route from port to that crossing of 30° N. The tables show it; still they show it only on the average. The navigator at sea has not only the charts and tables on board to tell him how the winds and currents may be, but he has the wide ocean spread out before him and the winds whistling by to tell him how they actually are—and when, on coming out of port, he finds them actually in his favor for making easting, he should take advantage of the circumstance and run to the meridian of 50° W., or there away, before caring to cross the parallel of 35° N. The average time from New York to 30° N. by the 30 best winter passages is 8 days 4¾ hours.

It will be seen by examining the monthly tables of crossing that, as a rule, I have classed all those vessels as following the old and middle routes which have crossed 30° N. east of 35° W., or 5° N. east of 25° W. The furthest easting is generally attained near 5° N. and not at the equator. These tables show very well where the calm belts and difficult parts of the route lie.

Thus, in October, by the old and middle routes, it takes, to make 10° of latitude, 4.3 days on the north side of the parallel of 10° N., and 8.9 days, or twice as long, on the south side

of it. Also the tables, by any route, show that in October the most tedious part of the passage is between 10° N. and the equator. A tight place is also often found between the parallels of 25° and 30° N.

Some vessels set off on the new route, that is, they enter the trades upon it and then go off on the old. These are one class included under the term "middle route." The Siam and Aldebaran, both from Boston, in December, are examples of this sort. All such act unwisely, for, after entering the trades by the new route, the difficulty is to make easting, and this fact will be brought out more fully in the discussion of the route from the equator to the "fair way" off the Cape of Good Hope. It will there be proved by experience that this passage is shorter from a westerly than from an easterly crossing of the line. As a rule, it is the vessels out of Boston and other eastern ports that most delight in the old and middle routes. These tables of time and crossings to St. Roque will afford owners a very clear idea of the loss and gain by routes, if they will convert the time required by the several routes into money. I am unable to account for this "slowness to take hold" among eastern vessels. It clearly indicates that their masters are "behind the times."

Another class of "middle routes" enter the trades by the old route, and then glide off into the new. These do better. The "Herald of the Morning," from Boston, and the "Eagle," of New York, in the January crossings, are both types of this class. They had, the one 23 and the other 24 days to the line, and they did well, because before reaching 30° north they had fine winds for making easting. In this they followed the advice given in the last paragraph, p. 329, 7th ed. Sailing Directions, and which advice has just been repeated, p. 145. They each crossed 30° N., near the meridian of 32°. Had they crossed it about 10° further to the west, they would have saved time.

The other vessels, in January, which come within this category are the Dashaway, from Bath, 29½ days; the Huguenot, from New York, 29 days; the Imaum, of Salem, 26¾ days; the Emily, of Philadelphia, 28¾ days; and the Star of the Union, 35 days. There are others that attempt to "split the difference" between the old route and the new. The vessels that go by the old route for the first part of the voyage and then go off upon the new make, as a rule, shorter passages than those do that commence with the new route and end with the old. The reason is obvious.

The new routes were determined in the first instance by calculation. They have been brought to the *experimentum crusis*, and may now be considered as the result of actual trial. Preceding the new route crossings there is, for each month except October and November, a table giving the computed route, and showing not only the shortest distance from New York to the line for each month, but the whole distance to be actually sailed on the average, in order to reach the equator at the designated crossing. Thus, the true distance to the equator by the December route is 3,918 miles; but the average detour on account of head winds calls for 197 miles more, making the total distance to be actually sailed by vessels on the new route, in December, 4,115 miles. The average calculated distance for the twelve months is 4,093 miles. The number of vessels that have kept and returned in their abstracts the distance actually sailed by each one on the new route is 105. The mean of the whole is 4,099 miles, or only 6 miles more than the calculated distance! Steam could not run more closely.

The method of computing these route tables is explained at page 21; the only positive data for the computation being the relative prevalence of winds from the different points of the compass, as shown by the Pilot Charts. Many of the arguments of the problem, such as

those relating to the force of the adverse winds, the state of the sea, the sailing qualities of ships, the seamanship of masters, and the like, are variables of such a nature that several friends, for whose opinions I have great respect, have questioned the method or doubted the utility of any calculation based upon such variables. Nevertheless, these variables are precisely those which can be very fairly represented by averages, and the problem itself, like that of insurance, is one of chances.

Routes through other parts of the sea more or less stormy, traversed by other vessels more or less weatherly, commanded by other navigators more or less skillful, would, probably, if calculated according to the method adopted for the Rio routes, not prove so accurate, on the average, as these have done. In seas where adverse gales are more prevalent and stormy, instead of assuming that a vessel can sail within 6 points of the wind, it would, perhaps, in order to get at the average detour, be necessary to assume that she could not make her course good at so small an angle; and so with the other averaged arguments.

The monthly tables of "time and crossings" to the "fair way off St. Roque" should be carefully studied before sailing, for much useful information may be gained after closely analyzing them. Thus, these tables agree with the trade wind, the pilot, and the track charts, as to the places of calms, light airs, and baffling winds, which constitute the difficult passes on the several routes.

The following tabular statement shows the parallels between which these difficult passes lie during each month, and the time usually required to overcome them:

Difficult passes.

	New route.		Old route.	
	Between.	Days.	Between.	Days.
December	5° N. and 0°.	3	5° N. and 0°. 30....do....25..	5.1 5.3
January	30....do....25..	3.1	5....do. .. 0..	4.4
February	5....do.... 0..	3.3	5....do.... 0..	5.1
March	5....do.... 0..	....	5....do.... 0..	5.5
April	5....do.... 0..	3.9	5....do.... 0..	4.7
May	5....do.... 0..	4.4	5....do....10..	5.9
June	5....do.... 0..	7	10....do.... 0..	13.5
July	10....do.... 5..	6.5	10....do.... 5..	7.4
August	10....do.... 5..	6.0	10....do.... 5..	6.9
September	10....do.. 5..	5.5	10. ..do.... 5..	7.2
October	10....do .. 5..	4.7	10....do.... 5..	5.8
November	30....do....25..	4	5....do.... 0.. 30....do....25..	4.6 5.1

The average speed in each of the four seasons by the several routes.

	Old.	Middle.	New.
	Miles per day.	*Miles per day.*	*Miles per day.*
Winter	92	114	134
Spring	92	101	119
Summer	88	86	102
Fall	84	87	90

It thus appears that, practically, it is nearly as easy to cross the trade wind belt during summer and fall by one route as the other. Though the new route is a little the best, yet the difference, except in September, for so much of the way is so trifling that it may be regarded

as resulting rather from mere chance than from any difference as to force of wind by the way. The gain for the new route during this half of the year is chiefly made between port and 30° N., that is, between port and the trade wind belt.

The crossings by the new route are given for two periods: one embraces all the passages that were made before the publication in 1857 (the last edition); and the other those that have been made with that edition as their guide. This classification was made in order to show what improvement, if any, navigators are making in their time of passage, in consequence of the improved lights which each successive edition of this work is holding up for their guide, and in consequence of following the sailing directions with more fidelity and faith. The result is highly gratifying.

The following table shows the average passage to the line by the new route for each month before and since 1855, the passage by the old and middle routes, together with the total number of passages, and the mean of the best 10, also, for each month:

	New route, 1855.—Average passages.		Old and middle route.—Averages.	Averages best of 10 per each month.	Total number of passages.
	Before.	Since.			
	Days.	*Days.*	*Days.*	*Days.*	
December	28.2	25.8	36.2	19.5	105
January	29.5	25.2	32.5	20.6	86
February	26.7	26.1	32.6	19.6	103
March	27.1	27.8	32	20.9	106
April	31.9	29.5	34.2	22.4	114
May	33.8	29.4	40.4	23.7	107
June	34.8	35	40.7	26	90
July	33.3	33.5	41.5	28	64
August	37.7	38.6	39.7	26.9	84
September	38.4	38.8	42.4	28.2	94
October	34.2	34.5	37	25.3	101
November	31.9	30.5	38.2	21.4	103
Means	32.2	31.2	37.3	23	Total ships..1,157

The gain with the lights of the last edition is 11.8 days in the aggregate, for the 12 monthly routes, which, on the average, is one day by every ship that sails from the United States on any voyage that lies across the line; the greatest shortening of the monthly average being 4.4 days on the May route—the gain being from November to May, inclusive, the loss from June to October being less than a day.

The column "old and middle route" above gives the mean of both of these routes as one. The average time to the equator of vessels that still pursue the old route is 40 days, even with the wind and current charts on board, so that the old route now is shorter than the old route used to be, or is when followed without the charts. The monthly averages by the old route and gain by the new, as each is now followed, may be thus stated:

By the old route.		Gain by the new.
December,	39.3 days.	13.5 days.
January,	34.5 "	9.3 "
February,	39.8 "	13.7 "
March,	36.3 "	8.5 "
April,	35.3 "	5.8 "
May,	42.2 "	12.8 "

By the old route.			Gain by the new.
June,	44.7	days	9.7 days.
July,	44.9	"	11.4 "
August,	44.	"	5.4 "
September,	42.3	"	3.5 "
October,	39.7	"	5.2 "
November,	36.6	"	6.1 "
Total annual gain			104.9 days.

Average monthly gain, 8.7 days.

That is, if a merchant owning a monthly line of packet ships to Rio were to despatch one on the 1st of each month, the total number of days gained by the whole on the outward voyage would be 104.9, provided they all took the new route, instead of the old.

There has been an improvement upon the old route in this: that vessels taking what is now called the old route do not go as far east as they formerly did. In this manner they avoid the calm belt and save time. In this the average gain has been nearly 4 days.

The average time from the line to Rio is 13 days. This gives vessels by the old route with the charts on board 53 days to Rio, against 58 days without the charts, as per following letter of Captain O. H. Saunders, of barque "Rocket:"

"RIO DE JANEIRO, *January* 20, 1855.

"I have had a long passage to Rio, but I found on my arrival here that it was not near as long as many of my neighbors; and a small proportion of vessels arriving here during the last six months have beat me; the average for the last six months, from the United States, as shown on the books at the ship chandlery here, is 58 days, allowing what has been reported to have been the actual passage."

TO THE "FAIR WAY" OFF ST. ROQUE IN DECEMBER.

Computed route from the Atlantic ports of North America to the "Fair Way" off St. Roque.

DECEMBER.

Latitude.	Longitude.	Course.	DISTANCES.			WINDS—PER CENT.					Total No. observations.
			True.	Per cent.	Average.	Head.	SLANTS FROM N'd or E'd.	SLANTS FROM S'd or W'd.	Fair.	Calms.	
From 40° 27′ N.	74° 00′ to										
39 12	70 00	E.S.E.	200	7.0	214	2.1	7.2	4.5	86.2	3.0	364
39 12	65 00 *d*	E.	233	6.4	248	2.0	5.0	7.0	86.0	1.5	195
35 12	60 00	S.E.	338	7.2	363	0.8	8.8	8.8	81.6	0.8	119
35 00	59 24	E.S.E.	31	10.9	34	4.0	7.0	7.0	82.0	1.0	100
33 29	55 00	E.S.E.	237	6.4	252	4.0	0.0	0.0	96.0	0.0	26
33 29	50 00 *d*	E	350	3.7	259	0.0	0.0	*w* 9.2	90.8	0.0	44
31 44	45 00 *d*	E.S.E.	275	9.3	300	3.9	7.8	6.5	81.8	7.5 *e*	75
30 00	43 00	S.E.	147	24.8	183	6.4	16.8	*w* 26.4	50.4	2.4	121
25 00	43 00	S.	300	9.6	329	2.0	12.0	12.0	74.0	6.0	48
22 16	40 00	S.E.	232	9.0	253	3.4	*w* 13.6	0.0	83.0	3.4	29
20 00	37 34 *d*	S.E.	192	7.5	206	0.0	*w* 19.5	6.5	74.0	1.3	79
15 00	35 24	S.S.E.	325	4.3	339	0.0	*w* 7.2	4.8	88.0	2.4	42
14 37	35 00 *d*	S.E.	33	22.9	41	11.1	*w* 14.8	0.0	74.1	0.0	27
10 00	35 00	S.	277	1.4	231	0.0	*w* 6.0	0.0	87.0	0.0	25
5 00	30 00 *d*	S.E.	424	13.1	479	2.0	*w* 26.0	14.0	58.0	10.7 *c*	50
Equator...	32 04	S.S.W.	324	3.0	334	1.4	4.2	0.0	94.4	4.0	71

Shortest distance to the equator by this route, 3,918 miles; average distance to be sailed on account of adverse winds, 4,115. Ship Bothnia, Captain Avery, in December, 1850, accomplished it in 29 days, and 4,077 miles per log. Schooner Blackfish (Hotchkiss) did the same in 32 days, and 3,810 miles. The Pleiades did it in 4,190 miles; the Fair Wind in 4,043; the Lowell in 4,025 miles.

It is only about in the proportion of 1 to 2 that a vessel in this part of the ocean can make a SE. course between the parallels of 10° to 5° N. Therefore, vessels going the December route should generally aim to cross 10° N. to the east of 35° W.

NEW ORLEANS, *March* 22, 1853.

SIR: Having taken passage in the barque Hazard, of Salem, George M. Pollard, master, for Rio de Janeiro and back to New Orleans, Captain P. requested me to keep an abstract jonrnal, which he received from your agent, with a set of wind and current charts, having engaged that it should be sent you on his return to the United States.

I now take the liberty of transmitting it to you, with the hope that you may find something therein to repay the examination. I would also take the liberty of making some remarks.

It was Captain Pollard's intention to follow in the track to the line that you recommended, as nearly as possible; but strong southerly winds, soon after leaving New York, drove the barque to the eastward, and when the track was regained, it was impossible to cross the line, as advised, without wasting time in beating to eastward in the doldrums. Having myself, in 1818, in ship Commerce, of Salem, about same season, crossed the line in about 34°, and although a wooden-bottomed ship, passed Pernambuco in nine days from the line, after making the land ten or twelve miles to leeward of St. Roque, I advised Captain Pollard to stand boldly across in 34°, the Hazard being a fast vessel. The result proved as was expected, passing Pernambuco in only 4¾ days from the equator, in longitude 34°, notwithstanding falling 20 miles to leeward of St. Roque.

From these examples, and the information gathered from traders between Maranham and Rio de Janeiro, I should not hesitate crossing the line in 36°, even in a good sailing vessel, feeling confident of beating round St. Roque by making short tacks on soundings which are very regular and may be trusted to. Off soundings, the current sets very strongly to westward.

On my arrival at Bahia, in December, 1818, I found that the passage from the latitude of Cape Verdes was from 10 to 20 days shorter than any other vessel's. The conclusion I then came to was, that the best track was 8° to 10° west of the Cape Verdes, passing the equator from 28° and 32°, according to season. This is now proved beyond a doubt by your charts, which are of incalculable benefit to all navigators.

I would suggest more particular inquiry about the monsoon, if I may so call it, that prevails along the Brazil coast from NE. to N.NE. during January and February, sometimes in December, which makes it very difficult to reach the equator from Rio. Dull vessels are often 30 days or more to Bahia and Pernambuco from Rio, and should they fall to leeward of St. Augustine, bound north, find it almost impossible to beat around, the currents set so strong to SW. During the winter months the prevailing winds are southerly and SW., but not so steady and constant as the NE. in summer.

I have added to the journal an abstract of the Hazard's passage from New York to Rio, in 1851, in 31 days, the shortest ever made by a merchant vessel loaded with a full cargo, or,

probably, than any; also, some memorandums of her six passages from Boston and New York to the equator, showing an average of only 26½ days, her tracks being always those which you recommend; and they are very conclusive evidence of the correctness of your advice, if any further evidence was wanting of its superiority over the old ones.

I remain, very respectfully, your obedient and obliged servant,

JOHN GARDNER.

Lieutenant MAURY, U. S. N.,
National Observatory, Washington, D. C.

I have investigated the subject of the so-called monsoons along the coast of Brazil.—(See Pilot Chart of the Coast of Brazil.) I find none upon a scale for that chart of 2° of latitude by 1° of longitude. During some seasons of the year certain winds are more prevalent than at others, as winds with northing in them are in *our* winter and spring; but these winds do not partake of the characteristics of monsoons.

Further, in reply to this very clever letter, I may remark that a vessel crossing the line as far west as 36° may clear St. Roque in three days; but on the average it will take longer.

Time and crossings to the "Fair Way" off St. Roque.—December.

Name of vessel.	From—	Date of sailing.	Longitude and time of crossing the parallels of—																	Total days to—	
			Days.	30° N.	Days.	25° N.	Days.	20° N.	Days.	15° N.	Days.	10° N.	Days.	5° N.	Days.	Line.	Days.	3° S.		Line.	St. Roque.
				W.		W.		W.		W.		W.		W.		W.		W.			
Southerner	New York	Dec. 1,1850	15	38°	2¼	41°	6¼	40°	3⅛	39°	3	35°	2	32°	5	30°	3¼	31°		37	41⅛
Albany	....do.	1,1853	10⅛	37⅛	4⅛	33	5	32⅛	2	31	2¼	30	1¾	27	5⅛	26¼	1⅛	28		31⅛	34
John Holland	....do.	1,1852	15	45	2¼	42	2¾	39	2¼	37	3	34	2¾	29	11¾	31	2	33		39¾	43¼
Gleaner	Boston	2,1854	16	43	2¾	44	3	42	5¼	37	2¼	34	2⅛	31	2¾	32⅛	1	33		34⅛	36⅛
Lightfoot	New York	2,1853	8	50	5¾	33	3¼	32	1⅛	32	1¾	31	1¼	31	2	30⅛	2	32⅛		23⅛	26¾
Daniel	....do.	2,1850	13	39	3	41	3	41	3	39	4	36	3	32	5¾	30⅛	3⅛	32		34¾	39¼
Lighton	....do	2,1854	11⅛	45	3⅛	40	4⅛	39	1¼	37	1⅛	35	2¾	32⅛	5	33	1¾	34		30	31¾
Malay	....do.	2,1854	9¼	44	4	43	4⅛	41	3¼	39	3¼	37	3	30	4¾	31	1¼	31¼		32	33¼
Aurora	....do	3,1854	8	49	3	47	2	45	5	41	4⅛	39	2¼	37	4¾	35	2¼	35		29⅛	33
Aurora	Boston	4,1853	10	41	5¼	33	1¾	33	1¼	34	1⅛	35	1⅛	34	4⅛	35	2⅛	34¼		25¾	34¾
Coringo	New York	4,1853	13	42	6	39	3	37	2¼	35	2	32	2	29	3	29	1¼	31		31¼	33¼
Golden Eagle	Boston	4,1852	10	43⅛	3¼	36	1¾	33	1	32	1¼	31	1¾	29	2¾	32	1	33		21¾	23¼
Hazard*	New York	4,1851	7⅛	45	2¾	41	1¼	40	1¼	38	2	36	2¾	32	2¾	31⅛	1⅛	32		20¼	22¾
Samuel Russell*	....do	5,1851	4¼	54	2¾	45	2¾	43	1⅛	42	2	37	2¾	31	2	31¼	1	32		19	20¾
Element	....do.	5,1851	7⅛	46	2⅛	42	2	39	1¾	36	2¼	33	2¼	31	3	30⅛	1⅛	31		21¼	23⅛
John Haven	....do.	7,1853	15	48	4	39⅛	2¾	36	2¼	34	2¼	32	2¾	27	3	30	1¾	33⅛		32	34⅛
Greyhound	Richmond	7,1852	10	38	2	35⅛	2	33	2	31⅛	1¼	30	2¾	29	5	31	1⅛	32		25	27⅛
Golden Gate*	New York	7,1852	8	46	3	41	2	37	1⅛	35	1¼	33	1¼	31	3	33¾	1¼	34		20	22⅛
Lantao	....do	8,1850	12	44	4¼	42	2¾	41	2	40⅛	2	37	2⅛	33	4⅛	29	1⅛	30		30	32⅛
Hermaphrodite	....do.	10,1848	13	38	2⅛	32	2⅛	30	2	28	2	26¼	2⅛	25	8	29	2⅛	31		32⅛	36¼
U. S. S. Southampton	....do	10,1852	10⅛	48	2⅛	41⅛	2	38⅛	2	38	2	35	3	31	8	31⅛	1¾	33		30	33
Samuel Appleton	....do	10,1850	14⅛	36	1⅛	38	1¾	38	1¾	37	2⅛	32	2	27⅛	2¾	28⅛	2⅛	31		26¾	30¼
Western Continent	....do	11,1854	17	41	1¾	37	3¼	35	1⅛	34	1⅛	33	2¼	30	3¼	31	1	31⅛		30⅛	32¼
Grey Eagle	Philadelphia	11,1853	10⅛	50⅛	2⅛	43	2⅛	39	2	37⅛	2¾	35	1¾	30⅛	2	33	1	34⅛		24	27
Sparkling Wave	....do	12,1854	17¼	35⅛	2¾	33	1¼	32	1⅛	31⅛	1¼	30	4¾	27⅛	2¼	30	¾	30⅛		31⅛	33
Dancing Feather	Boston	12,1852	7	59	8	48	4	43	4	39	3	37	4	30	3¼	31	1⅛	31		33¼	35¼
John Bertram	....do	12,1851	6⅛	50	4⅛	45	3⅛	44	5⅛	38	2	37	2¼	32	2¼	29⅛	1¼	31		26⅛	28¾
Seaman's Bride	New York	12,1851	9	42	4	40	3	40	5	37	2	34	2	30	2¼	30	1¾	32		27¼	30⅛
Winged Racer	....do.	12,1852	11	39	2	35	1¼	35	1⅛	32	1¼	30	1¼	29	3⅛	31	1¼	33		21¾	23¾
St. Lawrence	...do	12,1851	12	41⅛	3	39	6	35⅛	2	36	2	33	2	30⅛	4¼	30⅛	1¼	32		31¼	33¼
Harriet	Boston	12,1848	11¼	44	2¾	36	1⅛	34	1¾	31	1⅛	28⅛	2	26	3¼	29	1	30		24	25¾
David Brown	New York	13,1853	8	44⅛	3¼	33⅛	1¾	30⅛	2¼	31	1¾	31	1¾	30	2	32	1¼	34		20¾	23
Indus	Baltimore	13,1853	9⅛	47	3¼	39	2⅛	35	1¾	33	2¼	29¼	1⅛	28⅛	2	30⅛	2¾	31		22¾	26¼
Golden West	Boston	14,1852	11	41	1¼	40	1¾	38⅛	1¼	38⅛	1	37	1¾	34	8¾	32	1⅛	33		26¾	28¾
Pearl	....do	15,1854	14	45	3	42	3	40	4	38	4	38	3	34	7	33	¾	33		38	39¼
Jassar	Salem	16,1853	15⅛	43	1¾	40	2	37	2¼	34	1¾	30	1¾	27¼	2⅛	27	1⅛	29		27⅛	39¾
Ocean Steed	New York	16,1853	15¼	40	2	38	2	35	1¾	33	1¾	29	1¾	27	3	27	1¾	29		27⅛	30
U. S. S. Portsmouth	Boston	16,1851	9¾	36	2¼	39	6	38⅛	2¼	38⅛	1¾	36	2	32	2⅛	31	2¼	33		26⅛	29¼
Hurricane	New York	17,1851	7¼	45	2¾	43	3	41	6	40	2	38	2	34⅛	4	33⅛	1⅛	34		27	29⅛
Romance of the Sea*	Boston	17,1853	11	40	3	37	1¼	36	1	34	1	32	1¾	30	2	31	1¼	33		21	23
Channing	New York	17,1851	9¼	44	4¾	38	4¼	34	2¾	32	1¼	31	1¾	28¼	4⅛	28⅛	2⅛	30		28⅛	32¼
Wm. Eliza	New Bedford	18,1851	10	53	3⅛	49	3	46⅛	2¾	43	3¾	42⅛	3⅛	39	15⅛	32	2	32		42	45⅛
Ottawa	New York	19,1853	13	45	2¼	43	2¾	39	2	37	2¼	33	2	29⅛	1¾	27	1¼	31		26	28
Flying Childers	Boston	19,1852	6	49⅛	3	47	2	43⅛	2	42	2¾	36	2¼	33	4	30⅛	1	31⅛		22	24
George Morton	New York	19,1854	9	46⅛	2	41	1⅛	39	2	37	1¾	33	1¾	32	3¼	33	1⅛	34		21¼	23¼
Roman*	....do.	20,1852	9	39	1¼	38	1⅛	36	1⅛	35	1	34	2	31	3¾	30	1¼	31⅛		20	22⅛
Canvass Back	....do.	21,1854	6⅛	53	2	53⅛	11⅛	35	2¼	32	1¾	29⅛	3	29	4⅛	30⅛	1⅛	31		31⅛	33⅛
Eagle Wing	Boston	21,1853	14¼	39	1¾	36⅛	1¼	38	1¾	36¼	1¼	34⅛	2	30⅛	2¼	29⅛	¾	30¼		24⅛	26
Telegraph	....do	21,1854	14	41	5	34	2	31	2⅛	30	1⅛	29	4¼	28⅛	3⅛	31¼	1¼	33		32¾	34¾
Samuel Churchman	New York	21,1852	19	39	5	36	4	36	2	34	2¼	32	2⅛	29	4¼	27¼	2⅛	29		39	42⅛
Indiaman	Boston	21,1854	8	49⅛	2	49	9	30	3	28¼	1¼	29	2¾	29⅛	2⅛	30¼	2¼	31⅛		28⅛	31⅛
Georgiana	New York	22,1850	9	48	5	41	2¼	42	3¾	39	1¾	35	2	31⅛	3	32	1¼	32		26¾	29
Storm*	....do.	22,1852	7⅛	47	1⅛	41	1¼	40	1¾	37	1¼	36	1	33	3⅛	35¼	1⅛	36¼		17¾	25
Benjamin Howard	Boston	25,1852	9	38	2⅛	35	1¾	33	2	32	1¾	29	1¾	25	5¼	26¾	2	28		24	26⅛
Anu Sophia	New York	25,1849	13	55	3	51	10	43	7	35	3	31	2	29	6⅛	31	2⅛	34		44⅛	52
Pontiac	Boston	25,1851	10	40	2¼	38	2	37	2	35	1¾	32	1¼	30	3¼	30	3	31		22⅛	26¼
Bald Eagle	New York	26,1852	12	40	6	38	3	40	2¼	40	1¾	36	1⅛	33	2⅛	31	1¼	32⅛		29	30¾
Maria	....do.	27,1850	12	39	3⅛	36	1⅛	33	1⅛	32	1⅛	30	1⅛	29	3	28	1⅛	31		24⅛	26⅛
Windward	....do.	29,1854	10	52	6	34⅛	4⅛	33	1¾	32	1¾	30⅛	1¼	30	7⅛	30	1	32		32¾	35¾
Boston Light	Boston	31,1854	4	59	3	54	4	44	3	36⅛	2	34	5⅛	31	3	32⅛	1¾	33		24⅛	27⅛
George Ludwig	New York	31,1853	17	39⅛	5¼	34	2⅛	32	2¾	32	2	30	2⅛	26	3⅛	25⅛	1⅛	27		35¼	38
Josiah Quincy	....do	31,1853	14	45⅛	2	45⅛	3	42	2	40	2¾	35	3¼	30	7	29	3⅛	29⅛		34	37⅛
Means of passages before the 7th edition			11	44	3.2	40	3 1	37¾	2.4	35⅛	2	31¾	2.4	30⅛	4.1	30¾	1.8	32		28.2	30.9
Seaman	Boston	Dec. 1,1856	7	48	5	35	2¼	36⅛	1⅛	35	1⅛	34	2⅛	31	2⅛	33	1¾	34		22¼	25⅛
May Queen	Baltimore	1,1856	9⅛	46	5⅛	36	3	33	4¼	32	1¾	31	2	30	4⅛	31⅛	1¼	33		30⅛	32¾
Hollander	Boston	1,1855	10	44	3	42	4	39	2¼	36	2	34	2¾	29⅛	3¾	31⅛	3¼	32⅛		27¾	32¼
Rosamond	Baltimore	3,1857	12	46	4	41	2	39	2	36	2	33	2	30	2¼	31	1⅛	33		26¼	28¼
Isaac James	Philadelphia	3,1855	12¼	46⅛	2	42⅛	1¾	39	2	36⅛	2	34	2⅛	31	3¾	32	1⅛	34		26¼	29
Tornado*	New York	6,1855	9	45⅛	2¼	40	1⅛	36	1¼	34	1¼	32⅛	2	30	3¼	32	1⅛	33		20⅛	23⅛
Great Republic*	....do.	7,1856	6¼	44	2	42	1⅛	40	1¼	37⅛	1⅛	36	1¾	33	1¾	34¾	1⅛	35		16	19
Morning Star	Boston	7,1856	8	48	2¼	42	3¾	38	4¾	35	2¼	34	3⅛	32	4¼	33	1¼	34⅛		28¾	31
Antelope*	New York	8,1855	8⅛	48	2	42	1¾	37	1¼	35	1¾	31⅛	2	29	2¾	31¾	2¼	33		20	23⅛
Elizabeth Kemble	Boston	10,1855	8	55	6	42	2	39	2	37	2¼	34	2	30	3	32	1	32		25¼	27¼
Northern Light	....do.	11,1856	17¼	39	2¾	39	2	37⅛	1¼	37	1¾	34¼	2	32	3	34	2	35		30	33⅛
Rainbow	Cape Henry	11,1857	14	44	4	39	2	38	2	35	1¾	32	1⅛	30	3¾	31⅛	1¾	33		29	31⅛
Quickstep	Boston	13,1856	11	44	2⅛	42	4	38	2	36	2	33	2	31	2¼	32	1⅛	33		25¾	28¼
Alice	Philadelphia	16,1856	8	52	7	41⅛	2⅛	39	1¾	37	1¾	35	2¾	34	2¼	34⅛	1⅛	35		26	29
M. Hows	New York	16,1856	6	54	4	42	5⅛	37	1⅛	35	2	33	2	31⅛	3	33¾	1⅛	35		24	27
Antelope	....do.	18,1855	15	38	2	36	2	33	3¼	31	1¾	29	2	29	5¼	28⅛	2	30		31¼	32¼
Humboldt	Boston	19,1855	14	41	3	36	3	33	2	31	2	29	1¾	29	3⅛	30	1⅛	32		29¼	31¾
Kimball	New York	19,1856	16	40	4	38¼	2¼	38	1¾	37	1¼	36	2⅛	31	4	30¾	3¼	30		31¾	36
Mandarin	....do.	21,1855	9	43⅛	2	41⅛	2	38	2	35	1⅛	34	2⅛	30	2¼	31	1	32⅛		21¼	23¼
Margaret Eliza	....do.	23,1855	11¼	42	2	37	2¾	32⅛	3	29	1	28	1¼	27	3¼	29	1¼	31		24⅛	26¾

Time and crossings to the Fair Way off St. Roque—December—Continued.

Name of vessel.	From—	Date of sailing.	Longitude of crossing the parallels of—																Total days to—	
			Days.	30° N.	Days.	25° N.	Days.	20° N.	Days.	15° N.	Days.	10° N.	Days.	5° N.	Days.	Line.	Days.	3° S.	Line.	St. Roque.
				W.		W.		W.		W.		W.		W.		W.		W.		
James Brown	Boston	Dec. 23, 1855	11	44½°	3	40°	2	37⅛°	2	34½°	1¼	33°	1¾	30°	2¾	31⅛°	1¾	33°	23¾	26¾
Electric Spark*	....do	24, 1855	9	43	2	39⅛	3	37	1¾	34	1¼	32	1¼	30	2¾	31	1	31	21	22¾
Godwell	....do	25, 1856	10	37	4⅛	37	2⅛	36	2	35	1¼	33	2	30	3	28⅛	2¾	39	25¼	29¼
Niobe	New York	25, 1855	19	41	2¼	38	1¾	34⅛	2	33	2	30	3	26⅛	4	30	2	32	34	37
Therese	Philadelphia	25, 1855	13¼	45	3⅛	41⅛	3¼	38⅛	3¼	36	2	32	2	29	6	30¼	1¾	32	33¼	36
Cynthia	New York	27, 1855	11	45	3⅛	39	2	39⅛	2⅛	37	2	34	2	30¼	4	31	1¾	32	27	30
Adelaide*	....do	28, 1855	7⅛	47	2⅛	39⅛	1¾	37	2	34⅛	1¼	33	1¾	31	2	31⅛	1¼	32⅛	18¾	20
Osborn Hows	....do	28, 1856	10	43	2¼	39	1¾	36⅛	1¼	36	3	32	1¾	28	3¼	30	1¼	32	23¼	25¼
Means of passages since the 7th edition			10.8	44¾	3.2	38¼	2.5	37	2.1	35	1.8	32¾	2.1	30	3 3	31⅛	1.7	33¾	25.8	28.5
Means of 10 best			7.9	46	2.5	40¾	1.8	38¼	1.4	36	1.5	34	1.8	31	2.6	32¼	1.3	33¼	19.5	22.3

NOTE.—The vessels marked with the star (*) afford the "means of the 10 best."

Clipper barque Storm, J. J. Roberts, for San Francisco, eighteen days out from New York.

"Jan. 7. Lat. 1° 10′ N.; long. 35° 16′ W. Barometer, 29.98; temperature of air, 80°; of water, 80°. Winds: first and middle parts, light and baffling to south, and calms; latter part, SE. Fine weather and light airs. Looks rather dubious about clearing Cape St. Roque; however, I shall stand on, and trust to luck. [That's right.] It is my own fault if I fall to leeward, and get jammed, for I might easily have made more easting by sailing close-hauled.

Jan. 8. Lat. 00° 15′ S.; long. 35° 33′ W. Barometer, 30.05; temperature of air, 82°; of water, 80°. Winds: SE. by S., E., SE.; first part, light breeze. At 5 P. M. a heavy squall from E.NE.; carried away the larboard cathead, from the strain on the jib-guys, and wrung the bowsprit head and cap badly. All the trestle-trees, fore and aft, have given away, owing to bad material and being too light, and I am obliged to be easier with her than I should otherwise have been. Crossed the line in 17 days and 16 hours, from Sandy Hook. At 10 A. M. took the trades at SE. light.

Jan. 9. Lat. 2° 14′ S.; long. 36° 26′ W. Current, ½ knot per hour, W. Barometer, 30.00; temperature of air, 82°; of water, 80°. Wind: SE. Fine weather, and light winds; observed westerly current for the first time.

Jan. 10. Lat. 3° 23′ S.; long. 36° 29′ W. No current. Barometer, 29.90; temperature of air, 81°; of water, 79°. Winds: SE., E.SE., SE. by E. Fine weather, and moderate breezes.

Jan. 11. Lat. 3° 14′ S.; long. 36° 08′ W. Current, 1 knot per hour, W. Barometer, 29.93; temperature of air, 82°; of water, 79°. Winds; E.SE., E.SE., SE. by E. First part, fresh breeze, and heavy SE. swell—tacked to NE., Point Tubarao bearing south, 35 miles distant, at 8 P. M. Latter part fine.

Jan. 12. Lat. 1° 25′ S.; long. 34° 36′ W. Current per hour, 1 mile, NW. Barometer, 29.90; temperature of air, 81°; of water, 79°. Winds: SE. by E., SE., SE.; fine weather and moderate breezes.

Jan. 13. Lat. 1° 27′ S.; long. 35° 45′ W. Barometer, 29.90; temperature of air, 82°; of water, 80°. Winds: SE. by S.; S.SE., SE. Light wind, and rain squalls.

Jan. 14. Lat. 3° 52′ S.; long. 34° 31′ W. Current, 1 mile per hour, NW. Barometer, 29.90; temperature of air, 83°; of water, 79°. Winds: SE., SE. by E., SE. by E.; fine weather and light breeze; middle, fresh. Twenty-four days out, and I shall be very well satisfied if I can lay along the coast.

Jan. 15. Lat. 5° 55′ S.; long. 34° 42′ W. Current, same as yesterday. Barometer, 29.90; temperature of air, 84°; of water, 80°. Wind: E.SE.; fine weather and moderate. No sounding with 90 fathoms.

Jan. 16. Lat. 8° 10′ S.; long. 34° 30′ W. Barometer, 29.90; temperature of air, 85°; of water, 80°. Winds: E.NE., E., S. by E. At 2 P. M. made Point Pipa, W., 13 miles distant. The more we draw in shore the more the wind favors us. At midnight, passed within 5 miles of Cape Blanco."

The Storm behaved to admiration after she found herself jammed; she followed her guide, put off beating as long as she could, trusting to chance for a slant of wind. Though she crossed the equator as far as 35° 30′—and which is further than is desirable—yet in 25 days out, from New York, she was clear of Cape St. Roque, despite that great old phantom of a bugbear, "the westerly current off St. Roque."

Ship Great Republic, Captain Joseph Limeburner, from New York.

"Dec. 7, 1856. Lat. 39° 18′ N.; long. 69° 01′ W. Barometer, 29.88; temperature of air, 48°; of water, 48°. *Wind, W.NW. Fresh breezes, variable wind with a little snow; cloudy weather; water thermometer indicates Gulf Stream, as does the weather.

Dec. 8. Lat. 39° 06′ N.; long. 65° 39′ W. Barometer, 29.79; temperature of air, 50°; of water, 62°. Wind, N. Fresh breezes, and squally weather with snow, rain, and hail; ends, good breezes and pleasant weather.

Dec. 9. Lat. 38° 29′ N.; long. 61° 08′ W. Barometer, 29.90; temperature of air, 52°; of water, 69. Wind, N.NE. Fresh squalls and cloudy; heavy NE. swell; ends, moderate breezes.

Dec. 10. Lat. 36° 43′ N; long. 57° 07′ W. Barometer, 29.90; temperature of air, 57°; of water, 66°. Wind, E.NE. Moderate breezes with squalls and light rain; saw flying fish and gulf weed.

Dec. 11. Lat. 35° 18′ N.; long. 50° 01′ W. Barometer, 30° 10′; temperature of air, 60°; of water, 64°. Wind, E.NE. Strong gales and heavy squalls; ship under skysail; wind a point for giving in the squalls 16 and 17 knots; violent squalls.

Dec. 12. Lat. 31° 20′ N.; long. 44° 45′ W. Barometer, 30.00; temperature of air, 66°; of water, 66°. Wind, N.E. Strong gales and heavy squalls, with rain; wind backed in to N. and W.; ends, light breezes and fine weather.

Dec. 13. Lat. 27° 53′ N.; long. 43° 48′ W. Barometer, 29.90; temperature of air, 69°; of water, 72. Wind, SW. Moderate breezes and fine weather; ends, light airs and calms.

Dec. 14. Lat. 25° 23′ N.; long. 42° 35′ W. Barometer, 30.10; temperature of air, 76°; of water, 76°. Wind, W.SW. Light airs, increasing to gentle easterly winds, with fine weather; ends, good trades from about E. and pleasant weather.

Dec. 15. Lat. 22° 57′ N.; long. 41° 34′ W. Barometer, 30.15; temperature of air, 76; of water, 78. Wind, E.NE. Good breezes and pleasant weather; exchanged signals with an unknown English ship. We have followed thus far, so far as the winds would permit, the course laid down for us by Mr. Maury, and it is believed that our passage so far is unequalled; 10 days out.

Dec. 16. Lat. 18° 49′ N.; long. 39° 30′ W. Barometer, 30.00; temperature of air, 78; of water, 78. Wind, E. by S. Good breezes and fine weather for most part; ends, fresh winds and squally; carried away jib-boom.

Dec. 17. Lat. 15° 07′ N.; long. 37° 33′ W. Barometer, 29.95; temperature of air, 78; of water, 80. Wind, E. by S. Moderate trades and fine weather. We are quite anxious, on account of the trades being so southerly, and have been jammed on a wind for the last three days, endeavoring to get to the eastward. Since leaving the Gulf Stream we have not had the wind at any time actually free for more than a few hours.

Dec. 18. Lat. 11° 54′ N.; long. 36° 55′ W. Barometer, 29.90; temperature of air, 80; of water, 80. Wind, E. Good breezes and fine weather until 3 p. m., when the wind shifted suddenly to S.SW., with a squall of rain. At 4, the easterly wind again returned. Moderate trades still very southerly, and good weather. We have now but a very short distance in which to make easting, and our chance looks bad.

Dec. 19. Lat. 8° 41′ N.; long. 35° 39′ W. Barometer, 29.80; temperature of air, 82°; of water, 71°. Wind, E.SE. Moderate breezes and fine hot weather. We are at last favored

*In these extracts, the winds are quoted three times (first, middle, and latter part) for each day, except when they are from the same point for all the 24 hours.

with a slant to make easting, and hope it is not too late. Squally appearance; large SE. swell; ends E. by N. winds and fine weather.

Dec. 20. Lat. 6° 05′ N.; long. 33° 07′ W. Barometer, 29.78; temperature of air, 83°; of water, 81°. Wind, E.NE. Moderate winds and fine weather. At 6 p. m. smart squall from E.SE. At 2 a. m. a squall and then clear weather with wind from E.SE. to SE. by E., which we suppose to be the SE. trades.

Dec. 21. Lat. 3° 04′ N.; long. 33° 02′ W. Barometer, 29.74; temperature of air, 84°; of water, 82°. Wind, SE. by E. Moderate SE. trades and generally fine weather, with a squall of wind and rain at 3 a. m. At meridian we are in 0.05′ N., and with this breeze shall cross the line in about half an hour, making the passage from Sandy Hook in *fifteen days and nineteen hours*, believed to be the shortest on record. [It is, as far as I know.] We are, however, in an awful tight place as regards our longitude, and must run for luck and Maury.

Dec. 22. Lat. 0° 5′ N.; long. 34° 52′ W. Barometer, 29.83; temperature of air, 84°; of water, 82°. Wind, SE. Light SE. by S. winds and fine weather. At 4 p. m. tacked ship to the eastward. At 4 a. m. tacked to the southward. Good breezes, and we have got to make a beat of it.

Dec. 23. Lat. 0° 42′ S.; long. 34° 49′ W. Barometer, 29.80; temperature of air, 85°; of water, 81°. Wind, SE. Good trade-winds and generally fine weather; the wind veers and hauls a couple of points and the current is comparatively small. We shall see now how the plan works to beat to windward here instead of further north. At noon no land in sight; horizon quite hazy.

Dec. 24. Lat. 4° 25′ S.; long. 35° 40′ W. Barometer, 29.85; temperature of air, 85°; of water, 80°. Wind, SE. Fresh trades and pleasant. At 3 p. m. made the land and tacked ship. At 11 p. m. tacked. Light winds and variable from E.SE. to SE. Tacked ship at 10 a. m. and at meridian.

Dec. 25. Lat. 4° 59′ N.; long. 35° 14′ W. Barometer, 29.93; temperature of air, 84°; of water, 82°. Wind, SE. Light winds and fine weather. At 2 p. m. made the land on the lee bow and tacked ship to E.NE. At 7 p. m. a squall of wind and rain. At midnight tacked to S. by W. At 7 a. m. passed the latitude of Cape St. Roque, in *nineteen days and fourteen hours from Sandy Hook, notwithstanding we have had to beat two days with light winds.* Another feather in Maury's cap.

Dec. 26. Lat. 6° 02′ S.; long. 34° 32′ W. Barometer, 29.88; temperature of air, 83°; of water, 80°. Wind, SE. by E. Light winds and pleasant hot weather. Land in sight on starboard bow. At 6 p. m. tacked ship to eastward. Midnight tacked to southward. At 4 a. m. tacked to northward and eastward. At 5 a. m. tacked to southward and westward. First time in this position that I could not make a south course.

Dec. 27. Lat. 7° 30′ S.; long. 34° 27′ W. Barometer, 29.88; temperature of air, 84°; of water, 82°. Wind, SE. by E. Baffling winds and hot weather, with a squall of wind and rain at 7.30 p. m. Ends moderate trades; light airs and rain squalls."

I am proud of this passage. In the first place I set out upon this investigation with the assertion, the promise, that it could, would, and should be made in sixteen days to the line, and Captain Limeburner has made my word good. In the next place, I had the pleasure of conversing upon the subject with him on board his fine ship just before he sailed.

I take this occasion, for the twentieth time, of calling the attention of my fellow laborers

at sea to the very erroneous ideas that navigators generally have formed of Cape St. Roque, its currents, and the difficulties of weathering it from any crossing west of 30° on the line.

I have been now for eight or ten years affording them the most convincing proof, by spreading before them the logs of vessels that have tried it; I have proved that there is nothing there which any navigator who knows how to handle his ship need to fear, to doubt, or to hesitate to encounter. If his ship will turn to windward anywhere she will here.

Still, with all this evidence spread out before navigators, there are but few who can contemplate a good western crossing without seeing the horrid spectres of St. Roque rise up before their mind's eye.

See how, now and then, they made the heart of Captain Limeburner quake within him. We quote from his log: "Dec. 18. Lat. 11° 54′ N.; long. 36° 55′ W.—We have now but a very short distance in which to make easting, and our chance looks bad." "Dec. 21. Long. 34° 50′.—With this breeze shall cross the line in about half an hour, making the passage from Sandy Hook in 15*d.* 19*h.*, believed to be the shortest on record. We are, however, in an awful tight place as regards our longitude." "Dec. 23. Lat. 0° 42′ S.; long. 34° 49′ W.—We shall see now how the plan works to beat to windward here instead of further north."

Happily, his faith was stronger than his fear, and he did not abandon his guide, but kept on, and in three days from this tight place tossed up his cap in triumph.

Captain Cole, of the Leighton, (see crossings for November,) came along just behind the Great Republic, and crossed the equator well to the westward also, and the third day thereafter he passed ten miles to windward of St. Roque without tacking. In his remark: "He had learned not to fear the 'bug-bear.'"

Barque Leighton, John M. Cole, 26 days out.

"Dec. 25, 1856. Lat. 0° 10′ S.; long. 33° 08′ W. Barometer, 30.08; temperature of air, 71°; of water, 79°. Light SE. breeze; fine weather; sea quite smooth. Nautilus and flying fish. Ten mile current. Rather dull Christmas. Crossed the line the 27th day out.

Dec. 26. Lat. 2° 18′ S.; long. 33° 54′ W. Barometer, 30.07; temperature of air, 77°; of water, 77°. First part, light breeze from SE. by S.; smooth water and fine weather. Latter part, moderate breeze; partially clear; rough sea; about five mile westerly current.

Dec. 27. Lat. 4° 45′ S.; long. 34° 30′ W. Barometer, 32.02; temperature of air, 80°; of water, 79°. Moderate breeze from SE. by E. to E. Clear weather. Twenty miles westerly current. A ship hull down to leeward on the same tack.

Dec. 28. Lat. 7° 30′ S.; long. 34° 15′ W. Barometer, 30.00; temperature of air, 80°; of water, 80°. Steady breeze; fine weather. Passed about 60 miles to windward of St. Roque without tacking. This is the third time that I have crossed the line west of 31°, and never yet had any difficulty in clearing St. Roque."

In the extracts which follow for the other months numerous cases are presented showing how deep seated in the minds of navigators has been the dread of the St. Roque spectres; a dread which has done more, ten to one, to prolong passages than ever did the currents themselves. I speak quite within bounds when I say that on the average, and where the currents of St. Roque have prolonged the passage to Rio a day, the dread of them has prolonged it several; for the fear of them induces vessels to prolong their distance and to run through extensive regions of light and baffling winds.

I call, with emphasis, the attention of navigators, at the outset, to this view of the subject, because I want to press upon them a fact which experience is every day developing, and which

is this: That a navigator who takes the Wind and Current Charts for his guide, and *sticks* to them, almost invariably makes a better passage than he does who follows them one day and abandons them the next. It will be perceived, in the course of the illustrations of the route to the "Fair Way," that the average passage south to the line and the "fair way" of St. Roque has been considerably shortened, as much as four or five days, for some months, since the last edition of this work was published. I attribute this simply to the fact that the charts are understood better, and the Sailing Directions are more regarded than they were at first. *There is still room for further reduction.*

Captain Millett writes—Lat. 3° 44′ N.; long. 29° west:

"Dec. 25, 1855. Have experienced an easterly current the last two days. I have always noticed such along these latitudes, sometimes more to the northward than this, and in longitude 44°, about 1° north latitude. I think it may be an offset from the river Amazon current. I see in your logs that many captains notice it.

Dec. 26. Light winds from the east, and considerable rain at times; very sultry weather; meridian calm. At noon corked an empty bottle up tight and lashed the cork to a sail needle run through it, lowered it down 25 fathoms, hauled it in immediately, and found the temperature of the water in the bottle 80°; surface water, 82°. The bottle came up full."

Ship Governor Morton, John A. Burgess, captain, from New York to San Francisco, eight days out.

"Dec. 28, 1855. Lat. 29° 10′ N.; long. 42° 39′ W. Barometer, 30.25; temperature of air, 66°; of water, 70°. Winds: NE., NE., NE.* Moderate breeze, and pleasant; fresh breeze; fresh breeze.*

Dec. 29. Lat. 25° 23′ N.; long. 41° 15′ W. Barometer, 30.27; temperature of air, 68°; of water, 72°. Winds: N.NE., N.NE., N.NE. Moderate breeze; fresh; fresh.

Dec. 30. Lat. 21° 41′ N.; long. 39° 31′ W. Barometer, 30.15; temperature of air, 70°; of water, 74°. Winds: NE., E.NE., E. by N. Fresh breeze, and pleasant; moderate, baffling, and squally; moderate, unsteady, and squally.

Dec. 31. Lat. 19° 05′ N.; long. 38° 29′ W. Barometer, 30.18; temperature of air, 74°; of water, 75°. Winds: E. to SE., E. to SE., E. to S.SW. Moderate breeze, and baffling, with an occasional rain squall; light breeze, and baffling, with frequent rain squalls; light airs, and baffling, chiefly from the south, with rain squalls.

Jan. 1, 1856. Lat. 17° 21′ N.; long. 37° 53′ W. Barometer, 30.17; temperature of air, 74°; of water, 76°. Winds: E. to SE., E., E. Calm, with an appearance of a squall at the NE. Light and baffling breeze, and pleasant weather. Moderate breeze, and pleasant, with an appearance of the NE. trade wind; moderate, with a prospect of the wind from east.

Jan. 2. Lat. 14° 00′ N.; long. 36° 11′ W. Barometer, 30.09; temperature of air, 77°; of water, 77°. Winds: E., E. by S., ditto. Moderate breeze, and pleasant; fresh; fresh.

Jan. 3. Lat. 10° 51′ N.; long. 33° 49′ W. Barometer, 30.00; temperature of air, 79°; of water, 78°. Winds: E. by N., E.NE., E. by S. Moderate breeze, and overcast; moderate, and pleasant; fresh breeze, and pleasant to the close.

Jan. 4. Lat. 7° 43′ N.; long. 32° 37′ W. Barometer, 29.99; temperature of air, 79°; of water, 80°. Winds: E. by S., E. by N., E. by S. Moderate and pleasant; fresh, and squally, with an occasional passing shower; fresh, and overcast.

Jan. 5. Lat. 5° 24′ N.; long. 31° 50′ W. Barometer, 30.02; temperature of air, 76°; of

* Winds for each of the "three parts."

water, 80°. Winds: E. to SE., ditto, SE. to S.SE. Moderate breeze, and cloudy, with squally appearances, and a prospect of a termination of the NE. trades; moderate breeze, and unsteady, with frequent rain squalls from SE.; light airs, and more pleasant, with strong indications of a calm.

Jan. 6. Lat. 4° 47′ M.; long. 32° 06′ W. Barometer, 30.02; temperature of air, 79°; of water, 80°. Winds: Calm, calm, E., calm. Light airs, and calm; moderate breeze, and unsteady, attended with rain squalls from SE. Current to the westward.

Jan. 7. Lat. 3° 45′ N.; long. 31° 45′ W. Barometer, 30.04; temperature of air, 80°; of water, 80°. Winds: E. by S., E. by N., SE. by S. Light airs, and rain squalls from SE. Wind quite unsteady. Light airs, and baffling, with fine rain; moderate breeze, and pleasant. Strong indications of SE. trades. Poor prospect ahead, but shall stand on, courting fortune's favor.

Jan. 8. Lat. 0° 52′ N.; long. 32° 43′ W. Barometer, 29.97; temperature of air, 79°; of water, 78°. Winds: SE., SE., SE. Moderate breeze, and pleasant weather; fresh breeze, and a little squally; fresh, and pleasant weather. Rather too far west, but am not alone.

Jan. 9. Lat. 1° 25′ S.; long. 34° 07′ W. Barometer, 30.01; temperature of air, 79°; of water, 78°. Winds: SE. by S., SE. by S., SE. by S. Moderate breeze, and pleasant; fresh breeze, and nearly overcast. At 11 p. m. crossed the line, in long. 33° 20′ W., twenty days and eleven hours from Sandy Hook. Distance by log, 3,664 miles; by observation from noon to noon, 3,640 miles. Latter part, moderate breeze, and pleasant; very little current to the westward, if any.

Jan. 10. Lat. 4° 07′ S.; long. 34° 06′ W. Barometer, 30.01; temperature of air, 80°; of water, 78°. Winds: E.SE., E.SE., E. by S. Moderate breeze, and pleasant weather; moderate: moderate and pleasant. I think we have had a current of one mile per hour to westward.

Jan. 11. Lat. 7° 17′ S.; long. 32° 52′ W. Barometer, 30.00; temperature of air, 81°; of water, 79°. Winds: E. by S., E., E. Moderate breeze, and pleasant weather; fresh breeze, and pleasant to the close. I have found no difficulty, as you perceive, in clearing St. Roque, notwithstanding I crossed the line further west than is recommended. I began to experience some unpleasant feelings as to my position; but stood on, agreeably to your valuable advice, and found the wind so favored us that I think there would have been no difficulty in clearing the cape if we had crossed in 34° west longitude."

Ship Electric Spark, Laban Howes, captain, from Boston to San Francisco, eight days out.

"Jan. 2, 1856. Lat. 30° 00′ N.; long. 42° 42′ W. Barometer, 30.10; temperature of air, 70°; of water, 70°. Current half a mile E.NE. Winds: Calm, calm, variable. Light airs, variable, or calm, with fine pleasant weather. Much gulf weed on the surface of the water. Slight easterly current.

Jan. 3. Lat. 27° 53′ N.; long. 41° 45′ W. Barometer, 30.03; temperature of air, 69°; of water, 72°. Current half a mile SW. Winds: Variable, variable, N. Light variable winds throughout; generally cloudy; pass large patches of gulf weed.

Jan. 4. Lat. 24° 52′ N.; long. 39° 25′ W. Barometer, 30.00; temperature of air, 70°; of water, 73°. Winds: Variable, NE., NE. Fine weather; passing clouds; heavy, rolling sea from NE.

Jan. 5. Lat. 23° 02′ N.; long. 38° 14′ W. Barometer, 29.92; temperature of air, 70°; of water, 73°. Winds: NE., N., N. Very light winds, and dry, cloudy weather; heavy swell from NE.

NEW YORK, *December* 17, 1856.

"SIR: I arrived a few days ago from Buenos Ayres, and have handed my "abstract log" to Buenos Ayres and back, to your agent here, and take the present occasion to express to you my thanks for the benefit I have derived from the use of your Sailing Directions and Charts for the last six years, all of which time I have been in the South American trade, and have always followed your route to the equator as near as practicable, to which is to be attributed, without doubt, the shortness of my passages out. I think that any one bound across the equator, who has your Sailing Directions and Charts on board and understands them, will never be in doubt to know which will be the most advantageous course to pursue under any circumstances.

My present voyages are to the river 'Plate:' and on my return passages I am often at a loss to know what course to pursue from the river up to the SE. trades; and how far east I ought to be at the different seasons of the year, when I take them, that I may be able to fetch up along the coast of Brazil, as falling to leeward of Cape St. Augustine causes sometimes as much detention as falling to leeward of Cape St. Roque, bound out, the current setting very strongly to the westward there.

Perhaps, with the information you have at hand, you might be able to point out the best course to pursue, or at least the one that would give the shortest passage from the river 'Plate' to the equator. If you could give me any information on this subject, you would lay me under renewed obligations to you."

Yours, truly,

ATKINS HUGHES.

Lieutenant MAURY.

Captain Hughes' remark about falling to leeward of Cape St. Augustine is perfectly correct. In reply to his request, which is a very proper one, I beg leave to remark, that no general rule can be laid down as to the route for vessels coming out of the river except this: Get an offing and make the best of your way to the equator, aiming to cross it, at the usual place, in homeward bound vessels.

The winds for this voyage are, and *ought to be*, for the most part, fair. If I were coming out of the 'River' homeward bound, I should consult the Pilot, the Storm and Rain charts very closely, and with their lights before me as to the general character of the weather, the course to be steered should be determined by the winds as I found them. If they were fair for it, I would run out to the eastward for a day at least. I do not think I should lose by two days; at any rate I would go out until I fell in with the homeward track of vessels from around Cape Horn.

By doing this navigators will gain in time, though they may lose in distance; but they will have better winds. See the crossings from the Equator to the United States.

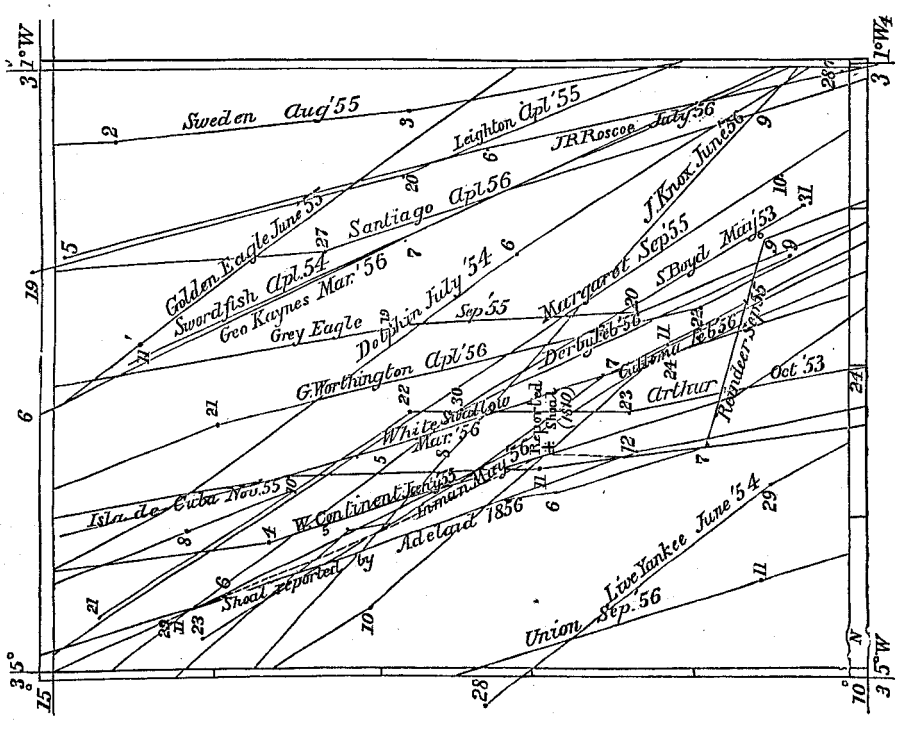
Ship Adelaide, (Captain Edgar Wakeman,) 13 days out from New York.

"Jan. 9, 1856. Lat. 17° 48′ N.; long. 35° 18′ W. Wind, SE. Commences moderate breezes and pleasant weather. At 2 p. m. boarded by boat from ship "M. O. Roberts," 64 days from Zanzebar, bound to Marseilles, short of provisions, which we supplied them; middle part, squally, in light sails; latter part, fresh breezes with passing squalls; set royals; distance run, 222 miles.

Jan. 10. Lat. 14° 13′ N.; long. 34° 39′ W. Wind, SE. Fresh breezes and passing clouds throughout. Distance run, 170 miles.

Jan. 11. Lat. 11° 21′ N.; long. 33° 33′ W. Wind, SE. ½ S. Commences strong breezes and passing clouds, accompanied with slight rain at 3.30 a. m. *Breakers ahead;* tacked ship, our stern being within 20 feet of the reef; when we gathered headway, stood to the northward; at 5.30 tacked ship and stood to the southward again, and at 7.30 saw three discolored patches to the leeward, which looked like shoal water; latter part squally, with rain; *current setting to the eastward;* at 10 a. m. a large ship to the E.NE. steering to the southward; distance run, 199 miles."

This seems to be proof positive of the existence of this shoal. Coming from a source so respectable, it at once commanded attention. Accordingly, investigation was instituted. The position of this danger was found to answer to that of the Texeiros shoal of 1810. It was, therefore, no recent upheaval; but it was in a frequented part of the ocean; and therefore, if really a reef such as Captain Wakeman took it to be, it must have been seen by other vessels passing that way. Reference to the abstract logs would show. Accordingly Lieut. Aulick was requested to overhaul them, and to project the tracks of as many as passed within 100 miles of Wakeman's position when he saw this shoal. He did so, and projected them on the annexed diagram. None of them make any mention of reef, shoal, or breakers thereabouts;



and the inference is, that the breakers seen by this navigator were not shoal water breakers. They were probably caused by those mysterious "tide rips" which are so common in this part of the ocean, and which are such a puzzle. Almost every navigator who crosses the equator sees them. They sometimes threaten almost to overwhelm the vessel, approaching through the stillness of the night with a roaring noise, and in the shape of seas combing and rolling over. They break over the decks furiously, and in a few moments the sea is as quiet and as unruffled as before. They, however, most commonly appear merely as currents of two or three knots an hour in conflict. What produces this appearance in the water I have

never heard any conjecture that appeared even plausible, unless Humboldt's be taken as such. I say *appearance*, because vessels in those tide rips do not feel them as currents.

Tide rips present their most imposing aspect in the equatorial regions. Humboldt met some in 34° N., and thus describes them: "When the sea is perfectly calm, there appears on its surface narrow belts, like small rivulets, and in which the water runs with a noise very perceptible to the ear of an experienced pilot. On the 15th of June, in about 34° 36′ N., we found ourselves in the midst of a great number of these belts of currents; we were able to determine their direction by the compass. Some were flowing to the NE.; others E.NE., although the general motion of the ocean, indicated by a comparison of the log and the longitude by chronometer, continued towards the SE. It is very common to see a mass of motionless water crossed by ridges of water which run in different directions. This phenomenon may be observed every day on the surface of our lakes; but it is more rare to find partial movements impressed by local causes on small portions of water, in the midst of an oceanic river, occupying an immense space, and moving in a constant direction, although with an inconsiderable velocity. In this conflict of currents, as in the oscillation of waves, our imagination is struck with these movements, which seem to penetrate each other, and by which the ocean is incessantly agitated."

I shall have occasion again to allude to these "tide rips" in mid ocean, and to the new value which the abstract logs possesses with regard to "vigias," and all such doubtful dangers. I propose, as the force at my disposal will allow, to rectify the general charts of the ocean, and to erase from them all the "vigias," shoals, and other myths that hinder navigation, which investigations like the foregoing shall warrant.

Ship James Brown, (C. W. Kerlin, captain,) Boston to Callao, ten days out.

"Jan. 3, 1856. Lat. 29° 40′ N.; long. 44° 31′ W. Barometer, 30.34; temperature of air, 69°; water, 72°. Wind, W.NW. to NW., NE., NE*. Begins clear, with good breeze. At 3 a. m. wind hauled in heavy squall of wind and rain to NE. Day ends much like trades; hove a bottle over with paper for M. F. M. at meridian.

Jan. 4. Lat. 27° 34′ N.; long. 41° 55′ W. Barometer, 30.22; temperature of air, 70°; water, 74°. Wind, NE., NE., N.E. Commences with strong, steady breeze and long swell from NE., passing very large quantities of Saragossa grass in unusually large patches.

Jan. 5. Lat. 26° 20′ N.; long. 40° 56′ W. Barometer, 30.13; temperature of air, 71°; water, 74°. Winds, NE. to N.NE., N. by E., N.NW. to NW. Commences with light airs and clear; saw much less grass than yesterday; at 4 p. m. wind commenced baffling to northward around to N.W.; by the aneroid's fluctuations should judge we are very near the trade winds.

Jan. 6. Lat. 24° 29′ N.; long. 39° 44′ W. Barometer, 30.13; temperature of air, 71°; water, 74°. Winds, NW. to N.NW., N.NW., NW. to N.NW. Commences with moderate breeze and very heavy swell from NE. At 6 a. m. wind baffling from N. to N.NW.; at 10 became steady breeze from N.NW; aneroid fluctuates from .03 to .05, as per log. As I am inside the trade lines for this month, by your charts, I am looking for the wind to haul to the eastward; for your directions thus far have given me great satisfaction.

Jan. 7. Lat. 22° 04′ N.; long. 38° 00′ W. Barometer, 30.10; temperature of air, 73°; water, 75°. Winds, NW. to N., N.NE., N.E. Throughout fresh, steady breeze and clear, after hauling NE., with a very heavy sea from NE. by N.

Jan. 8. Lat. 19° 49′ N.; long. 37° 20′ W. Barometer, 30.10; temperature of air, 73°;

* In these abstracts the winds are generally quoted three times, or one for each "part" of the 24 hours.

water, 76°. Winds, NE. to E.NE., E.NE., E.; moderate breeze and fresh passing squalls of wind and rain; caught a dolphin and saw flying fish for the first time; heavy swell from NE.

Jan. 9. Lat. 17° 24′ N.; long. 35° 48′ W. Barometer, 30.12; temperature of air, 75°; water, 76°. Winds, E. to E. by S., E.SE., E. Fresh passing squalls of wind and rain; saw large schools of flying fish; the heavy NE. swell continues; threw a bottle over at meridian, with ship's position and date.

Jan. 10. Lat. 14° 40′ N.; long. 34° 12′ W. Barometer, 30.09; temperature of air, 76°; water, 76°. Winds, E. by S., E. by N., E. First part, fresh passing squalls, with rain; showers very slight; middle part, fresh breeze and passing squalls of wind, accompanied with light showers; latter part, fresh breezes and steady; saw a few flying fish.

Jan. 11. Lat. 11° 29′ N.; long. 33° 01′ W. Barometer, 30.00; temperature of air, 77°; water, 78°. Winds, E. by S., E., E. by N. to E. by S. Fresh passing squalls and heavy chop sea. Flying fish are very plenty, but no birds of any kind.

Jan. 12. Lat. 8° 43′ N.; long. 31° 37′ W. Barometer, 29.97; temperature of air, 80°; water, 80°; current, 20 miles easterly. Winds, E. by S. to E., E. by N,. E. by N. to E. First part, fresh breeze and pleasant weather; middle, squally, with light showers; latter, fresh breeze and good trades; experienced 20 miles current setting E., northerly; large quantities of flying fish and porpoises.

Jan. 13. Lat. 5° 30′ N.; long. 30° 21′ W. Barometer, 29.90; temperature of air, 82°; water, 82°. Winds, E. to E. by N., E. by N., E.NE. First part, fresh breeze and clear; middle and latter, strong squalls that make whole sail crack; many flying fish, no birds. I am too far east for your track; so off I go for a true south course. The easterly current may put me right—28 miles.

Jan. 14. Lat. 3° 22′ N.; long. 30° 48′ W. Barometer, 29.95; temperature of air, 82°; water, 82°. Wind, E. by S. to S., S.SE. to SE., SE. Have had many changes in the wind. At 5 p. m. hauled very suddenly, in a heavy squall, to south, and continued so until 8, when it began to haul gradually to eastward. Stopped at SE. at 3 a. m. Weather very sultry; sea smooth. Saw a few flying fish; no birds.

Jan. 15. Lat. 1° 57′ N.; long. 31° 28′ W. Barometer, 29.98; temperature of air, 86°; water, 82°. Wind, SE. to S.SE., S.SE., SE. Wind from S.SE. to SE., but the bugbear does not trouble me; I have a ship that will stay in 8½ points and go to windward too, though I have not gotten more than 9½ knots out of her. I think my passage thus far very good for this class of ship.

Jan. 16. Lat. 0° 37′ S.; long. 31° 27′ W. Barometer, 30.00; temperature of air, 83°; water, 81°. Wind, E. to E. by S., E. by S., E.SE. At 1 p. m. heavy squall of wind and rain from eastward, with which I am making a south course true, although to leeward of your track. At 4 clear. I suppose I have the trades; if so, they are well to eastward. Crossed equator at 6 a. m., 23 days and 13 hours from Cape Cod, and less than 24 from Boston light. I have experienced no current to westward at all; made good course.

Jan. 17. Lat. 2° 19′ S.; long. 32° 40′ W. Barometer, 29.99; temperature of air, 83°; water, 80°. Wind, E.SE. to SE., SE. by S., S.SE. These twenty-four hours have caused me to attend closely to the sailing of my ship, as the wind has been well south; but I will follow your advice, and stand on, trusting to luck and slants. The wind at times has been so far as S. by E., but this ship hugs the wind very closely. I hope to lay up to south to-night.

Jan. 18. Lat. 3° 51′ S.; long. 33° 30′ W. Barometer, 29.97; temperature of air, 85°; water, 80°. Wind, SE. by S. to S.SE., S.SE., S.SE. to SE. by S. These twenty-four hours the wind has baffled from SE. by S. to S.; at 2.30 p. m. hauled, in a squall, to south; tacked to eastward until 5; it then hauled S.SE.; stood to southward and westward; heavy sea from SE. by S. Passed to windward of the Roccas at meridian. Have had a little current to the westward. Seen large quantities of whale birds.

Jan. 19. Lat. 6° 07′ S.; long. 34° 54′ W. Barometer, 29.92; temperature of air, 86°; water, 81°. Wind, SE. by S. to S.SE., SE. by S., ditto. Moderate breeze, and clear. Saw large numbers of whale birds. At 7.30 made the land, W. by S. and to the southward." (27 days out.)

Ship Electric Spark, (Laban Howes,) 8 days out from Boston.

"Jan. 2." Lat. 30° 00′ N.; long. 42° 42′ W. Barometer, 30.10; temperature of air, 70°; water, 70°. Wind variable; light airs; variable or calm, with fine pleasant weather. Much gulf-weed on the surface of the water. Slight easterly current.

Jan. 3. Lat. 27° 53′ N.; long. 41° 45′ W. Barometer, 30.3; temperature of air, 69°; water, 72°. Wind, north; light variable winds throughout; generally cloudy. Passed large patches of gulf-weed. Saw a ship trying to get NW.

Jan. 4. Lat. 24° 52′ N.; long. 39° 25′ W. Barometer, 30; temperature of air, 70°; water, 73°. Wind, NE. Fair weather; passing clouds. Heavy rolling sea from NE. Saw one ship bound northward.

Jan. 5. Lat. 23° 02′ N.; long. 38° 14′ W. Barometer, 29.92; temperature of air, 70°; water, 73°. Wind, N., N.NE. Very light winds; dry cloudy weather; heavy swell from NE. exchanged signals with an English ship bound northward.

Jan. 6. Lat. 21° 28′ N.; long. 37° 12′ W. Barometer, 29.90; temperature of air, 69°; water, 73°. Wind, N.NE.,* N., N.NW. Most of these twenty-four hours dull cloudy weather; light wind; very heavy long swell from N.NE.

Jan. 7. Lat. 20° 00′ N.; long. 36° 44′ W. Barometer, 29.73; temperature of air, 71°; water, 74° Wind, variable, NE., E.NE.; very light wind; cloudy; clear at intervals. A long swell from NE. Latter part, squally appearances, with light rain.

Jan. 8. Lat. 17° 01′ N.; long. 35° 05′ W. Barometer, 29.65; temperature of air, 74°; water, 74°. Moderate breeze and passing clouds throughout. Some flying fish. No weed nor birds. The long swell from NE. continues.

Jan. 9. Lat. 14° 03′ N.; long. 33° 55′ W. Barometer, 29.54; temperature of air, 74°; water, 75°. Wind, E.NE., E.SE., E. by S. Dark, cloudy looking weather; generally moderate breeze; sometimes quite fresh. A long swell from NE. Some flying fish.

Jan 10. Lat. 11° 03′ N.; long. 32° 35′ W. Barometer, 29.47; temperature of air, 76°; water, 75°. Wind, E.SE., ditto, ditto. Generally dark cloudy weather; moderate breeze throughout. Sea running from all points of the compass. Pass through rips frequently; appears like meeting of tides. Sea very luminous at night; spots of what appear to be fish or some insects in the water.

Jan. 11. Lat. 7° 27′ N.; long. 30° 55′ W. Barometer, 29.47; temperature of air, 76°; water, 75°. Wind, E.SE., E., E. by S. Wind not very fresh, but rather more than for the last twelve days. Passing clouds. Sea irrregular and rough. Very heavy dew at night;

* The winds are given for "first," "middle," and "latter part."

everything is kept damp, from the atmosphere through the day, except just when the sun shines. Flying fish in large schools. Distance sailed, 238 miles S.SE. $\frac{1}{4}$ E.

Jan. 12. Lat. 3° 54′ N.; long. 29° 40′ W. Barometer, 29.23; temperature of air, 81°; water, 80°. Winds, E., E. by S., ditto. Generally cloudy, with some light squalls of rain. Lightning from various points. First part, good breezes; latter part, calm. One hard squall; took in skysails, and set them again after it passed us. Distance sailed, 226 miles S. by E. $\frac{3}{4}$ E.

Jan. 13. Lat. 2° 37′ N.; long. 29° 50′ W. Barometer, 29.09; temperature of air, 75°; water, 80°. Winds, E.SE., NE., variable. Light airs; unsteady, with frequent hard squalls of rain. Lightning and thunder; looks squally all around the horizon. Sea irregular. Small chance to make headway; trying to get direct S. Distance sailed, by record, 87 miles S. $\frac{1}{2}$ W.

Jan. 14. Lat. 0° 19′ N.; long. 30° 55′ W. Barometer, 29.01; temperature of air, 82°; water, 80°. Winds, E.SE., SE. by S., ditto. First and middle parts, cloudy squally appearance. Wind light, variable; ship on port tack heading up SW. to S.SW., sometimes S. by W. Latter part, light passing clouds, hazy, but pleasant. See some birds. Barometer so low I apprehend something is disordered with it. Distance sailed, 141 miles S.SW. $\frac{1}{4}$ W.

Jan. 15. Lat. 2° 24′ S.; long. 31° 26′ W. Barometer (useless;) temperature of air, 80°; water, 79°. Winds, variable, SE., SE. by E. All these 24 hours gentle breeze and passing clouds. Fine pleasant weather. At 3 p. m. crossed the equator in long. 31° 03′ W., twenty-one days from Boston. Total distance sailed from Boston light-house to the line, three thousand five hundred and sixty-nine miles. Distance sailed this day, 165 miles S. by W.

Jan. 16. Lat. 5° 06′ S.; long. 31° 49′ W. Temperature of air, 80°; water, 80°. Current, $\frac{1}{2}$ mile W.NW. Winds, S.SE., SE. by S.SE. Charmingly pleasant weather. Gentle breeze and light passing clouds. On the port tack heading up S.SW. to S. Distance sailed, 164 miles S. $\frac{3}{4}$ W."

"JANUARY 13, 1857.

"DEAR SIR: For the class of ship M. Howes, I refer you to my last abstract log of 1855, 1856. This voyage she is in ballast and drawing 12 feet 6 inches. You will please to observe I kept as near the track laid down by you as possible, but, having strong breezes on leaving New York, I kept off to the S. more than I should have done under other circumstances, but had a good run across the NE. trades till the ship was in lat. 5° N., when the wind, coming out at SE., forced me further to the westward than I wanted to go; still, seeing no use to tack, I kept on and crossed the equator in 34° W., 24 days out, and made the land on the 26th day out, (January 11, 1856,) in lat. 4° 53′ S., long. 35° 22′ W., and tacked; next day was far enough to eastward to clear St. Rogue, 27 days out, and did not experience any current; if there was any, it was slightly to the westward. So I consider the ship has done well for a ship in ballast."

"Yours, respectfully,

"W. H. RILEY.

"Lieutenant MAURY."

COMPUTED ROUTE FROM NEW YORK TO RIO—*January.*

Latitude.	Longitude.	Course.	DISTANCES.			WINDS; PER CENT.					Total number of observations.
			True.	Per cent.	Average.	Head.	Slants from— N'd or E'd.	Slants from— S'd or W'd.	Fair.	Calms.	
From 40° 27′ N.	74° 00′ to										
40 27	70 00	E	182	6.2	193	2.0	6.0	5.0	87.0	2.1	97
38 52	65 00	E.S.E.	249	7.4	266	2.4	5.6	5.6	86.4	0.8	118
38 52	60 00*d*	E.	243	6.7	249	0.9	3.6	*w* 11.7	83.8	3.4	113
37 14	55 00	E.S.E.	255	7.5	274	2.4	3.2	*w* 8.8	85.6	0.0	128
35 35	50 00	E.S.E.	260	8.3	283	3.0	7.0	8.0	82.0	4.5	105
35 00	48 17*d*	E.S.E.	92	11.4	103	4.4	6.6	*w* 13.2	75.8	0.0	91
30 00	45 49	S.S.E.	324	12.1	362	1.9	15.2	*w* 19.0	63.9	10.0	54
29 44	45 00	E.S.E.	42	25.7	53	8.4	*w* 25.2	11.8	49.8	4.2	24
25 20	40 00	S.E.	347	13.6	425	3.3	*w* 16.4	8.2	72.1	1.6	61
25 00	39 38*d*	S E.	34	28.0	43	13.2	8.7	*w* 11.0	67.0	3.3	88
20 00	37 16	S.S.E	324	6.4	344	2.5	5.5	5.5	87.5	0.0	80
15 00	35 00	S S.E.	324	7.7	348	0.0	*w* 15.8	10.5	73.7	0.0	19
10 00	32 53	S.S.E.	324	0.4	325	0.0	*w* 3.0	0.0	97.0	0.0	33
5 00	30 48*d*	S S E.	324	1.6	329	0.0	*w* 8.0	0.0	92.0	0.0	25
Equator.	30 48	S	300	0.7	302	0.0	*w* 6.6	0.0	93.4	0.0	88
1 00′ S.	31 13	S.S.W.	65	3.7	67	0.0	*w* 15.0	0.0	85.0	0.3	294
2 54	32 00	S.S.W.	123	6.1	130	0.0	*w* 23.9	0.0	76.1	0.0	46
5 00	32 52*d*	S.S.W.	137	5.8	145	0.0	*w* 28.6	0.0	71.4	0.0	21
5 08	33 00	S.W.	12	0.0	12	0.0	0.0	0.0	100.0	0.0	29
7 00	34 00	S.S.W. ½ W.	136	5.1	143	0.0	*w* 14.4	0.0	85.5	0.0	28
9 00	34 50	S.S.W.	130	5.3	137	2.9	2.9	0.0	97.1	8.0	34

Shortest distance to the equator by this route, 3,640 miles. Average distance to be sailed on account of adverse winds, 3,899 miles. The Surprise, in January, 1851, accomplished it in 24 days, and 3,852 miles per log. The Governor Morton, in January, 1855, did the same in 20 days, and 3,640 miles from noon to noon; she crossed in 33° 20′; and Captain Burgess says: "Four days afterwards, [being in lat. 11° S., 32° 30′ W.,] I have found no difficulty, as you perceive, in clearing St. Roque, notwithstanding I crossed the line further west than you recommend. I began to experience some unpleasant feelings as to my position, but stood on agreeably to your valuable advice, and found the wind so favorable as that I think there would have been no difficulty in clearing the Cape, if we had crossed in 34°." See his log.

The courses from 35° N. to 30° N., and from 7° S. to 9° S., run through a part of the ocean that is liable to calms. In the adjacent wind-roses, to the east of these, (see Pilot Charts,) there is less liability to calms. From New York to the parallel of 25° N., in this month, the south is generally the windward side. Thence to the line it is to leeward. Prefer, therefore, in this month, to cross 25° N. to the E. of 40°, and 7° S. to the E. of 34° W. longitude.

Time and Crossings to the Fair Way off St. Roque—January.

Name of vessel.	From—	Date of sailing.	Longitude of crossing the parallels of—																Total days to—	
			Days.	30° N.	Days.	25° N.	Days.	20° N.	Days.	15° N.	Days.	10° N.	Days.	5° N.	Days.	Line.	Days.	3° S.	Line.	St. Roque.
Peri	Boston	Jan. 1, 1854	8	59	4⅛	48	3	44	2⅛	39	3⅛	35	6⅛	32	3¾	34	2⅛	34	31¾	35⅛
Hudson Trask	Cape Henry	1, 1854	11¾	46	2⅛	46	2	45	2	42	2	40	2¾	37	2	35	2	35	25	28
Game Cock	New York	1, 1854	11¼	39	1	37	1¼	35⅛	1¾	34	1	33	1⅛	31	3⅛	31	1¾	31	21¼	23⅛
Swan	Baltimore	1, 1854	17	44	5	37	2	35	2⅛	33	1¾	31	2¾	28	3¾	30⅛	1¼	31	34¾	37
Thartus	New York	2, 1851	11	44	4	39	3	37	3	35	2⅛	32	1¾	29	2¼	29	2¼	31⅛	27⅛	30¾
Rebecca	Richmond	2, 1854	14¾	41	3¾	42	4	42	3⅛	40	2¾	38	17¼	28	4¾	29	1	31	50¾	52¾
Phantom	Boston	7, 1853	12	37	4	42	1¼	42	1⅛	41	1⅛	39	2	35	2	33	1¼	32	24¼	26¼
Esther May	....do	7, 1853	14	36	3	40	2	38	1¼	36	2¾	32	2	30	2¼	30	1¾	32	27¼	30
Courier*	....do	7, 1852	10	38	3	36	1¼	36	1¾	35	1	34	1⅛	33	1¾	30⅛	1¾	32	20¼	22¾
Brothers	New York	7, 1854	12⅛	44	2⅛	38	3	36	3	34	3	30⅛	3	27	6⅛	27	3	28⅛	33⅛	37⅛
Grey Eagle	Cape Henry	8, 1854	10	45	4⅛	43	1¾	43	2	39	2	34	6¼	30⅛	2¼	34	1	34	28¾	31
Amelia	New York	8, 1853	16⅛	38	1¾	37	1⅛	35	1¼	33⅛	1¼	32	1¾	29	2⅛	31	1⅛	32	26⅛	28¾
Black Squall	Baltimore	8, 1852	11	40	2¼	39⅛	1¾	38	2	37	1¼	36	3	31	2¾	27⅛	2⅛	28	24	27¼
U. S. S. Relief	New York	8, 1852	14	42	3	41	4	40	4	38	3⅛	33	3	28⅛	3⅛	28	2⅛	29	35	38⅛
Rattler	....do	9, 1853	13	38	2⅛	41	1¾	39	1¼	39	1¾	36	1¾	33	2	32	3¼	32	23¾	27¾
Celestial	....do	9, 1853	9	45⅛	4	39	2	38	1¼	36	1¾	32	2	29	2¼	28	1¾	29	22¼	25
Great Britain	....do	9, 1852	14	36	2	37	2	36	1⅛	34	1⅛	33	2	30	2¾	30	2	31	25¾	28⅛
Tornado	... do	11, 1853	10	46	4	39	1⅛	37	1⅛	34	2¼	31	1	30	1⅛	30	1¼	31	21¾	24
A. Chesebrough	....do	12, 1853	11	45	2	44	2	41	3	37	2	35	3	30	6¼	31	1¾	32	29¼	31¾
Tzar	....do	12, 1853	12	44	2	42	2	38	3	34	2	31	2	28	6¾	27⅛	2¼	30	30¾	34¾
Windward	Baltimore	13, 1854	12	48	5	43	5	39	3	36	3	32	2	28⅛	7⅛	30	2	31	37⅛	40⅛
Isabelita Hyne	New York	13, 1851	13	38	4	38	1⅛	36	1⅛	35	2	31	1¼	30	4	30	1⅛	22	27¼	29¾
Falcon	Boston	13, 1852	10	44⅛	2	44	11¼	37⅛	1¾	35	2	32	2	27⅛	2¼	27	1¾	29	31¼	33⅛
Susquehanna	Philadelphia	13, 1851	15	41	3⅛	39	2⅛	37	3	34	2	31	1⅛	29	2⅛	28	2⅛	29⅛	30	33¼
Archer*	New York	13, 1854	8	43	2	43	2	41	2¼	39	1	38	2	35	2¾	31	1¼	31	20	22
Gray Feather	....do	14, 1851	14	36	4	34	1¼	33	2¾	31	1¼	30	1¾	28	2⅛	28	3¼	31	27⅛	31¼
Medford	....do	15, 1854	18	39⅛	3¼	37	5¾	34	4	31	2	29	2	28	7	28	4	29	42	47
Z. D.	....do	15, 1854	10¼	46⅛	3	41	4	39	2	37	2	33⅛	2	31	4	29⅛	1¾	31	27¼	30
Lucknow*	Boston	16, 1853	9	42	2	39	2	35	1¼	34	1¾	32	2	28	3	30⅛	2¼	33	21	24¼
M. Howes	....do	16, 1854	11¾	42	2	39	4	38	2¼	36	2	32⅛	1¾	29	3¾	28	2⅛	30	27⅛	31
Alert	New York	17, 1853	17	38	2¼	40	3	41⅛	2	40⅛	2	38	3¾	31⅛	3	32	3⅛	32	33	37¾
Dragon	Boston	19, 1851	10	43⅛	2	42	2	40	1¼	39	2	35	1¾	32	3¼	30	2¾	31⅛	22¼	25⅛
The Simoon†	New York	20, 1850	14	34	1⅛	36⅛	2⅛	45	2	44	2	42	2	58	4⅛	34⅛	2¼	35	28⅛	32
Pontiac	Boston	20, 1853	20	46	8	38	4	34	6	32⅛	2	30⅛	2	29¼	4⅛	29¾	1⅛	29⅛	46⅛	49
Minatonomi	New York	20, 1852	15	45	6¾	44	2¼	44	2	41	2	40	2	39	9¾	30	3¼	31	39¾	43¾
Phantom	Baltimore	20, 1853	17	44	5	47	7⅛	40	4⅛	34	2	34	2	32	5¼	30	1¼	30	43¼	45¼
Flying Cloud*	New York	22, 1854	6	48	1¾	46	1¾	45	1⅛	43	2	39	1¾	33	2¼	31¼	2	33	17	20⅛
Seaman's Bride	....do	24, 1854	10¼	39	2	39⅛	4¾	38	3¼	34	2	31⅛	1⅛	30	3¼	29	1¼	30	27	29

Time and Crossings to the Fair Way off St. Roque—January—Continued.

Name of vessel.	From—	Date of sailing.	Longitude of crossing the parallels of—																Total days to—	
			Days.	30° N.	Days.	25° N.	Days.	20° N.	Days.	15° N.	Days.	10° N.	Days.	5° N.	Days.	Line.	Days.	3° S.	Line.	St. Roque.
Arina	New York	Jan. 28, 1853	9	50	11	40	4	36	6	34	2	31	2¼	30	4	31	1¾	31	38¼	41
Venice	....do	28, 1850	12	40	3	37	5	33	2	32	2	31	2	30	5½	30	1⅛	32	31½	34⅛
John Gilpin	....do	29, 1854	11	43	1¾	39	2	36	3¼	34½	1¼	34	1¾	32	4	31	1¾	32	25	27¼
Golden Rover	Boston	29, 1853	17	37	3	35½	3	31	4	31	3	31	2	29	3	30	1	31	35	36½
General Jones	....do	29, 1851	13	42	2	38	2	35	3	33	2½	30	2½	25½	5	26	1¾	28½	30	32¾
Means before 7th edition			12.4	42¼	3.2	39¾	2.9	38	2.5	36	2	33¾	2.6	30½	3.7	30	2	31	29.5	32.4
Phantom*	New York	Jan. 1, 1856	10	43	2¼	41	2¾	37	2½	36	¾	34	1½	29	1¾	29	1	31	21½	22¼
Rosamond	Baltimore	3, 1857	11	47	4½	41	3½	40	3	37	3	31	2	29	2½	29½	1½	31	29½	32
Golden City	New York	8, 1856	10	42	2	39½	3	39	1½	36	2	34	2½	30	3½	29½	2½	30	24½	28
Quick Step	....do	9, 1856	8	44	2	38	3	36	1½	34	1½	32	2	30	6	28¼	2¼	28¼	24	27¼
Storm	....do	9, 1855	9	45	2¾	35	2½	32	2¾	32	1½	31	3¾	27¼	2½	26	1½	28	24¾	27
Lucknow	....do	10, 1855	16¼	38	2	35	2	33½	2	31	1½	30	1¼	28½	3½	30	1½	32½	28½	31
Abby	Boston	11, 1856	12	36½	5	32	2¼	32½	3	33	2	33½	1¾	30¼	1¾	29½	1¼	30½	27¾	30
Daniel Webster	...do	13, 1857	14	50	7½	46	1¾	45	2¾	41	2¼	37	2¾	31	2¼	29	1¼	31	33¼	35¼
E. F. Willets	New York	13, 1855	13	48	4½	39	2	35	2	33	1½	29	1½	27½	3	31	1½	32	27½	29½
Jenny Ford	Boston	13, 1855	15¾	40	2¼	38	2	37	2	33½	1¼	33	1¾	30½	4½	32	2½	33	29½	32½
Coloma	Savannah	14, 1855	16	42	2	39	2	37	2½	35	2	32	3½	30	5¼	30¾	2½	32	33¼	35¼
Greenfield	New York	14, 1855	14	42	2	39	1¾	37	1½	35	1¼	33½	1¾	30	4	31	1¼	32½	26¼	28¾
Rainbow	....do	15, 1855	8	44	5	33½	2	31	3¼	30	2	30	1	30	1¾	29½	1½	30½	23	26
David Brown*	....do	16, 1856	7	43	4½	35	2½	32	3	31	1¼	32	1¾	30½	1½	30	1½	30	21½	23¾
Alexander	Boston	20, 1856	9	42	2½	39	3	36	1½	34	1¼	35	2	33	2½	33	2	33	21¾	25¾
Sultan*	New York	20, 1856	8½	47	1¾	44	3¼	42	2½	40	1¾	37	1½	35	1¾	32½	1¾	32½	21	23½
Storm King	Salem	20, 1856	10	42	2	37	3	34	2¼	33	2	32	2	30	3¾	29	3	30	25	29
Derby	Boston	23, 1856	8	42	3	37	3	36	1½	35	1½	32	1¼	31	3½	30	1¾	31	22	23¾
Australia	New York	26, 1856	10½	45	2¾	39	1½	37	1¾	35	1¾	33	2	30	2½	30	1½	31	22¾	25
Gray Eagle*	Norfolk	29, 1858	8½	50	2	44	3¾	38	2¼	36	1¾	33½	1½	31	1¾	30	1	31	21½	23
Comet†	New York	31, 1857	7½	53	2	51	2	50	1½	48	2	44	1½	43	3½	41	20½	33½	20	42
Cathedral*	Boston	31, 1856	10	36	3¾	32	1¼	30	1¼	29	1	30	1½	30	2¼	31	1	32½	21	23½
Means since 7th edition			10.9	43¼	3.1	38¼	2.5	36	2.2	35	1.6	32½	2	30¼	2.9	30	1.7	31	25.2	27.7
Means of best 10			8.8	42¾	2.4	39¾	2.2	37	2	34½	1.3	34½	1.7	31½	2.2	30¾	1.5	31¾	20.6	23

* Fell to leeward.

† The Simoon crossed the parallel of 34° in 61°. She then attempted to make easting in the horse latitudes, and, after 10 days, found herself in the meridian of 32°, but still west of 34°. From this point she finds herself back, after one week of toil, on the meridian of 45° Captain Smith says he deviated from the new route, though not willingly. The route adopted cannot be properly classed with either old or new.

‡ Not included in the average.

There is to St. Roque a gain, since the date of the 7th edition, of upwards of four days (4.3,) on the average, for this month; and it will be observed that this gain has been effected by running for 30° N., between 43° and 44° W., and then keeping on the course which the table recommends, and making the crossings as therein advised. Certainly Cape St. Roque need not be dreaded at this season of the year.

Captain Bunker, of the Reindeer, says, January 6, after crossing the line in 34° 30′ N., and clearing St. Roque two days after, "I think we could have cleared the land without any difficulty, even if we had crossed the equator 30 miles further west. We are not a *regular* clipper either."

Ship Lucknow, (D. Plumer,) Boston to California, 21 days out.

"Feb. 7. Lat. 1° 07′ S.; long. 31° 32′ W. Barometer, 29.84; temperature of air, 81°; of water, 80°. Winds, southward, E., S. by E., S. by E., S., and S.SE. Moderate breezes and pleasant. At 1 hour 30 min. p. m. crossed the equator just 22 days from Boston light, on the meridian of 30° 40′ W., having sailed, by log, 3,803 miles, and courses made good, 3,782." [No other circumstance, not even the actual performance of the passage within a given time, tends so strikingly to prove the correctness of the data upon which these Charts are founded, and the accuracy of the calculations derived from them, as the near coincidence here referred to. Taking into account the detour which a ship has to make on account of head winds, the distance to be sailed is calculated. The Lucknow tries it, and her distance sailed differs only 10 miles from the computed distance. A steamer could not have shaved more closely.]

From H. T. Walter, of the Phantom.

"Three days from Cape Henry we lost our jib-booms, top-gallant mast, &c., besides leaking badly, and hence we were not able at times to keep the vessel by the wind, and were compelled to go eastward of your track, for fear we had to beat, which would have been a bad job without a jib. But we have paid the utmost attention to barometer, thermometer, state of weather, &c.

The barque Reindeer, which left the Capes with us, arrived the same day at Rio. I believe she crossed the line in 28° 00′.

The brig W. A. Steward left the Cape three or four days before us, and arrived the same day with us; she sighted Fernando de Noronha, and arrived with us the same day.

On an average, vessels which sailed before and with us had very long passages for the time of the year.

The barque Inca, which sailed from Baltimore the 2d of January, arrived some days after us; her passage is therefore from 80 to 90 days. On the other hand, two vessels left Baltimore after us; one made the passage in 35, the other in 41 days. Last year, about the same month and date, I found strong winds from E.SE. to E.NE. in the same latitudes where we had this time W.SW. and S. winds."

Another letter from H. T. Walter.

"BALTIMORE, *November* 7, 1854.

"SIR: Again we have the pleasure of sending you three abstract logs of the barque Phantom. I have on purpose withholden the abstracts, first, in not being too hasty to judge your route; secondly, if possible, to give our little experience on the same. I confess that, from the beginning, I was a little prejudiced in following your tracks. Not only I, but several masters of vessels I have seen upon the subject, having done several voyages from Europe to the East Indies, we were always in the habit of crossing the line far to eastward. Cape St. Roque was such a terror that it was never even mentioned; hence my prejudice. And, notwithstanding the barque Phantom has not been particularly favored in following your tracks, we must come to the conclusion that there are currents, winds, &c.; that one or two degrees would be of much importance to the vessel; but, taking the favorable and unfavorable views of your route, I think it is entitled to much credit.

First. Because of steadier breezes and the greater certainty of breezes between the NE. and SE. trades.

Secondly. Because of avoiding those heavy squalls and calms; and when we take in consideration the waste of time, the losing of spars, and the chafing of materials which are experienced to the eastward, we must come to the conclusion that your route is the most favorable, even if we have sometimes to beat around Cape Roque.

You will see that, in July, 1853, the Phantom crossed the line about 33° 00′ long., and had no difficulty in reaching 6° 15′ S. without tacking. Again, in August, 1854, the line was crossed in about 32° 00′ long. W., and had mostly to tack to 8° 00′ S. First, we rather lost than gained, owing to the strong breezes and rain, not being able to stand close in shore;, but, having once beating breezes and clear weather, we gained rapidly.

In working along the shore we noticed the night in shore tacks (although against the rule of land breezes) were the most favorable, and mostly lay up one or two points more to southward. I found not the least difficulty or danger in working along shore during the night, paying particular attention to the lead.

I again have omitted variation, because the amplitude observation never agrees with the variation of the chart. Ours, in most cases, is more westerly.

Currents are likewise omitted: first, because we had not the opportunity and knowledge to ascertain their correct rate and direction; secondly, currents which are found west to-day are east to-morrow; hence it must mislead every navigator. Even the famous Gulf Stream, this voyage, was so narrow that I hardly experienced any current. The pilots, however, told me that they had had an easterly wind for the last fourteen days. Even large quantities of gulf and sea-weed were found on the edge of soundings.

In July, 1853, between 5° 00′ and 8° 00′ latitude N., about 36° 00′ and 38° 00′ W., the current set us fast to eastward. Again, in August, 1854, about the same latitude and longitude, the current set us about 110 miles N.NE. I could not determine whether the current set us that much in one or three days, having had no observation in that time.

I have, however, paid a little more attention to the barometer. The same barometer was used in all three voyages. It stands rather lower than others; but, being very sensitive, I did not like to alter it. The stand of the barometer between four o'clock and five o'clock in the

morning may be $\frac{1}{100}$ or $\frac{2}{100}$ of an inch out of the way, being not then watched as closely as at the other times.

Lieut. M. F. MAURY, U. S. N."

I have often remarked the stress which navigators will lay, each upon his own experience, acquired even during one trip, as to winds and currents by the way. From this one voyage we often see conclusions drawn with great boldness, and rules for the guidance of mariners laid down with the confidence of perfect knowledge. "A little learning—". The Pilot and other charts of the series furnish the experience, not the opinions—but the facts, the carefully observed and faithfully recorded facts—of thousands of navigators, as to the winds and currents encountered by them; and yet, with all these data before me, I often find it exceedingly difficult to come to any satisfactory conclusions as to winds, and currents, and routes, or to lay down sailing directions which shall hold good alike for all.

I was reminded by this last letter of Captain Walter to examine and see how much experience the abstract logs in this office afford as to the difficulties of clearing Cape St. Roque when one crosses the line west of longitude 32°. Considering the ideas which have been unwittingly instilled into our minds as to awful currents, and the dangers which beset vessels that cross so far to the west, I was surprised to find how trifling, really, those difficulties are when they come to be tried. I have examined the logs of more than 100 vessels, bound south, that have crossed the equator to the west of 32°, and of these 43 crossed to the west of longitude 34°, and five of them only, viz: the Huma, that crossed in 37° 10′; the Levanter, in 35° 28′; the Gertrude, in 38° 50′; the Sabine, that crossed in 34° 30′, and the Comet, in 39° 30′, were more than a week in clearing Cape St. Roque—they had, respectively, 8, 19, 11, 9, and $7\frac{1}{2}$ days each. Two weeks in the equatorial doldrums, east of 25°, is common, and three weeks is not uncommon. The average of these 43, from the line to the fair way off Cape St. Roque, was $4\frac{1}{2}$ days. And, if we except the five unfortunates just mentioned, the average time from the line west of longitude 34° to the parallel of St. Roque is only $3\frac{3}{4}$ days, which is less than the average time from the line to the same parallel by the old route. Of these 43 the Sovereign of the Seas crossed in 36°, and had three days; the Hudson Trask crossed in 35°, and shot past in two days; the barque Maury crossed in 36° 20′, and had 4 days; the Bald Eagle, in 34° 30′, with $3\frac{1}{2}$ days; the Great Republic, in 35°, with $3\frac{1}{4}$ days; the Reindeer, in 34° 30′, with 2 days; but the Belle of the West took seven days from 35° 45′; and the Golden State the same time to clear this cape of fabulous terror, after having crossed the line in 36° 38′. Suppose experience to decide that it will take one week, on the average, to clear Cape St. Roque, after having crossed the line in (say) 35°—let us, upon this supposition, compare the passage by this crossing with the length of passages by the old crossings, say between 20° and 25° W. A vessel, after crossing in 25°, is generally forced to sight St. Roque, and certainly it is, to vessels from the United States, nearer to cross the equator in 35° and sight St. Roque a week afterwards, than it is to do it after crossing the line in 25°, and sight it in 3 days afterwards. Vessels, especially in summer and fall, that find themselves as far west as 36° or 37°, when they lose the NE. trades, will very frequently find the southwardly monsoons between the two systems of trades sufficiently strong and steady to carry them to the eastward at the rate of 100 miles or more for a couple of days, and so enable them to fetch up leeway by standing to the eastward as far as the meridians of 32° or 33°.

Commodore Mervine's remarks in the following letter bear upon this subject:

UNITED STATES SHIP INDEPENDENCE,

Rio de Janeiro, November, 1854.

"SIR: A fair opportunity has been afforded me of testing the soundness of your advice, in crossing the equator, "to stand on boldly towards St. Roque, instead of endeavoring to make easting in order to avoid being 'back-strapped.'" Now, this catastrophe happened to me, but occasioned no more than eighteen or twenty hours' detention.

Having pursued the course recommended by you after entering the doldrums, I stood on, crossed the equator in 33° 53′ west longitude, at 11 a. m., on the 15th November, and made land on the 17th, at 11 a. m., twenty-five miles to leeward of St. Roque. The prospect of working so far to windward, against a strong current, (which I was induced to believe existed), in a leewardly ship like the Independence, was rather inauspicious. It was accomplished, however, during that afternoon and night, by making short tacks off and on the Bank of St. Roque, in nine and ten fathoms water.

On the 18th, at 8 a. m., the Cape was under our lee, distant about twelve miles, and the wind at east, which enabled us to lay our course along the land.

We lost the NE. trades in 8° N. latitude, and got the SE. trades in 3° N. latitude, very far to the southward, S. by E., which, after we had crossed the equator, and as we approached the coast, gradually favored us more and more to the eastward, especially during the night.

From the frequency and comparative ease with which vessels beat around the Cape, I am inclined to believe that the winds in that vicinity are considerably modified by the land, and will be found generally to prevail from the eastward.

I am, very respectfully, your obedient servant,"

WM. MERVINE,

Appointed to Command Pacific Squadron.

Lieut. M. F. MAURY, U. S. N.,

National Observatory, Washington, D. C.

Barque Rainbow, (Atkins Hughes, captain,) New York to Buenos Ayres, six days out.

"Jan. 22, 1855. Lat. 30° 42′ N.; long. 43° 56′ W. Barometer, 30.16; temperature of air, 72°; water, 72°. Winds: W.SW., W.SW., SW. by W. Fresh breeze, large quantities of gulf-weed.

Jan. 23. Lat. 28° 49′ N.; long. 40° 56′ W. Barometer, 30.18; temperature of air, 72°; water, 71°. Clouds, cir., NE. Winds: SW., SW. by S., SW. by S; moderate breeze and pleasant; ends, light breezes, inclining to southward; plenty of gulf-weed; barometer appears to rise evening and fall again in the morning.

Jan. 24. Lat. 28° 15′ N; long. 39° 58′ W. Barometer, 30.20; temperature of air, 74°; water, 72°. Winds: SW. by S., SW., baffling; first part, light breeze; middle and latter parts, light and baffling airs from S. to NW.; ends with light breeze from S.; gulf-weed.

Jan. 25. Lat. 27° 10′ N; long. 37° 15′ W. Barometer, 30.18; temperature of air, 70°; water, 73°. Winds: S. by W., S.SW., S.SW.; moderate breezes and squally; latter part, fresh squalls; winds baffling from S. to S.W.; gulf-weed.

Jan. 26. Lat. 25° 42′ N.; long. 34° 41′ W. Barometer, 30.18; temperature of air, 72°; water, 74°. Winds: S.SW., SW. by S., S.SW.; fine breezes and pleasant weather; winds hold well to southward, and carrying me much farther to the eastward than I wish to go; gulf-weed.

Jan. 27. Lat. 24° 37′ N.; long. 33° 26′ W. Barometer, 30.18; temperature of air, 73°; water, 74°. Current, 20 miles, E.SE. Winds: S.SW., S., S.SW.; moderate breeze till 4 p. m.; 4 to 9 p. m., light baffling airs; at 9 a moderate breeze sprung up from southward, which continued the remainder of the day; latter part, tide rips; gulf-weed.

Jan. 28. Lat. 23° 08′ N.; long. 31° 52′ W. Barometer, 30.06; temperature of air, 74°; water, 74°. Current, 12 miles, E.SE. Winds: SW. by S., SW., SW. by W.; light winds and pleasant; ends with wind W. by S.

Jan. 29. Lat. 20° 20′ N.; long. 30° 52′ W. Barometer, 30.12; temperature of air, 73°; water, 74°. Winds: W. to N., N.NE., NE.; commences with light breezes from westward; from 4 to 10 p. m. wind hauled gradually round to NE.; middle and latter parts, moderate breeze; no gulf-weed.

Jan. 30. Lat. 18° 11′ N.; long. 30° 33′ W. Barometer, 30.08; temperature of air, 75°. Winds: E.NE., NE., N.NE; first part, moderate breezes; middle and latter parts, light baffling winds from E. to N.; a very heavy swell all day from NW.

Jan. 31. Lat. 16° 50′ N.; long. 30° 18′ W. Barometer, 30.10; temperature of air, 74°; water, 75°. Winds: NE., NE., N.; light baffling winds from NW. to E., with a heavy swell from NW.; saw flying fish for the first time.

Feb. 1. Lat. 15° 44′ N.; long. 30° 10′ W. Barometer, 30.08. Winds: N.NW., N.NW., N. by E.; all this day, light baffling airs; flying fish; heavy swell from NW.

Feb. 2. Lat. 13° 21′ N.; long. 29° 57′ W. Barometer, 30.10; temperature of air, 76°; water, 77°. Winds: NE., E.NE., E. by S.; first part, light baffling winds; middle and latter parts, moderate breeze; heavy swell from NW. This is the hardest chance I ever had to get through these latitudes. Perhaps I am too far east; but I could not avoid it with the winds I have had. It was my intention to have followed the route for January (Maury's S. D.) as near as possible.

Feb. 3. Lat. 10° 52′ N.; long. 29° 47′ W. Barometer, 30.08; temperature of air, 76°; water, 79°. Winds: E. by S., E.NE., NE.; light trades and pleasant; sea from NW. going down; passed through tide rips.

Feb. 4. Lat. 7° 35′ N.; long. 29° 45′ W. Barometer, 30.08; temperature of air, 80°; water, 81°. Winds: E. by N., E. by N., E. by N.; moderate and steady breezes and pleasant, the first steady wind since we entered the regions of the trades; no birds nor fish.

Feb. 5. Lat. 3° 47′ N.; long. 29° 14′ W. Barometer, 30.08; temperature of air, 82°; water, 83°. Current, 12 miles, E. Winds: E. by N., E.NE., E.NE.; fine breezes and pleasant.

Feb. 6. Lat. 0° 02′ N.; long. 29° 24′ W. Barometer, 30.03; temperature of air, 82°; water, 83°. Winds: E.NE., NE., NE. by N. Fresh breezes and dark squally weather, with lightning in the east; ends moderate and rainy, with barometer falling. At 5.30 a. m. made St. Paul's rock, bearing S.SE; at 6.30 bore east, distant 5 miles; saw flocks of birds while in sight of St. Paul's, the first I have seen since entering the tropics. I am now down to the equator, 22 days 18 hours from Sandy Hook. I have had a very pleasant passage so far; distance sailed, by observation, 3,761 miles.

Feb. 7. Lat. 2° 20′ S.; long. 29° 35′ W. Barometer, 30.01; temperature of air, 82°; water, 83°. Winds: E., SE. by E., SE. Commences with moderate breezes and rainy. At 2. p. m. thunder and lightning to the eastward, succeeded by a very fresh squall, with hard rain; ends with light breeze from SE. and pleasant weather.

Feb. 8. Lat. 5° 41′ S.; long. 30° 12′ W. Barometer, 30.01; temperature of air, 83°; water, 83°. Winds: SE. by E., E.SE., E.SE. Fine breezes and pleasant."

Ship Sultan, (F. A. Wyman, captain,) New York to San Francisco, eight days out.

"Jan. 28, 1856. Lat. 28° 25′ N.; long. 45° 19′ W. Barometer, 30.15; temperature of air, 60°; water, 70°. Winds: NW., NW., variable. Fresh breezes; fine weather; occasional smart puffs of wind; latter part, light breezes. Large quantities of sea-weed. Crossed parallel of 30° N., in long. 46° W.

Jan. 29. Lat. 26° 11′ N.; long. 44° 00′ W. Barometer, 30.10; temperature of air, 65°; water, 70°. Winds: variable, SW. by W., SW. by W. to SW. First part, light breezes and calms; middle part, fresh, sky somewhat overcast; latter part, good breeze, weather pleasant.

Jan. 30. Lat. 23° 29′ N.; long. 43° 02′ W. Barometer, 30.08; temperature of air, 74°; water, 73°. Winds: W.SW., SW. to SW. by W., and to W.NW. First part, fine fresh breeze; middle, wind variable, but still fresh; latter, wind decreasing, clouds dispersing.

Jan. 31. Lat. 21° 42′ N.; long. 42° 46′ W. Barometer, 30.40; temperature of air, 73°; water, 75°. Winds: NW. to N.NE., NW. to N.NE., NW. to N.NE. Wind light and variable; occasional calms.

Feb. 1. Lat. 20° 25′ N.; long. 42° 17′ W. Barometer, 30.20; temperature of air, 73°; water, 76°. Winds: variable, variable, N.NW. Light airs, calms, and variable. Weather remarkably fine; sky clear.

Feb. 2. Lat. 19° 24′ N.; long. 42° 13′ W. Barometer, 30.11; temperature of air, 74°; water, 77°. Winds: variable from N. to E.NE. Light breezes stirring; weather still continues beautiful.

Feb. 3. Lat. 18° 03′ N.; long. 42° 10′ W. Barometer, 30.12; temperature of air, 74°; water, 76°. Winds: variable, E.SE., E.SE. First part, very light breezes and variable; latter part, fresh breeze from E.SE.

Feb. 4. Lat. 15° 05′ N.; long. 40° 04′ W. Barometer, 30.05; temperature of air, 74°; water, 76°. Winds: E., E. by N., E. First part, breeze strong; middle, strong, but variable; latter part, squally.

Feb. 5. Lat. 12° 06′ N.; long. 38° 53′ W. Temperature of air, 74°; water, 74°. Winds: from E. by N. to E. by S. First part, wind strong and frequent squalls; middle and latter parts, fresh gales, at times severe. Numerous fast flying clouds.

Feb. 6. Lat. 9° 07′ N.; long. 36° 54′ W. Barometer, 30.05; temperature of air, 78°; water, 80°. Winds: E. to E. by N., E. by N., E. to E. by N. Strong winds and frequent squalls of some severity; rather cloudy.

Feb. 7. Lat. 5° 42′ N.; long. 35° 05′ W. Barometer, 30.05; temperature of air, 78°; water, 80°. Winds: E. by N. to E.NE. First part, strong breezes, occasional squalls, clouds still hanging over; middle part, moderate gales, with slight rain.

Feb. 8. Lat. 2° 43′ N.; long. 33° 17′ W. Barometer, 29.90; temperature of air, 80°; water, 80°. Winds: E.NE., NE. by E., E.NE. First part, fresh winds, occasional squalls, with light rain; latter part, pleasant breezes. Numerous flying clouds.

Feb. 7. Lat. 0° 00′; long. 32° 37′ W. Barometer, 29.90; temperature of air, 80°; water, 80°. Winds: NE., E.NE., E.NE. to E.SE. Upon the equator, at meridian, twenty days out from New York. Fine breeze still continues; sky overcast; light rain occasionally.

Feb. 10. Lat. 2° 01′ S.; long. 32° 36′ W. Barometer, 30.30; temperature of air, 82°;

water, 81°. Winds: E. to E.SE., to E. by S., E.SE. First part, moderate breezes, and dense clouds; middle and latter parts, light breeze; still very cloudy, but clearing off towards noon.

Feb. 11. Lat. 3° 46′ S.; long. 32° 39′ W. Barometer, 30.10; temperature of air, 82°; water, 81°. Winds: E to S. First part, light breezes from E.SE. Weather fine. Made at 6 a. m. the island of Ferdinand Naronha, bearing S. ½ E., distant 25 miles. Latter part, cloudy, with light rain.

Feb. 12. Lat. 6° 01′ S.; long. 32° 49′ W. Barometer, 30.30; temperature of air, 81°; water, 81°. Winds: varying from E. by S. to SE. by S. First part, breeze moderate; occasional squalls, without much wind, but some rain. Middle part, partially cleared off; breeze still moderate. Latter part, cloudy again; breeze light. At 6 a. m. up with Cape St. Roque, 2¾ days from the equator."

Ship Australia, (N. J. Kinsman, captain,) New York to Melbourne, 10 days out.

"Feb. 5, 1856. Lat. 29° 03′ N.; long. 43° 49′ W. Barometer, 29.97; temperature of air, 70°; water, 70°. Winds: SW. by W., SW. by W., SW. by W. Good breezes and clear; smooth sea.

Feb. 6. Lat. 27° 15′ N.; long. 41° 49′ W. Barometer, 29.97; temperature of air, 71°; water, 71°. Winds: SW., SW. by W., SW. by W. Moderate breezes. Latter part, squally appearances.

Feb. 7. Lat. 25° 33′ N.; long. 39° 57′ W. Barometer, 29.97; temperature of air, 72°; water, 72°. Winds: SW. by W., SW. by W., W.SW. Moderate breezes, and pleasant. At 11 a. m. wind hauled in a squall to north.

Feb. 8. Lat. 22° 36′ N.; long. 37° 52′ W. Barometer, 29.97; temperature of air, 70°; water, 73°. Winds: N., N.NE. to NE., NE. by E. Brisk trades and passing clouds.

Feb. 9. Lat. 19° 25′ N.; long. 36° 44′ W. Barometer, 30.04; temperature of air, 72°; water, 74°. Winds: NE. by E., E.NE., NE. by E. Brisk trades and passing clouds.

Feb. 10. Lat. 16° 27′ N.; long. 35° 55′ W. Barometer, 29.97; temperature of air, 74°; water, 74°. Winds: E.NE., E. by N., E. by N. Fresh trades and passing clouds, with occasional squalls.

Feb. 11. Lat. 13° 35′ N.; long. 34° 47′ W. Barometer, 29.91; temperature of air, 75°; water, 75°. Winds: E., E. by N., E. Strong trades and squally weather.

Feb. 12. Lat. 10° 41′ N.; long. 33° 47′ W. Barometer, 29.88; temperature of air, 76°; water, 77°. Winds: E. by N., E.NE., E.NE. Fresh trades and squally.

Feb. 13. Lat. 8° 16′ N.; long. 32° 08′ W. Barometer, 29.81; temperature of air, 78°; water, 78°. Winds: E. by N., E.NE., E.NE. Fresh breezes and flaws.

Feb. 14. Lat. 5° 45′ N.; long. 29° 57′ W. Barometer, 29.78; temperature of air, 78°; water, 79°. Winds: E.NE., E.NE., NE. by E. Good breezes and pleasant.

Feb. 15. Lat. 3° 02′ N.; long. 29° 26′ W. Barometer, 29.77; temperature of air, 80°; water, 80°. Winds: NE. by E., NE. by E., E.NE. to S.SW. and E. by S. Good winds and cloudy. At 9.40 a. m. wind hauled to south, with rain.

Feb. 16. Lat. 1° 31′ N.; long. 29° 37′ W. Barometer, 29.77; temperature of air, 79°; water, 80°. Winds: E. by S. to E. by N., E. by S. to E. by N., E. by N. First and middle parts, lightwinds and rainy; sharp lightning to the southward and eastward. Latter part, moderate and squally appearances; ends with squalls and heavy rains.

Feb. 17. Lat. 0° 07′ S.; long. 30° 09′ W. Barometer, 29.76; temperature of air, 82°;

water, 80°. Winds: NE. by E. to E. by S., SE. by E., S.SE. to SE. by E. Comes in with heavy rain and light wind; middle part, squally, with rain and light breezes. At 11 a. m. crossed the line, in 22 days and 21 hours from Sandy Hook light-ship. Latter part, light winds and pleasant.

Feb. 18. Lat. 2°. 32′ S.; long. 31° 05′ W. Barometer, 29.73; temperature of air, 83°; water, 81°. Winds: SE. by E., SE. by E., SE. to SE. by E. First and middle parts, moderate and pleasant. Latter part, the same. At 9.30 a. m. squally from the eastward, with fine rain.

Feb. 19. Lat. 5° 20′ S.; long. 31° 47′ W. Barometer, 29.73; temperature of air, 85°; water, 81°. Winds: SE. by E., SE. by E., SE. by E. Moderate and pleasant."

Ship Cathedral, (W. H. Howard, captain,) Boston to Callao, 11 days out.

"Feb. 10, 1856. Lat. 28° 58′ N.; long. 35° 00′ W. Barometer, 30.15; temperature of air, 62°; water, 68°. Current, ½ knot, south. Winds: W., W.SW., SW. Gentle westerly winds and pleasant. Large quantities of weed.

Feb. 11. Lat. 27° 18′ N.; long. 33° 50′ W. Barometer, 30.25; temperature of air, 64°; water, 68°. Winds: SW. by W., W.SW., W.SW. Gentle breezes and fine weather, with smooth water.

Feb. 12. Lat. 26° 02′ N.; long. 32° 00′ W. Barometer, 30.30; temperature of air, 68°; water, 66°. Winds: W.SW., SW., SW. Fine weather and light breezes, a swell setting from the NE. No weed.

Feb. 13. Lat. 24° 27′ N.; long. 31° 02′ W. Barometer, 29.81; temperature of air, 66°; water, 66°. Winds: SW., W., E. First part, light westerly winds; latter part, wind shifted, in a squall, to the eastward. I think we have now the regular NE. trades, and shall run for the long. of 30° and lat. 10°, according to Lieut. Maury's recommendation.

Feb. 14. Lat. 20° 18′ N.; long. 29° 30′ W. Barometer, 30.25; temperature of air, 69°; water, 70°. Winds: E., E.NE., NE. Fresh breeze and clear. No weeds nor birds. I shall now make a due south course.

Feb. 15. Lat. 16° 00′ N.; long. 29° 00′ W. Barometer, 30.30; temperature of air, 70°; water, 70°. Winds: NE., E.NE., E.NE. Brisk breeze, and at times light showers of rain. No weeds nor birds.

Feb. 16. Lat. 11° 51′ N.; long. 29° 40′ W. Barometer, 30.30; temperature of air, 72°; water, 72°. Winds: E.NE., E.NE., E.NE. Brisk winds and pleasant. As yet we have not had four hours calm since leaving Boston.

Feb. 17. Lat. 7° 59′ N.; long. 30° 40′ W. Barometer, 30.30; temperature of air, 76°; water, 77°. Winds: E.NE., E.NE., E.NE. Brisk breezes and clear, beautiful weather. Large numbers of flying fish. The wind has held for the last four days from E.NE. with singular regularity. The barometer, also, has hardly varied one-tenth. Sailed in the last four days 1,068 miles.

Feb. 18. Lat. 4° 35′ N.; long. 30° 16′ W. Barometer, 30.10; temperature of 78°; water, 78°. Current, 1 mile, south. Winds: E.NE., E.NE., E.NE. Moderate breezes and pleasant.

Feb. 19. Lat. 1° 52′ N.; long. 30° 45′ W. Barometer, 30.02; temperature of air, 78°; water, 78°. Current, 1 mile, south. Winds: E.NE., E., E.NE. First part, pleasant breezes, during the night heavy showers; latter part, gentle breezes and clear.

Feb. 20. Lat. 00° 03′ N.; long. 31° 17′ W. Barometer, 30.02; temperature of air, 78°; water, 80° Winds: E., E., SE. by S. Commences with gentle breezes, and through the

night heavy showers of rain. In the morning, wind hauled to SE. by S., with clear weather, 45 miles north of the equator. I think we have now the regular SE. trades, and I shall not tack till the last moment.

Feb. 21. Lat. 2° 43′ S.; long. 32° 30′ W. Barometer, 30.02; temperature of air, 81°; water, 81°. Winds: SE. by S., S.SE., SE. Gentle breezes and clear. At 1 p. m. crossed the equator, 21 days from Boston.

Feb. 22. Lat. 4° 42′ S.; long. 33° 43′ W. Barometer, 30.02; temperature of air, 81°; water, 80°. Current, 1 mile, S. by W. Winds: SE., S.SE., SE. by S. Clear, pleasant weather, and light breezes. Tacked at 8 p. m., and stood four hours E.NE., to clear the Roccas. I would remark again the singular regularity of the barometer, it having varied very little the last four days.

Feb. 23. Lat. 6° 32′ S.; long. 34° 50′ W. Barometer, 30.05; temperature of air, 80°; water, 80°. Current, 1½ mile, west. Winds: SE., SE. by S., S.SE. Fine weather and gentle breezes. At 2 a. m. found ourselves in green water, with land in sight; tacked to the NE. At 8 a. m. tacked to the southward. At 12 Cape Blanco bore SW. by S., 16 miles distant."

COMPUTED ROUTE FROM NEW YORK TO RIO—*February.*

Latitude.	Longitude.	Course.	DISTANCES.			WINDS; PER CENT.					Total number of observations.
			True.	Per cent.	Average.	Head.	Slants from— N'd or E'd.	Slants from— S'd or Wd.	Fair.	Calms.	
From 40° 27′ N.	74° 00′ W.										
39 11	To 70 00	E.S.E.....	199	5.1	209	1.3	7.3	5.9	85.5	6.2	303
37 33	65 00	E.S.E.....	256	2.7	263	0.0	5.7	2.3	92.0	4.5	87
35 53	60 00	E.S.E.....	263	1.2	280	7.0	9.0	6.0	84.0	1.0	100
35 53	55 00 *d*	E.....	243	7.2	260	3.0	5.0	4.0	88.0	1.0	100
35 00	53 12	E.S.E.	144	5.7	151	1.3	12.2	14.6	78.4	4.0	74
33 21	50 00	S.E.....	225	0.0	225	0.0	0.0	0.0	100.0	3.5	28
32 54	48 13	E.S.E.....	98	2.1	100	0.0	5.5	5.5	88.9	0.0	18
30 00	45 00	S.E.....	240	3.8	249	0.0	5.5	11.1	83.4	0.0	18
25 38	40 00 *d*	S.E.....	372	0.0	372	0.0	0.0	0.0	100.0	0.0	20
25 00	40 00	S.....	38	11.5	42	3.7	14.8	7.4	74.1	18.2 *e*	27
20 00	37 45	S.S.E.....	324	9.3	354	4.8	1.6	3.2	90.3	3.1	62
15 00	35 35	S.S E.....	324	1.6	329	0.0	*w* 8.0	0.0	92.0	0.0	25
10 00	33 28	S.S.E.....	324	0.0	324	0.0	0.0	0.0	100.0	0.0	31
5 00	31 23 *d*	S.S.E.....	324	0.0	324	0.0	0.0	0.0	100.0	5.3 *e*	18
Equator.	31 23 *d*	S.	300	3.7	311	0.0	*w* 14.7	0.0	85.3	2.7	108
1 00 S.	32 00	S.S.W. ¾ W....	72	5.1	76	0.0	*w* 19.0	0.0	81.0	1.7	289
3 00	32 50	S.S.W.....	130	6.5	138	0.0	*w* 21.6	0.0	78.4	0.0	28
3 24	33 00	S.S.W.....	26	0.0	26	0.0	.....	0.0	100.0	0.0	9
5 00	33 40	S.S.W.....	104	3.0	107	0.0	*w* 25.0	0.0	75.0	0.0	12
7 00	33 40 *d*	S.....	120	0.0	110	0.0	0.0	0.0	100.0	0.0	11
7 48	34 00	S.S.W.....	52	0.0	52	0.0	0.0	0.0	100.0	0.0	22
9 00	34 30	S.S.W.....	78	5.2	82	0.0	*w* 13.0	0.0	87 0	0.0	23

Shortest distance to the equator by this route, 3,674 miles. Average distance to be sailed on account of adverse winds, 3,793.

The route for this month is one of the most favorable. In no part of it is the average of winds that are entirely fair less than 74 in 100, and generally the northern or larboard side is the windward side. The passage to the line has been frequently made by vessels that have followed this route in 19, 18, and even 16 days.

Time and Crossings to the "Fair Way" off St. Roque—February.

Name of vessel.	From—	Date of sailing	Longitude of crossing the meridians of—																Total days to—	
			Days.	30° N.	Days.	25° N.	Days.	20° N.	Days.	15° N.	Days.	10° N.	Days.	5° N.	Days.	Line.	Days.	3° S.	Line.	St. Roque.
Coloma	New York	Feb. 1, 1851	10½	46	2½	38	3	35	2	32	2	29	2	25½	5	26	1¾	29	27	30
Stag Hound*	do	1, 1851	9	41	2	34	2	32	2½	30	1½	29	1½	28	1¾	28	1	30	20¼	21
Polynesian	Philadelphia	2, 1854	6¼	53	5¾	41	6	35	2½	35	1½	33	1¼	31	4	32	2¼	33	27¼	31
Kate Hays	New York	3, 1852	10	49	8	42	3	38	2¼	35	1¾	31	1½	29	2¾	28½	3	29	29¼	33
Phantom	Baltimore	4, 1854	10½	44	3½	39	4¼	38	2	37	2	34	1¾	31½	3	30½	1½	32	27	29½
Marian	Philadelphia	4, 1853	12	46	3	37	6	31	3	30	1¼	30	1¾	30	4	30½	2	32	31	34
Cœur de Lion	Boston	5, 1854	10	37	5	36	3	37	1½	36	1½	31½	1½	29	3½	27½	1¼	29½	26	28
Isabelita Hyne	New York	5, 1852	6½	56	2	54	2	51	2	50	2¼	45	3½	39	3¼	33	2¼	34	21½	24½
Tagus	do	6, 1851	10	46	3	39	2	38	2½	36	2½	34	4	28½	3½	28½	2½	31	27½	31
Wallace	Boston	6, 1852	18	44	4	43	4	39	3	36	3	32	2½	30	5	29½	3	31	39½	43¾
Golden State	New York	8, 1853	10½	41	4¼	36	4	32	1¾	30	1½	29½	1½	28	2¾	28½	1½	30	26¼	29½
George Morton	do	8, 1853	9½	44	2½	39	4½	34	2½	32	1¾	31	1½	30	2¼	30	1½	32	24½	26¾
Frederick Demming*	do	8, 1851	8	47	3	40	2	35	2¼	33	1¾	31	1¾	29	1¾	29	1	29	20½	22½
Surf	do	8, 1854	5	62	3	54	4½	43	3½	39	2¼	36	2¾	31	3	30	1½	31	24	26½
Cornelia	Philadelphia	9, 1853	17	36	2¼	35	1¾	34	1¼	33	2	32	1½	30	2	29	2	31	27¾	31
Paragon	New York	9, 1853	10	44	6	35	2½	31	1½	29	1¼	28½	1¾	27	4	27¾	2	29½	27	30
Ariel	do	9, 1853	11	42	3½	37	3½	31	2	30	1¾	39½	1½	29	3¾	30	2	29½	27	30
Herculean	do	10, 1853	12	46	4	37½	2	35	2	33	2	31½	2	29	2½	28	2½	30	26½	30
Tinggua*	Philadelphia	11, 1854	7	42	3	42	2	40	2	37½	1¾	33	1	32	3¼	31	1	32½	20	21¾
Vernon	New York	11, 1854	15	42	5	39	2¼	37	2	35	2	32	2	30	2½	30	2¼	31	30¾	34¼
Sea Serpent*	do	12, 1853	6	48	4	44	2	39	3	36	1½	34	1½	31	1¾	30	1¼	31	19¾	21½
Malsem	do	12, 1851	8	57	11	39	5½	40	2	40	2½	37	1½	34	5½	32	2	33	36	44
Lurman	do	12, —	8	52	3	48	13	37	2¾	35	1¾	32	1¾	28	5	28	2	30	35¼	38¼
Stephen Lurman	do	12, 1851	8¼	52	12¾	36	3	37	3	35	2	32	2	28¼	5¼	28	1¾	30	36¼	39½
Francis	do	12, 1851	12	53	9	38	5	40	3	38	3	34	2¼	30	5	29	2¾	31½	39¼	43½
Daniel Webster	do	12, 1853	14	40	3	40	2½	38	2	37	2¼	32	2	29	2½	28	5	28	28½	34½
R. S. W. Dodge	Boston	12, 1854	8	46	8	32½	4	38	1½	36½	1¾	33	1½	31	3¼	32	1	32½	28	29¾
Eliza Thornton	New Bedford	13, 1853	10½	51	2½	46	3½	42	3	41	3	39	3¾	32	3½	29½	4¼	29¾	29¾	35½
Sword Fish	New York	13, 1853	11	38¾	2¼	37	1¾	36	1¼	34½	1	33	1¼	30	3¾	29	1¾	29½	22¼	25
Eastern State	do	13, 1852	11¼	39	2¾	35	2	34	3	30	2¼	29	2	30	1½	30	2¾	31	24¾	28
Candase	do	13, 1853	8	48	5	37	2	34	1½	33	1½	31	2	30	2¾	30	1½	29½	22¾	25¼
Storm	do	14, 1853	10	42	2	38	2	35	1¼	33	2	32	2	30	2¼	30	1¼	32	21½	23¾
Arcole	Philadelphia	16, 1851	12½	44	4½	39	6	39½	2¼	37	2	33½	2	30½	4¼	28¼	1¾	29	33½	36
Havana	Richmond	17, 1854	11½	39	4	38	3¼	39	2	37	2	34	2¼	32	2¾	31	1¾	33	27¾	30½
Pamelia	New York	18, 1853	12	42	2	39	2	37	3	33	2	30	1¾	28½	3¼	28	3	27½	26	30
Rouble	do	18, —	11	43	2	38	3	35	2	33	1¼	32	2	30	5¼	30	2¼	32	26½	29¾
Houqua	do	18, 1852	10¼	41	1¾	37	2	35	2	34	1¼	33	1¾	30	2¼	29½	1½	31	21¼	23¾
Hampton	do	19, 1853	19	38	2	37	2	33	2	31	2	30	2	29	2	29½	3¼	30	31	35¼
Sirocco*	New York	20, 1853	10	39½	2	35	1½	33	1½	31	1¼	30	1½	28	2¾	28	5¼	29	20½	26¾
New York	do	20, 1853	10	46	3	43	2	40	2¼	35	2¼	32	2	28½	2½	28½	2¼	29	24	27½
Archer	do	20, 1853	13	45	2	47	2	45	3½	41	2½	35	2	30¼	1¾	29¼	2¼	30	26¾	30½
William Priner	Philadelphia	20, 1853	17	42	3	37	2	34	2½	32	2¼	28	1¾	27	2¾	26½	2½	29	31¼	34¾
Sacramento	New York	21, 1851	11	43	4	40	3	39	2	37	3	31	2	27	4½	27	1¾	28	29½	32¼
Maria	do	21, 1852	8½	48	1¾	42	2½	38	2¼	34	1¾	31	1½	29	3	29	1¾	31	21¼	24
Main Law	do	22, 1855	12	39	2½	39	2½	37	2½	34	2½	31	1¼	29	4¼	29½	1¼	32	27½	29¾
Houqua	do	22, 1853	16	44	1½	43	2½	40	3	35	1¼	33	1¾	30	2½	29	2	30	28½	31¼
Acorn	Richmond	22, 1852	12	46	3	45	3	40	5	34	3½	31	2½	29	4	29	3	30	33	38
Dragon*	Salem	23, 1854	9	36	2¼	35	1½	35	1¼	35	1¼	34	1¾	31	2	30½	1¾	32	19	21½
Tornado	New York	23, 1852	10	47	3	39	2	37	1¼	36	1¾	32	1½	30	5¾	29	1½	30½	25¼	28
Robert Harding	Boston	23, 1853	16	37	1¾	35	1½	33	2¼	31	1¾	29	2	28	2¼	28½	3	29	27½	31¾
Candace	New York	23, 1852	10¾	47	2¼	41	3½	41	3½	39	5	35	2¼	32	2½	28½	3	31	29¾	34
Weybassett	do	23, 1854	14½	38	6½	35	2	34	2	32	2	29	2	26	3	25½	2	26	32	35
M. Howes	do	23, 1852	13	40	4¼	32	3¾	29	3	27½	4	26½	2	26	5½	26	2½	27½	35½	40½
Albert Franklin	do	24, 1854	15	41	6	38	2¼	36	2½	32	1½	30½	2	28	3¼	26	1¾	26¼	32½	35½
Gleaner	do	24, 1854	13	38	7	38	2	37	3	33	2¼	30	1¾	28	2¾	27¼	2½	29½	32	36
Petrel	Philadelphia	24, 1853	14	37	1½	35	2	33	1¾	31	1¾	30½	1¾	29	2	29½	2½	31	24¾	27¾
Sartelle	Cape Henry	25, 1853	13	41	2	40	2¾	37	2¼	34	2¼	32	2½	30	3¼	29	3¼	30	28	34
Stag Hound	New York	25, 1853	13	35	1¼	34	1¼	34	1½	33	1¼	32	1¼	31	1¾	29½	1	31	21¼	23
Kate & Alice	do	26, 1853	12	40	2	38	2	35	2½	33	2¼	28	1½	27	3¼	27	2	27	25½	28½
Hugh Birckhead	Baltimore	26, 1853	11	46	2	42	2	41	3	35	2	32	1¼	31	2	30	2	31	23¼	26¼
Roscoe	New York	27, 1853	12¼	48	11¼	34	2¾	32	1½	31½	1¾	30	1¼	29	2½	28	1¼	29¼	33¾	36
Tremont	Boston	27, 1853	13	41	2¼	39	2¾	35	2	32	2	28	1¼	28	2¾	26	2	28	26	29
Morgan Dix	do	27, 1850	10	44	3	39	2	37	1¼	35	2	33	1¾	30	3¼	31	1¾	32	23½	26¾
S. S. Bishop	Baltimore	27, 1854	8¾	47	2½	43	1¾	41	1¼	39	1¾	37	2	32	4	30	1¼	31	22	24
Mary McRea	Wilmington, N. C.	28, 1854	13½	48	6½	42	3	40	3½	38	2	35	2½	30	4¼	28	5¼	31	35¼	41¾
Means to 7th edition			11.0	43¾	3.5	39¼	2.9	38½	2.2	34¾	2	32¼	1.9	29¾	3.2	29¼	2.2	30½	26.7	30.2
Chimborazo	New York	Feb. 1, 1857	15½	41	1¾	39	1¾	36½	2	33	1½	31	1½	30	4	30	2	31½	28	31
Phœnix	do	1, 1855	10	39	2	35	3	29	3½	28	1½	28	1¼	28	3	30	1½	30	24¼	27
Santa Cruz	do	1, 1857	16	45	2	44	1	43	3	41	2	39	2	36	3¼	34½	2¼	35½	29¼	31¼
Euterpe	do	1, 1855	9	39	1¾	35	3¼	31	3¾	28	1½	28	1¾	29	2¼	32	1¼	33	23¼	25¾
Gertrude	do	3, 1855	9	41	2	36	2¾	28	2½	26	2	27	1¾	27	3¼	29	1½	31	23¼	25
Hindostan	Boston	3, 1857	11¼	42	1¾	39½	2	36	2	33	1½	30	1¼	28	4	28	1¾	30½	23¾	25¾
Boston	do	3, 1856	8	51	4	43	2	43	3	40	3	37	2½	33	3	31	2½	32	25½	28½
Witchcraft	do	7, 1857	9½	48	1½	47	1½	46	1¾	46	2	45	2¼	39	3¼	39	6	37	21¾	28
Z. D.	do	7, 1857	13	44	8	35	2	33	1½	32	1½	30	1¾	29	3¼	29	2¾	31	31	34¾
Eagle	New York	9, 1857	17¼	42	2¾	39	2	36	1¼	34	1¾	31	2	30	2½	30	1¾	31	29½	31¾
Star of Hope	do	10, 1856	11	48	5	39	6	33	1¾	31	1½	30	1½	29	3½	30	1¾	31	30¼	32¾
Mary Wilkins	do	12, 1856	7	38	6½	36	2	37	2¼	37	2¼	34	2	30	2	30¼	1	32	24	26
G. W. White	do	17, 1855	18	36	2	34	1¾	34	1½	33	2	31	1¾	29	3	29	2½	30	30	32¼
Samuel White	do	17, 1855	17	37	3	34	1¾	34	1½	33	2	31½	1¾	29¼	3¼	28¾	2	30	30¼	33¼
Dashing Wave*	Boston	18, 1855	7	44	2½	43	1½	41	1¼	38	1½	37	2½	35	4¼	33½	2¼	32	20½	23½
W. H. Stewart	New York	19, 1856	9	50	4	39	2	37	1¾	34	1½	34	1¾	32	2¼	31	1½	32	22¼	25
White Swallow*	do	21, 1856	7½	45	2	40	2½	35	1¾	34	1	33	1¼	31	1¾	31	1	32	17¾	18¾

Time and Crossings to the "Fair Way" off St. Roque—February—Continued.

Name of vessel.	From—	Date of sailing	Longitude of crossing the meridians of—																Total days to—	
			Days.	30° N.	Days.	25° N.	Days.	20° N.	Days.	15° N.	Days.	10° N.	Days.	5° N.	Days.	Line.	Days.	3° S.	Line.	St. Roque.
Sweepstakes*	New York	Feb. 21, 1856	7	39	2¼	34	2¾	29	1½	29	1	29	1¾	30	1¾	30⅛	1½	31	18	20¼
Ann Maria	do	21, 1857	15½	46	3½	44	3	42	3	40	3	36	2½	32	4¾	27½	2	30	35¼	38¼
Elvira	do	22, 1857	12⅛	40	1¾	37	1¾	35	1¼	33	1¾	31	1¼	30	6	29	2	30	26¼	29¼
Wampanago	Boston	23, 1857	15	42⅛	2	41	3	39	3	36	4	32	2	28	5¼	29	1	29⅛	34¼	36
Atlanta*	New York	23, 1855	9⅛	40	2¾	36	1	35½	1⅛	33	1	30½	1½	30½	2¼	31	1⅛	33	19⅛	21
Geneva	Boston	24, 1857	13⅛	38	2	36	2	34	2	32	1⅛	29	2	27½	3⅛	27	1½	28	26⅛	29⅛
Blondel	do	26, 1856	11	41	2¼	36	2⅛	33	3¼	31	2¼	29	2	28	2½	29	2¼	30	25¾	29
Mandarin	New York	27, 1857	16	37	3	36	1¼	35	1	34	1¾	30¾	1¼	29	6	29	1	30	30¼	31¾
Parana	do	28, 1856	12	44½	3	39	4	33	2¼	31	1¾	31	1¼	30	3	30	1½	31	27¼	28¼
Means after 7th edition			11.8	42½	2.9	38¼	2.3	35¾	2.1	34	1.9	32	1.8	30¼	3.3	30¼	1.9	31¼	26.1	28.5
Means of best 10			8.0	42	2.6	38¼	1.9	35½	1.8	33⅛	1.3	32	1.6	30½	2.4	30¼	1.7	31	19.6	21.8

Ship "Boston," from New York to Acapulco, Capt. Jesse D. Potter, 18 days out.

"Wednesday, Feb. 20, 1856. Lat. 15° 35′ N.; long. 40° 00′ W. Throughout these 24 hours brisk breezes from E. and E. by N., and occasional flaws with the passing clouds. Royals furled. Sea tolerably smooth. Barometer gradually falling for the past week.

I have always found the barometer in the tropics to range between 29.90 and 29.70, where the 'trade' winds or 'monsoons' were blowing; and on approaching the variables outside the tropics, I have always found the barometer rising.

Thursday, Feb. 28. Lat. 00° 30′ N.; long. 30° 20′ W. Throughout these 24 hours gentle and light breezes, varying from NE. to SE., with frequent moderate rain showers. Met a SE. swell. All sail set throughout. Have made the shortest passage to the equator this voyage I ever made, (this is the eighteenth time I have crossed the equator, outward bound,) and the deepest draft ship in proportion I ever was in, which satisfies me that the route Mr. Maury has projected or pointed out has great advantages over the old route to the equator."

Ship "George Raynes," (Capt. Nathan A. Bachelder,) from Boston to San Juan del Sur.

"March 13, 1856. Lat. 0° 27′ S.; long. 28° 27′ W. Wind: SE. to S. Crossed the equator 11 p. m., 23½ days from Boston.

The "George Raynes" is what may be called a good profitable freighting ship. Carries a large cargo, and sails as well as the average of full ships; is 1,000 tons burden, and quite deep this voyage, (having on board 1,535 tons coal, and 30,000 feet of lumber, making, in all, good 1,600 tons, dead weight;) ship drawing 21 feet 6 inches water; the most that she will sail now, being so deep, is 8 or 8½ knots. Good luck, with your valuable information to guide us, has thus far shortened our passage 10 or 12 days. I think a clipper ship, with the same chance, would have done it in 16 days. Distance sailed is 3,620 miles."

North of the equator there appears to be a pretty regular set, about a knot an hour, in February and March, as per this bottle paper:

"Latitude 00° 46′ N.; longitude 39° 16′ W. Barque "May Queen," of Baltimore, Capt. E. P. Johnson, from Rio de Janeiro to Baltimore. All well. February 10, 1857. Whoever finds this bottle will please send the enclosed to Lieut. M. F. Maury, National Observatory, Washington, D. C."

The bottle containing this paper was picked up April 9, 1857, on the east coast of the Island of Trinidad, lat. 10° 36′ N.; long. 61° W., by Mr. John Carter, and forwarded by Edward B. Marache, esq., U. S. consul, to the National Observatory, Washington.

Now, it appears that this bottle was carried to the northward and westward, in a direction nearly at right angles with that of the wind, 1,420 nautical miles in 58 days, which shows a current of about a knot an hour. I think this a very good determination as to the movements of the waters in that part of the ocean at this season of the year.

Ship Enterprise, (Joseph Airey, captain,) New York to Calcutta, 8 days out.

"Feb. 9, 1855. Lat. 30° 10′ N.; long. 38° 26′ W. Barometer, 29.80. Winds: NW. by W., N. by W., N. by W.; first part, fresh gales and high sea; middle and latter parts, moderate breezes and cloudy.

Feb. 10. Lat. 26° 34′ N.; long. 36° 51′ W. Barometer, 30.05. Winds: N., N. by E., N.NE. Commences with pleasant weather and fine breezes; ends with light breezes and cloudy; passed large quantities of gulf-weed; winds appear like trades.

Feb. 11. Lat. 24° 27′ N.; long. 35° 08′ W. Barometer, 30.10. Winds: N.NE., N. by E., N.; moderate breezes throughout, and pleasant.

Feb. 12. Lat. 23° 02′ N.; long. 34° 00′ W. Barometer, 30.00. Winds: N., N., N.; first part, light winds and pleasant; middle and latter parts, light airs and cloudy.

Feb. 13. Lat. 21° 43′ N.; long. 33° 38′ W. Barometer, 29.80. Winds: N. by W., N. by W., N. by W. Commences with light, baffling airs; middle and latter parts, light air and calms, sky overcast.

Feb. 14. Lat. 20° 30′ N.; long. 31° 07′ W. Barometer, 29.80. Winds: N.NW., W.SW., S.SW.; first, calm and pleasant; middle, fresh; ends the same.

Feb. 15. Lat. 19° 09′ N.; long. 27° 49′ W. Barometer, 29.80. Winds: S.SW., SW.; S.SW. Commences fresh breezes and pleasant; middle, fresh variable winds and cloudy; ends moderate.

Feb. 16. Lat. 18° 39′ N.; long. 26° 49′ W. Barometer, 29.70. Winds: S.SW., S.SW., SW. Commences moderate breezes and pleasant; middle and latter, light airs and pleasant, heavy thunder in the NW.

Feb. 17. Lat. 17° 47′ N.; long. 27° 8′ W. Barometer, 29.70. Winds: calm, NE., NE.; first and middle, calm and pleasant; latter, light breezes and cloudy, heavy sea from NW.

Feb. 18. Lat. 14° 24′ N.; long. 27° 26′ W. Barometer, 29.80. Winds: NE., NE., NE. Commences light breezes and pleasant; middle, fresh and cloudy; ends with fine trade-winds and passing clouds.

Feb. 19. Lat. 10° 54′ N.; long. 28° 00′ W. Barometer, 29.80. Winds: E.NE., E.NE., E.NE. Fine trade-winds throughout and passing clouds.

Feb. 20. Lat. 8° 08′ N.; long. 28° 29′ W. Barometer, 29.80. Winds: NE., E.NE., E.; first and middle, moderate breezes and cloudy; latter, light winds and sultry weather.

Feb. 21. Lat. 4° 57′ N.; long. 28° 41′ W. Barometer, 29.70. Winds: E.NE., E., E. Commences moderate breezes and pleasant; middle, black, heavy clouds passing; squally appearances; ends light winds and a heavy sea from the SE.

Feb. 22. Lat. 2° 24′ N.; long. 29° 32′ W. Barometer, 29.60. Winds: E. by S., SE. by S., SE. by S. Begins with moderate breezes and fine weather; middle, squally, with rain; latter part, moderate.

Feb. 23. Lat. 0° 11′ N.; long. 31° 38′ W. Barometer, 29.50. Winds: SE., S.SE., S.SE. Light breezes throughout, and passing clouds; tide rips.

Feb. 24. Lat. 2° 50′ S.; long. 32° 57′ W. Barometer, 29.62. Winds: SE. by S., SE. by S., SE. by S. Fine breezes throughout; passing showers.

Feb. 25. Lat. 3° 55′ S.; long. 33° 30′ W. Barometer, 29.45. Winds: E. by N., SE., SE.; first and middle parts, light winds and sultry; ends light variable airs.

Feb. 26. Lat. 6° 40′ S.; long. 33° 28′ W. Barometer, 29.45. Winds: SE., SE., SE. by E.; first, increasing winds; middle and latter, fresh variable winds, and squally, with rain."

Brig William H. Stewart, (G. A. Scales, captain,) New York to Pernambuco, 10 days out.

"March 1, 1856. Lat. 27° 47′ N.; long. 40° 54′ W. Barometer, 29.90. Wind: southward and westward; fresh and cloudy.

March 2. Lat. 25° 38′ N.; long. 39° 19′ W. Barometer, 30.02. Wind: from the northward; much sea-weed and many flying fish; studding-sails on both sides.

March 3. Lat. 23° 04′ N.; long. 37° 39′ W. Barometer, 30.03. Wind: northward and eastward. All sails and port studding-sails set. Passed great quantities of weed.

March 4. Lat. 20° 18′ N.; long. 36° 23′ W. Barometer, 30.02. Wind: northward and eastward; latter part, eastward.

March 5. Lat. 17° 19′ N.; long. 35° 05′ W. Barometer, 30.02. Wind: easterly; fresh breezes and heavy passing clouds from E.NE.; sharp wind.

March 6. Lat. 14° 06′ N.; long. 34° 11′ W. Barometer, 30.03. Wind: northward and eastward; fresh, with dark passing clouds.

March 7. Lat. 11° 03′ N.; long. 33° 31′ W. Barometer, 30.01. Fresh breezes and cloudy, with the wind NE. by N.

March 8. Lat. 7° 52′ N.; long. 32° 57′ W. Barometer, 30.00. Fresh breezes from NE. by N., and cloudy; ends fresh from NE. by E., with light passing squalls. Set port, top-mast, and top-gallant studding-sails.

March 9. Lat. 4° 36′ N.; long. 32° 16′ W. Barometer, 30.00. Fresh breezes from east, and cloudy; studding-sails set; latter part, fresh, with passing squalls and slight rain.

March 10. Lat. 2° 19′ N.; long. 31° 38′ W. Barometer, 29.90. Winds: NE. to E., E.SE., SE.; fresh winds and passing squalls; middle part, cloudy, and baffling winds, with rain; ends, light baffling winds and squally.

March 11. Lat. 0° 14′ S.; long. 31° 16′ W. Barometer, 30.00. Winds: NE. to E., E.SE., E., and calm; light baffling wind and constant rain; middle, steady at E., no rain, wind quarterly, and smooth sea; latter part, light airs and calms, and constant rain. Great numbers of Mother Carey's chickens.

March 12. Lat. 1° 34′ S.; long. 30° 53′ W. Barometer, 30.00. In the doldrums. Light breezes and calms, and squalls of wind, with rain. Lightning in the SE.

March 13. Lat. 3° 40′ S.; long. 31° 41′ W. Barometer, 30.00. Current, 1½ miles, W.NW.; variable winds and calms, with rain, thunder, and lightning. At 4 a. m. fresh breeze from SE.; ends moderate breezes from SE.

March 14. Lat. 5° 28′ S.; long. 32° 16′ W. Barometer, 30.00. Current, ½ mile, W. Light winds and clear from SE.; middle part, fresh; latter part, moderate."

Ship Sweepstakes, (George E. Lane, captain,) New York to San Francisco, 7 days out.

"Feb. 28, 1856. Lat. 29° 23′ N.; long. 39° 20′ W. Barometer, 29.90; temperature of air, 69°; water, 67°. Winds: SW. by S., W.SW., W.NW.; first part, fine breeze, with few passing showers; middle, the same; latter, nearly calm. Horse latitudes, I guess, beginning. Saw a few sprigs of gulf-weed—first seen.

Feb. 29. Lat. 27° 40′ N.; long. 37° 40′ W. Barometer, 29.80; temperature of air, 71°; water, 69°. Winds: SW., SW., SW. by S.; first part, moderate and nearly calm, until 5 p. m.; middle and latter, gentle breeze and clear fine weather."

Ship White Swallow, (Nat. Brown, jr.,) first day out.

"Feb. 21, 1856. Lat. 38° 34′ N.; long. 70° 46′ W. Barometer, 29.85. At 5 p. m. took departure from Highlands of Neversink, bearing W. 15′ distant. Middle, fresh breezes and overcast; latter parts, moderate; all studding-sails out, steering SE.

Feb. 22. Lat. 37° 37′ N.; long. 67° 23′ W. Barometer, 29.80; temperature of water, 58°; moderate and overcast. At 10 p. m. wind veered northeastly; in studding-sails and braced up; ends moderate and fine; much mirage on the horizon.

Feb. 23. Lat. 36° 55′ N.; long. 63° 18′ W. Barometer, 29.85. First and middle, brisk winds, veering northwestward; latter, light and pleasant, all drawing sails set.

Feb. 24. Lat. 36° 45′ N.; long. 57° 58′ W. Barometer, 29.70. First part, increasing breezes and cloudy; middle, strong gales and large sea, shipping much water; latter parts, much the same, with squalls and high sea.

Feb. 25. Lat. 34° 56′ N; long. 54° 20′ W. Barometer, 29.80. Strong gales, violent squalls, and a heavy sea running; ship laboring, and taking much water on board; running under double reefs and foresail.

Feb. 26. Lat. 33° 39′ N.; long. 51° 16′ W. Barometer, 29.90; temperature of air, 62°; of water, 59°. Strong breezes and cloudy, running under double reefs and foresail; middle, moderating; ends, fresh breezes and passing squalls; high westerly sea continues; pass much gulf-weed—first seen.

Feb. 27. Lat. 31° 25′ N.; long. 46° 29′ W. Barometer, 29.90; temperature of air, 66°; of water, 63°. Fine fresh westerly breezes; top-gallant sails set, steering SE. ½ S.; hazy weather and damp; ends, moderately and very fine; all studding-sails set; much gulf-weed.

Feb. 28. Lat. 28° 44′ N.; long. 43′ 28′ W. Barometer, 30.00; temperature of air, 70°; of water, 70°. Fine breezes and hazy; middle and latter, moderating to a gentle wind; considerable NW. swell; all studing-sails set, steering S.SE., per compass.

Feb. 29. Lat. 26° 47′ N.; long. 41° 08′ W. Barometer, 29.95; temperature of air, 74°; of water, 70°. Light winds and hazy. At 9 p. m. wind veered SW.; at midnight freshened, and continues with brisk breezes at the close; fine weather, &c.

March 1. Lat. 24° 11′ N.; long. 37° 34′ W. Barometer, 30.00; temperature of air, 73°; of water, 70°. Brisk winds and fine weather; morning, light showers; all sail set by the wind; am sorry to get so far to the eastward.

March 2. Lat 22° 16′ N.; long. 35° 06′ W. Barometer, 30.05; temperature of air, 82°; of water, 71°. Moderate breezes and passing clouds; middle and latter, quite light, with delightful weather, steering by the wind.

March 3. Lat. 20° 02′ N.; long. 34° 37′ W. Barometer, 30.07; temperature of air, 83°; of water, 72°. Light airs and fine weather; night, hauling north; heavy bank to NE. At 3 a. m. squally, and heavy rain till 7 a. m.; latter, gentle breezes and hazy, cloudy weather; all sail out, steering S. ½ W., per compass.

March 4. Lat. 16° 36′ N.; long. 34° 32′ W. Barometer, 30.07; temperature of air, 84°; of water, 72°. Moderate trades and squally looking weather, sometimes light and showery. In my anxiety not to go too far east, I find that, having had a westerly current, I am not so far as I could wish; but the wind is still free enough to haul up a little to check it.

March 5. Lat. 12° 56′ N.; long. 33° 31′ W. Barometer, 30.05; temperature of air, 84°; of water, 74°. First part, very baffling, trying to be squally, but little wind, some fine rain; middle, the same; latter, fine fresh trade-wind and passing clouds.

March 6. Lat. 9° 00′ N.; long. 32° 14′ W. Barometer, 29.975; temperature of air, 84°. of water, 76°. Fine fresh trade-winds and pretty steady, with passing clouds; topmast studding-sails out, steering S. by E.

March 7. Lat. 5° 08′ N.; long. 30° 36′ W. Barometer, 29.95; temperature of air, 83°, of water, 78°. Fine trades and hazy weather; middle, the same; morning, inclining to be squally; ends fresh and hazy; noticed tide rips yesterday and to-day.

March 8. Lat. 1° 59′ N.; long. 29° 58′ W. Barometer, 29.90; temperature of air, 83°; of water, 78°. First part, moderating breezes and squally appearances. At 2 a. m. wind hauled SE. in a smart squall and much rain; latter, light winds from SE. to E. by S.; sultry weather and rough irregular swell; ends, a squall from SE.

March 9. Lat. 0° 48′ S.; long. 30° 48′ W. Barometer, 29.92; temperature of air, 84°; of water, 78°. Light airs, with some squalls and rain, with head swell; middle part, a few squalls and little rain; latter, very pleasant. Crossed the line about 6 a. m., 17 days 13½ hours from Sandy Hook.

March 10. Lat. 3° 39′ S.; long. 32° 12′ W. Barometer, 29.90; temperature of air, 86°; of water, 78°. Light winds, somewhat fine; sometimes a smart squall, with rain; morning, faint airs, squally appearances; latter, fine. Fernando de Noronha in sight, peak bearing SW. by W.

March 11. Lat. 6° 25′ S.; long. 33° 00′ W. Barometer, 29.925; temperature of air, 84°; of water, 79°. First and middle, variable, sometimes light and baffling, then hard squalls (?) and much rain, then good wind; latter, gentle breezes and beautiful weather.

March 12. Lat. 9° 43′ S.; long. 33° 43′ W. Barometer, 29.925; temperature of air, 86°; of water, 80°. Moderate winds and fine weather; middle, the same; latter, light and fine, smooth sea; ends, hauling east; set all port studding-sails."

Ship Atalanta, (F. M. Montell, captain,) New York to San Francisco, 10 days out.

"March 6, 1855. Lat. 29° 02′ N.; long. 36° 27′ W. Barometer, 30.10; temperature of air, 66°; water, 69°. Winds: SW., W.SW., S.SW. During the day, gentle breezes and cloudy weather; saw large quantities of sea-weed.

March 7. Lat. 25° 44′ N.; long. 36° 15 W. Barometer, 30.10; temperature of air, 66°; water, 68°. Winds: SE., S.SE., SE. First part, moderate breezes, with cloudy weather; middle and latter parts, squally.

March 8. Lat. 21° 30′ N.; long. 35° 30′ W. Barometer, 30.10; temperature of air, 68°; water, 70°. Winds: S.SE., S.SE., E.SE. During the day, strong breezes, with heavy squalls of wind and rain. Distance this day, per observation, 338 miles.

March 9. Lat. 17° 36′ N.; long. 34° 22′ W. Barometer, 30.00; temperature of air, 71°; water, 70°. Winds: E.SE., E.SE., E.SE. Strong breezes from the eastward, with frequent squalls.

March 10. Lat. 13° 38′ N.; long. 32° 58′ W. Barometer, 30.00; temperature of air, 75°; water, 75°. Winds: E.SE., SE. by E., E.SE. Strong breezes, with frequent squalls of wind and light rain.

March 11. Lat. 9° 25′ N.; long. 31° 35′ W. Barometer, 29.90; temperature of air, 76°; water, 77°. Winds: SE. by E., SE. by E., E. by S. Strong breezes, with clear weather.

March 12. Lat. 5° 35′ N.; long. 30° 41′ W. Barometer, 29.80; temperature of air, 79°; water, 79°. Winds: E.SE., E.SE., E. by S. Fine clear weather.

March 13. Lat. 2° 54′ N.; long. 30° 27′ W. Barometer, 29.80; temperature of air, 82°; water, 81°. Winds: E. by S., E., E. Moderate breeze and cloudy; think there is a current setting one mile per hour to the westward.

March 14. Lat. 1° 20′ N.; long. 31° 10′ W. Barometer, 29.80; temperature of air, 79°; water, 81°. Winds: E., E.SE., S.SE. Light baffling airs and calms, with heavy rain, thunder, and lightning; current setting to the westward, 15 miles per day.

March 15. Lat. 1°-21′ S.; long. 32° 40′ W. Barometer, 29.80; temperature of air, 81°; water, 81°. Winds: S.SE., calm, S.SE. First part, light airs and cloudy; middle and latter, fresh breezes and clear.

March 16. Lat. 2° 49′ S.; long. 33° 05′ W. Barometer, 29.75; temperature of air, 85°; water, 82°. Winds: SE. by E., SE. by E., SE. by E. Pleasant, with light breezes; saw large quantities of birds this morning at 8 a. m.

March 17. Lat. 3° 07′ S.; long. 32° 50′ W. Barometer, 29.65; temperature of air, 80°; water, 81°. Winds: S.SE., SE., SE. by S. Pleasant weather, with light breezes; a current of 36 miles per day to the westward.

March 18. Lat. 4° 00′ S.; long. 33° 00′ W. Barometer, 29.70; temperature of air, 81°; water, 81°. Winds: SE., SE., SE. by S. Pleasant weather and light winds.

March 19. Lat. 6° 21′ S.; long. 33° 50′ W. Barometer, 29.80; temperature of air, 84°; water, 82°. Winds: E.SE., E.SE., E.SE. Light airs during the day and fresh breezes all night."

Ship Sweepstakes, (George E. Lane,) from New York to San Francisco, 7 days out.

"Feb. 28, 1856. Lat. 29° 23′ N.; long. 39° 20′ W. Barometer, 29.90; temperature of air, 69°; water, 67°. Winds: W.NW. First part, moderate and nearly calm, until 5 p. m., when a breeze sprung up; middle and latter part, gentle breezes and fine weather. Distance run, 134 miles.

Feb. 29. Lat. 27° 40′ N.; long. 37° 40′ W. Barometer, 29.80; temperature of air, 71°; water, 69°. Winds: SW. by S. First part, fine and clear; middle part, fine breezes, and occasional showers of rain; latter part, fine breezes, all sails set. This wind taking me two far east in this latitude; cannot avoid it; hope to get the NE. trades soon. Distance run, 253 miles.

March 1. Lat. 25° 22′ N.; long. 33° 44′ W. Barometer, 29.95; temperature of air, 72°; water, 70°. Winds: SW. by S., SW. by S., S.SW. First part, fine and clear; middle, fine breeze; few showers; latter, fine breeze; all sail set. This wind is taking me too far east in this latitude; cannot avoid it; hope to get the NE. trades soon.

March 2. Lat. 23° 51′ N.; long. 30° 35′ W. Barometer, 30.00; temperature of air, 70°; water, 71°. Winds: S.SW., S.SW., SW. by S. First part, fine and clear; middle and latter, wind very unsteady and light. Have seen but two birds since leaving New York.

March 3. Lat. 22° 02′ N.; long. 30° 12′ W. Barometer, 30.00; temperature of air, 69°; water, 71°. Winds: SW. by S., W.SW., W. by S. Fine weather and very smooth sea. I certainly thought we should have had the trades in this latitude at this season of the year, as I have run twice in February from Madeira to New York without going south of 28°, and carried good trades past Bermuda.

March 4. Lat. 19° 33′ N.; long. 29° 20′ W. Barometer, 30.00; temperature of air, 72°; water, 71°. Clouds: cum., stra., and cir. Winds: W., N., N. First part, gentle breeze, with few slight showers; middle, fine weather; latter, fine, clear and moderate. Am afraid I am too far east in this latitude to get good trades. [You ought to have been between 34° and 36°.] No weeds nor birds.

March 5. Lat. 16° 27′ N.; long. 29° 28′ W. Barometer, 30.05; temperature of air, 73°; water, 72°. Clouds: cum. Winds: N., N.NE., NE. Fine weather throughout, and gentle breezes; large swell from NW. Saw a few flying fish. Took the trades in about 18° north.

March 6. Lat. 12° 34′ N.; long. 29° 38′ W. Barometer, 30.00; temperature of air, 75°; water, 76°. Winds: NE., E.NE., E.NE. Throughout, good trades and fine weather. Saw a large number of birds this a. m.

March 7. Lat. 8° 22′ N.; long. 29° 30′ W. Barometer, 29.95; temperature of air, 78°; water, 79°. Clouds: cum. Winds: E.NE., E.NE., E.NE. Throughout, good brisk trades, with clear and hazy weather. Swell from NW. still perceptible. I never saw it so far south before.

March 8. Lat. 4° 41′ N.; long. 29° 20′ W. Barometer, 29.85; temperature of air, 81°; water, 79°. Clouds: overcast. Winds: E.NE., E.NE., E.NE. First part, clear and pleasant; middle, dark cloudy weather; latter, cloudy, with several showers; heat very oppressive. After 10 a. m. moderate; it has every appearance of losing the NE. trades.

March 9. Lat. 1° 50′ N.; long. 29° 42′ W. Barometer, 29.90; temperature of air, 85°; water, 80°. Winds: E., SE. by E., SE. First part, heavy showers; middle, same, with sharp lightning, no thunder, until 1 a. m., when we appeared to pass out of the disagreeable sultry weather; saw it flash lightning astern all night; latter, cloudy, fine weather. Fortunate to get the SE. trades so soon.

March 10. Lat. 0° 56′ S.; long. 30° 30′ W. Barometer, 29.85; temperature of air, 86°; water, 80°. Winds: SE., SE., SE. by E. First part, gentle breeze and hazy; sea very smooth. Middle, fine and clear. Latter part, very pleasant. At 4 a. m. we crossed the equator in long. 30° 14′ W. Eighteen days and eight hours from Sandy Hook; having sailed, as per log, 3,896 miles; (the average by calculation 397.6) being an average of 8 knots $\frac{7}{8}$ per hour.

March 11. Lat. 3° 47′ S.; long. 31° 34′ W. Barometer, 29.85; temperature of air, 87°; water, 81°. Winds: SE., SE. by S., SE. First part, very warm and sultry; had a heavy shower at 3 p. m. Middle, several showers. At 1.30 a. m. a heavy squall passed over us, and left a good breeze, with clear weather. Latter, very pleasant. We have experienced little or no current the last three days.

March 12. Lat. 7° 11′ S.; long. 33° 34′ W. Barometer, 29.85; temperature of air, 85°; water, 81°. Winds: SE., SE. by S., SE. by S. Throughout this day, clear and pleasant. Passed the latitude of Cape St. Roque at midnight, 20 days 4 hours from New York."

Barque Dragon, (Thomas C. Dunn, master,) Salem to Fejee Islands, 8 days out.

"March 4, 1854. Lat. 29° 31′ N.; long. 36° 10′ W. Barometer, 30.10; temperature of air, 67°; water, 68°. Winds: SW., W.SW., W.SW. Commences with strong gales and violent squalls. Middle part, good breezes and clear weather. A very heavy hard sea. Latter part, fine breezes.

March 5. Lat. 28° 08′ N.; long. 35° 20′ W. Barometer, 30.20; temperature of air, 69°; water, 69°. Winds: W.SW., W.SW., calm. Comes in with good breezes and clear. A very heavy swell from the NW. At sunset wind moderate. Middle part, very light airs and baffling. At 9 a. m. a very light air from NE., which came up very gradually, and at noon was a three-knot breeze, steady from the eastward. Ends clear and pleasant.

March 6. Lat. 26° 09′ N.; long. 35° 02′ W. Barometer, 30.30; temperature of air, 69°; water, 70°. Winds: E.NE., E., E.SE. Comes in with light breezes and clear weather. At 4 p. m. barometer had risen $\frac{1}{10}$, and the breeze apparently increasing; began to flatter myself we had the trades. Middle part, moderate and clear. Latter part, the same.

March 7. Lat. 22° 50′ N.; long. 35° 30′ W. Barometer, 30.20; temperature of air, 72°; water, 70°. Current, S. 60°, W. $\frac{6}{10}$ of a mile. Winds: E.SE., SE., SE. by E. Brisk trades

and clear weather; wind hanging well to the southward. I will here remark the correctness of your trade-wind chart. In my last voyage, in May, I consulted your chart, which indicated that in my position (32° 00′ W.) the trades would be found in about 32° N.; accordingly there I found them, taking them in 31° 40′ N. Again, upon my present voyage, your chart indicated that in 36° W. the trades would be found in 28° N. I have taken them in 28° 20′ N. Of course I do not understand that they will always be so exact; but I think that, as averages, they will be found wonderfully correct.

March 8. Lat. 19° 05′ N.; long. 35° 10′ W. Barometer, 30.10; temperature of air, 74°; water, 73°. Current, S. 67° W., $\frac{8}{0}$ of a mile. Winds: SE. by E., E.SE., E. by S. Brisk trades and clear weather.

March 9. Lat. 15° 08′ N.; long. 35° 15′ W. Barometer, 30.10; temperature of air, 74°; water, 75°. Current, S. 67° W., 8 of a mile. Winds: E. by S., E. by S., E.SE. Strong trades and cloudy weather.

March 10. Lat. 11° 34′ N.; long. 34° 30′ W. Barometer, 30.00; temperature of air, 75°; water, 76°. Current, W., 1 mile. Winds: E.SE., E. by S., E. Very strong trades and cloudy. As the Pilot Charts indicate winds to the northward of east, in the proportion of 6 to 1 from 10° N. to the line, I have kept my yards braced in a point during the last four days. I think the wind must soon haul more to the northward.

March 11. Lat. 8° 25′ N.; long. 32° 20′ W. Barometer, 29.95; temperature of air, 78°; water, 79°. Current, W., $\frac{8}{10}$ of a mile. Winds: E., E.NE., E.NE. Fresh trades and hazy weather. Wind veering to the north. I note as something remarkable, that, since crossing 30° N., I have not seen a piece of Saragossa weed as large as my hand. I never passed through these trades before without seeing large quantities of it. End, moderate and pleasant. Average run per day from Salem, 207 miles.

March 12. Lat. 4° 50′ N.; long. 30° 57′ W. Barometer, 29.93; temperature of air, 80°; water, 79°. Current, N. 78° W., 7 of a mile. Winds: E.NE., E.NE., E.NE. Fresh trades and hazy.

March 13. Lat. 2° 13′ N.; long. 29° 50′ W. Barometer, 29.90; temperature of air, 80°; water, 80°. Current, N. 67° W., $\frac{1}{2}$ mile. Winds: E.NE., E.NE., from E. to S. Comes in with good breezes and very hazy weather. Middle part, the same. Latter, light baffling winds from E. to S. Ends with moderate breezes from the eastward, with slight rain showers.

March 14. Lat. equator; long. 30° 20′ W. Barometer, 29.90; temperature of air, 82°; water, 81°. Current, N. 70° W., $\frac{7}{10}$ of a mile. Winds: E.NE., E. by S., SE. Comes in with moderate breezes from the eastward. Middle part, unsteady breezes, with frequent, heavy rain showers. Latter part, light breezes from SE., and pleasant. At noon on the equator, 20 days from Salem. Distance by log, 4,023 miles, [by computation, 3,976,] being an average of 201 miles per day.

During this passage, I have followed your Sailing Directions as nearly as practicable. Sometimes I have been on one side of your route, sometimes on the other. I could have followed it closer; but when close hauled with a very strong breeze, I have always kept my yards braced in a point or two, thinking that the increased speed, when I had plenty of sea-room, would more than compensate the increased distance, and so it has proved. I could probably, by keeping close to the wind, have followed your track to the very letter; but I should probably have been another day reaching the equator. I have found your Pilot Charts a very valuable guide.

March 15. Lat. 1° 54′ S.; long. 31° 40′ W. Barometer, 29.95; temperature of air, 84°;

water, 81°. Current, west, 1 mile. Winds: SE. and calm, SE. by S., SE. by S. Comes in with light breezes and clear weather; at 3 p. m. calm; middle part, moderate breeze from SE., and clear; latter part, the same.

March 16. Lat. 4° 46′ S.; long. 32° 38′ W. Barometer, 29.90; temperature of air, 86°; water, 82°. Current, $\frac{7}{10}$ of a mile. Winds: SE. by S., SE., SE. by E. Throughout, moderate trades and pleasant. At 6 a. m. Fernando de Noronha bore E., dist. 7 miles. Ends light trades and pleasant.

March 17. Lat. 7° 10′ S.; long. 33° 18′ W. Barometer, 29.95; temperature of air, 91°; water, 82°. Current, none. Winds: S.SE., SE., SE. by E. Comes in with light trades and clear weather. At 4 p. m. wind at S.SE. Tacked to the eastward at 7 p. m. Tacked again to the southward. Latter part, moderate breezes and clear."

NEW YORK TO RIO—*March.*

Latitude.	Longitude.	Course.	Distances.			Winds; per cent.					Total number of observations.
			True.	Per cent.	Average.	Head.	Slants from— N'd or E'd.	Slants from— S'd or W'd.	Fair.	Calms.	
From 40° 27′ N.	74° 00′ to										
39 11	70 00	E.S.E.	199	9.6	218	2.2	*w* 10.7	7.5	79.7	2.0	448
37 43	65 00	E.S.E.	256	7.0	274	1.4	7.8	7.0	83.9	2.0	353
36 03	60 00	E.S.E.	261	6.7	278	2.4	6.6	3.0	88.0	6.7	181
36 03	55 00 *d*	E	243	6.5	259	2.1	6.3	4.9	86.7	4.7	142
35 00	53 43	S.E	89	6.1	94	0.9	1.8	*w* 14.4	82.9	4.2	113
31 53	50 00	S.E	265	12.6	298	6.0	4.5	3.0	86.5	0.0	65
30 05	45 00 *d*	E.S.E.	284	12.2	318	5.1	6.8	6.8	81.3	0.0	60
25 00	45 00	S.	305	8.8	331	0.0	*w* 15.5	12.4	72.1	8.6	32
20 23	40 00	S.E	399	10.5	441	0.0	*w* 22.5	15.0	62.5	0.0	40
20 00	39 35	S.E	33	4.5	34	0.0	6.0	*w* 12.0	82.0	2.0	45
15 36	35 00	S.E	370	3.7	484	0.0	*w* 14.8	0.0	85.2	0.0	27
15 00	34 23 *d*	S E	51	10.1	56	3.6	7.2	7.2	82.0	0.0	56
10 00	32 16	S.S.E	324	1.0	327	0.0	*w* 5.1	0.0	94.9	0.0	60
5 00	30 10 *d*	S.S.E	324	9.8	355	3.9	*w* 11.7	1.3	83.1	3.7	78
Equator.	30 10 *d*	S	300	3.0	309	1.4	*w* 2.8	0.0	95.8	2.0	143
1 00′ S.	30 35	S.S.W	65	2.1	66	0.0	*w* 7.4	0.0	92.6	4.8	299
1 25	31 00	S.W.	35	4.0	37	0.0	*w* 13.4	0.0	86.6	0.0	15
3 00	31 40	S.S.W	103	0.0	103	0.0	0.0	0.0	100.0	0.0	6
3 48	32 00	S.S.W	52	8.8	56	0 0	*w* 22.2	0.0	77.8	0.0	9
5 00	32 30	S.S.W	78	0.0	78	0.0	0.0	0.0	100.0	0.0	10
6 12	33 00	S.S.W	78	0.0	78	0.0	0.0	0.0	100.0	0.0	15
7 00	33 20	S.S.W	52	0.0	52	0.0	0.0	0.0	100.0	40.0	25
8 36	34 00	S.S.W	104	4.5	109	0.0	*w* 14.0	0.0	86.0	0.0	49
9 00	34 10	S.S.W	26	3.2	27	0.0	*w* 9.8	0.0	90.2	0.0	82

Shortest distance to the equator by this route, 3,703 miles. Average distance to be sailed on account of adverse winds, 3,976 miles. The Storm Bird, (Henry C. Small,) crossed the line April 11, 1855, in 28° 48′. Distance sailed, 3,980 miles. She tacked but once.

This and the February route are the most favorable. After crossing 5° N., if you can, lay up S.SE. to the line.

I would recommend vessels, in coming out of New York and Boston, to stand off well to the eastward when the winds are fair, before attempting to make any southing. The degrees are short, and by standing as far as 60° or 50° before crossing the parallel of 40°, you have a better chance for running south across the horse latitudes.

This recommendation applies to all months, but only when the winds are fair for easting.

Time and Crossings to the "Fair Way" off St. Roque—March.

Name of vessel.	From—	Date of sailing.	Longitude of crossing the parallels of—																	Total days to—	
			Days.	30° N.	Days.	25° N.	Days.	20° N.	Days.	15° N.	Days.	10° N.	Days.	5° N.	Days.	Equ'r.	Days.	3° S.		Equator.	St. Roque.
Chanticleer	Baltimore,	Mar. 1, 1854	8½	44	7½	41	3	38	2	34½	2	31	2	27	3	26½	1½	29		28	30¼
Architect	New York	1, 1854	10	44½	4½	41½	2	39½	2	35	1½	33	1½	30	2½	29	2	29		24	27
Mantanzas	Boston	1, 1853	17	43½	4	39¾	3	36½	2	34	1½	32	2	30	3	30	2	32		32½	36½
Chenango	Baltimore	2, 1850	11	45½	3	40	3	37	2	35	3	32	4	27	2½	26¼	1½	27½		28½	31
North American	New York	3, 1852	5	54	9	41½	3	36	2½	34	1½	35	1	30	2½	27	1¼	27		24½	28½
Hahuemann	....do	6, 1854	17	45	8	41	3	38	6	33½	2	31	2½	29	5	29	2½	30		43½	47
Michael Angelo	....do	6, 1852	10	45	3	37	2	32	2	31	2	28	2¼	25	4¾	23¾	4	24½		26	31½
Vandalia	Philadelphia	7, 1853	13	35½	4	28	2	28	1½	27	1½	26¾	2	26	2¾	26½	2¼	29		26¾	29¾
Lucia Maria	Salem	9, 1852	7	44½	2½	39	1¾	34½	1¾	32	2	30	2	28	3¾	26	3¼	27½		20¾	26
Will	Baltimore	9, 1850	11½	47	4	36	2¾	32	1¾	29¼	2	27	2	26	5½	27	1½	30		29½	32
Sarah Boyd	Philadelphia	9, 1850	13	42½	3½	36	2½	33½	2	32	1¼	31	1¾	30	7	28	4	30		31	37
Sea Serpent*	New York	10, 1852	5	46½	2	41	2	39	2	36	2¼	33	1	31	3¼	29½	3¼	30		17¼	22
Ellen Foster	Boston	10, 1855	9½	46	9½	42	2½	41	2½	38	2¾	34	2¼	30	5½	28	4½	31½		34½	40
Sherwood	....do	11, 1851	13	35½	2½	33	3	32	1½	31	2	29½	2¼	27¾	4	28	2¾	30		28¼	32
Governor Morton	New York	12, 1852	10	43	2	38	4	35	4	34	2	30½	2	29¼	1¾	28½	2	29		25¾	28½
Ottaway	Richmond	12, 1852	10	49½	4½	42	3	37	3½	36	2½	32	2	29½	2	28¾	1½	30		27½	30
Surprise*	New York	13, 1853	7	48½	3	43	2½	41¾	1¾	40	1¾	36½	2	31½	1¾	30	1	32½		19¾	22
Empress of the Seas	....do	13, 1853	7	49	6½	42	2	40	1¾	38½	1½	35	1½	33	4	30	2¾	31½		24½	28
Benjamin Howard	....do	13, 1853	9	46	5	41	2	40	2½	37	2¼	32	2¼	29	4¼	28	1¼	29		27¼	29¼
Rienzi	Boston	14, 1850	11	40½	3	38	2	37	2	35½	2	33	3	27	7¾	26	2¾	29		30¾	34½
Santiago	New York	14, 1853	8½	45	4½	38	2	36	2	34	2	31	2	28¼	5¼	28	1	28½		26¼	28¼
Storm King	Boston	14, 1853	10	40	4	37	1½	37	1½	36	1½	33	1¾	30	4	30	2¾	31		24¼	28
Thos. B. Wales	....do	15, 1852	12	43	3	38½	4	34	2	33	1¾	30	1¾	28½	2¼	28¼	1¾	30		26¾	29¾
Santiago	New York	15, 1853	9½	44	4½	38	2¼	36	1¾	34½	2	31	2	28¼	5	28	1½	29		27	29½
Star Light	Boston	16, 1854	11	36½	3	36½	2	34	1½	32½	3½	31	1½	30½	2½	29	3	30¾		25	28¾
Parana	New York	16, 1852	11	36½	2	31	3½	30	2	29	1¾	28½	1¾	28	1¾	28¼	1	29		23¾	25½
Viking	Boston	18, 1854	9	48	4	42	1¼	42	2¼	37	2½	34	3	30¼	2	29	2	30½		24	27
Greyhound	Cape Henry	19, 1852	13	39	2	36	3	35	2	33	2	32	2	29	5	29	1½	30½		29	31¼
Mary Annah	New York	20, 1853	10	47	7	37	2	34	3	32	2	30½	2	28½	6	26¾	2	27¾		32	35
Golden Eagle*	....do	21, 1854	9	46	2	40	2	35½	2	33¾	3	31¼	1½	29	3	28¼	2	29¼		22½	25¼
Oregon	....do	22, 1853	12	41½	3	34	2	32	3	28	1½	28½	2½	27	5	37¾	2¼	28		29	32
Santao	....do	22, 1852	10½	43	5	36	3	35	1½	34	1½	32	1¾	29	3½	29	1¼	30½		26½	28½
Do	....do	22, 1853	8	43	4¼	39¾	2¾	39	1¼	37	2	33	1¾	30½	3¼	29¾	2	31½		23¼	26½
Parthian*	Richmond	23, 1853	10	44¾	3	37	1½	35	1½	33	2	31	1¼	29½	3¼	29½	1¾	31		22½	25½
Shooting Star	Boston	23, 1851	8	50	4	41	4	38	2	36½	2	33	1¼	30	3½	29	1½	30		24¾	27
U. S. ship Relief	New York	23, 1854	11¾	39	2¼	36½	6	33¾	2	31½	2	29	3	26½	3¼	26½	1¼	27¾		30¼	32¼
George Raynes	....do	24, 1854	9½	51	2½	47	3½	45	2½	41¼	2¼	38	2¼	33	3½	31¾	3	32½		26	29½
Horsburgh	Boston	25, 1852	8½	47	2½	41	4½	39	2	36½	1½	34	2¼	30	3	29½	1¼	29½		24½	26¼
Candace	New York	25, 1851	10	45	3	43¾	2½	42	2	41	3	38½	3½	32	4¼	30	1¾	31		28¼	31
Kedar	Boston	27, 1851	20	38	3	33	4	31	2	30	2	29½	3	29	6¾	29½	3¼	30½		40¾	44¾
Yarmouth	New York	27, 1853	14	43	5	41	5	40	3	38½	3½	36	2	33	4½	31¾	2¼	32			41
Competitor	Boston	27, 1853	9	36	1½	33	1½	32	2¼	32	1¾	30	1¾	28½	6½	28¾	2½	30		24¼	27¼
Climax*	....do	28, 1853	8	42	1	41	1½	39	1½	36	2	31½	1¼	29	4¾	29¼	3	30		20	25
Robert C. Winthrop	....do	28, 1852	9	40	4½	35	2½	33½	1¼	32	1¾	31	2	29	4¾	27½	3¼	28		25¾	31
Lucia Maria	Salem	29, 1854	10¼	44	3	39	2	36½	1½	35	2	32	1½	30½	3½	27½	1½	28		24	26
L. P. Foster, (schooner)	Boston	29, 1853	13½	38½	2½	37	2	35¼	2¼	33	1¾	31	2	29	2½	29½	1½	31¼		26½	29¼
Seargo	....do	30, 1854	14	41	5	36	2½	34½	1½	33½	1½	31	2	28	4	28	1½	28½		30½	32¾
Means before 7th edition			10.5	43½	3.9	38½	2.7	36¼	2.1	34¼	2.0	31¾	2.0	29	3.9	28½	2.1	29¾		27.1	30.3
Mary Wilkins	Boston	Mar. 1, 1857	14	38½	2½	37½	2½	35	1	34	2	32	1½	30	3½	30	1½	31		26	28¾
Sunny South*	New York	1, 1856	10	41	2	37	5	30	1½	30	1½	30	1½	29½	2	30	1	31		23½	24¾
Guide, (barque)	Salem	1, 1857	11	43	3	41	2	38	2	36	1½	33	1½	30	2½	29	2	30		23½	26¾
Wm. R. Kibbey	New York	3, 1856	11	40½	2½	37	2½	35½	2	34	2	32	1½	29	3	29	1	30		24½	26½
Thetis	....do	4, 1857	12	43	2½	41	2	40	1½	38	2½	35	2	31	3	28½	1½	31		25½	28
Storm Bird	St. Mary's, Geo.	6, 1855	14	47½	8¼	40	1¾	39	2	38	2½	35	3	29	4¼	28¾	1¼	29		35¾	38¼
Sierra Nevada	New York	8, 1856	8	43	2	40	5	38½	2	36½	2	33	1½	30½	3½	29	2½	31		24	27½
Panama	....do	8, 1855	11	44½	3	42	2	41	1	40	½	38	1½	34	3	32½	4	32		22	27½
Henrietta	Cape Henry	9, 1857	13½	42	3½	36	2	34	2	32	2	29½	2	28	2	28½	2½	30½		27	30½
David Crockett	New York	9, 1857	10	46	4	43	3	39	1½	37	1½	33½	2	29½	3	29	1½	30		25	27½
Chevalier	Richmond	9, 1857	13	37	2	33	4	32	2	30	1½	29	4	28	2¼	30	1½	31		29	32
Elmir	New York	10, 1855	12	47	6½	38	3½	36	3	34½	2	32	2	29	7	29	3	30½		36	39½
Syren	....do	12, 1856	10	38	3	35½	3	35¾	2	32¼	1	30½	1½	29	2½	30¼	1½	30¾		23	25¾
Jacob Bell*	....do	15, 1856	7	45½	4	37	1½	37	1	36½	1½	34	1	32	2	29¼	2	31¼		18	20½
May Queen	Cape Henry	17, 1856	14	37	4½	35	1½	34	2	32	1½	29	1½	28	3	28	1	29		28	30
Seaman's Bride	New York	19, 1855	10	44	4½	37½	3	36¾	1	34½	1½	32	1¼	29¾	1¾	29	1¾	30		23	25
Virginia, (barque)	....do	19, 1855	16	40	5	39	3	36	2	32	3	27	3	26	3	27	2	29		35	37½
Kate, (barque)	Baltimore	19, 1857	13	45	3½	37	2½	33½	3	33	2	29½	1½	29	4½	29	1½	28½		29	31¾
Golden State	New York	20, 1857	8	38¾	6½	27	1½	27½	1	27¾	1¼	28	1¾	27	4	26	2	26½		24	26¼
Northern Light*	Boston	20, 1856	10	35	4½	35½	1½	36½	1	35½	1	33	2½	28	2½	29	1	30½		23	24½
Antagonist	New York	20, 1856	12	44	5½	41	2¾	38	2	35½	2	32½	2	30	2½	30½	4	30½		28¾	33¾
Lantao	....do	21, 1855	9	43	4	40	3	39	1¼	36	1¾	32½	2	30	3½	29¾	2	32½		24½	27
Union	Boston	22, 1857	11	41½	2	39	1	37½	2	34	1½	31	1½	29	3	30¼	3	30		22	26
Morning Light	Philadelphia	23, 1856	12	44	9	34½	4	36	2½	33½	2	30	2	28	5	29	1½	31		36½	39
Reindeer	Cape Henry	24, 1857	8	49	3	42	2	40	3	39	3	35	2	31	4	28½	1½	29		25	28
Phantom	New York	24, 1857	11	46	8	32	1	31	2	27	1	28	2	27½	3½	26	2	24½		28½	31
Golden Era	....do	25, 1857	14	39	6	38	4	38	4½	35	2	32	2	29	4	26½	2¾	27½		36½	40½
Samuel Russell*	....do	26, 1855	8	43	2	40	3	35	1	33	1½	32	1½	31	5	30	2	31½		22	24
Civilian	Boston	26, 1856	15	42	5	35¾	3	35	2¼	33	1¼	31	1	30	5¼	30	1¼	31½		32¾	35¼
George Worthington	New York	27, 1856	14	39	4	38	4	35	2½	33½	1¾	32	2	29	4¾	31	1½	32		33	35½
War Hawk	Boston	27, 1855	12	45	5¼	43	2	41	2¾	38	2¼	35	2	31	3	28	1	29		29¼	31
Lion	....do	27, 1856	15	40	7	34½	3	33	3	33	2	31¾	2	30½	4	30½	4	32		36	41½
Weather Gauge	New York	28, 1855	15½	42	3½	40¾	2	38	2	35½	2	32	2	28¾	3	29	1½	30		30	32
Haidee	....do	28, 1856	10	38½	4	35½	7	35	2½	32½	1½	31	1½	28	6	27	2	30		32½	37
Game Cock	... do	29, 1855	9	49	4½	47	5½	44	2½	42	1½	40	2½	35	3	32	2½	34½		28½	32¾
Scotia	Philadelphia	30, 1856	11	50	4	41	3	38	3	36	2	33	1½	30½	5	30½	1½	31		29½	32¼
Means since 7th edition			11.5	42½	4.3	38	2.9	36¾	2.0	34½	1.7	32	1.9	29½	3.5	29	1.9	30¼		27.8	30.7
Mean of 10 best			8.1	43¾	2.6	39	2.2	36¼	1.5	34½	1 8	32¼	1.5	29¾	3.1	29	2	30½		20.9	23.9

I have endeavored to impress navigators who attempt the new route, and who use these Sailing Directions, with a sense of the advantages which they gain by standing boldly on when they begin to feel pinched; they had better trust to chances for slants and favorable changes than to attempt to beat up or to stand back to the northward in order to make easting. They can but do that after they have stood their chance, made the land, and fallen to leeward. Then they can but beat at last, taking advantage, as they always should whilst near or far from the land, of favorable slants of the wind.

Let us impress this lesson with the teachings of example, for there is no want of cases. The George Raynes is not as swift footed as her competitor, I take it; nevertheless, she and the fine clipper ship Starlight left New York and Boston in the same month for the fair way off St. Roque, and beyond. Up to this point I quote their abstracts. I quote from the abstract log of each, because the log of the clipper, who did not feel so closely pinched, serves to illustrate the propriety of Bachelder's course, (April 2,) who did feel pinched, and who did right, notwithstanding he did it doubtingly. Indeed, the Starlight would have done better if she had been a little more bold, and had not hugged the wind so closely. She crossed the line, in 29°, the 25th day out, and was five days thence to the fair way off Cape St. Roque.

Bachelder, on the other hand, came along, crossing the parallels of 30°, 20°, and 10° N., as much as 13°, 11°, and 7° to the westward of her computed route,* reaching the line, in 32°, the 26th day out, with 6 days thence to the fair way off St. Roque. Now, suppose Bachelder had yielded to the suggestions of timidity and stood to the northward and eastward, on the 2d April, as he had "a half a mind to;" the probabilities are that for every day he stood to the NE. he would have lost two in reaching the line; and did he not act wisely and prudently to put off tacking as long as he could, and so take his chances for any favorable change? Clearly so; and the two logs show it.

Ship George Raynes, (N. A. Bachelder,) New York to Valparaiso; first day out.

"March 26. Lat. 39° 05′ N. Barometer, (aneroid,) 29.46; temperature of air, 38°; of water, 54°. Wind: NW. throughout. Throughout, strong gales and passing squalls of hail and snow.

March 27. No observation. Current, 50 miles, E.NE. Barometer, 29.40; temperature of air, 40°; of water, 69°. Wind: W.NW. throughout. Throughout, hard gales and squalls of snow, hail, and rain.

March 28. Lat. 37° 15′ N.; long. 60° 48′ W. Barometer, 29.60; temperature of air, 50°; of water, 62°. Wind: W.NW. to NW. First part, moderate; latter part, hard gales and squalls.

March 29. Lat. 36° 55′ N.; long. 59° W. Barometer, 29.60; temperature of air, 50°; of water, 69°. Winds: N., N., NW. First and middle parts, light breeze, rough, heavy swell; latter part, fresh gales and squally.

March 30. Lat. 36° 46′ N.; long. 56° W. Barometer, 29.90; temperature of air, 52°; of water, 62°. Wind: W.NW. to NW. ¾ N. First part, fresh gales; middle and latter parts, light breezes and pleasant.

March 31. Lat. 36° 35′ N.; long. 54° 24′ W. Barometer, 30.30; temperature of air, 58°; of water, 63°. Wind: NW. to W.SW. Light breezes, and rain squalls occasionally; "light."

April 1. Lat. 35° 05′ N.; long. 51° 19′ W. Barometer, 30.50; temperature of air, 64°; of water, 63°. Winds: NE., E.NE., E. by N.; first part, moderate; middle and latter parts, strong breezes and passing clouds.

* See Table of Crossings, New Route to Rio for April.

April 2. Lat. 31° 59′ N.; long. 51° 05′ W. Barometer, 30.50; temperature of air, 66°; of water, 65°. Winds: E., SE., SE. by E.;* moderate breezes and pleasant.

April 3. Lat. 29° 04′ N.; long. 51° 03′ W. Barometer, 30.30; temperature of air, 71°; of water, 68°. Winds: E.SE., E.SE., SE. by E.; moderate breezes and pleasant.

April 4. Lat. 26° 56′ N.; long. 49° 23′ W. Barometer, 30; temperature of air, 74°; of water, 71°. Winds: E. by S., E., E. by N.; moderate breezes and pleasant.

April 5. Lat. 25° 21′ N.; long. 46° 54′ W. Barometer, 30; temperature of air, 70°; of water, 71°. Winds: E.NE., E.NE., NE. by N. to E.NE.; first and middle parts, moderate breezes; latter part, light, unsteady, and baffling; large swell from NE.

April 6. Lat. 23° 26′ N.; long. 46° 27′ W. Barometer, 30.08; temperature of air, 76°; of water, 73°. Winds: E.NE., E. by S., SE. by E.; light baffling breezes and squally appearances.

April 7. Lat. 21° 44′ N.; long. no observation. Barometer, 30.10; temperature of air, 78°; of water, 74°. Winds: E.SE., SE. by S., SE. by E.; light baffling breezes throughout; stood to the NE. four hours.

April 8. Lat. 20° 54′ N.; long. 45° 30′ W. Barometer, 30.10; temperature of air, 77°; of water, 74°. Winds: E., E.NE., E.NE.; light baffling breezes throughout; pleasant, smooth sea.

April 9. Lat. 19° 35′ N.; long. 44° 12′ W. Barometer, 30.10; temperature of air, 77°; of water, 74°. Winds: E.NE., NE. by E., E. by N.; light baffling breezes throughout; *sharp braced.*

April 10. Lat. 17° 39′ N.; long. 42° 49′ W. Barometer, 30.10; temperature of air, 81°; of water, 74°. Winds: E. ¾ N., from E.NE. to E. by S.; moderate breezes and pleasant.

April 11. Lat. 14° 59′ N.; long. 41° 15′ W.† Barometer, 30.10; temperature of air, 75°; of water, 75°. Winds: E., E. by S., E.; good breezes and pleasant; middle and latter parts, overcast.

April 12. Lat. 12° 53′ N.; long. 39° 38′ W. Barometer, 30.10; temperature of air, 78°; of water, 77°. Winds: E., E. by N., E.; first and middle parts, strong breezes and cloudy, "head sea;" latter part, moderate.

April 13. Lat. 10° 47′ N.; long. 37° 56′ W. Barometer, 30.05; temperature of air, 79°; of water, 77°. Winds: E., E. by N., E.; good breezes and cloudy.

April 14. Lat. 8° 37′ N.; long. 35° 52′ W. Barometer, 30; temperature of air, 80°; of water, 77°. Winds: E. by N., E.NE., E.NE.; good breezes, pleasant, "hazy."

April 15. Lat. 6° 06′ N.; long. 34° 03′ W. Barometer, 30; temperature of air, 82°; of water, 79°. Winds: E. by N., E., E. by N.; pleasant breezes and hazy.

April 16. Lat. 4° 06′ N.; long. 32° 05′ W. Barometer, 30; temperature of air, 83°; of water, 79°. Winds: E. by N., E.NE., E.NE.; good breezes and hazy; latter part, heavy showers of rain, wind light and unsteady.

April 17. Lat. 2° 50′ N.; long. 31° 26′ W. Barometer, 29.95; temperature of air, 81°;

* "I don't know whether I am doing right or not in standing so long to the southward. We have made a good south course these twenty-four hours. It seems a pity to go on the other tack. Can't make better than a NE. course; might as well be lying still."—*Bachelder's Log.*

† "Too far to leeward again. Don't see how I could have helped it. Trust the wind will favor me, so that I shall be in a good position to cross the equator."—*Bachelder's Log.*

of water, 81°. Winds: E.NE., E., E. by S. Light baffling breezes and showers of rain; in rain squalls wind hauls to SE. by S.; "tide rips;" lightning to S.SE. and E.

April 18. Lat. 2° 09′ N.; long. 31° 26′ W. (D. R.) Barometer, 29.95; temperature of air, 81°; of water, 81°. Wind: E. to SE.; light baffling airs and calms; frequent showers of rain.

April 19. Lat. 0° 45′ N.; long. 31° 47′ W. Current, 30 miles, SE. Barometer, 29.98; temperature of air, 88°; of water, 81°. Wind: SE. to SE.; light breezes and calms; latter part, heavy showers of rain; stood E.NE. three hours.

April 20. Lat. 1° S.; long. 32° 06′ W. Current, 10 miles, easterly. Barometer, 29.98; temperature of air, 84°; of water, 81°. Wind: SE. by E. to SE. by S.; light breezes throughout, and frequent showers of rain. At 11 p. m. *crossed the equator in long.* 31° 55′ *W.*, 25 *days* 15 *hours from Sandy Hook.* Distance sailed to the equator by observation, from noon to noon, 3,753 miles; by Maury's tables, 3,811 miles.

April 21. No observation. Current, 10 miles, westerly. Barometer, 29.95; temperature of air, 85°; of water, 82°. Wind: E.SE. to S.SE.; first and latter parts, light baffling breezes and light rain squalls; middle part, calm.

April 22. Lat. 3° 18′ S.; long. 32° 32′ W. Current, 10 miles, westerly. Barometer, 29.95; temperature of air, 84°; of water, 82°. Winds: E. by S. to SE. by S., SE., SE. by S.; first part, light baffling winds and heavy showers of rain; middle and latter parts, moderate breezes and cloudy. Stood E.NE. 4 hours.

April 23. Lat. 3° 37′ S.; long. 33° W. Current, NW. by W., 30 miles. Barometer, 29.97; temperature of air, 83°; of water, 81°. Wind: SE. by S. to S. by E.; moderate breezes throughout. Stood to the eastward 11 hours.

April 24. Lat. 3° 57′ S.; long. 33° W. Current, W.NW., 17 miles. Barometer, 29.97; temperature of air, 83°; of water, 81°. Winds: S.SE., E.SE., SE. by E.; first part, light breezes; at 9 p. m. wind shifted in a squall to E.SE.; middle part, light baffling winds and heavy showers of rain, lightning to the eastward, calm at times; latter part, light breezes and frequent showers of rain.

April 25. Lat. 6° 31′ S.; long. 33° 47′ W. Barometer, 29.97; temperature of air, 83°; of water, 81°. Winds: SE. by E., SE. by E., S.SE.; moderate breezes and light rain squalls.

April 26. Lat. 8° 07′ S.; long. 34° 35′ W. Barometer, 29.97; temperature of air, 84°; of water, 82°. Winds: S. from SE. to S.SE.; moderate breezes and passing clouds of rain; light."

Ship Starlight, (J. Chase,) Boston to San Francisco; first day out.

"March 17, 1854. Lat. 41° 19′ N.; long. 67° 25′ W. Barometer, 29.2; temperature of air, 52°; of water, 39°. Winds: W.SW. to S., S. to W., NW., W.NW. At 10 a. m. sailed from Lewis' wharf; at noon discharged the pilot off the "Light." Light breezes from W.SW. until 3 p. m.; fresh from S. to 9 p. m.; rigging stretching; in royals and top-gallant sails; middle part, wind hauled W.NW. in a squall, where it remained with fine weather.

March 18. Lat. 41° 19′ N. (D. R.;) long. 64° W. Barometer, 29.1; temperature of air, 50°; of water, 42°. Winds: W.NW., S.SE., W. First part, fine weather; middle part, heavy gale from S.SE. to S., with sharp lightning, heavy thunder, and torrents of rain. At 5 p. m. wind shifted suddenly to west in a heavy squall of wind and rain.

March 19. Lat. 39° N.; long. 59° 53′ W. Barometer, 29.6; temperature of air, 50°; of water, 64°. Winds: W. by N., W., NW. Strong breezes, with heavy hail squalls; under double reefs.

March 20. Lat. 37° 25′ N.; long. 56° W. Barometer, 29.9; temperature of air, 54°; of water, 66°. Winds: SW., SW., W.NW. Exceedingly squally throughout these 24 hours; was obliged to run off more to the eastward than I wished; highest barometer I ever saw for such a wind and such weather, and standing steady.

March 21. Lat. 36° 28′ N.; long. 51° 56′ W. Barometer, 29.8; temperature of air, 54°; of water, 66°. Winds: SW., W.SW., SW. Hard rain squalls throughout the day.

March 22. Lat. 34° 43′ N.; long. 48° 32′ W. Barometer, 29.9; temperature of air, 58°; of water, 64°. Winds: W., SW., SW. Hard rain squalls throughout the day.

March 23. Lat. 32° 43′ N.; long. 45° 44′ W. Barometer, 30; temperature of air, 58°; of water, 68°. Winds: NW. throughout. Brisk breezes, with frequent squalls; latter part, moderate.

March 24. Lat. 32° 43′ N.; long. 44° 10′ W. Barometer, 30.3; temperature of air, 68°; of water, 63°. Winds: NW., calm, S.SE. Fine weather; had intended to strike the latitude of 30° in longitude 43°, but this wind throws me off the track.

March 25. Lat. 31° 55′ N.; long. 40° 56′ W. Barometer, 30.4; temperature of air, 70°; of water, 69°. Winds: S. by E., S., S.SW. Fine weather; but the wind still pushes me to the eastward.

March 26. Lat. 30° 26′ N.; long. 38° 10′ W. Barometer, 30.4; temperature of air, 70°; of water, at surface, 70°; of water, ten feet below surface, 70°. Winds: S. by W. throughout. Fine weather; but the wind still pushes me to the eastward.

March 27. Lat. 29° 43′ N.; long. 36° 20′ W. Barometer, 30.5; temperature of air, 70°; of water, at surface, 70°; of water, ten feet below surface, 70°. Winds: S. by W., S. by W., SW. Light air and baffling, from S. to SW.; still going too much to the eastward. At 9 a. m. saw three whales, apparently of the fin-back tribe. Latter part, nearly calm; irregular swell; small Portuguese men-of-war floating by.

March 28. Lat. 29° 30′ N.; long. 35° 44′ W. Barometer, 30.5; temperature of air, 72°; of water, 70°. Calms throughout, with a long, irregular swell of the sea. At 9½ a. m. light breeze from S.SE.; at 10 a. m. tacked to SW.

March 29. Lat. 27° 57′ N.; long. 36° 20′ W. Barometer, 30.6; temperature of air, 72°; of water, 70°. Winds: S.SE., calm, SE. First part, light airs from S.SE.; middle part, calm; ends brisk at SE. by S.

March 30. Lat. 25° N.; long. 36° 20′ W. Barometer, 30.6; temperature of air, 72°; of water, 72°. Winds: SE. by E., E.SE., SE. Brisk breezes, with frequent rain squalls; wind veering from E.SE. to S.SE.; barometer falling one-tenth; saw "flying-fish" for the first time; long swell from NW.; water clear and free from grass of any kind.

March 31. Lat. 22° 12′ N.; long. 35° 50′ W. Barometer, 30.4; temperature of air, 74°; of water, 72°. Winds: SE., SE., E.SE. Light breezes, with dry squalls; wind veering from E. to S.SE.; ship going from three to eleven knots; no weed; swell from NW.

April 1. Lat. 19° 21′ N.; long. 34° 03′ W. Barometer, 30.3; temperature of air, 74°; of water, at surface, 73°; of water, ten feet below surface, 73°. Winds: E. to E.SE., E. by N. to E. by S., E. Commences strong breezes, with squalls; middle part, light breezes, but still

nard squalls; latter part, moderate, and less wind in the squalls; water still clear; no weed; no grass; at meridian wind hauled SE. in a squall.

April 2. Lat. 15° 56′ N.; long. 33° 10′ W. Barometer, 30.2; temperature of air, 74°; of water, 74°. Winds: E.SE., E. by S., E.SE. First part, light baffling breezes and squally; middle part, strong breezes and cloudy weather; latter part, brisk breezes with squalls. Barometer veering from 30.3 to 30.2, ending at the latter; ship close-hauled; sea clear.

April 3. Lat. 13° 03′ N.; long. 32° 12′ W. Barometer, 30.2; temperature of air, 75°; of water, at surface, 75°; of water, at ten feet below surface, 74°. Winds: E.SE., E. by S., E. by S. Light breezes, veering from E. to E.SE., throughout these 24 hours; sea smooth and clear.

April 4. Lat. 12° N. (D. R.); long. 31° 42′ W. Barometer, 30.2; temperature of air, 77°; of water, at surface, 80°; of water, at ten feet below surface, 77°. Winds: E. to E.NE., calm, calm; first part, light breezes from E. to E.NE.; middle and latter parts, calm. There appeared to be a sudden increase in the surface heat of the water; but, after several trials, the result was as recorded in the columns. Small (what sailors call Portuguese) men-of-war around the ship.

April 5. Lat. 11° 40′ N. (D. R.); long. 31° 42′ W. Barometer, 30.2; temperature of air, 78°; of water, at surface, 78°; of water, ten feet below surface, 78°. Calm throughout, with a long swell of the sea from N.NW. and light puffs of wind from every point.

April 6. Lat. 9° 24′ N.; long. 31° 04′ W. Barometer, 30.2; temperature of air, 78°; of water, 78°. Winds: NE., E., SE. by E.; first part, light airs from NE.; middle part, E.; long swell from north.

April 7. Lat. 7° 28′ N.; long. 30° 34′ W. Barometer, 30.3; temperature of air, 81°; of water, at surface, 80°; of water, ten feet below surface, 80°. Winds: E.SE., E., E.; light breezes and fine weather throughout these twenty-four hours.

April 8. Lat. 4° 19′ N.; long. 29° 30′ W. Barometer, 30.3; temperature of air, 83°; of water, 82°. Wind: E. throughout; brisk breezes and fine weather throughout these twenty-four hours.

April 9. Lat. 1° 50′ N.; long. 29° 10′ W. Barometer, 30.2½; temperature of air, 82°: of water, at surface, 82°; of water, ten feet below surface, 82°. Winds: E., E., baffling; first two parts, light breezes from east; latter part, squalls and calm, wind from E. to S., and heavy rain, barometer veering several times from 30.3 to 30.2, and back again.

April 10. Lat. 0° 30′ N.; long. 29° W. Barometer, 30.2½; temperature of air, 82°; of water, at surface, 82°; of water, ten feet below surface, 82°. Winds: baffling, E., variable; at thirty minutes p. m. had a hard squall from S.SW., with heavy rain; at 4 p. m. calm, light breezes from east; through the night with passing squalls; ends, E.NE., with squalls.

April 11. Lat. 0° 40′ S.; long. 29° W. Barometer, 30.2½; temperature of air, 81°; of water, 82°. Winds: E. by N., E. by S., calm; first part, light breezes from E.NE.; at 4 p. m. hard squall of wind, with heavy rain; wind light from E. through the night, squally and calm towards morning; ends calm, sea heaving from the south.

April 12. Lat. 1° 40′ S.; long. 29° 21′ W. Barometer, 30.2½; temperature of air, 84°; of water, at surface, 83°; of water, ten feet below surface, 82°. Winds: S., calm, E. by S.; squall from south; middle part, calm, with heavy rains; latter part, light breeze from E. by S., sea still heaving from south.

April 13. Lat. 2° 36′ S.; long. 29° 47′ W. Barometer, 30.2½; temperature of air, 82°; of water, 83°. Winds: calm, calm, S.SE.; first and middle parts, calm, with occasional puffs from every point of the compass and torrents of rain; barometer rose and fell one-tenth three times during the first sixteen hours.

April 14. Lat. 5° S.; long. 31° 15′ W. Barometer, 30.2; temperature of air, 82°; of water, 83°. Winds: S., S.SE., SE.; first part, squall from S.; middle part, strong breeze from S.SE.; latter part, steady and brisk from SE., with fine weather.

April 15. Lat. 8° 23′ S.; long. 32° 30′ W. Barometer, 30.2; temperature of air, 84°; of water, 85°. Winds: SE. ½ E., SE. ½ E., SE.; brisk mainsail breeze; head S.SW., with fine weather throughout.

I would here observe that I have experienced no perceptible current since leaving the Gulf Stream. I have taken sights morning and evening, and these and the longitude agreed so nearly with the log that I chose to ascribe the trifling error to the log, rather than put it down as current, when I was not certain of it. There has been opportunity of trying the current; but with a new ship, and her rigging stretching very much, we have always been very busy on such occasions."

Ship Jacob Bell, (Captain Charles F. W. Behm.)

"April 3, 1856. Lat. 0° 36′ S.; long. 29° 46′ W. Barometer, 30.20; temperature of air, 82°; of water, 81°. Wind: S. Faint variable airs, with the exception of a light rain squall from the eastward in the afternoon. Crossed the equator at 5 p. m., in about 29° 10′ W., in 18 days 4 hours, or (allowing for difference in time) in 18 days 1 hour. Distance sailed from noon to noon, 3,703 precisely, the shortest distance for March in Maury's Directions; average for 433 hours, 8.55. Latter part, ends with light breeze from the south, looks like trades; have been close-hauled since crossing 30° N."

From Captain John C. Very, of barque *Guide*, February, 1858:

"I have been sailing, out of Salem, 25 years, voyages across the equator, but never crossed the equator in less than 35 days before, [this time he did in 22 days;] nor ever crossed to the westward of 26° W., and your directions to me have been of great service; and when I look back upon 25 years spent at sea, I think I have actually been sailing blindfold, and that I have learned more about the ocean, in studying your Directions, than I ever knew before; and if there are any new publications, I should feel very much obliged if I could obtain them. On another voyage, I shall get better instruments, and take pleasure in keeping an abstract."

Ship Sunny South, (H. H. B. Willis, captain,) New York to Rio de Janeiro, 9 days out.

"March 10, 1856. Lat. 29° 04′ N.; long. 40° 57′ W. Barometer, 30.10. Winds: NE. NE., NE. First and middle parts, fine NE. winds; latter part, wind E., with sea from NW. Observed for the first time large quantities of gulf-weed.

March 11. Lat. 27° 50′ N.; long. 39° 44′ W. Barometer, 30.07. Winds: E., E., E.SE. First and middle parts, light easterly winds; latter part, light from SW.; gulf-weed.

March 12. Lat. 25° 02′ N.; long. 37° 18′ W. Barometer, 30.03. Winds: SW., SW., SW. All through these 24 hours wind SW. and cloudy, with glimpses of the sun now and then. Latter part, a clear portion of sky in the NE.; looks as though we were to have the wind from that direction; some gulf-weed.

March 13. Lat. 23° 38′ N.; long. 35° 15′ W. Barometer, 30.08. Winds: SW., SW., S.SW. Light SW. and S.SW. wind. I think it very singular that we have experienced no trade-wind as yet.

March 14. Lat. 22° 34′ N.; long. 32° 50′ W. Barometer, 30.04. Winds: SW., SW., S.SW. Moderate winds, at times baffling and light. I am puzzled to know what to do. If I go about I will make no better than a west course good. [Then do not go about.] As I am, I am diverging from your track further than I wish; but I think I will stand on, hoping the wind will change, and then I can easily run to the westward again.

March 15. Lat. 21° 21′ N.; long. 31° 30′ W. Barometer, 30.00. Winds: S.SW., SW., SW. by S. The wind still holds to the southward and westward; but we now have a very long and regular swell from northward and eastward. I am in hopes the wind will change before a great while.

March 16. Lat. 20° 44′ N.; long. 30° 35′ W. Winds: SW., S.SW., S.SW. Wind still to southward and westward, with no prospect of a change, with the exception of northerly sea.

March 17. Lat. 19° 25′ N.; long. 29° 47′ W. Barometer, 30.02. Winds: S.SW., S.SW., S.SW. First and middle parts, wind S.SW. At midnight wind hauled more to the northward. I shall make a little more westing than is necessary, in order to get into your track again, if possible. [A straight course from where you are to your crossing place on the line is what you should have aimed for. That's *my* track.—See p. 450.]

March 18. Lat. 17° 01′ N.; long. 30° 13′ W. Barometer, 30.05. Winds: W. by N., NW., N. First and middle part, wind NW. and N.; latter part, from NE. to E., with fine breeze. I am in hopes I now have the trades; if so, I shall not make a very long passage after all.

March 19. Lat. 13° 17′ N.; long. 30° 24′ W. Barometer, 30.02. Winds: NE. to E., E., E. Fine winds, at times so strong could not carry royals. Came up and spoke ship Whirlwind, from New York, February 29, to San Francisco. Scud flying very rapidly from east.

March 20. Lat. 10° 03′ N.; long. 29° 52′ W. Barometer, 29.96. Winds: E., E., E. Fine winds throughout.

March 21. Lat. 6° 13′ N.; long. 29° 24′ W. Barometer, 29.92. Winds: E. by S., E. by S., E. by S. Fine winds throughout.

March 22. Lat. 3° 07′ N.; long. 29° 25′ W. Barometer, 29.90. Current, W.SW., ¾ of a mile. Winds: E. by S., E. by S., NE. Light from E. by S. to N.

March 23. Lat. 1° 36′ N.; long. 30° 14′ W. Barometer, 29.96. Current, SW. by W. ½ W., ¼ of a mile. Winds: N., SE. to N., SE. to N. Light variable winds, with some rain.

March 24. Lat. 0° 44′ S.; long. 30° 32′ W. Barometer, 29.92. Winds: SE. to N., SE. by E., SE. by E. First and middle parts, light winds. Latter part, pleasant and moderate. At 7 a. m. crossed the equator in 30° 30′ W.; thus making the passage from Sandy Hook to the line in twenty-two days and fifteen hours; and I feel assured if I had taken your advice more closely whilst I was to the northward, in the lat. of 30° N., instead of getting more to the eastward, had I contented myself with making more latitude than longitude, [then you would have done exactly right,] I could easily have made the passage in eighteen days. But as it was, I got jammed with S.SW. winds, after having made all the longitude I wished, and thus lengthened my passage.

March 25. Lat. 3° 14′ S.; long. 31° 11′ W. Barometer, 29.87. Winds: E. by S., E.SE., E.SE. Light winds, with slight showers of rain.

March 26. Lat. 6° 19′ S.; long. 32° 45′ W. Barometer, 29.90. Current, W. by N., 1 mile. Winds: E.SE., SE. by E., SE. by E. Fine moderate breezes."

Ship Eagle, (John S. Farran,) from New York to San Francisco, 12 days out. (See her crossings; old and middle route.)

"March 28. Lat. 30° 54′ N.; long. 42° 00′ W. Barometer, 30.33; temperature of air, 71°. Wind: S., S. by W., S., light. I have been trying to get into the track, about half way between the March and April tracks, as laid down by Lieut. Maury's directions, but here I have the wind at south, and, on consulting the Charts, I think it advisable to go to the eastward.

March 29. Lat. 30° 36′ N.; long. 39° 01′ W. Barometer, 30.40; temperature of air, 71°; of water, 67°. Wind: S., moderate, S. by E., moderate, S. by E., fresh.

March 30. Lat. 30° 54′ N.; long. 35° 58′ W. Barometer, 30.38; temperature of air, 70°; temperature of water, 66°; cloudy. Winds: S. ½ W., light; S. ½ W., moderate; S., light.

March 31. Lat. 31° 01′ N.; long. 33° 31′ W. Barometer, 30.37; temperature of air, 67°; of water, 66°. Winds: S. by E., moderate; S., moderate; SE. by S., moderate. A swell from E.SE; no weed.

April 1. Lat. 29° 48′N.; long. 34° 11′ W. Barometer, 30.22; temperature of air, 67°; of water, 66°. Winds: SE., moderate; SE. by E., moderate; E.SE., moderate.

The barometer has been steadily falling for the last 30 hours, which, I hope, denotes the neighborhood of the trades. Latter part, yards checked in one point. Considerable swell from SE. The weather begins to assume the appearance of the trades, and the barometer gradually falling as we approach them. I am trying to regain the April track of Lieut. Maury's Sailing Directions.

April 2. Lat. 26° 24′ N.; long. 34° 06′ W. Barometer, 30.15; temperature of air, 68°; of water, 67.5°. Winds: E.SE., moderate; E.SE., moderate; E.SE., fresh. Occasional squalls of rain.

April 3. Lat. 22° 55′N.; long. 33° 53′ W. Barometer, 30.13; temperature of air, 72°; of water, 72°. Winds: SE. by S., unsteady; S.SE., moderate and variable; S., light, variable, and calm. Eight p. m. weather improving; confused sea. At noon water agitated, and strong ripplings running to NW.; temperature, 72°.

April 4. Lat. 20° 58′ N.; long. 35° 37′ W. Barometer, 30.16; temperature of air, 71°; of water, 70°. Winds: southerly, light, and calms; S., variable; E. ½ S., moderate trades. At 4 a. m. the trades sprung up; long heavy sea from the SE.

April 5. Lat. 20° 09′ N.; long. 35° 28′ W. Barometer, 20.15; hazy. Winds: E. by S., fresh, E. by S., moderate, E. by S., fresh. Throughout very hazy and damp; there must be copious evaporation going on.

April 6. Lat. 16° 44′ N.; long. 33° 55′ W. Barometer, 30.05; temperature of air, 78°; of water, 73°; weather, overcast. Winds: E. ½ S., fresh; E. ½ S., fresh; E. ½ S., strong. First part, thick haze. At 5 p. m. the appearance of the weather changed; it hove up dark, threatening ahead, and became overcast, coming over in a body from S.SE.; wind decreasing but hauling more southerly, but the barometer began raising, and rose .04. And I never remem-

bered so heavy a sea in the trades (during 40 years experience) before. There must have been a heavy gale blowing amongst the southernmost of the Cape de Verde Islands.

April 7. Lat. 13° 05′ N.; long. 32° 06′ W. Barometer, 30.00; temperature of air, 77°; of water, 74°; light scud. Winds: E., fresh; E., fresh; E., decreasing; sea smooth.,

April 8. Lat. 9° 35′ N.; long. 29° 54′ W. Barometer, 30.00; temperature of air, 78°; of water, 78°. Winds: E. by N., moderate; E. by N., decreasing; E. by N., decreasing. At noon getting light; trade clouds nearly gone; I fear we are going to loose the trades too soon.

April 9. Lat 6° 22′ N.; long. 28° 45′ W. Barometer, 30.00; temperature of air, 86°; of water, 80°. Winds: E.NE., moderate; E.NE., moderate; NE. to SE., light; dry atmosphere. At 9 a. m. wind shifted in rain squall to SE. by S.; weather sultry and oppressive; temperature of rain water, 78°. At 9 temperature of rain, (result of several trials,) 76°; we were evidently under the cloud ring. I could not perceive that we experienced any current in crossing the trades; we had in the calm belt, just before taking them, and again the last 24 hours, since we lost them.

April 10. Lat. 3° 58′ N.; long. 28° 34′ W. Barometer, 29.96; temperature of air, 80°; of water, 8°. Winds: NE., light and variable; NE., variable; SW., variable and calm.

April 11. Lat. 2° 37′ N.; long. 28° 40′ W. Current, S. 70° W., 0.5. Barometer, 29.96; temperature of air, 80°; of water, 82°. Winds: northerly, light airs; SE., light and calms; NE. to E.SE, variable, calms.

April 12. Lat. 1° 58′ N.; long. 28° 53′ W. Current, S. 79° W., 0.5. Barometer, 30.00; temperature of air, 86°; of water, 82°. Winds: N., light; N.NE., light and calms; NW., light airs. Latter part, a general trade-wind appearance.

April 13. Lat. 1° 41′ N.; long. 29° 11′ W. Current, S. 84° W., 0.8. Barometer, 30.00; temperature of air, 85°; of water, 83°. Winds: SW. by S. to S.SE., variable and light; S. by E., unsteady; S.SE., squally, unsteady in force or direction.

April 14. Lat. 1° 14′ N.; long. 29° 02′ W. Current, S. 80° W., 0.8. Barometer, 30.00; temperature of air, 79°; of water, 81°. Winds: SW. by S., light and variable; S. by E., unsteady; S.SE., squally. Porpoises going S.SW.

April 15. Lat. 0° 14′ S.; long. 29° 31 W. Barometer, 29.95; temperature of air, 78°; o water, 82°. Wind: SE., fresh; SW. by S. to W.SW., unsteady, light, and squally; SW. by S., light and frequent squalls. We must certainly be under the cloud ring. Spoke the ship Ellen Foster, for San Francisco, which cleared from Boston, on the 3d March. Crossed the equator at 8 a. m. in longitude 29° 18′ W. Sailed by course from day to day, 4,213, or 162 more than the April track gives for head-winds. No difficulty about getting to the eastward, or keeping there with so much SW. airs. All these 24 hours we must certainly have been under the cloud ring, for we have been surrounded with dense black masses hanging low and distilling copiously.

April 16. Lat. 0° 47′ S.; long. 29° 08′ W. Barometer, 29.98; temperature of air, 78°; of water, 81°. Winds: E.SE., light and calms; SE. by E., light breeze; SE. by E., hauling to S. by W., in squalls. I think and hope we have at last got hold of the trades; in the last 7 days we have made 355 miles of southing, fair beatimg in light airs.

April 17. Lat. 1° 57′ S.; long. 29° 27′ W. Current, N. 78° W., 0.5. Barometer, 30.00; temperature of air, 78°; of water, 82°. Winds: S.SE., light and variable; SE. by S., decreasing; SE. by S., moderate.

April 18. Lat. 3° 45′ S.; long. 31° 09′ W. Current, N. 84° W., 0.7. Barometer, 30.00; temperature of air, 79°; of water, 82.5°. Winds: S.SE ½ E., moderate; S.SE., moderate; S.SE. ½ E., moderate, with occasional light rain.

April 19. Lat. 6° 03′ S.; long. 32° 17′ W. Current, N. 80° W., 0.5. Barometer, 29.97; temperature of air, 86°; of water, 83°. Winds: S.SE., moderate; S.SE., moderate; S.; freshening. At 10 a. m. made the land from the deck on the lee bow; at 10.30 tacked to the eastward.

Ship Northern Light, (Seth Doane, captain,) Boston to Manilla, eleven days out.

"April 1, 1856. Lat. 29 03′ N.; long. 34° 36′ W. Barometer, 30.38; temperature of air, 71°; of water, 70°. Winds: W.SW., calm, W.SW. First part, gentle breeze, sea very smooth; middle part, calm; morning, calms, large number of nautilus in sight, a sure sign of calm weather, gulf-weed in small pieces, and a number of crabs swimming on the top of the water; end, calm.

April 2. Lat. 28° 40′ N.; long. 34° 42′ W. Barometer, 30.38; temperature of air, 72°; of water, 70°. Current, SW., 10 miles. Winds: calm, calm, SW. Commences, calm, with no steerage; gulf-weed in small pieces and of a dead color; middle, calm. At 6 a. m. light airs sprung up from SW.; all possible sails set; sky clouded.

April 3. Lat. 28° 21′ N.; long. ———. Barometer, 30.35; temperature of air, 73°; of water, 70°. Winds: SW. calm, calm, and SE. Commences, light airs, sea very smooth; calm through the night. At 7 a. m. light air sprung up from SE. At 11 calm again. I never saw so much calm weather at this season of the year in this latitude.

April 4. Lat. 26° 46′ N.; long. 35° 44′ W. Barometer, 30.43; temperature of air, 73°; of water, 71°. Current, SW., 10 miles. Winds: calm and S. by W., S. by W. to SE., SE. by S. First part, calm; no steerage. At 5 p. m. breeze sprung up from S. by W.; braced up on port tack; middle part, light baffling winds; morning strong beezes from SE. by S., and squally. Saw large quantities of weed of a fresh color. End, brisk breeze.

April 5. Lat. 23° 01′ N.; long. 37° 10′ W. Barometer, 30.30; temperature of air, 74°; of water, 72°. Current, SW., 15 miles. Winds: SE., SE., SE. First part, brisk breeze and cloudy; middle part, baffling and puffy; morning, gentle breezes and cloudy. Saw large number of porpoises and a few flying fish. Short swell from SE. End, brisk breezes and cloudy weather.

April 6. Lat. 19° 02′ N.; long. 36° 38′ W. Barometer, 30.26; temperature of air, 76°; of water, 74°. Current, west, 8 miles. Winds: E.SE., E. by S., E. by S., brisk breezes. Saw a land bird, about the size of a sparrow, of nearly red color; flying fish plenty. Middle part, strong breezes and puffy at times; latter part, strong breezes, with a heavy short swell from the eastward.

April 7. Lat. 14° 52′ N.; long. 35° 30′ W. Barometer, 30.10; temperature of air, 78°; of water, 76°. Winds: E. by S., E., E,. strong breezes, with passing clouds. Saw a number of porpoises. Middle and latter parts, the same. Sky has a very smoky appearance. I am sagging off to the westward of the track, but shall keep a good full, and trust to luck for coming out right.

April 8. Lat. 11° 26′ N.; long. 32° 52′ W. Barometer, 30.09; temperature of air, 79°; of water, 77°. Winds: E., E. by N., E. by N. Strong breezes and cloudy; short confused sea from the NE.

April 9. Lat. 8° 35′ N.; long. 29° 52′ W. Barometer, 30.10.; temperature of air, 80 ; of water, 77°. Winds : E.NE., E.NE., E.NE. First part, gentle breezes and passing clouds ; middle, the same ; short sea from NE. ; porpoises around the ship, with a few flying fish. End gentle breezes and pleasant weather ; all possible sails set ; find no trouble in making easting *This is the first voyage I have had the Wind and Current Charts ;* and having very bad weather in coming off the coast, together with a very poor crew, *I had not time to examine the Sailing Directions and Charts until I was well to the eastward ;* then, having S.SW. winds, could do no better than keep on. I think I should have had less calms farther to the westward.

April 10. Lat. 6° 08′ N.; long. 28° 25′ W. Barometer, 30.03 ; temperature of air, 82°; of water, 81°. Winds: E.NE., E.NE., E.NE. to NE. Commences, light breezes and pleasant weather. At 1 p. m. set stud sails ; flying fish a plenty ; middle, the same ; morning, light baffling airs and pleasant ; passing through some tide rips ; sky overcast.

April 11. Lat. 4° 08′ N.; long. 27° 56′ W. Barometer, 30.10 ; temperature of air, 82°; of water, 81°. Winds : E., E. by S., SE. to NE. First part, light airs and pleasant ; middle, the same. At 7 a. m. wind came out from SE. in a rain squall ; and at 9 a. m. hauled back to NE. ; sky nearly clouded over. No current perceptible ; very hot sun at times.

April 12. Lat. 2° 04′ N.; long. 28° 15′ W. Barometer, 30.03. temperature of air, 83°; of water, 82°. Current, W.NW., 15 miles. Winds : E.NE., E.SE., E.NE. to SE. Commences, light breezes from E.NE. and baffling SE. ; middle part, steady at E.SE. ; morning, heavy rain squalls from SE. At 9 a. m. clouded up. Ends, light airs and very hot ; sea much agitated, with light swell from NE.

April 13. Lat. 0° 02′ south ; long. 28° 52′ W. Barometer, 30.01 ; temperature of air, 84°; of water, 82°. Current, westerly, 10 miles. Winds : E.NE., SE., and calm. First part, light airs and pleasant ; middle part, calm ; morning, gentle breezes with a short swell from the southward. Ends, the same. At noon crossed the equator in longitude 28° 52′ W., 23 days from Nantucket south shoal ; distances sailed, 3,937 miles from south shoal. Distance by tables for April, 4,051 ; for March, 3,976, which I think is coming pretty near, although the winds obliged me to go further to the eastward than I intended before taking the trades. I have had plenty of chances to make easting, having had studding sails set for the last five days.

April 14. Lat. 2° 53′ S. ; long. 30° 24′ W. Barometer, 29.98.; temperature of air, 83°; of water, 82°. Current, westerly, 10 miles. Winds : SE. by S., SE. by S., SE. by S. Commences, light breezes and pleasant ; many birds and flying fish ; middle, much the same ; latter, light winds and squally, with rain ; large flocks of birds ; some petrels and the flying fish.

April 15. Lat. 5° 55′ S.; long. 31° 23′ W. Barometer, 29.94.; temperature of air, 83°; of water, 82°. Winds : SE., SE., SE. by S. No current. First part, light airs, with frequent airn squalls ; middle, the same ; latter part, strong breezes, with frequent rain squalls ; short heavy swells from SE."

Ship Shooting Star, (W. E. Kingman, captain,) New York to San Francisco, eleven days out.

"April 2, 1855. Lat. 28° 04′ N.; long. 32° 50′ W. Barometer, 30.04; temperature of air, 67°; water, 67°. Winds: S.SE., E.SE., E.SE. First and middle parts, moderate; latter, fresh, with passing squalls.

April 3. Lat. 24° 02′ N.; long. 32° 30′ W. Barometer, 30.04; temperature of air, 69°;

water, 70°. Winds: SE. by E., E.SE., E.SE. First, squally; middle, fine; latter, cloudy, with passing squalls.

April 4. Lat. 20° 32′ N.; long. 33° 08′ W. Barometer, 30.02; temperature of air, 73°; water, 71°. Winds: SE., SE., SE. First, fresh squalls and heavy showers of rain; middle, fresh and fine; latter, moderate and light. Trade-like weather, but not the NE. trades by about 8 points.

April 5. Lat. 18° 38′ N.; long. 33° 25′ W. Barometer, 30.00; temperature of air, 73°; water, 74°. Winds: S., calm and E.NE., E.SE. First, light baffling breezes; middle, calm and light; latter, moderate.

April 6. Lat. 14° 56′ N.; long. 32° 37′ W. Barometer, 29.91; temperature of air, 82°; water, 75°. Winds: E.SE., E.SE., E. by S. Moderate breezes and fine weather throughout.

April 7. Lat. 10° 55′ N.; long. 31° 09′ W. Barometer, 29.86; temperature of air, 76°; water, 77°. Winds: E. by S., E., E. Fresh and fine throughout.

April 8. Lat. 7° 09′ N.; long. 29° 42′ W. Barometer, 29.89. Winds: E. by S., E. by S., E. by S. Moderate breezes and fine throughout.

April 9. Lat. 4° 10′ N.; long. 28° 25′ W. Barometer, 29.89; temperature of air, 81°; water, 81°. Winds: E., E., E.NE. First and middle, fine; latter, light and cloudy. Appearances of a southerly wind. I have lately noticed that the barometer is lowest at about 3 p. m., say about .05 lower than at 9 a. m. or 9 p. m.; it also has fallen to about the same at 4 a. m.

April 10. Lat. 2° 11′ N.; long. 28° 00′ W. Barometer, 29.84. Winds: E.NE., E.NE., E. and baffling. First and middle, light breezes; latter, light squalls and lighter breezes. Ends calm.

April 11. Lat. 1° 47′ N.; long. 28° 15′ W. Barometer, 29.84; temperature of air, 81°; water, 82°. Winds: NE., baffling, baffling. First, calm and light baffling airs from east; middle, squalls of rain; latter, calm and hot; swell from SE.

April 12. Lat. 1° 21′ N.; long. 28° 27′ W. Barometer, 29.84; temperature of air, 81°; water, 83°. Winds: baffling, baffling, baffling. First, calm and light airs from all points; middle, rain squalls, and continuation of calms; latter, perfectly calm.

April 13. Lat. 0° 40′ N.; long. 28° 47′ W. Barometer, 29.87; temperature of air, 82°; water, 83°. Winds: S. to SE., NE., baffling. First, till 3 p. m. calm, after which moderate, and light breezes from S. to SE. Middle, very light air from the northward; latter, calm and fine weather. This is the calmest time I have ever had in this vicinity.

April 14. Lat. 0° 05′ N.; long. 29° 01′ W. Barometer, 29.87; temperature of air, 81°; water, 81°. Winds: calm, and N.; W. and baffling; calm, baffling, and S.SE. Light baffling airs from the westward until 6 a. m., after which light breezes from S.SE. and cloudy. The line is hard to reach this time; 24 days out.

April 15. Lat. 1° 40′ S.; long. 30° 45′ W. Barometer, 29.80. Winds: S. and baffling; S. and baffling; SE. by S. First and middle, light baffling breezes; latter, moderate, with fresh squalls. Crossed the line at about 6 p. m., in about long. 29° 15′ W., in a little less than 24 days. Distance from noon to noon, 4,084; log distance, 4,225 miles. Have had but little rain, and no thunder or lightning about the line.

April 16. Lat. 4° 17′ S.; long. 32° 52′ W. Barometer, 29.85; temperature of air, 80°;

water, 81°. Winds: SE., SE. by S., SE. by S. Moderate breezes and fine weather. At 9 a. m. Fernando de Noronha bore east, per compass, distant 8 miles. Expect to get jammed about St. Augustine. [But you didn't.]

I call attention to these facts with emphasis, because, at certain seasons of the year, a little too much to the east is fatal to hopes of a quick run. Both the "Shooting Star" and "Northern Light" set out upon the old route, and glided off into the ocean. The latter did not consult Charts or Sailing Directions until she had been out 10 days or 2 weeks, and by comparison was the loser. On the 2d of April both of these ships were near 28° N., the Northern Light being 100 miles to the W., and from this position she passed St. Roque two days ahead of her competitor. The Sword Fish came along the next day, and crossed 28° N., 80 miles E. of the Shooting Star, but did not clear St. Roque until the Star had been past two days.

April 17. Lat. 6° 41′ S.; long. 33° 40′ W. Barometer, 29.90. Winds: SE. by S., SE. by S., SE. by S. First, moderate, with frequent squalls; very little rain; middle and latter, moderate and fine; wind not steady."

Ship Sword Fish, (H. N. Osgood, captain,) New York to San Francisco, ten days out.

"April 3, 1855. Lat. 27° 58′ N.; long. 31° 24′ W. Barometer, 30.10; temperature of air, 66°; water, 62°. Winds: SE. by E., E.SE., SE. by E. Fine whole-sail breezes and pleasant weather. Middle, faint breezes; ends, light and pleasant.

April 4. Lat. 24° 20′ N.; long. 32° 53′ W. Barometer, 30.00; temperature of air, 70°; water, 69°. Winds: SE., S.SE., S.SE.. Light breezes and cloudy; middle, strong breezes and much rain; ends, same.

April 5. Lat. 23° 53′ N.; long. 33° 14′ W. Barometer, 30.10; temperature of air, 68°; water, 70°. Winds: S.SE., S., calm; strong breezes and rainy. P. m., winds haul to the westward; tacked to the eastward; ends, calm and pleasant.

April 6. Lat. 21° 13′ N.; long. 33° 38′ W. Barometer, 30.00; temperature of air, 75°; water, 74°. Winds: SE. by E., SE., SE. by E., calm, fine clear sky. P. m., light breezes from SE.; ends fine.

April 7. Lat. 17° 00′ N.; long. 34° 30′ W. Barometer, 30.00; temperature of air, 81°; water, 74°. Winds: SE. by E., SE. by E., SE. by E.; fresh breezes and cloudy throughout.

April 8. Lat. 13° 04′ N.; long. 32° 48′ W. Barometer, 29.90; temperature of air, 84°; water, 81°. Winds: easterly, easterly, easterly; strong trades and cloudy throughout.

April 9. Lat. 9° 44′ N.; long. 31° 23′ W. Barometer, 29.90; temperature of air, 86°; water, 82°. Winds: easterly, easterly, easterly; light and fine; middle and latter, firm and steady.

April 10. Lat. 7° 40′ N.; long. 29° 40′ W. Barometer, 29.82; temperature of air, 76°; water, 73. Winds: easterly, easterly, easterly; light and fine throughout.

April 11. Lat. 5° 36′ N.; long. 29° 00′ W. Barometer, 29.80; temperature of air, 86°; water, 84°. Winds: easterly, E.NE., easterly; light breezes and fine throughout.

April 12. Lat. 3° 58′ N.; long. 28° 30′ W. Barometer, 29.84; temperature of air, 86°; water, 80°. Winds: easterly, easterly, variable; light airs and cloudy; middle, light, with squally appearances; ends, baffling breezes and passing rain squalls.

April 13. Lat. 3° 10′ N.; long. 28° 30′ W. Barometer, 29.85; temperature of air, 88°; water, 84°. Winds: easterly, variable, W.SW.; light variable airs throughout.

April 14. No observation. Barometer, 29.80; temperature of air, 80°; water, 82°. Winds: variable, variable, variable; faint airs, calms, and passing rain squalls.

April 15. No observation. Barometer, 29.75; temperature of air, 76°; water, 82°. Winds: variable, variable, calm. Light variable airs and calms, and passing rain squalls; two heavy squalls from SW. at 2 p. m.

April 16. Lat. equator; long. 29° 00′ W. Barometer, 29.75; temperature of air, 82°; water, 80°. Winds: variable, N., W.; fresh breezes and passing rain squalls; middle, faint airs, and raining in torrents; ends, wind W., and raining throughout. I am on the equator, 23 days 12 hours from Sandy Hook.

April 17. Lat. 1° 00′ S.; long. 29° 02′ W. Barometer, 29.90; temperature of air, 86°; water, 86°. Winds: variable, variable, variable; light baffling airs and passing rain squalls.

April 18. Lat. 1° 40′ S.; long. 29° 30′ W. Barometer, 29.90; temperature of air, 82°; water, 90°. Winds: variable, SE., SE.; faint airs and squally appearances.

April 19. Lat. 2° 47′ S.; long. 30° 18′ W. Barometer, 29.85; temperature of air, 84°; water, 90°. Winds: variable, variable, variable; faint variable airs from all points, and much rain.

April 20. Lat. 3° 21′ S.; long. 31° 00′ W. Barometer, 29.90; temperature of air, 88°; water, 89°. Winds: variable, S.SE., calm; light breezes and calms, with rain.

April 21. Lat. 4° 34′ S.; long. 31° 08′ W. Barometer, 29.90; temperature of air, 90°; water, 89°. Winds: variable, variable, variable; baffling and light breezes, with rain.

April 22. Lat. 7° 09′ S.; long. 33° 18′ W. Barometer, 29.85; temperature of air, 92°; water, 86°. Winds: SE., S.SE., S. by E. Light breezes, with passing rain squalls; middle, fresh, with rain; ends, fresh, with rain squalls."

Ship War Hawk, (L. B. Simmons, captain,) Boston to San Francisco, fourteen days out.

"April 11, 1855. Lat. 29° 26′ N.; long. 43° 42′ W. Barometer, 30.03; temperature of air, 73°; water, 71°. Winds: SE., E.SE., SE. by S.; commences, light breezes from SE. by S.; at 6 p. m., tacked to S.SW.; the wind hangs from the SE., and I am forced to the west, but must stand on to the south and trust to chance to get to the east, between this and 20° north; ends pleasant.

April 12. Lat. 26° 39′ N.; long. 43° 07′ W. Barometer, 30.04; temperature of air, 73°; water 72°. Winds: SE. by S., E.SE., E.SE., commences pleasant breezes and mostly clear. I fear I am too far west; but the wind hangs from a quarter that will not allow the other tack. Middle much the same; latter part, strong breezes; all sail to advantage.

April 13. Lat. 23° 40′ N.; long. 42° 12′ W. Barometer, 30.04; temperature of air, 74°; water 73°. Winds: E.SE., E.SE., E.SE.; strong breezes and pleasant; middle, the same; latter part, the same. Trying to work up to Maury's track before getting too far south.

April 14. Lat. 20° 51′ N.; long. 41° 09′ W. Barometer, 30.04; temperature of air, 75°; water, 74°. Winds: E.SE., E.SE.; E., commences much the same, strong E.SE. breezes, and passing clouds; middle, the same, wind hauling more easterly; ends pleasant.

April 15. Lat. 18° 25′ N.; long. 40° 04′ W. Barometer, 30.05; temperature of air, 76°. Winds: E.SE., E., E., and E. by N. Strong breezes and passing clouds; middle part, light squalls, wind more northerly; latter part, the same.

April 16. Lat. 16° 22′ N.; long. 38° 40′ W. Barometer, 30.05; temperature of air, 76°; water, 75°. Winds: E. to E. by N., E., E. First part, moderate breezes; middle, much the

same; latter, light squalls, wind round the compass; calm, much tide rips, and appearance of strong current.

April 17. Lat. 15° 00′ N.; long. 37° 45′ W. Barometer, 30.02; temperature of air, 78°; water, 78°. Winds: E. by N., E., E. by S., calm and baffling; middle part, moderate; latter, moderate, much tide rips. I think the worst time I ever had to get along.

April 18. Lat. 13° 26′ N.; long. ——. Barometer, 30.01; temperature of air, 78°; water, 78°. Winds: E., E. by S., E.NE.; commences moderate; middle, the wind canted to E.NE., the first time for 19 days that the ship has laid her course. Latter part, squally; ends cloudy; hope to creep along to the eastward enough by the time I reach 5° N.

April 19. Lat. 11° 00′ N.; long. 34° 58′ W. Barometer, 30.01; temperature of air, 80°; water, 79°. Winds: NE., E., E. First part, strong breezes; middle, east; latter, the same. If I could have been 5° more to the eastward, it would have made a difference of 8 days in my passage to the line.

April 20. Lat. 8° 30′ N.; long. 33° 01′ W. Barometer, 30.01; temperature of air, 82°; water 80°. Winds: E.NE., E.NE., E.NE.; commences pleasant weather; the prospect of fetching down looks better than it has for 15 days past. If the wind continues from this point the next 24 hours, think we shall be all right; the ship has been close-hauled for the last 23 days. Ends with passing clouds.

April 21. Lat. 5° 48′ N.; long. 30° 46′ W. Barometer, 30.01; temperature of air, 83°; water 80°. Winds: E.NE., E.NE., E.NE.; comes in strong trade-wind; middle part, head sea from SE., with squalls of wind and light rain; latter, clear and pleasant. Begin to feel that I shall fetch in all right, and shall be in good condition to-morrow to cross the line.

April 22. Lat. 3° 08′ N.; long. 28° 18′ W. Barometer, 30.01; temperature of air, 84°; water, 82°. Winds: NE. by E , NE. by E., NE. by E.; first part, strong trades; middle, much the same. Now we are running 2 points per compass, with all sail set. Latter, strong appearances of the doldrums; squall rising to the southward, and wind dying fast. Ends, moderate and overcast.

April 23. Lat. 2° 07′ N.; long. 28° 05′ W. Barometer, 30.00; temperature of air, 82°; water 82°. Winds: NE. by E., E.NE., SE. to SW.; commences, squally appearances and doldrums; middle, calm and baffling, with strong tide rips; latter part, light airs; passed through a tide rip laying east and west; ends, overcast, with moderate appearances.

April 24. Lat. 1° 00′ N.; long. 28° 04′ W. Barometer, 30.01; temperature of air, 83° water, 84°. Winds: S.SW., calm and squalls, E.SE.; commences squally with lots of rain; middle part, fine breeze from E.SE., with appearance of the SE. trades; latter part, fine trades and clear; ship going 10 knots, good full, heading S. by W.; shall cross the line by 6 p. m.; a swell from the south.

April 25. Lat. 2° 01′ S.; long. 29° 08′ W. Barometer, 31.00; temperature of air, 84°; water, 84°. Winds: SE. by S., SE. by S., SE.; commences, fine breezes. At 5.30 p. m. crossed the equator in 28° 15′ W., fine SE. wind. Middle, wind more southerly, with passing clouds; clear at times. Crossed the equator in 28 days and five hours from Boston; considering the chances, I think it quite good. Cannot head better than SW. by S., but think I am enough to westward to go all clear. 20 miles current W.SW. this day.

April 26. Lat. 5° 08′ S.; long. 30° 45′ W. Barometer, 80.01; temperature of air, 84°; water, 82°. Winds: SE. by S., SE. by S., SE. by S. Comes in strong breezes and passing clouds, with a head sea from S.SE.; middle and latter, the same."

COMPUTED ROUTE FROM NEW YORK TO RIO, ETC.—*April.*

Latitude.	Longitude.	Course.	DISTANCES.			WINDS; PER CENT.					Total number of observations.
			True.	Per cent.	Average.	Head.	Slants from— N. & E.	Slants from— S. & W.	Fair.	Calms.	
Sandy Hook to											
39° 10′ N.	70° 00′	E.S.E.	200	10.7	221	3.6	*w* 11.1	5.3	80.0	4.0	523
39 10	65 00	E.	233	9.8	256	3.7	*w* 9.3	6.2	80.8	4.5	320
37 33	60 00	E.S.E.	254	6.2	274	2.0	*w* 6.6	4.0	87.4	3.2	151
35 54	55 00	E.S.E.	260	5.4	276	0.7	8.0	8.8	82.5	4.9	136
35 54	50 00	E.	243	6.1	258	0.0	*w* 12.2	7.2	81.6	8.1	125
35 54	45 00	E.	243	5.8	257	0.0	*w* 12.3	3.7	84.0	5.8	81
35 00	42 21	E.S.E.	141	7.7	152	1.5	6.2	*w* 10.8	81.5	0.0	65
30 00	40 00	E.S.E.	312	17.4	366	6.3	6.2	*w* 32.5	55.0	1.0	95
25 00	37 40	S.S.E.	325	13.8	369	3.0	17.0	*w* 19.0	61.0	3.0	97
20 00	35 26	S.S.E.	325	2.6	333	0.0	5.4	*w* 7.2	87.4	5.1	56
15 00	33 16	S.S.E.	325	2.0	331	2.0	0.0	0.0	98.0	0.0	49
10 00	31 09	S.S.E.	325	0.0	325	0.0	0.0	0.0	100.0	4.4	43
5 00	29 04	S.S.E.	325	0.6	327	0.0	1.7	0.0	98.3	0.0	59
Equator	29 04	S.	300	2.1	306	0.0	*w* 5.9	1.3	92.8	6.8	152
			3811		4051						
1 00 S.	29 29	S.S.W.	65	4.4	68	0.0	*w* 17.7	0.9	81.4	5.5	344
1 31	30 00	S.W.	44	3.3	45	0.0	*w* 16.7	0.0	83.3	0.0	12
2 31	31 00	S.W.	85	2.4	87	0.0	*w* 8.4	0.0	91.6	0.0	12
3 00	31 12	S.S.W.	31	2.4	32	0.0	*w* 12.0	0.0	88.0	15.0	17
5 00	32 02	S.S.W.	130	4.0	135	0.0	*w* 20.0	0.0	80.0	12.5	15
7 19	33 00	S.S.W.	150	2.7	154	0.0	*w* 13.3	0.0	86.7	0.0	15
9 00	33 42	S.S.W.	109	3.2	112	0.0	*w* 10.8	0.0	89.2	0.0	55

Observe that between the meridians of 55° and 60° the calms of the horse latitudes most prevail between the parallels of 21° and 27° N.; and between the parallels of 28° and 32°, between the meridians 40° and 45°.

The Eagle (Captain Farral) crossed the line April 15, 1855, in 29° 18′ W., after a passage of 29 days, and sailing 4,213 miles.

Captain Powers to Lieutenant M. F. Maury.

JUNE 14, 1857.

"While at Pernambuco I was shown your Wind and Current Charts, with book directions, and after examining them I felt satisfied of their valuable service to shipmasters in the South American trade.

It would be doing me a great favor, as I am at present in a regular trader to Pernambuco, if you would be kind enough to send me a copy, and I will endeavor to comply with your request, in sending to Washington, on the return of each voyage, a correct journal of the voyage as far as my abilities will admit of.

On my outward passage to Pernambuco, while in the vicinity of the equator, I found a strong current setting to the east, (month of April,) light wind and smooth sea; there could be no possibility of mistake in regard to the course steered, or distance by log. I took particular notice of this current, as I have always thought it set strongly to the westward about the equator, except when far to the eastward. I have given a short abstract of it on the other page; the chronometer proved correct on arrival at Pernambuco. Mentioning the circumstance

among the American shipmasters in Pernambuco was fortunately the means of my seeing your Charts and book, though I had often heard them spoken of and highly recommended. I expect to sail in 6 days for Pernambuco, and would be much gratified to procure them previous to leaving again. If they could be bought, I would not give you the trouble of sending them.

Respectfully, your obedient servant,

JOHN POWER,

Master of Barque Union, of Philadelphia.

Date.	Course steered by compass, and distance by log.	Variation.	Wind.	Latitude observed.	Longitude by chronometer.	Latitude acct. from last observation.	Long. acct. from last observation.	Remarks.
1857.		°		° ′	° ′	° ′	° ′	
April 25	S.S.W., 72	11 W.	W.N.W. to N.	00 38 N.	28 44 W.	.....	.....	Smooth sea and light breeze.
26	.....do.....	...do...	North	00 24 S.	28 04	00 33 S.	28 58 W.	Current N. 80° E., 5.3 miles.
27	S.W. by W., 48..	...do...	S.S.E	00 53	28 01	00 58	28 38	Current E. ¾ N., 3.7 miles.
28	W. by S., 48	...do...	S.S.W. to S .	1 07	28 32	1 11	28 45	Current E.N.E. ½ E., 1.4 miles.
29	S.W. by W., 75...	...do...	S E., N E., E.	1 53	29 15	2 00	29 25	Current N.E. ¾ E., 1.2 miles.
30	S.W. by W., 71...	...do...	N.E. to E ...	2 44	30 00	2 43	30 05	No current.
May 1	S.W. by W., 67...	.. do...	E.N.E.....	3 32	30 49	3 3[illegible]	30 47	Light E.N.E. wind and smooth.
2	S W. by W., 114..	10 W.	N.E.....	4 55	32 08	4 53	32 10	N.E. and continual rain.
3	S.W. by W., 191..	9 W.	S.E. by S....	7 04	34 27	7 05	24 29	Strong S.E. trades.

At midnight anchored in 7 fathoms, the lighthouse bearing N.W.; 39 days from Cape Henlopen.
No S.E. trades until in 5° south latitude.

Time and Crossings to the "Fair Way" off St. Roque—April.

Name of vessel.	From—	Date of sailing.	Longitude of crossing the parallels of—																Total days to—	
			Days.	30° N.	Days.	25° N.	Days.	20° N.	Days.	15° N.	Days.	10° N.	Days.	5° N.	Days.	Equator.	Days.	3° S.	Equator.	St. Roque.
Empire	New York	April 2, 1852	8	40	5	34⅛	2	35	2	35	2¼	32	1¾	29	4⅛	28¾	1¼	28¾	25⅛	28
Golden Gate*	do	2, 1854	7	50	3½	40	1½	37	1½	34⅛	1½	32	1	31	3	30	2	32	19	22
Gambia	Salem	3, 1851	13	39	3	37	6	34½	2	32	2	29	1½	28	6⅛	30⅛	2	32	34	37⅛
Raduga	New York	4, 1851	15	37⅛	2	34	3	33	2	32⅛	1½	31	1½	29	5¾	31	1¼	32	30¾	33
Surprise*	do	6, 1854	7⅛	41	3⅛	34⅛	1¼	33	1½	31	1½	29¾	1¼	29⅛	2	29⅛	1	30	18½	20
Mazatlan	do	6, 1853	20	37	2	35⅛	1⅛	33⅛	1⅛	32	¾	31	2¾	28	4¼	29¾	1⅛	31⅛	32¾	36
Robt. Wing	Boston	6, 1852	15	41¼	2	39½	3	34⅛	2	32	1	31	6	29	3	30	1	30	32	34
American	New York	6, 1853	21	37¾	2	36⅛	2	34	2	32	2	30	2	29	4	30⅛	2	33	35	38¼
Channing	do	7, 1853	18⅛	37	1¾	36	1¾	34	1½	32	2⅛	30	2	28	5¼	29¾	1⅛	31	33½	35⅛
Amazon	do	7, 1853	19	37	2	34	2	31	1	30	1⅛	28	2	27⅛	3¼	29	1¾	30	31¼	34
William Goddard	Boston	8, 1852	11	35⅛	1	33	2¾	32	1⅛	31	1¾	29	2	27¼	6	25¾	2⅛	28⅛	26	29⅛
Cahota	do	8, 1850	7	46	6	38	2	34⅛	2¼	33	1¾	30	3	26½	6⅛	28¾	1¼	30	28⅛	30¾
Vancouver	New York	9, 1850	13	36⅛	3	32	2	30⅛	3	30	2	27¾	3	27	8	27¼	1	28	34	36
Java	do	9, 1854	22	38	2½	38	2⅛	38	2½	35	2⅛	31½	2⅛	29	4⅛	29⅛	2	30⅛	39	41¾
White Squall*	do	10, 1852	9⅛	38	2	34	2	32	1	31	1½	30	1½	28⅛	3	27	3	28	20⅛	24¼
Hamilton	Boston	10, 1851	14	38¾	7	37	5	33	3	31	1½	30	2	28⅛	5	29⅛	1⅛	31	37⅛	43
Tennessee	Richmond	10, 1853	16	40⅛	2¼	38	1¾	35	1⅛	33	1⅛	32	1¼	31	2⅛	31⅛	1¼	32	26¾	28¾
Loo-Choo	Boston	10, 1853	15	43⅛	2	41	3	37	2	34⅛	2⅛	31	2⅛	27⅛	8¾	29	1¼	29¾	35¾	38
Candace, (barque)	New York	11, 1854	18⅛	37	2	36⅛	2	36½	1⅛	35½	2	32	2	30⅛	3⅛	30⅛	1¼	31	31⅛	33⅛
Tartar	Philadelphia	12, 1851	9	39½	6	37¼	1¼	36	1¾	34	1¼	32	2	29	6⅛	30	1¼	31	27¾	29¼
Swan	Richmond	12, 1853	13¾	38	1⅛	37	2	34½	1¼	33	1⅛	31	1¼	29	4¼	30⅛	1	32	25¼	27¼
Bay State	New York	13, 1853	13¾	39½	1¾	38	1¾	35	2	32	1¾	30	2⅛	28⅛	8¼	30	1	30⅛	31¾	33¾
Shooting Star	do	14, 1853	14	40	1⅛	39	1⅛	36	1⅛	34	1⅛	33	2⅛	29½	3⅛	31	1	32	26	28¼
Linwood	Baltimore	15, 1853	11⅛	52	11½	33¾	2	32	2	32	1¾	28¾	1¾	27¼	2¾	30	1¼	30½	33¼	35¼
Oxnard	New York	16, 1853	18	35	5	33	1⅛	32	1⅛	31⅛	2	30	1½	28⅛	2¾	30⅛	1¾	31	32¼	35
Ellen Noyes	Boston	17, 1850	10	46⅛	5	40⅛	9	32	2	31⅛	3	29	7½	26	4⅛	28½	2	30	41	44⅛
Robt. Wing	do	18, 1850	15	37⅛	4	34	3	33	2	32¼	1¼	30⅛	1½	30	2⅛	31	1¼	32	29¼	31¼
Gem of the Sea	do	19, 1850	13	39⅛	6	33	2	33	1⅛	32	1½	32	1½	31	1¾	32	1¼	33⅛	27	29
Star King*	do	19, 1854	8⅛	44⅛	4	47	5⅛	44	1¼	42	1¾	38¾	2	34¾	2	34	1⅛	34	25	27¼
St. Patrick	New York	19, 1850	14	43	4	37	4⅛	32	2	31	2	30	6⅛	28½	6	27	1⅛	28	39	41⅛
Mary A. Jones	Baltimore	20, 1846	9	47	3	41	3	37	3	37	1¼	31	2	31⅛	7	32¾	3	33	28¼	32⅛
Margaret Hugg	do	20, 1853	16	47	7⅛	41⅛	2½	39	3	36	2	33	2⅛	30	3⅛	31	1⅛	31⅛	36¾	39¾
General Pinckney	do	22, 1851	12	39⅛	3	38½	6	37	2	37	2⅛	33	2⅛	28¼	4⅛	30⅛	1⅛	31	32⅛	35⅛
Southerner	New York	22, 1852	11	41⅛	3	41	3	41	2	39	1⅛	36	2⅛	32	3⅛	29¾	5	31	26⅛	32⅛
Victory	do	22, 1853	11	39¾	5	34⅛	2	33⅛	2	31	1¼	30	1¾	28	2¾	30	1¼	31	25¾	27⅛
John Land*	Boston	23, 1853	11	37	4	33	2	33	1⅛	32	1⅛	29⅛	1⅛	28	2¼	30⅛	1¼	31	23¾	25¾
Victor, (barque)	New York	23, 1853	29	45	4	44¾	4	44	4	42	4	38	7	32	7	31½	2	33	59	62¼
Levanter	do	24, 1853	13	44	3¼	43⅛	1¾	43	2	41	1¼	40	2¾	36	2¼	35⅛	1¾	36¾	26¼	45

Time and Crossings to the "Fair Way" off St. Roque—April—Continued.

Name of vessel.	From—	Date of sailing.	Longitude of crossing the parallels of—																	Total days to—	
			Days.	30° N.	Days.	25° N.	Days.	20° N.	Days.	15° N.	Days.	10° N.	Days.	5° N.	Days.	Equator.	Days.	3° S.		Equator.	St. Roque.
Nestorian	New York	April 24, 1851	11½	36	3	34½	2	35	2	33	1½	30½	4	27	5¾	28½	1½	30½		29¾	33
Huma	....do	25, 1851	8	58	4	54	4	50½	8½	46	3	43	5½	39	7½	37	6½	33		40½	48½
Joshua Bates	....do	26, 1850	11	41	3	35	8	33½	4	33	3	30½	5	29	4½	28½	1	29		38½	40¼
Nehemiah Hand	....do	26, 1853	13	41½	2	40	2	37½	2	34¾	2	30½	2	27½	5	28	1½	29		28	30
Stag Hound	....do	26, 1854	17	37½	2	37½	3½	36	1	34	1½	32	2	31	6	31	2	32		33	36¼
Elizabeth	Baltimore	27, 1851	11	54	2	52	5	49	4	44¾	3	40	2	38	8	37	4	37		35	45
Hazard	Boston	27, 1852	11	39½	2½	38¾	2	37	1½	34½	1½	31	1¾	28¾	3¾	28½	1½	29		24	26
Celestial Empire	New York	28, 1853	13	41	2	39	2	36	2	33	2	30	2	29½	4½	32	1½	33		27½	30
Hornet*	....do	28, 1853	8½	42	2¼	41	1¼	40	1½	38	1½	35	2	30½	2	31¼	1	32		a 19	20¾
Atalanta	Boston	28, 1853	15	46	2¼	44½	2¾	41½	2	39	3	34	4	31½	6	31½	2	31½		35	37½
Corinne	New York	28, 1853	18	52	2¼	51	6¾	47	2½	44	2	42	5½	36½	12¼	30½	2	30		49¼	52¼
E. S. Sronton	....do	28, 1853	17	45	3½	42	3½	39½	3½	36½	3	32	3½	28	5	29¼	2½	30½		39	42½
Sarah Boyd	....do	29, 1853	22	38	3	38	2	37	2½	35	3½	32	4	28½	6½	30	2½	30		43½	47½
Do	....do	29, 1853	22	38	3	38	2	37¼	2¾	34	3¾	31	3½	28½	6¾	30	2¼	30		43¾	47½
Arthur Pickering	Salem	30, 1851	17	37¾	3	36	4	36	2	33	2	29½	2¾	27	6¾	27½	1¾	27½		37½	40
Means before 7th edition			13.9	41½	3.3	38½	2.9	36½	2.2	34½	1.9	31¾	2.7	29¾	4.8	30¼	1.8	31		31.9	35.2
Mary L. Sutton	New York	April 1, 1857	14	40	5	37½	4	32	5	31	2	29	1½	27	2½	28	2	28½		34	37
Santiago	Boston	3, 1856	17	38	2	36	2	34½	2½	32½	1½	31	2½	30	3	31	1	31½		30½	32
Messenger	New York	3, 1856	16	43	2	44½	1½	43½	2	41	2½	37	3	32	3	30½	1	32		30	33
Cœur de Lion*	....do	4, 1855	12½	41	2	41½	1½	40	1½	39	1¾	35	2	31	3¼	29½	1¼	31		24½	26¼
Florence*	Boston	5, 1856	11	46	3½	42	1½	40	1¾	36½	1¼	34	2	30½	3	31	1	34		24	26
Said-Bin Sultan	Salem	5, 1856	15	39	2	36	2	33	2	31	3	26½	4	26	3½	28½	1	28½		31½	33¼
Mary L. Sutton	New York	5, 1856	15½	38½	1½	37	1¾	35½	2½	33	1	31¾	2	29½	2	31	1¾	33½		25½	28¼
Hotspur	....do	5, 1857	10	48	3	40½	3	35½	2	34	2	31	2	30	3	28½	3	28½		25	29
Miquelon	...do	7, 1855	16	45	12½	37	2	38	2	36	1½	34	3	31	4	33	2½	35		41	44¼
Ellen Morrison	Baltimore	8, 1857	17½	36½	2½	35	2	33½	3	34	2	31	2	27	5	26½	2	29		34	36¾
Alarm*	Boston	8, 1856	12	40¾	2	36	2	34½	2	33	1½	30	1½	29	3	31	1½	31		24	26¾
Sea Serpent	New York	10, 1855	12½	35	1½	35½	1	36	1	36	2	36	1	34	6	33	2	32		25	28¾
Surprise	....do	12, 1853	13	38	5	37	4	35½	2	33	1½	31	1½	27	4	30	1	30		31	32¾
Kate & Alice	....do	13, 1855	25½	32	2	40½	2	39	2	37	2	34	4	31½	6½	31¾	4	33		44	50
Parana	....do	13, 1857	18	38	1½	37	1½	37	1½	36	1½	34	2	31	4	29	1½	30		30	32
Gray Eagle*	Philadelphia	14, 1857	10	40	1½	38	3½	34½	2	35½	1	34	2	31	2	29½	1	31½		22	23¾
John Land	Boston	15, 1857	15	38	2	38	1	38	2	35	1	34	2	29½	4	29¾	1	31		27	29
Joshua Bradlee	Portland, Me.	15, 1857	15	40½	2	40	2	39	3	35	2	31	2½	28	2½	29½	¾	31		29	29¾
Antagonist	New York	16, 1857	14	47	5	43½	2	40½	3	34	3	31	2	29	4½	29½	2	31½		33½	36
Judge Shaw	Boston	22, 1855	10	45	5	37	2	37	2½	33	2½	29	3	26	7	27½	2	29		32	35¼
Said-bin-Sultan	Salem	23, 1857	13	36	3	31½	4	30	1½	29	1½	28	2	26	4	28	¾	31		29	30½
Robin Hood	New York	25, 1855	12	40½	2½	44	1½	44	2	41	2	37	4	31	7	31	2	31½		31	34
Panama	....do	27, 1856	13¾	33	2	31¾	1¼	30½	1¾	28¾	1½	28½	1½	28	4	28	¾	29		26	27½
California	....do	27, 1856	13	38½	3	37	2	34	2	32	2½	29	3½	26	3	28	1½	29		29	31¼
Speedwell	Boston	28, 1857	14	41	4½	36½	2	34½	1½	33	2	30	1½	28	5	29	1½	32		30½	33
Horatio	New York	28, 1855	16	43	1½	41½	2½	40	3	35	2	31½	2	30	4	32	2	33		31	33½
Sarah E. Dix, (brig)	....do	29, 1855	13	43	2	42	2	39	1	38	2	33	4	31	4	31½	3	31½		28	31½
Inman, (barque)	....do	29, 1856	16	46	4	38	2	37	1½	35	2	33	2	30	7	31½	2	32½		34½	37
Means since 7th edition			12.7	40¼	2.9	38½	2	36¾	1.9	34½	1.7	32.0	2.1	29½	3.6	30	1.4	31		27.1	32.4
Mean of 10 best			9.7	42	2.8	38¾	2.2	36¾	1.5	36¼	1.4	32¾	1.6	30¼	2.5	30¼	1.4	31½		22.0	24.2

a Distance sailed to the equator, 4,019 miles.

Ship Messenger, (Samuel Kennedy, captain,) New York to San Francisco, fifteen days out.

"April 19, 1855. Lat. 29° 09′ N.; long. 43° 10′ W. Barometer, 30.08; temperature of air, 73°; water, 70°. Current, W.SW., 13 miles. Winds: SE. by E., SE., SE. by E.; moderate breeze all day.

April 20. Lat. 26° 51′ N.; long. 43° 52′ W. Barometer, 30.11; temperature of air, 72°; water, 70°. Current, W.SW., 18 miles. Winds: SE. by E., SE. by E., SE. by E. Fine weather and moderate breeze.

April 21. Lat. 24° 11′ N.; long. 44° 32′ W. Barometer, 30.07; temperature of air, 74°; water, 72°. Current, SW. by W., 21 miles. Winds: SE. by E., SE. by E., SE. by E. Fine weather all day.

April 22. Lat. 21° 16′ N.; long. 43° 41′ W. Barometer, 29.97; temperature of air, 73°; water, 73°. Current, W.SW., 17 miles. Winds: E.SE., E.SE., E.SE. Fine breezes and pleasant weather.

April 23. Lat. 18° 45′ N.; long. 42° 50′ W. Barometer, 29.93; temperature of air, 77°; water, 74°. Current, W., 21 miles. Winds: E. by S., E. by S., E. Fine breezes and passing clouds.

April 24. Lat. 16° 13′ N.; long. 41° 49′ W. Barometer, 29.93; temperature of air, 78°; water, 74°. Current, W. by N., 16 miles. Winds: E. by S., E. by S., E. by S. Moderate trades and pleasant.

April 25. Lat. 13° 41′ N.; long. 40° 26′ W. Barometer, 29.88; temperature of air, 77°; water, 77°. Current, W., 21 miles. Winds: E. by S., E., E. Continues the same as yesterday.

April 26. Lat. 11° 50′ N.; long. 38° 51′ W. Barometer, 29.87; temperature of air, 79°; water, 78°. Current, W. by N., 19 miles. Winds: E., E. by N., E. by N. The same as yesterday; current rips.

April 27. Lat. 9° 29′ N.; long. 36° 47′ W. Barometer, 29.84; temperature of air, 80°; water, 78°. Current, W., 20 miles. Winds: E. by N., E., E. Same as yesterday.

April 28. Lat. 7° 30′ N.; long. 35° 00′ W. Barometer, 29.85; temperature of air, 84°; water, 80°. Current, W. by N., 22 miles. Winds: E. by N., E. by N., E. by N. Magnetic variation observed, 10° W. Moderate trades and pleasant.

April 29. Lat. 5° 50′ N.; long. 32° 30′ W. Barometer, 29.88; temperature of air, 83°; water, 80°. Current, W., 16 miles. Winds: E. by N., NE. by E., NE. by E. Fine weather and moderate breezes; ends, cloudy.

April 30. Lat. 4° 24′ N.; long. 31° 10′ W. Barometer, 29.84; temperature of air, 84°; water, 80°. Current, W. by S., 17 miles. Winds: baffling, NE. to E., NE. by E., NE. by E. Commences, rainy and winds, baffling; middle and latter parts, passing rain squalls and moderate breezes.

May 1. Lat. 3° 42′ N.; long. 30° 20′ W. Barometer, 29.83; temperature of air, 85°; water, 81°. Current, W. by N., 13 miles. Winds: NE. by E., E., and baffling, E.NE., baffling, and rain squalls.

May 2. Lat. 2° 06′ N.; long. 29° 23′ W. Barometer, 29.80; temperature of air, 87°; water, 82°. Winds: E. by S., E., E. Passing squalls and moderate breezes.

May 3. Lat. 0° 01′ S.; long. 30° 30′ W. Barometer, 29.79; temperature of air, 86°; water, 82°. Current, W., 12 miles. Winds: SE. by S., SE. by E., SE. by S. Moderate breezes and passing squalls; 30 days to the equator. Rather a long passage.

May 4. Lat. 2° 35′ S.; long. 32° 09′ W. Barometer, 29.78; temperature of air, 86°; water, 82°. Current, W. by N., 21 miles. Winds: S.SE., S.SE., S.SE. Fine trades, with pleasant weather all day; heavy sea on.

May 5. Lat. 4° 57′ S.; long. 33° 48′ W. Barometer, 29.84; temperature of air, 87°; water, 82°. Current, W.NW., 31 miles. Magnetic variation observed, 10° W. Winds: S.SE., S.SE., S.SE. Continues the same as yesterday.

May 6. Lat. 5° 31′ S.; long. 33° 41′ W. Barometer, 29.85; temperature of air, 85°; water, 81°. Current, W. by N., 24 miles. Winds: S.SE., S.SE., S.SE. The same as yesterday. Tacked to the eastward at 7 p. m.; tacked to S.SW. at 7 a. m."

Ship Mary L. Sutton, (P. E. Rowland, captain,) New York to San Francisco, fourteen days out.

"April 20, 1856. Lat. 28° 02′ N.; long. 38° 09′ W. Barometer, 30.16; temperature of air, 73°; water, 70°. Winds: E.SE., E.SE., E. Light airs; poor chance for a passage; looks like the trades. Large quantities of gulf-weed.

April 21. Lat. 24° 49′ N.; long. 36° 47′ W. Barometer, 30.17; temperature of air, 74°; water, 72°. Winds: E. by N., E., E. Pleasant trades; rather light. Much gulf-weed.

April 22. Lat. 21° 57′ N.; long. 35° 40′ W. Barometer, 30.16; temperature of air, 78°; water, 74°. Winds: E., E., E. Light pleasant trades; short rain squalls; beautiful rainbow in the west.

April 23. Lat. 19° 24′ N.; long. 34° 45′ W. Barometer, 30.12; temperature of air, 76°; water, 74°. Winds: E. by S., E. by S., E. by N. Light breezes and pleasant. Sea from SE. by E.

April 24. Lat. 16° 04′ N.; long. 33° 30′ W. Barometer, 30.04; temperature of air, 76°; water, 74°. Current, E., 15 miles. Winds: E., E., E. by S. Fine, pleasant breezes and strong tide rips.

April 25. Lat. 12° 40′ N.; long. 32° 32′ W. Barometer, 30.04; temperature of air, 80°; water, 76°. Current, E., 10 miles. Winds: E. by S., E.SE., E. Fine trades, rather light; strong tide rips.

April 26. Lat. 9° 22′ N.; long. 31° 20′ W. Barometer, 30.04; temperature of air, 82°; of water, 80°. Current, E., 10 miles. Winds: E. by N., E. by S., E.; stiff trades but misty, a little squally; at 10 a. m. clear and pleasant, very warm.

April 27. Lat. 6° 17′ N.; long. 29° 36′ W. Barometer, 30.01; temperature of air, 83°; water, 81°. Winds: E. by N., E.NE., E.NE.; light breezes and pleasant. At 8 a. m. measured distance between moon and sun, which gave long. 30° 10′ W.; rather far west for the chronometer. Middle and latter parts, strong breezes.

April, 28. Lat. 3° 30′ N.; long. 28° 51′ W. Barometer, 20.92; temperature of air, 86°; water 83°. Winds: E.NE., E.NE., E.SE. Begins with pleasant trades; at 4 p. m. canting to the northward and dying away; afraid we are going to lose them. Middle part, light; at 5 a. m., rain in squalls. Latter part, calm, frequent showers; hope we shall not be long in the doldrums; quite a sea from south through the night.

April 29. Lat. 1° 39′ N.; long. 29° 57′ W. Barometer, 29.95; temperature of air, 86°; water, 82°. Winds: calm, SE. to S., SE. by S. At 8 p. m. squall from SE., fresh; hope it is the trades. Wind through the night from S. to SE.; frequent light rain squalls. Latter part, good breeze, lightning to the southward.

April 30. Lat. 1° 11′ S.; long. 31° 48′ W. Barometer, 29.95; temperature of air, 86°; water, 81°. Current, west, 24 miles. Winds: SE. by S., SE. by S., SE. by S.; stiff breezes, with many squalls, and lightning. At last, 3 a. m. crossed the equator in long. 31° 06′ W., after a passage of light breezes, in 24 days and 15 hours from Sandy Hook. Logging, 3,893 miles. The sky-sails have only been in about fifty hours since leaving.

May 1. Lat 3° 47′ S.; long. 33° 34′ W. Barometer, 29.92; temperature of air, 85°; water, 81°. Current, west, 24 miles. Winds: SE. by S., SE. by S., SE. by S.; moderate, with squalls of wind and rain; middle and latter parts, the same. Meridian, the Roccos Islands bear, per compass, SE.; distant 5 miles.

May 2. Lat. 5° 24′ S.; long. 34° 45′ W. Barometer, 29.96; temperature of air, 86°; water, 82°. Current, W.NW., eighteen miles. Winds: SE. by S., SE. by S., SE. by S.; begins with stiff breezes and squally weather; middle part, cleared off; latter part, squally as usual; tacked several times."

On the 22d April, the Mary L. Sutton, with Messenger, were both near the parallel of 21°; the former where, according to the route for April, she should be, and the Messenger about 7° to the westward. This little tabular statement will show the progress of the two ships:

Crossings.

April route.	M. L. Sutton.		Messenger.	
Lat. Long.	*Lat. Long.*	*Days.*	*Lat. Long.*	*Days.*
20° in 35°	20° in 35°	.....	20° in 43°	.....
15 in 33	15 in 33	2	15 in 41	2½
10 in 31	10 in 31	2	10 in 37	2½
5 in 29	5 in 29	1¼	5 in 32	2¾

In this distance the Sutton follows her guide beautifully, and gains two days and a half over her competitor in one week. The Mary L. Sutton, however, appears to be the fastest vessel, which circumstance may help to account for this great gain.

Ship Sea Serpent, (J. D. Whitmore, captain,) New York to San Francisco, thirteen days out.

"April 24, 1855. Lat. 28° 48′ N.; long. 35° 10′ W. Barometer, 30.00; temperature of air, 67°; water, 68°. Winds: N., E.SE., SE.; light winds.

April 25. Lat. 25° 05′ N.; long. 35° 30′ W. Barometer, 29.60. Winds: SE., SE., E.SE.; fresh trades and fine weather.

April 26. Lat. 20° 53′ N.; long. 36° 00′ W. Barometer, 29.60. Winds: SE., SE., SE.; fresh trades and fine weather.

April 27. Lat. 16° 58′ N.; long. 36° 45′ W. Barometer, 29.76; temperature of air, 76°; water, 76°. Winds: SE., SE., SE.; continues fine breezes and squally.

April 28. Lat. 12° 55′ N.; long. 36° 25′ W. Barometer, 29.60; temperature of air, 77°; of water, 79°. Winds: SE., SE., SE.; wind getting light and unsteady.

April 29. Lat. 8° 56′ N.; long. 36° 15′ W. Barometer, 29.65; temperature of air, 81°; of water, 79°. Winds: E.SE., E.SE., E,SE.; fine weather and freshening breeze.

April 30. Lat. 5° 31′ N.; long. 34° 10′ W. Barometer, 29.70; temperature of air, 81°; of water, 79°. Winds: E.SE., E.SE., SW.; wind dies away, calm; light airs from SW.

May 1. Lat. 3° 55′ N.; long. 34° 00′ W. Barometer, 29.75. Winds: SW., SW., SE.; light winds and squally, alternately.

May 2. Lat. 1° 17 N.; long. 34° 15′ W. Winds: variable throughout, with torrents of rain.

May 3. No observation. Calms and squalls and torrents of rain.

May 4. No observation. Weather same.

May 5. No observation. Same throughout and more rain if possible.

May 6. Lat. 0° 34′ S.; long. 33° 15′ W. Current, 1 mile per hour. NW. winds, variable, throughout, and strong current.

May 7. Lat. 2° 23′ S.; long. 33° 30′ W. Current, 1 mile, NW. Winds: calm, SE., SE. Weather the same.

May 8. Lat. 2° 41′ S.; long. 33° 30′ W. Current, 1 mile, NW. Winds: SE., SE., SE. Light winds and squally weather.

May 9. Lat. 3° 00′ S.; long. 32° 30′ W. Current, 2 miles, NW. Winds: S.SE., S.SW., S.SW.; light winds and squally.

May 10. Lat. 3° 43′ S.; long. 32° 10′ W. Current, 1 mile, NW. Winds: S.SW., S.SW., S.; wind continues light, squally, and variable.

May 11. Lat. 5° 39′ S.; long. 34° 15′ W. Current, 1 mile, NW. Winds: S., S., S.SE. Same throughout; smooth water; calm, variable and baffling winds; throughout, occasional rain."

Note by Captain Whitmore, 16th inst., in lat. 8° 26′ S., *long.* 33° 30′ W.: "Here notice that since leaving lat. 38° N., have had the wind dead ahead, not being to the eastward of SE. during that time; and to get this far, ship has sailed over 5,531 miles, [making an average, on a bowline, of 158 miles a day for 35 days; pretty good.] Note that other vessels keeping more to the westward experienced more favorable weather. Take also into account the spars and rigging of the ship rather 'shakey' at this time."

Ship Robin Hood, (R. Bearse, jr., captain,) New York to California, eleven days out.

"May 7, 1855. Lat. 29° 24′ N.; long. 40° 40′ W.; temperature of air, 73°; of water, 72°. Winds: S.SW., S., S.SW. First part, light breezes and fine weather. Middle and latter, fine breezes.

May 8. Lat. 27° 51′ N.; long. 43° 18′ W. Winds: S. by W., S. by E., variable, and S.SE. First and middle, fresh breezes and cloudy. Latter part, wind and weather variable. At 4 a. m. traced on starboard tack. At 7 a. m. tacked to SW. Ends rainy.

May 9. Lat. 27° 03′ N.; long. 44° 00′ W. Temperature of air, 72°; of water, 74°. Winds: S. by E., S.SW. to SE. First, fresh breezes and dark, squally, rainy weather; middle, squally and rainy, wind baffling. At 12 tacked to the eastward. At 4 a. m. tacked to the SW. Latter, light, baffling breeze and fair.

May 10. Lat. 24° 01′ N.; long. 44° 34′ W. Temperature of air, 75°; of water, 75°. Winds: SE., SE. by E., SE. by E. First part, moderate breezes and fair. Middle, fresh breezes and passing squalls, attended with light rain. Latter, gentle breezes and fine weather.

May 11. Lat. 20° 47′ N.; long. 44° 07′ W. Temperature of air, 77°; of water, 78°. Winds: SE. by E., E.SE., E.SE. Throughout, fine breezes and trade-looking weather; winds hold on to the SE. I do not know when I shall fetch, but trust to Providence, and let her go for the equator, and make easting then.

May 12. Lat. 18° 00′ N.; long. 42° 55′ W. Temperature of air, 79°; of water, 79°. Winds: E.SE., E. ½ S., E. ½ S. Throughout, gentle breezes and trade-looking weather; wind a little more favorable; hope to come out right side up yet.

May 13. Lat. 14° 57′ N.; long. 41° 16′ W. Temperature of air, 81°; of water, 80°. Winds: E. ½ S., E., E. ½ S. Throughout, fine breezes and passing clouds. Middle, light showers of rain. Ends very clear and pleasant.

May 14. Lat. 12° 10′ N.; long. 39° 16′ W. Temperature of air, 80°; of water, 81°. Winds: E., E. ½ N., E. ½ N. Fresh breezes and squally looking weather throughout; frequent, light passing showers.

May 15. Lat. 9° 47′ N.; long. 37° 10′ W. Temperature of air, 82°; of water, 82°. Winds: E.NE., E. by N., E. by N. First part, fresh breeze and dark hazy weather, with a few light showers. Middle, more moderate, with dark passing clouds. Latter, fine sky-sail breeze and fine weather.

May 16. Lat. 7° 23′ N.; long. 34° 50′ W. Temperature of air, 83°; of water, 82°. Winds: E. by N., E.NE., E.NE. First and middle, fresh breezes and squally looking, with light storms; latter, moderate breeze and hazy.

May 17. Lat. 5° 40′ N.; long. 32° 12′ W. Temperature of air, 78°; of water, 82°. Winds: E.NE., NE. by E., NE. by E. First part, moderate breezes and misty. Middle, fresh breeze and light passing rain squalls. Latter, squally and rainy, wind variable.

May 18. Lat. 5° 26′ N.; long. 31° 27′ W. Temperature of air, 85°; water, 82°. Winds: SW., N.NW., NE. First part, moderate and baffling; dark, cloudy weather with rain. Middle, light airs and baffling. Latter, light airs and calms, fine pleasant weather.

May 19. Lat. 5° 04′ N.; long. 31° 06′ W. Temperature of air, 82°; of water, 82°. Winds: NE., E., SW. Throughout, light airs and calm, wind all around the compass; weather pleasant.

May 20. Lat. 4° 39′ N.; long. 31° 08′ W. Temperature of air, 83°; of water, 83°. Winds: SW., N.NW., SE. by S. Throughout, light winds and calm; cats' paws from all points of the compass; frequent showers.

May 21. Lat. 4° 16′ N.; long. 31° 00′ W. Temperature of air, 82°; of water, 83°. Winds: S.SE., S., S. by W. First and middle, light airs and calm. Latter, light and variable.

May 22. Lat. 3° 51′ N.; long. 30° 50′ W. Temperature of air, 81°; of water, 83°. Winds: S.SW., N., N.NW., and S.SW. Throughout, light variable airs and calms, with rain. Filled water casks.

May 23. Lat. 3° 24′ N.; long. 30° 40′ W. Temperature of air, 78°; of water, 83°. Winds: SW., calm, and N., E. Light baffling airs and calms, with rain.

May 24. Lat. 2° 56′ N.; long. 30° 32′ W. Temperature of air, 80°; of water, 83°. Winds: NE., E.SE., calm, and SE. First, a fine little breeze, and rainy. Middle, light baffling airs and calms; dark cloudy weather, with showers of rain. Latter part, calm most of the time, with much rain.

May 25. Lat. 20° 30′ N.; long. 29° 58′ W.; temperature of air, 83°; of water, 84°. Winds: SE. and calm, S.SE., S.SE. First, light baffling breeze and calm, with rain; middle, moderate breeze and passing rain showers; latter, light winds and fine pleasant weather. We have the trade-wind, I hope, at last; we have been 8 days making 230 miles.

May 26. Lat. 0° 01′ S.; long. 31° 15′ W. Temperature of air, 82°; of water, 82°. Winds: SE. by S., SE. by S., SE. by S. Throughout moderate breezes and passing squalls, with light rain. Crossed the equator this day 31 days out; and have beaten my last passage 1½ day, and have crossed about 50 miles further west. I hope to get the wind a little more to the equator, so that we can fetch along.

May 27. Lat. 2° 22′ S.; long. 32° 07′ W. Temperature of air, 82°; of water, 82°.

Winds: SE. by S., SE. by E., S.SE. First, moderate breezes and baffling, with rain squalls; middle, same wind, with clear weather; latter, light breeze and variable, with fine weather. At 11 tacked to the eastward. [In that longitude I would not have advised you so to do.]

May 28. Lat. 2° 51′ S.; long. 31° 35′ W. Temperature of air, 83°; of water, 83°. Winds: S.SE., S.SE., SE. by S. First and middle, moderate breeze and baffling, with passing squalls attended with rain. At 6 p. m. tacked to the SW.; at 10 p. m. tacked to the eastward; and at 4 a. m. tacked to the S.SW. Latter part, light breezes and passing rain squalls. Hard wind this.

May 29. Lat. 3° 56′ S.; long. 32° 12′ W. Temperature of air, 79°; of water, 83°. Winds: S.SE., S.SE.; baffling and S. by W. First, moderate breeze and passing rain squalls; middle and latter, squally, with rain. Tacked frequently. At 9 a. m. made the island of Fernando de Noronha, bearing W.SW., distant 7 miles. Ends, squally, cloudy, rainy, and wind playing about.

May 30. Lat. 5° 40′ S.; long. 32° 36′ W. Temperature of air, 84°; of water, 83°. Winds: SE. by S., SE. by E., variable. Light variable winds and cloudy, with rain throughout. Tacked frequently; I never before experienced such weather on this side of the equator."

Ship Panama, (W. P. Cave, captain,) New York to Melbourne, thirteen days out.

"May 11, 1856. Lat. 29° 33′ N.; long. 53° 03′ W. Barometer, 30.10; temperature of air, 73°; of water, 71°. Current, none. Winds: SE., E.SE., E.SE. Throughout quite moderate winds, with easterly swell.

May 12. Lat. 27° 25′ N.; long. 32° 03′ W. Barometer, 30.00; temperature of air, 73°; of water, 71°. No current. Winds: E.SE., E.SE., E. Throughout moderate, with occasional puffs.

May 13. Lat. 24° 32′ N.; long. 31° 38′ W. Barometer, 30.00; temperature of air, 72°; of water, 72°. Current, NW., ½ knot. Winds: NE., NE., E.NE. Moderate breeze, with occasional puffs.

May 14. Lat. 21° 00′ N.; long. 30° 45′ W. Barometer, 29.94; temperature of air, 72°; of water, 72°. Winds: E.NE., E.NE., NE. No change in wind or weather. Large schools of flying fish.

May 15. Lat. 18° 04′ N.; long. 29° 24′ W. Barometer, 30.00; temperature of air, 75°; of water, 74°. Current, NW., ½ mile. Winds: E.NE., E.NE., E. Moderate breezes and fine weather; rather too fine for my passage to the line, as I am so far to the eastward. I shall cross in about 28°, but shall not pinch my ship on a wind.

May 16. Lat. 15° 20′ N.; long. 28° 50′ W. Barometer, 30.10; temperature of air, 78°; of water, 74°. Current, NW., ¼ mile. Winds: E., E., E. Continuation of moderate trades and fine weather. I am now out twenty days; you will see how I was bothered with light southerly winds, which drove me over 600 miles out of my course. I think it is well I am so far east, as I should be jammed on a wind. [What do the tables and the charts, and the crossing, and the united experience of those who have gone before you, say?]

May 17. Lat. 11° 44′ N.; long. 28° 41′ W. Barometer, 20.08; temperature of air, 74°; of water, 76°. Current, NW., ¼ mile. Winds: E.SE., E., E. Throughout moderate trades, varying two points.

May 18. Lat. 7° 54′ N.; long. 28° 06′ W. Barometer, 30.00; temperature of air, 83°; of water, 79°. Current, none. Winds: E.SE. E.SE., E.SE. Throughout, moderate trades;

sometimes not a cloud to be seen, and again so cloudy I have not had a correct meridional observation.

May 19. Lat. 5° 08′ N.; long. 28° 00′ W. Barometer, 30.00; temperature of air, 83°; of water, 80°. Current, north, 1 mile. Winds: E.NE., E.NE., E.NE. Throughout, moderate and fair; passing clouds and smooth water.

May 20. Lat. 3° 48′ N.; long. 27° 49′ W. Barometer, 30.00; temperature of air, 85°; of water, 82°. Current, NE., 1 mile. Winds: S.SW., N.NW., N. Begins with light easterly wind. At 1 p. m. wind shifted southward by westward; middle, baffling—had a couple of light showers, the first since leaving New York.

May 21. Lat. 2° 30′ N.; long. 29° 49′ W. Barometer, 30.00; temperature of air, 80°; of water, 82°. Current, NE., 1 mile. Winds: SW., S.SW., S.SW. Begins with moderate baffling winds. At 4 p. m. heavy squall of wind and rain; middle, tacked ship four times; at 4 a. m. heavy squalls; ends quite moderate. I must have a strong NE. current, as I find my reckoning differs widely.

May 22. Lat. 1° 55′ N.; long. 26° 56′ W. Barometer, 29.98; temperature of air, 85°; of water, 82°. Winds: S.SW., S.SW., S.SW. Throughout, moderate and squally; a long heavy swell from south,

May 23. Lat. 0° 12′ S,; long. ———. Barometer, 29.98; temperature of air 85°; of water, 82°. Winds: S., S.SE. SE. Throughout, moderate winds; a long heavy swell from south. Crossed the line at last, 26 days and 22 hours, a long passage. I think the currents are guided by the winds, and often run in every direction. I have sailed by log and observation 4,694, including working to eastward; long road.

May 24. Lat. 3° 34′ S.; long. 29° 14′ W. Barometer, 30.00; temperature of air, 82°; of water, 80°. Current, NW., 1 mile. Winds: SE., SE., SE. Throughout, moderate and squally, with heavy head sea.

May 25. Lat. 7° 15′ S.; long. 30° 50′ W. Barometer, 30.05; temperature of air, 81°; of water, 81°; Current, NW., 1 mile. Winds: S.SE., SE., SE. Moderate winds and very heavy head sea; ship going bows under; squally; wind varies two points."

Captain Cave is one of my "crack" co-operators. He has kindly undertaken to keep the "man-of-war log," and it is to be regretted that he was forced so far away from his course. The gain—4.8 days—that has taken place in the April passage to the "fair way" off St. Roque,* since the publication of the 7th edition of this work, cannot certainly be ascribed to any improvement that has taken place since 1855 in naval architecture and the sailing qualities of ships; clipper models and fast ships were "all the go" in the "flush times" of California and Australia. The impetus which the gold of those countries gave to ship building and commerce had been fully expressed prior to 1855. This shortening of that passage cannot, in my judgment, be fairly attributed to the introduction of faster ships in the trade that passes St. Roque. It may be attributable, perhaps, to the fact that navigators have more confidence in the Wind and Current Charts, and understand them better than they did.

At first, notwithstanding I insisted that I was only collecting the experience of navigators themselves, as to the prevailing winds and currents on this or that voyage, many shipmasters held that I was somehow or other only theorizing; many therefore stood aloof, while others took up the Sailing Directions and shaped their course by them doubtingly. As long as the

* See pp. 212–13.

wind was fresh and fair, the Charts and Sailing Directions were in favor. But the moment the wind began to pinch, all those of weak faith, and they were many, began to doubt, and then to abandon. Having undertaken the new route, they would, as things began to look a little unpropitious, falter and then go off. The result was a sort of middle course—a compromise between the old and the new route.

In some of the earlier editions of this work, it became necessary to devote a chapter to the "MISTAKES IN THE ROUTE TO RIO." Such mistakes are now so rare that there is no longer any occasion for alluding to them, except as matter of history or of warning. I shall have occasion again to revert to this shortening of the passage to the "fair way" off St. Roque; the point I wish now to impress upon navigators is suggested by Captain Cave's remark that to reach the line he had to sail 4,674 miles, which is 755, or 19 per cent., more than the average, according to computation.

These route tables are calculated according to the doctrine of chances. And when a vessel sticks to the new route, it is seldom that the distance actually sailed by her differs from the computed distance more than 5 per cent.; it frequently is less than 1 per cent., and on the average it would not exceed 2½. Not many steamers sail closer than that, yet here is a voyage of 4,000 miles, projected across the Gulf Stream, the variables, the horse latitudes, and through the NE. trades for sailing vessels alone. The chances of slant and head winds have been brought into the calculation, and that with such precision that the distance actually sailed will not, one voyage with another, differ from the calculated distance more than 2½ per cent.

Is not this the best proof that can be given as to the accuracy of the Wind Charts for this part of the Ocean? We hear of navigators who have crossed the Atlantic 100 times, but which of them will set down beforehand and tell how much adverse winds will turn him out of his way, and how far he will have to sail during the passage?

The doctrine of insurance companies has been applied to the elements for determining these monthly routes, and the rates of insurance are not determined according to principles that are any more correct than are the principles by which the tables of the "Route to Rio, for April" and other months were calculated.

Barque Inman, (S. G. Brooks, captain,) New York to Rio Grande, Brazil, seventeen days out.

"May 17, 1856. Lat. 28° 41′ N.; long. 40° 47′ W. Barometer, 30.22. Winds: S. to W., S. to W., S. to W. Heavy head sea. Strong current from E.SE. Moderate breezes.

May 18. Lat. 26° 45′ N.; long. 39° 05′ W. Barometer, 30.26. Winds: SW., SW., WSW. to N. Throughout, fine breezes; declining and hauling westward. Plenty of gulf-weed. Smooth sea.

May 19. Lat. 24° 28′ N.; long. 37° 57′ W. Barometer, 30.20. Winds: N.NW., NE., E.NE. Light variable breezes.

May 20. Lat. 22° 28′ N.; long. 37° 30′ W. Barometer, 30.20. Winds: E. by N., E. by N., E. by N. Light breezes and passing squalls.

May 21. Lat. 20° 08′ N.; long. 36° 52′ W. Barometer, 30.20. Winds: SE., E., variable. Throughout, brisk trades; puffy; showers at intervals. Squally baffling trades.

May 22. Lat. 17° 08′ N.; long. 35° 08′ W. Barometer, 30.20. Winds: E. by N., E. by N., E. by N. Throughout, fresh breezes. Head sea on. Rigging stretching; cannot carry hard.

May 23. Lat. 14° 03′ N.; long. 34° 47′ W. Barometer, 30.10. Current, NW., half mile. Throughout, strong puffy trades. Foggy and a reddish tint to the clouds. Long seas.

May 24. Lat. 11° 15′ N.; long. 33° 00′ W. Barometer, 30.10. Winds: NE. to E.NE., NE. to E.NE., E. First and middle, strong, puffy breezes, heavy swell; latter, moderate, with frequent rain squalls.

May 25. Lat. 8° 33′ N.; long. 31° 55′ W. Barometer, 30.10. Current, 1 mile, W. Winds: E., E., E. Throughout, moderate breezes and passing clouds. The weather now begins to have the appearance of trades, quite unlike the last few days.

May 26. Lat. 6° 04′ N.; long. 30° 20′ W. Barometer, 30.05. Winds: E. by S., E. by S., E. by N. to E. Throughout, fresh squally weather; showers. Head sea on. Ends, firm and fresh breezes.

May 27. Lat. 4° 30′ N.; long. 29° 40′ W. Barometer, 30.05. Winds: SE., S., N. to SE. Throughout, baffling, and hard squalls of wind and rain, with much thunder and lightning. Squalls very hard. Latter, confused sea.

May 28. Lat. 4° 50′ N.; long. 30° 02′. Barometer, 30.05. Current, 1 mile, NW. Winds: calm, calm, calm. Throughout, baffling airs and calms; squalls all around the compass.

May 29. Lat. 4° 30′ N.; long. 30° 10′ W. Barometer, 30.05. Winds: calm, calm, calm. Throughout, calm, light airs and heavy rains.

May 30. Lat. 4° 10′ N.; long. 29° 40′ W. Barometer, 30.05. Winds: calm, calm, calm. First and middle, calm and light airs from all points; latter, gentle airs from S. to SE.; passing clouds.

May 31. Lat. 4° 14′ N.; long. 29° 59′ W. Barometer, 29.95. Winds: calm, calm, calm. Throughout, calm as usual.

June 1. Lat. 4° 03′ N.; long. 29° 58′ W. Barometer, 30.00. Winds: calm, calm, SE. First and middle, calm and rainy; light airs and squally. Latter part, a light breeze.

June 2. Lat. 1° 50′ N.; long. 31° 06′ W. Barometer, 30.05. Winds: SE., SE., SE. Throughout, fine breezes; lulling and freshening. How refreshing, after 6 days in the doldrums.

June 3. Lat. 0° 14′ S.; long. 31° 44′ W. Barometer, 30.08. Winds: SE., SE., E.SE. Throughout, fine pleasant weather and gentle breezes.

June 4. Lat. 2° 01′ S.; long. 31° 40′ W. Barometer, 30.03. Winds: E.SE., baffling, E.SE. First and middle, moderate breezes; declining. Latter, gentle breezes.

June 5. Lat. 3° 24′ S.; long. 32° 32′ W. Barometer, 39.05. Winds: SE., baffling and calm, S.SE. First, squally; middle, calm and rainy. At meridian Fernando de Noronha bore S. by E.

June 6. Lat. 4° 25′ S.; long. 33° 20′ W. Barometer, 30.05. Winds: S. by E., S. by E., SE. by S. First part, fine weather and gentle breezes. At 4 tacked to E.SE. At midnight tacked to SW. ½ S. Plenty of birds.

June 7. Lat. 6° 33′ S.; long. 34° 12′ W. Barometer, 30.10. Winds: SE., SE., SE. Throughout pleasant weather and moderate breezes. Several vessels in sight."

COMPUTED ROUTE FROM NEW YORK TO RIO, ETC.—*May.*

Latitude.	Longitude.	Course.	DISTANCES.			WINDS; PER CENT.					Total No. observations.
			True.	Per cent.	Average.	Head.	Slants from— N. & E.	Slants from— S. & W.	Fair.	Calms.	
From port to											
39° 11′ N.	70° 00′	E.S.E.	199	9.8	218	2.5	10.8	8.3	78.4	2.1	599
39 11	65 00	E.	238	11.5	464	6.4	12.8	11.2	69.6	2.8	315
37 34	60 00	E.S.E.	254	9.1	277	2.8	6.6	8.8	81.8	1.6	181
35 55	55 00	E.S.E.	250	10.2	285	1.8	9.1	*w* 15.2	73.9	3.6	163
35 55	50 00	E	243	9.9	267	0.7	15.2	12.4	17.9	2.7	145
35 00	47 17	E.S.E.	144	5.5	152	0.9	0.0	*w* 16.9	82.2	1.7	112
33 06	45 00	S.E.	194	9.1	211	3.3	0.0	*w* 11.5	85.2	1.6	61
30 00	41 23	S.E.	263	14.7	301	3.3	13.9	*w* 19.1	63.7	5.6	151
27 00	40 00	S.S.E.	194	6.5	206	2.6	*w* 10.4	0.0	87.0	2.5	39
25 00	40 00	S.	120	9.4	131	3.4	5.1	5.1	86.4	0.0	60
20 00	37 46	S.S.E.	325	0.3	326	0.0	1.8	0.0	98.2	0.0	54
15 00	35 36	S.S.E.	325	0.8	327	0.0	*w* 4.4	0.0	95.6	0.0	23
10 00	33 29	S.S.E.	325	0.0	325	0.0	0.0	0.0	100.0	0.0	54
5 50	31 24	S.S.E.	325	0.5	325	0.0	*w* 4.8	0.0	95.2	0.0	42
Equator...	31 24	S.S.E	300	0.6	302	0.0	*w* 5.2	1.7	93.1	3.4	115
			3708		3917						
1 00 S.	31 49	S.S.W.	65	2.1	66	0.0	*w* 9 9	0.4	89.7	0.0	264
1 27	32 00	S.S.W.	29	0.0	29	0.0	0.0	0.0	100.0	6.2	15
3 00	32 39	S.S.W.	101	3.3	104	0.0	*w* 16.7	0.0	83.3	0.0	12
3 51	33 00	S.S.W.	55	0.0	55	0.0	0.0	0.0	100.0	0.0	21
5 00	33 28	S.S.W.	75	0.0	75	0.0	0.0	0.0	100.0	0.0	6
6 24	34 00	S.S.W.	84	0.0	84	0.0	0.0	0.0	100.0	0.0	9
7 00	34 15	S.S.W.	39	14.2	45	0.0	*w* 48.9	2.4	48.7	0.0	41
7 00	33 30	E.	44	3.2	45	0.0	0.0	*w* 11.8	88.2	0.0	23
8 13	34 00	S.S.W.	79	32.0	104	13.0	*w* 52.2	0.0	34.8	0.0	23

In this month and near this route, the calms of the horse latitudes are most prevalent between the meridians of 40° and 45°, and the parallels of 32° and 33° N. Between the meridians 25° and 30° the equatorial calms are most prevalent from 5° N. to the line, the greatest prevalence of calms being between 3° and 4° N. Between the meridians of 30° and 35° the equatorial calms prevail most between 3° and 5° N. Here they extend also a little to the south of the line. In the main, the equatorial calms prevail as you go to the east. When you cross the line to the west of 29°, draw a line from the point of crossing to St. Augustine, and aim to keep to the eastward of it, and for this purpose take advantage of all slants. This direction applies to every month. You should aim generally to make easting, when easting becomes necessary after crossing the line, before crossing 7° S.

If you can cross 7° S. to the east of 34°, there will probably be no necessity of steering the east course, as by the table. Observe that calms are seldom or never found along this route in this month south of 1° S.

The equatorial calms in April, between 25° and 30° W., prevail from 5° S. to 3° N., being most prevalent between 1° S. and 1° N. Between 30° and 35° W. they prevail from 3° N. to 3° S., being most prevalent between 2° and the line.

Observe, also, how the winds in this month hang from the southward in latitude 35° to 30° N., and between the meridians of 40° and 45° W.

Time and Crossings to the "Fair Way" off St. Roque—May.

Name of vessel.	From—	Date of sailing.	Longitude of crossing the parallels of—																Total days to—	
			Days.	30° N.	Days.	25° N.	Days.	20° N.	Days.	15° N.	Days.	10° N.	Days.	5° N.	Days.	Equator.	Days.	3° S.	Equator.	St. Roque.
Hersilia, (barque)	Boston	May 1,1853	10	55	6	52⅛	16	43	8	36¼	3½	31⅛	2⅛	28¾	6⅛	29	2⅛	30⅛	52½	56
Avondale	Baltimore	2,1853	19	37⅛	1½	36	2⅛	34½	1	33	2	30⅛	2	29	6	30⅛	1	31	34	35⅛
Oceanus	Boston	2,1853	20⅛	42	7½	39	3	37	2	35	2½	32	5½	26½	11¾	28¾	1¼	29½	52¾	55¾
Mason	New York	2,1851	17	37	10	34	5	33	2	30	1½	29	3½	27	3¾	28½	1⅛	30	42¾	45¼
Æolian	....do	3,1851	12	42	5	39⅛	5	38	2	36	2	35	4	28⅞	6⅛	30	2⅛	32	36⅛	40
Staffordshire*	Boston	3,1852	6⅛	52	3	51	4⅛	45½	2¼	42	2	37	3	32	3½	29¾	1¼	30½	24¾	25¾
Shirley	New York	3,1854	10	52¼	3	48¾	4	45	7	39¼	2	34¾	2	32	3	31	1	32	31	32¼
Robin Hood	Boston	6,1854	13¼	37	7¾	32	2¾	32½	1½	32	1¼	31	2¼	29⅛	3⅛	30	1¼	31½	32¼	34
Nimrod	New York	6,1853	17⅛	49½	5¼	48	2⅛	48¾	3	48½	2½	48	2½	48	9	31	2	31¾	42½	46
N. B. Palmer	....do	7,1851	7	49½	3	42½	6	37	1½	35	1½	31	3	26¾	4¼	31	2	31	26¼	29¾
Otawa	....do	7,1853	14½	45¼	2½	44	2¼	43	2⅛	40	3½	35	2¾	32	5½	33	1¼	32	33½	35¾
Relief, (United States ship)	....do	7,1851	22	41½	5½	37	2⅛	34¾	3	31¾	2½	28	5⅛	26	4¼	28¼	1⅛	29½	45¾	48¼
Audiben	Boston	8,1852	14	42	2	40	2¼	38	1¾	36½	2	34	3	32	5	32	2	32	30	34
Sarah Boyd	Philadelphia	9,1850	14	40	4	34½	2	32½	1⅛	31½	2	31	2½	29	6½	28¼	3¼	30	32½	38
Greenwich	Boston	9,1853	15	43	4	43	3	42	3	39	2½	35	5½	27⅛	3½	30½	1½	31¼	36½	39
Equator	....do	9,1851	17	43½	8	39	2¼	38¾	1¾	38½	1½	37	4¾	33	8	31	1	31	43¼	45¼
White Squall	Philadelphia	10,1853	13½	41	2	41	1½	40	1⅛	38	1¾	35	3¾	29	1¾	31	1⅛	32	25¾	28
F. Copeland	Boston	11,1852	19	43	3	39	2¼	37	1¾	35	2	32	5½	29	2¾	31½	2¾	32	36¼	40
Ino	New York	11,1853	13½	43	2½	42	2	40	2	37	2	32½	2	30	6	30⅛	1¼	30⅛	30	32
Carica	Philadelphia	13,1852	17	43½	2	39½	3	37	2	35	1½	33	6½	27¼	3	32	3	33¼	35	39¾
Element	New York	13,1850	18	42	4	39	3	34	2	32	3	28	7	27½	3¼	29⅛	1¾	29	40¼	43
Minguelon	Salem	14,1850	11	38¼	3	33	5	27	2	27	2	27	5	26	3¼	29	1¼	30	31¼	33½
Sea Breeze	Boston	15,1851	13	43¾	5	40	3	40	1½	39	1¾	36	5	32	6¼	30	1¼	30⅛	35½	38¼
Flying Cloud	New York	15,1852	15½	42½	2	37	3	35	1	34	1½	32½	2½	31	2⅛	31	1½	34	28	30½
Milton	Boston	15,1851	17	37	4	36	2	36	3	32	2⅛	28	4⅛	26	3¾	28	1¼	28¾	36¾	39
West Wind	....do	15,1853	8¾	42¾	3¾	42½	3	41	2	38½	2½	34	3½	28	3¼	30¼	1¼	29½	26¾	28¾
Falmouth	....do	16,1843	18	40	2	39½	4	38	2	34	1½	32	4½	28¼	4	31¼	1½	32	36	38¼
Bay State	New York	16,1854	22	39	5	38	2	35½	2¼	32¼	2¾	28¾	3	26	3½	27⅛	1	28½	40½	42¼
Pelican State	Philadelphia	16,1853	16	39	3	39	3	36	2½	33	2½	29¾	2	28	10	29½	2	31	a 39	42
Roman	New York	17,1850	16	36	1½	34	1	33	1½	31	2	29	5	26	2½	29	1	30	29½	31¼
Cyane	Hampton Roads	18,1853	13	37¾	3¼	37	2	36	1¾	33	1¾	30	2½	29	2¼	32	2½	32¾	26½	30
Oneida	New York	18,1852	13	38	2	34	3	32	1½	31	1½	29	6	27	2¼	29½	1¾	30½	29¾	31¾
Eliza Mallory	....do	18,1852	12½	41	2½	37	2½	35	1½	32	2	30	6	27½	4¾	31	1½	31	31¼	34¼
Union	....do	19,1853	23	38	3	36	2½	33¾	2	32	2	30½	5	29	7½	23	1½	35	45	47¼
Reindeer	....do	19,1853	13	40	3	40	3	39	2	36½	2¼	32	2¾	29½	4¼	30	2	29¾	30¼	33¼
Belle of the West	Boston	20,1853	14½	46	4	46½	1½	47	2	44½	2	41½	3	37	9	35¾	2	34½	36	39

* Distance per log to equator, 3,920 miles.

Time and Crossings to the "Fair Way" off St. Roque—May—Continued.

Name of vessel.	From—	Date of sailing.	Longitude of crossing the parallels of—																Total days to—	
			Days.	30° N.	Days.	25° N.	Days.	20° N.	Days.	15° N.	Days.	10° N.	Days.	5° N.	Days.	Equator.	Days.	3° S.	Equator.	St. Roque.
Witch of the Wave*	Boston	May 21, 1851	9	42⅛	5	39	1	33	1½	36	1½	34	4	30¼	2¼	31	1	32¼	24¼	26¼
Dragon*	....do	21, 1851	9	43	5	38	2	37	1	36	2	33	3	31	3	31½	1½	31½	25	27½
Grey Hound	New York	21, 1851	10	38	3	36	3	34	2	30	2	26½	3	25½	4½	29	1¼	30	27½	29¾
George Lestie	....do	21, 1851	13	39	5	41	2	39	2	37	2	34	4	31	6½	30	1	30	34¼	36½
Sandusky	....do	21, 1853	20	37⅛	2	37¼	2	35	1½	32	2	30	4½	29	12	32	¾	32	44	45¾
Mary Ellen	....do	21, 1851	10	42	4	38	2	37	2	36	2	33½	3	32½	6½	32	1½	33	29½	33
N. B. Palmer*	....do	22, 1852	8	41½	3	33	2½	32	1½	30	1¼	28	5	25¼	2¼	28	1	30½	23½	25¼
Isabelita Hyne	....do	22, 1852	10	39	2	36	2	35	2	31½	1¼	30	4¾	28	3¼	30½	1	31	25¼	27¼
Emily Wilder	Salem	24, 1850	14	41	3	38	2½	32	1½	30	3	27	5	25½	2	28¼	1	28	31	33
Albany	New York	24, 1851	15½	39	3	37	2½	35	1½	33	2	30	8½	27¾	8¾	27½	1¼	28	41¾	44½
Maria L. Davis, (schooner)	....do	25, 1854	13	39	4	38	2	35¾	3	30½	2	28	3	27	3½	28	1	28½	30½	32½
Paladin	Baltimore	25, 1854	10	44¾	4½	41	2	39	2½	36	2	32½	5	29½	5	31½	1	32	31	33
General Jones	Wilmington	26, 1852	15	42	2	39½	2	39	3	35	3	30	6	26¼	3½	30½	1½	31	31½	37
Baldwin	Baltimore	26, 1854	10	44¾	4½	41	2	40	2½	36	2¼	32½	4¾	29½	4¾	31	1¼	32	30¾	33
Golden State*	New York	26, 1854	9	48¾	4	43½	2	43	1	43	2	38½	2	36	3½	36½	2¼	36	23½	26½
Oneida	....do	27, 1850	13	44	2¼	43	2	40	1¾	38	2¼	36	7¾	31½	8	29¼	1	29¼	36	38
Samoset	Boston	29, 1852	11	40	2½	36	2	35½	1¼	34	1¾	31	8	25	2¼	28¼	1¼	29½	28¾	31
Huntingdon, (barque)	New York	30, 1854	18	40½	2½	40½	2½	39	2	36½	4	31	9	29	2½	30	1	32	40½	42¼
Means before 7th edition			14	42	3.7	39½	2.9	37½	2.1	35	2.1	32	4.2	29¼	4.8	30¼	1.5	31	33.8	36.4
Union	Boston	May 1, 1857	15	33	2½	33	1½	33	1½	32¾	1	31	1½	29	4½	31	1	32	27½	29½
Beverly*	....do	2, 1856	11	39	1½	35	2½	31	2	30	1	30	1½	28	3	28½	1	29	22½	24½
Santa Claus	....do	4, 1856	15	39	2	37	2	35½	2	34	2	32	2½	29	4½	31	2	32	30	34
Napier	New York	4, 1856	14	43	3	39	1	38	2	36	1½	32½	1½	30	6	31	2	31	29	32½
Godfrey, (barque)	....do	4, 1857	15	39	2	37	3	35	2	33	2	30	4	28½	5	31	2	32	33	36
Surprise*	....do	6, 1857	9	42	1½	37	1½	35½	1½	34	1½	29½	1	28	5½	28	1	30	21½	23¼
Swordfish*	....do	7, 1856	11	41½	2	39	2	39	1½	35	1½	32½	2	31	5	33	4½	32½	25	31
Candace	....do	10, 1855	12	49½	3	48	3	46	7	38	2	34	5	29	8	31	2½	32	40	44
Golden Eagle	....do	10, 1855	13	41½	3½	39	2	37	2	33	1½	29	1½	28	3	31	2¼	33	26½	28½
John E. Thayer	....do	11, 1856	14	42½	3	41¼	2¼	40½	1¾	37	2½	31	3½	28½	4	33	1	34½	31	33¾
Endeavor	....do	18, 1853	16	39½	3½	38	1½	37	2	34	2	30	7	26	3	30	1	31	35	37
John Knox	....do	19, 1856	13	41½	1½	41	2½	38½	2	35½	2	31	3	30	6	34	2	34¾	32	35¾
Flying Dutchman*	....do	19, 1856	11	37½	2	36	1	35	1½	33	1½	30	4	28½	3	30½	2	32	24	27¼
Sarah H. Snow	Boston	23, 1857	12	41	2	37	3	33	1½	31	2½	29½	4	29	6	31	2	32½	31	34
Game Cock	New York	24, 1856	14	45	1½	44	1½	43½	2	40½	2	36¾	6	32½	4½	33	5	32	31½	37½

Time and Crossings to the Fair Way off St. Roque—January—Continued.

Name of vessel.	From—	Date of sailing.	Longitude of crossing the parallels of—																Total days to—	
			Days.	30° N.	Days.	25° N.	Days.	20° N.	Days.	15° N.	Days.	10° N.	Days.	5° N.	Days.	Line.	Days.	3° S.	Line.	St. Roque.
Borneo*	Boston	26, 1857	7	45	2½	40	2½	37	2	36	2	33	4	30	3	33	5	32	23	29
Competitor	do	28, 1855	12	45½	2½	44	2	41	1	40	2	36	3	30	5	33	4	31	27½	32
Kitty Simpson	New York	29, 1857	13	41	6	37½	5	34	5	32	3	30	1½	29	3½	29	2	30	37	39
Western Continent	do	30, 1856	12	39	2	38	2	34	1	32½	3	30½	4	30	2½	32½	3½	33	26½	31
Enterprise	do	31, 1856	20	40	1½	40	1½	38½	1½	35	1½	32½	5	26½	3	26½	1	28	34	36
Means since 7th edition			12.9	41¼	2.4	39	2.2	37	2.1	34½	1.9	31½	3.3	29	4.4	31	2.3	31¾	29.4	32.7
Mean of 10 best			9.0	43¼	2.9	39	2.1	37¼	1.6	35½	1.6	32½	2.9	30	3.4	31	2	31	23.7	26.7

Bottle paper.

"Ship Oracle, of Thomaston, from New York for San Francisco, 6th of April, 3 p. m. Lat. 2° 05′ S.; long. 31 46′ W.; 23 days out; all well.

Will the finder please enclose this to Lieut. Maury, Washington Observatory, stating when and where found."

ALBERT D. WOOD,
Commander Oracle.

Picked up 22d of June, 1858, at Flat Shoal Bay, north side Barbadoes. Course N. 60° W.; 1,902 miles, or 1 knot an hour for 77 days.

The Oracle made an excellent run to the line, and the drift of this bottle affords one of the best tests of the current that we have had. This bottle drifted nearly at right angles with the wind. The actual set of the current is therefore and probably even more to the north than this bottle makes it; for the bottle must have been driven to the west, more or less, by the northeast trades.

In this month as well as in the last there is also a marked improvement in the passages to the line. The table of crossings, now published for the first time, shows a clear gain, since the date of the 7th edition, of 10 or 12 per cent. Practically, according to this table, the best crossing of 30° and 25° N., for May, is near the meridian of 41° and 40°, as suggested in the route table, p. 223. After that experience suggests crossings somewhat further to the east than the route table gives. A vessel may consider herself in a good position for a May passage anywhere between the new route crossings, per table, and the crossings "since 7th edition." This difference of crossing may, in part, be due the May currents, which were not taken into the account when the bearings for the route tables were computed. The following bottle paper suggests a westerly current, which, however, cannot be strong, for the bottle was probably drifted quite as much by the wind as by the currents:

"On the 15th of May, 1856, at 2 p. m., the Dutch ship Prins Frederik der Nederlanden, S. J. Rotgans, master, was sailing in lat. S. 11° 17′, and long. W. 10° 21′.

The finder of this bottle is requested to cause this to be published in the nearest newspaper, with the place and date of finding; and, if possible, to forward this note to the Superintendent of the National Observatory at Washington."

Picked up three miles north of Ceara, in Brazil, 9th of October, 1856, Drift, say 12 miles a day.

Ship Golden Eagle, (Samuel A. Fabens, captain,) New York to San Francisco, thirteen days out.

"May 24, 1855. Lat. 28° 34′ N.; long. 40° 37′ W. Barometer, 30.09; temperature of air, 75°; water, 75°. Winds: E. to E.SE., E. ½ S., E. by N. to E. by S. Light airs and pleasant; latter, moderate.

May 25. Lat. 26° 40′ N.; long. 39° 43′ W. Barometer, 30.02; temperature of air, 78°; water, 76°. Winds: E. by S. to E., E. by S. to E., E.SE. to SE. by E. Light airs and calms.

May 26. Lat. 26° 11′ N.; long. 40° 00′ W. Barometer, 30.06; temperature of air, 79°; water, 78°. Winds: E. to S.SE., calm, calm. Light airs and calms.

May 27. Lat. 24° 13′ N.; long. 38° 55′ W. Barometer, 30.08; temperature of air, 79°; water, 77°. Winds: E.NE., E., E. Light airs and pleasant.

May 28. Lat. 22° 22′ N.; long. 38° 03′ W. Barometer, 30.09; temperature of air, 78; water, 77. Winds: E.SE., E. by S., E. by S. ½ S. Light airs and pleasant.

May 29. Lat. 19° 35′ N.; long. 36° 50′ W. Barometer, 30.00; temperature of air, 78°; water, 77°. Winds: E. to E.SE., E. by S., E. by S. Light airs and squally appearances; middle and latter, moderate breezes and overcast; squally appearances.

May 30. Lat. 17° 17′ N.; long. 34° 57′ W. Barometer, 29.98; temperature of air, 78°; water, 77°. Winds: E., E., E. Same as yesterday.

May 31. Lat. 14° 27′ N.; long. 32° 53′ W. Barometer, 29.96; temperature of air, 80°; water, 79°. Winds: E., E., E. As yesterday, with an occasional shower of rain.

June 1. Lat. 11° 37′ N.; long. 30° 39′ W. Barometer, 29.87; temperature of air, 80°; water, 80°. Winds: E., E., E. to E.N.E. As yesterday, throughout.

June 2. Lat. 8° 29′ N.; long. 28° 20′ W. Barometer, 29.84; temperature of air, 80°; water, 80°. Winds: E.NE., E.N.E., E.NE. to NE. Moderate breezes and pleasant.

June 3. Lat. 5° 32′ N.; long. 28° 12′ W. Barometer, 29.76; temperature of air, 82°; water, 80°. Winds: NE., NE., NE. to SE. by S. First, moderate breezes and pleasant; middle, the same, with sharp lightning to the SE.; latter, light and variable winds; light rain.

June 4. Lat. 3° 59′ N.; long. 29° 02′ W. Barometer, 29.80; temperature of air, 85°; water, 84°. Winds: S.SE., S. by E., S.SE. Light and moderate breezes and pleasant weather.

June 5. Lat. 1° 50′ N.; long. 30° 02′ W. Barometer, 29.80; temperature of air, 86°; water, 84°. Winds: SE. by S. ½ S. to SE. ½ S., SE. ½ S. to S.SE., SE. by S. Moderate and pleasant.

June 6. Lat. 00° 01′ S.; long. 31° 23′ W. Barometer, 29.85; temperature of air, 84°; water, 82°. Winds: S.SE., SE. by S., SE. by S. First and middle, light airs and pleasant; latter, moderate. Estimating from noon to noon, we have sailed 4,063 miles. [Computed distance, as per table, 3,917; difference, 3¾ per cent.]

June 7. Lat. 2° 23′ S.; long. 32° 59′ W. Barometer, 29.84; temperature of air, 85°; water, 82°. Winds: SE. by S., SE., SE. by S. Moderate breezes and pleasant, with occasional light rain squalls.

June 8. Lat. 4° 01′ S.; long. 33° 30′ W. Barometer, 29.81; temperature of air, 85°; water, 83°. Winds: SE. by S., SE. by S., SE. Moderate breezes and pleasant; stood 6 hours to the eastward.

June 9. Lat. 6° 34′ S.; long. 34z 05′ W. Barometer, 29.84; temperature of air, 82°; water, 83°. Winds: S.E., E.SE., E.SE. to SE. by E. Moderate breezes and pleasant."

Ship Flying Dutchman, (A. Hubbard, captain,) New York to San Francisco, eleven days out.

"May 31, 1856. Lat. 28° 04′ N.; long. 37° 04′ W. Barometer, 30.23; temperature of air, 76°; of water, 74°. Winds: SE., E.SE., E.SE. Commences with fresh breezes and unsteady, with occasional strong puffs, and very fine rain. Quantities of sea-weed. Meridian, fresh breezes and fine trade-like weather. Strong current rips. At 8 p. m. fresh breezes and squally, with fine rain. A turbulent sea.

June 1. Lat. 24° 13′ N.; long. 36° 03′ W. Barometer, 30.14; temperature of air, 75°; of water, 75°, Winds: E.SE., E.SE., E.SE. Unsteady breezes, with frequent squalls, and

fine rain; wind canting southerly in squalls. Sea-weed in moderate quantities. Meridian, fresh breezes and pleasant; passing through current rips. 8 p. m., wind very unsteady from SE. to E., with frequent squalls and light rain.

June 2. Lat. 20° 39′ N.; long. 34° 56′ W. Barometer, 30.12; temperature of air, 77°; of water, 75°. Winds: E.SE., E.SE., E.SE. Fresh breezes and unsteady, with occasional showers of fine rain. But little sea-weed. Continual current rips agitate the water. 8 p. m. cloudy, and not so much wind.

June 3. Lat. 17° 31′ N.; long. 33° 38′ W. Barometer, 30.07; temperature of air, 78°; of water, 76°. Winds: E.SE., E. by S., E. by S. Commences with light winds and cloudy. Meridian, moderate and fine. No sea-weed. Frequent current rips. P. m., no northing in our trades as yet; it is not material to us, however, in our position. It is now my intention to make what easting may be necessary to clear St. Roque along "the northern limits of the SE. trades," whichever side of the equator I find them.

June 4. Lat. 13° 51′ N.; long. 32° 03′ W. Barometer, 30.03; temperature of air, 79°; of water, 77°. Winds: E. by S., E. by S. Fresh breezes and steady throughout. Frequent current rips. No sea-weed. No current indicated by difference of account and observations. p. m., light showers of rain.

June 5. Lat. 10° 47′ N.; long. 29° 59′ W. Barometer, 30.03; temperature of air, 79°; of water, 79°. Winds: E., E., E. by N. Fresh breezes and unsteady, with frequent light squalls, with rain. Frequent current rips. At noon rather a doldrum looking sky. No sea-weed.

June 6. Lat. 70° 02′ N.; long. 28° 12′ W. Barometer, 29.97; temperature of air, 83°; of water, 81°. Winds: E., E. by S., E. by S. Fresh breezes and steady. Calm and squally looking clouds about the horizon. Current rips still. Noon, we are in the doldrums "to all intents and purposes," with a prospect of plenty of rain.

June 7. Lat. 5° 46′ N.; long. 28° 20′ W. Barometer, 30.00; temperature of air, 80°; of water, 81°. Winds: SE., S.SE., S.SE. Light variable winds and calm. Noon, no observation; lights, however, taken this morning indicate an easterly current of 1 knot.

June 8. Lat. 5° 31′ N.; long. 28° 11′ W. Barometer, 39.02; temperature of air, 82°; of water, 83°. Winds: variable, N., N. Light winds and variable, calm, squalls, with rain throughout.

June 9. Lat. 4° 51′ N.; long. 28° 25′ W. Barometer, 29.98; temperature of air, 83°; of water, 83°. Winds: N., S., calm. The same as yesterday. Meteors very numerous during the night, flying in all directions, large and small, fast and slow.

June 10. No observation. Barometer, 29.95; temperature of air, 82°; of water, 83°. Winds: SE., S.SE., S.SE. At 4 a. m. it may be said the SE. trades commenced with us, in lat. 4° 12′ N.; long. 28° 30′ W. Noon, fresh breezes and beautiful trade-like weather. Numerous flying fish. Shall not try to make any easting to the north of the equator, as long as the wind holds where it is—at least I shall not tack for that purpose.

June 11. Lat. 00° 13′ N.; long. 31° 16′ W. Barometer, 29.95; temperature of air, 82°; of water, 81°. Current, west, 1½ mile. Winds: SE. by S., S.SE., S.SE. Fresh breezes, with passing clouds and fine weather. Noon, squally, with light rain; frequent strong rips. 7 p. m., tacked for the purpose of making easting, instead of standing on to the strand, and making it under the land about St. Roque. Whether it proves a judicious course remains to be seen. The winds have more easting in them than is usual at the commencement of the trades.

June 12. Lat. equator; long. 30° 47′ W. Barometer, 29.06; temperature of air, 83°; of water, 81°. Current, west, 1 mile. Winds: S.SE., SE. by S., SE. by S. Strong breezes, and puffy. At 10.30 a. m. tacked to southward and westward; noon, tacked to eastward; wind heading on both tacks. Tacked frequently.

June 13. Lat. 1° 37′ S.; long. 31° 52′ W. Barometer, 30.00; temperature of air, 83°; of water, 81°. Current, west, 1 mile. Winds: SE. by S., S.SE., S.SE. A strong trade, with a considerable sea from southward. Noon, tacked to the eastward. At p. m. tacked to southward and westward.

June 14. Lat. 3° 02′ S.; long. 32° 12′ W. Barometer, 30.00; temperature of air, 82°; of water, 81°. Current, west, $\frac{7}{10}$ of a mile. Winds: SE. by S., SE. by S., SE. by S. Fresh trades, with beautiful weather. Not quite so much sea; less current indicated. At noon, Noronha S. 14° W., 53 miles distant. At 3 p. m. made Noronha, bearing south, 30 to 38 miles. Tacked often. Midnight, wind moderate.

June 15. Lat. 3° 52′ S.; long. 32° 32′ W. Barometer, 29.97; temperature of air, 82°; of water, 81°. Current, W.NW., 1 mile. Winds: SE. by S., SE. by S., SE. by S. At 4 a. m. wind quite light and variable; a slight shower. At 8 a. m. tacked to the eastward. Noon, east, 7 miles distant; passed along northward, heading up better than usual on this tack. At 8 p. m. tacked to southward and northward. Current rips.

June 16. Lat 4° 20′ S.; long. 32° 10′ W. Barometer, 29.99; temperature of air, 81°; of water, 80°. Current, $\frac{1}{2}$ mile, west. Winds: SE. by S., SE. by S., SE. by S. At 7 a. m. Noronha just visible, bearing N. by E. Strong breezes and squally. Tacked frequently.

June 17. Lat. 6° 43′ S.; long. 34° 03′ W. Barometer, 30.06; temperature of air, 82°; of water, 81°. Current, west, 1 mile. Winds: SE. by S., SE. by S., S.SE. Strong breezes and unsteady, with frequent squalls and light rain. Noon, same, with heavy sea. Tacked frequently. The winds 'hang obstinately to the southward in June.' Midnight, the land in sight; tacked to the eastward; passed through strong current rips."

Ship Competitor, (Otis White, captain,) Boston to San Francisco, twelve days out.

"June 10, 1855. Lat. 28° 07′ N.; long 44° 30′ W. Barometer, 29.70; temperature of air, 78°; of water, 72°. Winds: E., E.SE., S.SW. First part, light breezes and pleasant, with passing clouds; middle, light baffling airs and cloudy; latter, light baffling airs and calms, squalls rising in the S.SW. Tacked to the SE.

June 11. Lat. 26° 07′ N.; long. 43° 45′ W. Barometer, 29.70; temperature ——. First part, light breezes and passing clouds, with pleasant weather; middle, light baffling winds; latter, the same, with squalls and fine rain.

June 12. Lat. 23° 39′ N.; long. 41° 54′ W. Barometer, 29.70; temperature of air, 79°; of water, 76°. Winds: E., E. by N., E. by N. First, fresh breezes, with passing clouds; middle, baffling and cloudy; latter, light airs and clear pleasant weather; heavy swell from NE.

June 13. Lat. 21° 36′ N.; long. 42° 54′ W. Barometer, 29.70; temperature of air, 79°; of water, 77°. Winds: calm, E.SE., SE. by S. First, calm and cloudy; middle, light breeze and passing clouds; latter, the same, with heavy swell from NE. I regret being forced quite so far west, but shall stand on and trust to chances.

June 14. Lat. 18° 38′ N.; long. 40° 45′ W. Barometer, 29.67; temperature of air, 79°; of water, 77°. Wind: SE. by S., SE. by E., E. by S. First, light baffling breezes and squally, with fine rain; middle, light squalls; latter, fresh breezes and squally, with passing clouds.

June 15. Lat. 15° 31′ N.; long. 40 °00′ W. Barometer, 29.65; temperature of air, 79°; of water, 77°. Current, ½ mile, east. Winds: E. by S., E. by S., E. by S. First, fresh breezes and cloudy; middle, the same; latter, wind the same, squally, with fine rain.

June 16. Lat. 12° 37′ N.; long. 37° 47′ W. Barometer, 29.60.; temperature of air, 78°; water, 78°. Winds: E., E., E. by N. First, strong breezes and squally, with thick weather; middle, thick, squally weather; latter, strong breezes, with heavy squalls and rain.

June 17. Lat. 10° 36′ N.; long. 35° 45′ W. Barometer, 29.55; temperature of air, 78°; water, 79°. Winds: E.NE., E.NE., E.NE. First, fresh breezes and squally, with thick weather. Heavy swell from NE. Middle, thick, squally weather, with rain. Latter, light baffling airs and calm, with rain. No observation.

June 18. Lat. 8° 19′ N.; long. 33° 31′ W. Barometer, 29.50; temperature of air, 81°; water, 81°. Winds: E. by N., E. by N., E. by N. First part, light breezes and squally, with rain; middle, overcast, with fine rain; latter, fresh trades and pleasant, with passing clouds.

June 19. Lat. 5° 53′ N.; long. 31° 19′ W. Barometer, 29.45; temperature of air, 81°; water, 81°. Winds: E. by N., calm, calm. First, fresh breezes and pleasant trades; middle and latter, baffling and calm, cloudy.

June 20. Lat. 5° 00′ N.; long. 30° 10′ W. Barometer, 29.45; temperature of air, 82°, water, 81°. Winds: E. by N., calm, calm. First, light baffling breezes and squally, with rain; middle, calm, with much rain; latter, calm, with light showers of rain. I hope we shall not be long in the doldrums.

June 21. Lat. 4° 39′ N.; long. 29° 43′ W. Barometer, 29.50; temperature of air, 78°; water, 80°. Current, 1 mile, N. Winds: SW., SW., S. First, light baffling airs and squally, with rain; middle, the same; latter, the same, with heavy swell from south. Tacked twice.

June 22. Lat. 4° 03′ N.; long. 30° 32′ W. Barometer, 29.50; temperature of air, 80°; water, 81°. Winds: S., S.SE., calm. Light baffling airs and frequent squalls. Tacked to the SE.

June 23. Lat. 3° 39′ N.; long. 30° 04′ W. Barometer, 29.50; temperature of air, 82°; water, 83°. Winds: first, calm and cloudy. Hard chance! Middle, fresh breezes and squally. Heavy swell from SE. Tacked several times; my object being to stand on the tack that gives the southing. Latter, breezes, cloudy, heavy sea.

June 24. Lat. 2° 08′ N.; long. 31° 23′ W. Barometer, 29.45; temperature of air, 82°; water, 82°. Winds: S., S., S. First, light breezes. Tacked to W.SW. Middle, the same, and cloudy. Latter, the same.

June 25. Lat. 0° 14′ S.; long. 32° 53′ W. Barometer, 29.45; temperature of air, 82°; water, 82°. Current, a half mile, W. Winds: SE., SE., SE. First, light breezes and cloudy; middle, fresh breezes and squally, with light rain; latter, fresh breezes and cloudy. Crossed the equator 27 days 18 hours from Boston; a very good passage, considering the chances I have had from 5° N.

June 26. Lat. 2° 08′ S.; long. 33° 53′ W. Barometer, 29.50; temperature of air, 82°; water, 82°. Winds: SE., SE., E.SE. to S.SE. Current, a half mile, W. First, fresh breezes and squally; middle, fine breezes and pleasant, with passing clouds; latter, light breezes and baffling and squalls of rain. Tacked several times to avail of a point or two in the winds.

June 27. Lat. 0° 33′ S.; long. 31° 28′ W. Barometer, 29.50; temperature of air, 82°; water, 82°. Winds: SE., SE., SE. Fresh breezes and pleasant, with passing clouds. Tacked twice.

June 28. Lat. 2° 09′ S.; long. 31° 45′ W. Barometer, 29.50; temperature of air, 82°; water, 81. Winds: E.SE. to S.SE., E.SE. to S.SE., E.SE. to S.SE. Light baffling winds and squally throughout.

June 29. Lat. 2° 49′ S.; long. 31° 14′ W. Barometer, 29.50; temperature of air, 81°; water, 81°. Winds: E.SE. to S., E.SE. to S., E.SE. to S. Baffling and squally throughout. Tacked frequently.

June 30. Lat. 5° 01′ S.; long. 32° 38′ W. Barometer, 29.50; temperature of air, 81°; water, 81°. Winds: S.SE., S.SE., SE. by S. First and middle, light breezes and squally. Tacked several times. Latter, strong breezes and very squally, with rain showers. At 5.30 a. m. made the island of Fernando Noronha, bearing NW. by W., 15 miles distant.

July 1. Lat. 8° 02′ S.; long. 34° 13′ W. Barometer, 29.56; temperature of air, 81°; water, 81°. Winds: S.SE., SE., SE. to S. Light breezes and squally throughout."

Ship Rapid, (Phineas Windsor, captain,) New York to San Francisco, 13 days out.

"June 11, 1856. Lat. 33° 36′ N.; long. 50° 25′ W. Variation, 13° 27′. Barometer 30.40. Thermometer: air, 78°; water, 75°. Winds: S.SW. to SW. Light airs and calms during the night.

June 12. Lat. 33° 37′ N.; long. 49° 59′ W. Current, N.NE., ¼ knot. Barometer, 30.40. Thermometer: air, 77°; water, 80°. Winds: S.SW. to SW. Heavy NW. swell; rain squalls to the SW. and SE., on the horizon; damned dull music this; swell increasing; no fish; very little gulf-weed; swell from all points; light airs and calms from SW. to S.; slight surface current.

June 13. Lat. 33° 21′ N.; long. 48° 09′ W. Barometer, 30.40. Thermometer: air, 81°; water, 78°. Winds: SW., SW., S. Light airs and calms; all sorts and kinds of scuds from S. One case of small pox on board, which Maury says nothing about in his book.

June 14. Lat. 32° 58′ N.; long. 46° 36′ W. Current, N., ½ knot. Barometer, 30.35. Thermometer: air, 78°; water, 76°. Winds: S. to S.SW.; light airs; hazy and partly overcast.

June 15. Lat. 32° 12′ N.; long. 45° 01′ W. Variation, 13°. Barometer, 30.25. Thermometer: air, 76°; water, 76°. Winds: SW., S.SW., S. First part, overcast, with light baffling airs and squalls, and wind; lightning of a yellowish white. Middle part, squally, with rain and lightning. Latter part, fresh breeze from south, and overcast, but got the sun, morning and at meridian. Porpoises and black fish about.

June 16. Lat. 31° 58′ N.; long. 41° 48′ W. Current, westerly, 18°. Variation, 13°. Barometer, 30.30. Thermometer: air, 78°; water, 76°. Winds: S., S.SW., S. to SE. and S. First part, strong breeze. Middle part, light airs and overcast, with threatening appearances all around; heavy bank to the NE. Ends, strong breezes and heavy easterly sea; strong tide observed, but no perceivable effect of current; compasses disagree very much. Tacked ship twice. Large ring around the moon. Mares' tails and heavy, dull, dirty weather always accompanies changes of the moon. Sun rose clear and went in a cloud. Beating down south; gain 30′; so much for the C.

June 17. Lat. 31° 32′ N.; long. 41° 54′ W. Variation, 13°. Barometer, 30.38. Thermometer: air, 76°; water, 75°. Winds: S., SE., S.SE. Heavy rain and wind squalls throughout from all around. Tacked ship as often as heads off of E. and off of W. by S. Robin Hood in sight, and two barques; tacked at 11 to get out of bad company. East sea continues with exceedingly unsettled weather; impossible to get to the southward.

June 18. Lat. 31° 25′ N.; long. 41° 19′ W. Variation, 12°. Barometer, 30.35. Thermometer: air, 74°; water, 74°. Winds: S.SE., S.SW., S. East swell continues; unsettled weather. Middle part, cleared up; trady appearances all around. Latter part, passing squalls in E. and SE.; moderate and pleasant, but overcast.

June 19. Lat. 29° 24′ N.; long. 41° 44′ W. Variation, 13° 41′. Barometer, 30.30. Thermometer: air, 76°; water, 76°. Winds: S.SE. to SE., SE., Easterly, SE. Observed a lunar rainbow in the morning, from E. by S. to N. by W., complete arch and bright. Made a good run south, much better than expected; has the appearance of trades, but wind is baffling from SE. to E., with occasional squalls from SE. Latter part, light airs hauling more easterly; very small flying fish about; easterly sea making.

June 20. Lat. 27° 41′ N.; long. 41° 48′ W. Barometer, 30.30. Thermometer: air, 76°; water, 75°. Winds: SE. to E.SE., E.SE. Fine, beautiful weather with some SE. and easterly swell at times. Appearances of the trades, but the wind obstinately holds E.SE.; moderate winds, at times nearly calm; more weed than usual.

June 21. Lat. 25° 33′ N.; long. 41° 10′ W. Variation, 16°. Barometer, 30.30. Thermometer: air, 77°; water, 76°. Winds: E.SE. throughout, and light with occasional calms; do not call this the trades yet.

June 22. Lat. 22° 49′ N.; long. 40° 37′ W. Variation, 17°. Barometer, 30.35. Thermometer: air, 76°; water, 76°. Winds: E.SE. to E.; passing clouds and drops of rain; baffling winds; some E.SE. sea; fluctuating trady weather. At 8 a. m., sun directly overhead; at noon, north of us. Hope the wind will haul north now. I shall keep her travelling on Maury's new chart all through. I am not as well off as last voyage, same number of days out. Sailed same time of year and in a full built ship, and this is a clipper; put her through.

June 23. Lat. 19° 38′ N.; long. 39° 30′ W. Current, W. by N., 1½ knots. Variation, 13° 35′ W. Barometer, 30.30. Thermometer: air, 78°; water, 76°. Winds: E. to E. by N., E. by N.; flawy and hazy; squalls and cold; wind hangs about east, northerly, westerly; NE. swell; overcast.

June 24. Lat. 15° 54′ N.; long. 38° 39′ W. Current W. by N., 1½ knots. Barometer, 30.30. Thermometer: air, 77°; water, 77°. Winds: E. by S., E. by N. This beats all the NE. trades I ever met with. I commanded the Angelique in 1849, very full ship and extremely deep. I followed the same track in the same month, and 26 days out was nearly in the same place as to-day with the Rapid, a clipper. I think this month's track is rather far west; further than the Pilot Chart seems to warrant. My aneroid and sympiesometer is far preferable to any barometer I ever saw.

June 25. Lat. 12° 40′ N.; long. 37° 00′ W. Current, W., 1 knot. Variation, 13° W. Barometer, 30.20. Thermometer: air, 79°; water, 77°. Winds: from E. by N. to E.NE. First, reached the trades; and can scarcely be called so now. First part, wind inclined northerly; sea smooth at times, then rough; no birds, no fish, no rain; strong flaws from passing clouds. Not so much wind as last 24 hours. Trade clouds, misty and overcast.

June 26. Lat. 9° 34′ N.; long. 35° 13′ W. Current, W., 1 knot. Variation, 14°, W. Barometer, 30.10. Thermometer: air, 80°; water, 79°. Winds: E.NE., NE. by E. to E.NE., NE. by E. First part, wind seems inclined to haul northward; passing foggy clouds, hanging low, having wind in them. Middle part, strong breeze, heavy SE. swell, glasses falling; getting towards the calm spots. Latter part, wind hauled to NE. by E., moderating; less SE. sea. These east trades are about done. Total absence of fish and birds; hazy horizon all the time.

June 27. Lat. 7° 54′ N. (DR.); long. 33° 57′ W. (DR.) Variation, 11° 15′ W. Barometer,

30.10. Thermometer: air, 77°; water, 80°. Winds: NE. to E., SE. to S. and S.SW. First part, appearances of rain from SE. Middle part, heavy rain from SE.; heavy sea from NE. and SE. Latter part, calm, rain and light airs from S.SW.; baffling airs from every point of the compass, and calms.

June 28. Lat. 7° 15′ N.; long. 32° 26′ W. Surface current east. Barometer, 30.10. Thermometer: air, 78°; water, 82°. Winds: doldrums, with the variations; observations poor; heavy N.NE. sea, rain and calms; clouds of all kinds and from every direction.

June 29. Lat. 7° 28′ N.; long. 31° 52′ W. Current for two days, E.NE., 48. Barometer, 30. Thermometer: air, 78°; water, 82°. Winds: SW., W., N. to NE., SW. to W.SW. Observe a surface current, by drift of chips, &c. Doldrums! doldrums!! occasional squalls.

June 30. Lat. 6° 44′ N.; long. 32° 00′ W. Current, S.SW., 43′. Variation, 11° 04′ W. Barometer, 30. Thermometer: air, 79°; water, 82°. Winds: S.SW., S. to W.SW. Throughout this day, calms, with heavy rains from SW.; southerly swell, and a 2 knot current setting us to the S.SW. Most conflicting currents hereabout; just my luck; never made a quick or a decent passage to the line in my life; clipper worse than full built; this luck would make an angel swear, I know. Worse than getting to leeward of Roque; beats all my calculations, worse than the Gulf stream.

July 1. Lat. 6° 10′ N. (DR.); long. 29° 13′ W. (DR.) Barometer, 30. Thermometer: air, 79°; water, 82°. Winds: W.SW., S.SW. to S. Had steerage way all the time; at times going 12 knots per hour, for half hours, in squalls; south sea; evidently a current, but enormous. The last three days puzzle me, and I give it up for a bad job. Can Maury *solve this riddle?* The devil has put his claw on us.

July 2. Lat. 6° 7′ N.; long. 27° 51′ W. Current, NE., 26. Barometer, 30.00. Thermometer: air, 81°; water, 82°. Winds: S.SW., S. by E. Rain squalls; southeasterly sea. Latter part, SW. monsoons set in fresh; all kinds of clouds.

July 3. Lat. 5° 43′ N.; long. 25° 15′ W. Current, E.NE., 19. Barometer, 30.10. Thermometer: air, 82°; water, 80°. Winds: S.SW., S. by E., SW. by S. to S. Squalls and rain. Sudden shifts of wind; heavy southerly sea; calms and fresh flaws. Signalized clipper ship Endeavor, from New York, sailed 8 or 9 days before us; standing W. by S. per compass. Made more latitude the last 24 hours than for 48 hours previous, and have not made so good a course by log by 10′. Suppose the current has abated.

July 4. Lat. 3° 48′ N.; long. 27° 30′ W. Current, E., ½ knot. Variation, 16° 16′ W. Barometer, 30.05. Thermometer: air, 80°; water, 82°. Winds: S. to S.SE. Fresh breezes; some SE. sea; every appearance of SE. trades. Ends pleasant. Shall cross about 32° W.

July 5. Lat. 1° 46′ N.; long. 30° 00′ W. Current, W.NW., 45. Variation, 14° 48′ W. Barometer, 30.10. Thermometer: air, 79°; water, 78°. Winds: S. by E., misty and overcast. Less wind through the night than during the day, and baffling. Water discolored; should think we're on soundings. Surface current rips. Large flocks of whale birds; young flying-fish innumerable; one Mother Carey's chicken and one black gull.

July 6. Lat. 00° 16′ S.; long. 31° 55′ W. Current, W.NW. 32; variation, 12° 14′ W. Barometer, 30.00. Thermometer: air, 80°; water, 79°. Winds: unsteady, S.SE. to SE. Crossed the line in 38 days, in 31° 55′ W. long. I am satisfied I should have done better to have run to the eastward, up north of the horse latitudes, and crossed the line in 26° or 28°. I know there is a strong current always setting W., northerly, when I have passed here outward and homeward, and if Lieutenant Maury was to make a few trips hereabouts, he would not be so *fond* of standing *boldly* on until he makes St. Roque. I have seen 3¼ knot

current between the Rocos and the land. I see, by his book, every shipmaster agrees with Mr. Maury in his ideas; if there be any disagreeing ones he keeps them out of the way. *I, for one, disagree* with him in some of his particular points, and in this Roque spot in particular. Those who cross the line in 26° or 27°, in June and July, will make the shortest time through the variables south of the SE. trades. I have followed your track as *you mean it to be followed;* sometimes here, sometimes there, as the winds compelled me to. I have not had *one hour* of NE. trades, or a wind N. of E. *one hour at a time*, and none N. of E. by N. S.SW. winds drove me east in the doldrums when I had current setting east. In 25° tacked to W.SW.; fetched 32° on the line; had I no current, should have fetched 29° 30′ easily with the wind I had. Now, then, where is the fault? From your Pilot Chart, my chances would have been *far preferable* on the old route; and I think I should have made the passage in *thirty days*, and, instead of getting to the leeward of St. Roque, as I now evidently must, should have been well down to Rio. Whether I can be rated a *bold* navigator is not for me to say.

July 7. Lat. 2° 10′ N.; long. 33° 15′ W. Current, NW., 21. Barometer, 30.05. Thermometer: air, 80°; water, 80°. Winds: unsteady, from S.SE. to SE. Rocos distant 105 miles S. by W., true. Strong current setting me NW. by W. to NW., which shows itself very plainly on the surface; smooth spots all around. Short jumping sea from S.SE. to S. Light airs during the night. Signalized ship Chariot of Fame, 41 days from New York; Rapid is 39. At 2 p. m. Chariot of Fame tacked to the E.; have not seen her since. Rapid stands on. Fresh squalls, strong breezes; tremendous sea, ship jumping in royals and top-gallant stay sails. Current and sea heaving off to NW.; makes just the course we head, SW. ¾ S. Unless the winds haul east more, we shall fall to leeward of Roque. I have put her head in the terrible lion's den, and I am bound to rout him out by the tail. Awful sea, *short*. Roque bears SW. by S., true, distant 58. Shall not be able to weather it. If Maury is bold in his *office*, I will be bold on the *sea*.

July 8. Lat. 4° 27′ S.; long. 34° 47′ W. Current, NW. by W., 27. Barometer, 30.05. Thermometer: air, 80°; water, 80°. Winds: S.SE., S.SE. to SE. Wind fresh, trade squalls from the S.SE. Hearts of oak can do their duty; though we have a very *bad* crew, still, sir, we will put her through, daylight or dark. Small-pox broke out again. At sunset tacked to E. and E. by N. and E. by S., wind unsteady. Roque bore S. by W. 15 miles when we tacked. Found more current in shore and strong as we get off. You don't catch me in here again; an *ounce of preventive* is worth *ten pounds of cure*. Mr. Maury keep clear of Roque. *Smallpox increases*—more good the better.

July 9. Lat. 4° 05′ S.; long. 33° 56′ W. Current, NW., 45. Barometer, 30. Thermometer: air, 79°; water, 79°. Wind: S.SE. and unsteady. Fresh gales with heavy squalls and short, heavy chop sea; all sorts of clouds. At 5 p. m. tacked to S.SE. At 2 p. m. Chariot of Fame standing in shore 12′ to windward.

July 10. Lat. 6° 00′ S.; long. 34° W. Current, uncertain. Variation 15° W. Passing squalls; top-gallant breeze. Barometer, 30.10. Thermometer: air, 80°; water, 80°, Wind: SE., fresh; heaviest SE. trades I ever saw; quite a gale. At 8 a. m. wore ship and stood in. Cleared Roque after a great deal of trouble—have I followed your directions or not?

July 11. Lat. 6° 06′ S.; long. 33° 32′ W. Current, do not know. Barometer, 30.10. Thermometer: air, 80°; water, 80°. Winds: E.ES. to S.SE. Tremendous heavy sea, blowing a gale at times; pitching bows under, split sails, &c. Jumped mizen top-gallant mast out of its step; sent it down. Beware of falling to leeward of Roque. Never pass to the west

of Fernando de Norono, bound south, is my advice. Had I crossed in 26° should now have been half way from Rio to Falklands. Curse this new route.

July 12. Lat. 7° 53′ S.; long. 34° 28′ W. Current, N., 33 miles. Barometer, 30.10. Thermometer: air, 80°; water, 78°. Winds: SE. to S.SE. Heavy black squalls of rain and wind; terrible sea; ship jumping, bows under. Split top-gallant sails, stay sails, fore sails, and cross-jack. At daylight made the land N. of Olinda. Noon, Pernambuco bore W. ¾ S., true, distant 18 miles. Say you there is no current to contend with on this coast? I say there is a strong one. This is a clipper ship, but I did better in the old Angelique in '49. Cape Roque a bugbear! Catch me again! Sent down mizen top-gallant mast, up another instead. Keep clear of the Brazil coast, say I.

July 13. Lat. 7° 35′ S.; long. 32° 45′ W. Current, N., 39. Variation, 7° 48′ W. Barometer, 30.20. Thermometer: air, 78°; water, 80°. Winds: S.SE. Trade squalls, fine weather. Tell me there is no current here; last night I tacked in 10 fathoms water between Augustine and Pernambuco. Should have made an E. course *good.* 6 a. m. tacked to SW., fine S. by E. trades; less sea and fine weather."

NOVEMBER, 18, 1856,*
Lat. 48° 40′ *S.; long.* 85° *W.*

MR. MAURY: In reading over your book of directions, it seems to me that out of the thousands of logs you must have accumulated you could have found some hard ones to have placed side by side with the good ones which you are so *careful* to *set before us* in glowing terms, it seems to me, to mark your theory good! I do not see any of the *dark side* of the picture; it is all the sunny side, taken from those men who seem to be *born* to *good luck*, instead of that faculty commonly known as instinct and common sense; and who are kicked through the world in good luck, to *keep them out of harm's way.* Place them side by side with one who has butted face to face some of the awful times off Cape Horn, for instance, and who through life has fought *hard luck up hill*, and where are they? Their experience of so many years standing as shipmasters does not amount to a 12 months of his dear bought experience, it is of another *sort!* Of which side does the balance preponderate, is it on the fair winds, fine weather, good chances, and quick passages? Decidedly not. But your book makes it appear so. I do not find fault with those born to good luck, I *envy them*, I wish I was one of them! But I do find fault with you, or any one else who puts out directions entirely one-sided. You have left out these awful passages because they were awful. Those are the ones which, in my opinion, would give as *much*, if not more information of the passage around what lucky, fortunate shipmasters call bugaboo (!!!) Cape Horn and bugaboo St. Roque. Let them get caught once, and, as the boys say at school, they will laugh out of the other corner of the mouth. Cape Horn is no *bugaboo!!* Sometimes it is very fine, but the majority is on the rough and rugged. My experience teaches me to keep the land *aboard*, and get north to 45° as quick as possible, then get west in decent weather; your theory to the contrary notwithstanding, backed by the long experience of so many respectable shipmasters. It is my opinion, a passage can be made quicker round Cape *Good Hope* to San Francisco than Cape Horn, I mean the average of 10, 20, or more passages; and should I again sail for San Francisco, I intend to go that way. I have followed your route when and where I could; I started with that intention; I am satisfied I have lost a deal

* Further extracts from Captain Windsor's log.

thereby; my own instinct would have led me otherwise. On leaving New York, I resolved to prove your theory for good or for evil; and now, being through the bounds of where the SE. trades usually blow, or *should* blow, (either, as you please,) I will give you a little review of the voyage thus far. I suppose you will put me down as the *one* unlucky one in a hundred; be it so, it matters not.

I followed the directions in *your book* in that manner which *you mean it should be followed.* A clipper ship in good sailing draft, 18 feet, 1,100 tons, and perfectly indifferent as to being *back strapped*, (as you call it,) I stood boldly on without fear. Unfortunately, I had not *one hour NE. trades*, as on examination of this log you will perceive. I ran through the doldrums and made my easting in the SW. monsoons, (as you are pleased to term it, and very appropriately too,) but, *I think* had I stood on still further east, or so long as I could make any southing on that tack, I should have come off with flying colors; but being then out of your limits, I kept good my resolution, and put about. The consequence was I was back strapped, falling 20′ to leeward of St. Roque, where *I* found a strong NW. current running, and strongest *in shore.* I would remark here, I always, when homeward bound from either cape, run more than half the distance in shore from Rocas, to benefit by the strong current which I *always* have found running there NW. and westerly; once I found it 3½ knots—always calculate on finding a 2 knot and upwards. Well, to return, I found in addition to this current, a short chop sea from the south, with a strong top-gallant gale from S. by W. to S. by E.; and having an old suit of summer sails, and a *very poor black crew*, in tacking ship I had the misfortune to split my foresail, jib, cross-jack and mainsail, the first tack. However, I suppose you will place to my credit that, in 3 days, I was clear of St. Roque, running boldly on, and fetched Pernambuco, so I did; and I am clearly of the opinion, had I been 200 or 250 miles east of St. Roque, when in its latitude, I should have been to Rio in *half the time.* As it was, I had no SE. trades; as I think, by being so near *in shore.* This is the 2d time I have followed your track, and both times made long passages. I fell in with the Chariot of Fame, which sailed three days before me, in about 1° S. True, I had a hard chance *all the way* from New York to Rio. But being up with the Abrolhos and clear of the SE. trade limit, I am of opinion that in shore is the best chance to get to the *Horn*; say from 50 to 90 miles off the headlands, inclining near as you get past Rio Plata; passing the mouth of that river, say about 75′ east of its capes, hugging Corienties to 25′ or 30′, thence shaping your course to fall in with St. Joseph's Peninsula, and making the headlands as you proceed to Le Maire. My remarks are dictated by circumstances and feelings. I disagree with you in some points, and no doubt that you will think my remarks of no value, and throw them amongst that big pile of rubbish. Never mind, if you do not like it, cast it over your shoulder, but recollect the mark master's mark. All that have found, doubtless, your favor, figure in your book; having no such desire, I out with what comes uppermost in my impulsive mind, relevant or otherwise. My advice is, keep clear of St. Roque; always pass to the eastward of Fernando de Norono; tack there, if tack you must, and guard getting in with the land, until through the SE. trades. Now, as to your book and charts, I, with most others, think very highly of them; should be sorry to go without them; they throw an immense light upon the subject of which they treat, and no navigator should leave port without them. But, unlike those who have been represented in your great book, I do not believe all they say. I suppose I am the first man that ever set himself up to disagree with you; now, if no one disagrees with you, you will soon be considered perfection. If we believe your "first great thought," that cannot be.

Probably no ship that ever doubled Cape Horn ever had *that kind* of misfortune to an equal extent, in addition to *the usual hardships*, that the Rapid has had on this present voyage. And to keep up the time, I am sorry to say, my officers have got to disagreeing amongst themselves; and the incompetency of one makes everything out of sorts, and brings an extra care on the master. Such being my case, I think I have a shadow, at least, of excuse for not having *correctly and fully* kept this abstract. For I feel that it is very difficult when I come to look over it, and I must needs find a hole to crawl out of somewhere.

Yours, &c., respectfully,

P. WINDSOR.

DECEMBER 1, 1856.

When I passed the 2d time through the Straits of Le Maire, it was also in the morning about 7½ o'clock, it had the exact appearance of breaking, mast head high, clear across from land to land, and looked extremely frightful; and, as my ship was heading for it, for an instant, my hair was like so many needles, so to speak; and had I not sounded through there before should certainly hesitated to plunge into it. But being early in the morning, and everything upon surface of the sea had a sort of *halo* above it. The shore line also loomed up, which loom made this meeting of the *two tides* appear like high breakers; but when the ship plunged into it, and flooded our decks, setting everything afloat—strong breeze—and we putting our *flying jib-boom all under*, it kicked up a tremendous sea; was obliged to double reef going through. I kept in the middle of the straits, for fear the current might set me on either side; also because there appeared to be less sea there. The wind was at the time NW. to N.NW., and freshening as we drew towards the straits. It was also the day of the *new moon*, which always brings a heavier swell. But she plunged into it like a war-steed into battle. The thought struck me very forcibly, *how* far will the work of man resist that of the Great God! It was fearful to look upon her; but sublime thought that she was under full control: how much further may we dare resistance against the power of old ocean's waves?

DECEMBER, 14, 1856.

The more I read your book the more I like it; the philosophy of your science instructs me exceedingly. I shall look for some of your productions, apart from your Sailing Directions, on my arrival in port; as you have an agent in San Francisco, who, without doubt, knows of all your pen has put forth. You see I am very impulsive. Can't help it; no use to beg to be excused on that score. The Good Book says, "Such as I have, such give I unto thee." From the wheat sift the chaff, and but little will remain."

P. W.

Captain Windsor's irrelevant and "impulsive" remarks speak for themselves, and they answer themselves. In other respects the abstract log of the Rapid is valuable. The remarks about the route she took deserve notice; and, therefore, I address myself to them, though I should first explain, if not apologize, to those who are working with me, for admitting into these pages remarks such as the above; for they are calculated neither to instruct nor to improve. These displays of eccentricity are admitted, because navigators have been invited to express their opinions of charts and routes freely. I wish to encourage them in that; for, in the course of my investigations, I have derived from the opinions and remarks of co-operators not a little instruction and much profit. Moreover, it is fair to Captain Windsor that, if his remarks and opinions be quoted at all, they should be quoted so that others may fairly weigh them. I doubt,

however, whether his "impulsive" disposition will ever so far run away with him as to take him to California by the way of the Cape of Good Hope. (See his remarks, p. 237.)

On the voyage before us, Captain Windsor thinks he would have done better had he made more easting north of the horse latitudes. Doubtless he would, for the winds there were favorable for going east.

I have endeavored to impress navigators with the importance of the advantages, on coming out of port, to be gained by running off east when the winds will allow. A vessel from New York and ports east, for instance, should not care to make with westerly winds any southing until they reach the meridian of 60° or 55°, or even of 50° W., provided always, however, they have the wind, and can make a good run of it. If, on coming out of port, the winds be not fresh and fair, stand on your course in search of good winds; but with a "smashing" breeze from the west, a Rio bound vessel will lose nothing by running off to the eastward as far as the meridian of 50° W. before crossing the parallel of 38° N. (See p. 145.)

Captain Windsor also thinks he would have done better had he crossed the line in 26° or 28° W.

There he is wrong. The Pilot Charts give the winds as shipmasters have reported them. Shipmasters cannot be accused by any one of conspiring to report them from the wrong points. The winds as they are entered in the logs, and reported to me, have been transferred to these charts; and Captain Windsor is too intelligent to say, that, if any one will tell him which way the winds blow in any part of the sea, it would be necessary for him to go there in order to tell what courses a ship can make good with these winds. And if he had consulted these charts, he would have perceived that the united observations of all, as therein expressed, were against this opinion of his.

I suppose, if the abstract of another vessel be produced that was making the voyage at the same time of the Rapid, and which did take the route which Captain Windsor thinks would have put him so far ahead, that *he* will take that as decisive, in favor of the Sailing Directions, though he thinks so little of the united testimony which hundreds of seamen have given in, and which is embodied in the Pilot Charts. The schooner Jamestown, from Baltimore to Pernambuco, is such a one. Extracts from her log are subjoined, that navigators of the school represented by Captain Windsor may examine and compare for themselves. The case is as striking, and bears out the Sailing Directions as triumphantly as was done in the case of the Sancho Panza, Captain Hildreth. (See the October route.)

The Jamestown took her departure from Cape Henry the day before the Rapid took hers from Sandy Hook; and the time to the line is a day or two less from Sandy Hook than from the capes of Virginia. We may, therefore, infer from the speed made, that the sailing qualities of the schooner were quite as good, if not better, than those of the ship.

June 11,	Rapid, thirteen days out.....	Lat. 33° 36′ N.;	long. 50° 25′ W.
"	Jamestown, fourteen days out....	" 33° 06′ N.;	" 50° 20′ W.
June 21,	Rapid.....	" 25° 33′ N.;	" 41° 10′ W.
"	Jamestown	" 25° 18′ N.;	" 39° 52′ W.

On the 11th the Jamestown was 5′ to the eastward of her competitor; on the 21st she was 78′. The Jamestown has now made up her mind to abandon the new route, and go off on the old, as Captain Windsor regrets he did not do. Let us see how each fared.

June 30, Rapid ..... Lat. 6° 44′ N.; long. 32° 00′ W.
" Jamestown ..... " 12° 22′ N.; " 27° 23′ W.

The Rapid is about 5° further to the south, and as much to the west, but her 5° 38′ of southing is in this position clearly worth more than the Jamestown's 5° 23′ of easting. But Windsor thought differently, and then and there lamented his "bad luck."* He already saw Cape St. Roque looming up in dreadful aspect before him. Unlike the faint-hearted Hildreth, of the Sancho Panza, he resolved to stand "boldly on," and take the chances. In this he did well. He crossed the line July 6, in 31° 50′ W.; the Jamestown six days after, in 25° 24′, by which time Windsor had cleared St. Roque, and was railing at it as an enchanted headland, which all navigators should shun; and it took the Jamestown as long to clear it from 25° 24′ as it did the Rapid from 32°! The position of the two vessels was:

July 8, Rapid ..... Lat. 4° 27′ S.; long. 34° 47′ W.
" Jamestown ..... " 5° 38′ N.; " 21° 09′ W.

Captain Windsor also thinks with him of the Sancho Panza, that the abstracts of the long passages have been suppressed, and should be quoted. Any one may make a long passage. To do that requires neither training, instruction, nor sailing directions. The object of this work is to impart knowledge from experience; to teach navigators how to make short passages. For that purpose are copied those abstracts which I think are most instructive, and best calculated to answer the purpose in view. IN THE TABLES OF CROSSINGS MAY BE FOUND THE TRACK AND THE TIME OF EVERY RIO BOUND VESSEL WHOSE LOG HAS BEEN RETURNED TO THIS OFFICE. So that all the passages, the long and the short, the good and the bad, were spread before Captain Windsor at the very time he was making his unworthy remarks.

It is of importance that every navigator who uses these Sailing Directions should bear in mind that they are based on the Charts, which are constructed from the logs; and, therefore, that he who consults them has the same data before him that I in their preparation had. When running for a quick passage, he should ever remember that the Sailing Directions are drawn to suit the *prevailing* winds in any part of the ocean. Now, suppose, when a vessel arrives in such part of the ocean, she does not find the *prevailing wind*, but some other, what should her master do? Continue to follow the Sailing Directions, or go to the fountain head—look at the weather, consult the Wind and Current Charts, and follow them until the winds return to the prevailing quarter? Clearly the latter; and for that purpose all who have the Sailing Directions, are furnished also with a copy both of the Pilot and Trade Wind Charts.

On the route to Rio, or rather to the fair way off St. Roque especially, these two charts should be well studied, because there are several turning points on the way, and the success of the passage as to time depends upon the winds that the master happens to find, and how he shapes his course when he comes to these points.

The navigators of this portion of the sea, and especially those who are afraid of St. Roque and a western crossing, should recollect that that cape, unlike all others, has *two lee* sides; that a vessel may fall *to leeward* of it by being too far to the *eastward*, as well as by being too far to the *westward;* and that this is especially the case in the summer and fall. The two logs under discussion, viz: those of the Rapid and Jamestown, illustrate this.

The Jamestown got into the belt of southwardly monsoons, and was forced as far as 21° W. She had then to beat to get back to the westward. The Rapid crossed the line in 32°; and

* See Remarks, June 30, p. 234.

she had to beat to get to the eastward. But the latter gained a week here over her competitor. Any two ships that will pursue the routes of these two in June, July, August, September, or October, will be very apt to re-enact the story of the Jamestown and Rapid, a fact which, I hope, those engaged in trans-equatorial voyages will bear in mind.

Extract from the log of the schooner "Jamestown," (P. S. Marshall, captain,) from Baltimore to Bahia, 8 days out.

"June 11. Lat. 33° 06′ N.; long. 50° 20′ W. Winds: S.SW. First and middle part, light airs and cat-paws from the SW. Ends light winds and fine weather; sea smart. I never experienced such a continuation of light weather before in these latitudes; hope it will not last much longer.

June 12. Lat. 33° 00′ N.; long. 49° 45′ W. Winds: S.SW., light, baffling, and calm; this is slow getting along—it does not look very favorable for a short passage.

June 13. Lat. 32° 53′ N.; long. 48° 31′ W. The same as yesterday. I should like to see it rain, as we are using water very fast. Weather very warm and close.

June 14. Lat. 32° 32′ N.; long. 47° 21′ W. Winds: SW. to S.SW.; light and baffling; weather fine; a large swell from the NE.; I hope the wind will come from that direction.

June 15. Lat. ——; long. ——. Winds: SW.; brisk, with squally weather; an ugly cross sea running; all sail set by the wind.

June 16. Lat. ——; long. ——. Winds: S.SW. and SW. Common light breeze from the SW., and cloudy weather, with sharp lightning at the NW. during the middle part. Ends fresh gales from the S.SW., with cloudy, squally weather. An ugly cross sea; vessel very uneasy.

June 17. Lat. 29° 33′ N.; long 42° 39′ W. Winds: SW. to South. Moderate and cloudy weather.

June 18. Lat. 29° 10′ N.; long. 41° 33′ W. Winds: variable; during these 24 hours wind all around the compass, with light passing showers of rain; large SE. swell.

June 19. Lat. 28° 17′ N.; long. 41° 48′ W. Winds: S.SE. to SE. First part, light baffling airs and squally. At 4 P. M. tacked to the S.SW.; middle part, light passing squalls from the SE., with large swell; vessel plunging bows under; ends, moderate breeze from the SE., with squally weather; I think the NE. trades are close at hand, everything denotes it.

June 20. Lat. 26° 53′ N.; long. 41° 03′ W. Winds: E. by S. to East. First and middle part, fresh breezes, with fine weather. A large SE. swell, with strong tide rips; sea breaking on board; latter part much the same, with more swell.

June 21. Lat, 25° 18′ N.; long. 39° 52′ W. Winds: East to E. by S.; begins moderate breeze and smoky weather; middle part, the same, with light sprinkling rain; a heavy E.SE. swell, and heavy tide rips. I never saw strong tide rips so far to the east before; ends, fresh gales and gloomy weather.

June 22. Lat. 23° 27′ N.; long. 38° 40′ W. Winds: E. by S.; pleasant gales and fine weather; a rough sea; vessel shipping much water.

June 23. Lat. ——; long. ——. Winds: E. by S.; stormy, with dark gloomy weather; a very rough sea. At 8 P. M. handed all the light sails, and reefed the mainsail.

June 24. Lat. 20° 32′ N.; long. 36° 12′ W. Winds: E. by S. to E. Strong gales, with squally weather, and a rough sea. At 8 A. M. turned the reef out of the mainsail, and set the flying jib.

June 25. Lat. 18° 59′ N.; long. 35° 08′ W. Wind: East; strong gales, with squalls; showery weather; a rough SE. swell; decks washed continually by the sea.

June 26. Lat. 17° 30′ N.; long. 33° 47′ W. Winds: E. by N.; strong trades, with squally ugly weather; a high sea from the SE., and heavy tide rips; I never saw such ugly looking weather; such a rough sea, or such strong tide rips before in the NE. trades.

June 27. Lat. 16° 18′ N.; long. —. Winds: E. to E.NE. Strong baffling trades; weather squally, with passing rain showers; a rough sea.

June 28. Lat. 15° 00′ N.; long. 30° 55′ W. Winds: E. to E.NE. First part, strong breezes with cloudy drizzly weather, a bad sea; middle part, light and baffling winds with rain; ends, strong and steady trades with cloudy gloomy weather, with heavy tide rips. I never saw such weather before in these latitudes.

June 29. Lat. 13° 42′ N.; long. 29° 10′ W. Wind: E. to E.NE. First part, strong breezes with squally-looking weather at the SE., heavy tide rips; middle part, light and baffling winds with passing showers; ends, pleasant gales with heavy smoky weather; a cross sea.

June 30. Lat. 12° 22′ N.; long. 27° 23′ W. Wind: E.NE. to E. First part, fresh breezes and fine weather; middle part, squalls with much lightning at the SE.; ends, pleasant gales and fair weather. A large SW. swell. Current, 18 miles, SE.

July 1. Lat. 11° 09′ N.; long. 26° 02′ W. Wind: NE. First part, light airs and calms; middle part, moderate breezes with squally appearances to the NW. Passed two ships bound north; a ship in company bound south. Ends with light baffling winds and hazy weather. Current, 14 miles, SE.

July 2. Lat. —; long. —. Wind: NE. First part, light airs and fine weather, a smooth sea; middle part, calm with a heavy SW. swell. Lowered all sail. At 7 a. m. light air from the N.NE.; made sail; a rough sea.

July 3. Lat. —; long. —. Wind: SW. First part, light airs from the NE. with squally appearances all around. From 4 p. m. until 12 m. wind all around the compass with small rain; middle part, cloudy and rainy, wind SW.; ends, faint airs from SW. to S.SW., with cloudy rainy weather; a rough sea.

July 4. Lat. 9° 13′ N.; long. 24° 45′ W. Winds: calm, NE., and E.NE. Commences, faint airs from SW. with squally appearances to the SE.; a rough sea and much rain. Lowered all sails. Middle part, calm; ends, faint airs in cat's-paws from the NE. Set all sails. A heavy swell from the S.SW.

July 5. Lat. 7° 18′ N.; long. —. Wind: E.NE., baffling and calm. First part, faint airs from the NE. and fine weather; middle part, strong gales from the E.NE. with cloudy rainy weather. At 7 a. m. from a ten-knot breeze it fell suddenly calm, with black ugly looking squalls from all around the compass, with no wind or rain. Ends calm, with baffling cat's-paws from the southward. A cross-legs sea running.

July 6. Lat. 6° 44′ N.; long. 23° 38′ W. Winds: SW. to W.NW. and SW. First part, calm, fine weather; middle part, light baffling airs from the SW., with light rain; ends, fresh gales from the W.SW., with squally weather. A heavy sea from the S.SE.; vessel plunging bows under.

July 7. Lat. 6° 00′ N.; long. 22° 50′ W. Wind: S.SW. to S. First and middle part, strong breezes, but very baffling, from the S.SW. to W.SW., with hard squalls of wind and rain, accompanied with sharp lightning. At 9 a. m. tacked to the W.SW. Ends, moderate breezes and fine weather.

July 8. Lat. 5° 38′ N.; long. 21° 09′ W. Wind: S. Light breezes with smoky weather. At 4 p. m. tacked to the SE. At 10 a. m. tacked to the SW. Sea smooth.

July 9. Lat. 4° 28′ N.; long. 22° 13′ W. Wind: S.; pleasant gales, fine weather and a smooth sea.

July 10. Lat. 3° 17′ N.; long. 23° 38′ W. Wind: S. by E. to S. Strong breezes with fine weather. A rough sea. Current, 15 miles, E.SE.

July 11. Lat. 1° 49′ N.; long. 24° 29′ W. Wind: SE. to E.SE. First part, brisk breezes with fine weather. During the night the wind hauled more favorable. Middle part, strong breezes and squally weather. During the forenoon wind hauled back again to S. Ends, fresh breezes and fine weather. Current, 12 miles, SE.

July 12. Lat. 00° 03′ N.; long. 25° 24′ W. Wind: S. by E. to S.SE. Strong baffling trades from E.SE. to S.SE., with fine weather.

July 13. Lat. 1° 24′ S.; long. 26° 40′ W. Wind: S.SE. to S., moderate and baffling, weather fine. At 1 p. m. vessel on the equator, long. 25° 27′ W. Middle part, fresh breezes and flawy and baffling towards the north. Latter part, light variable winds and fine weather, with passing clouds. A rough sea.

July 14. Lat. 2° 06′ S.; long. 26° 29′ W. Wind: SW. to S.SE. Moderate and baffling wind and squally appearances; during the night squalls of wind and rain. At 11 tacked to the SE. Middle part, strong gales from the S.SW. with much rain. Ends, strong gales from the S. to S. by W., and squally appearances to the SW. A rough sea.

July 15. Lat. 3° 03′ S.; long. 27° 23′ W. Wind: S. by E. to S.SE. Commences, strong breezes with squally weather. At 1 p. m. tacked to the SW. Middle and latter part, moderate breezes from the S.SE. and fine weather. A rough sea. All sail set.

July 16. Lat. 4° 44′ S.; long. 28° 44′ W. Wind: SE. to S.SE. First part, moderate breezes and fine weather. Middle part, strong breezes and squally appearances to the SW. At 4 a. m. a hard squall from the S.SW. with much rain. Ends, strong breezes from the S.SE. and fine weather.

July 17. Lat. 6° 04′ S.; long. 29° 30′ W. Winds: SE. and S.SE. First and middle part, moderate breezes and squally with light showers of rain; a heavy swell from the SW. Latter part, hard squalls from the E.SE. and much rain. Calm during the intervals. Ends, baffling, from the SE."

COMPUTED ROUTE FROM NEW YORK TO RIO—*June.*

Latitude.	Longitude.	Course.	DISTANCES.			WINDS; PER CENT.					Total number of observations.
			True.	Per cent.	Average.	Head.	Slants from— Northward.	Slants from— Southward.	Fair.	Calms.	
New York to—											
39° 11′ N.	70° 00	E.S.E.	199	10.1	219	2.6	7.8	*w* 11.4	78.2	3.1	349
37 34	65 00	E.S.E.	254	13.4	287	5.3	*w* 10.7	4.0	80.0	1.3	300
35 55	60 00	E.S.E.	259	5.9	272	2.0	2.8	*w* 6.2	89.0	1.2	245
35 00	57 17	E.S.E.	144	8.8	157	2.2	6.3	*w* 10.9	80.6	0.9	233
34 13	55 00	E.S.E.	123	2.0	125	0.0	*w* 10.0	0.0	90.0	20.0	20
32 30	50 00	E.S.E.	271	6.1	287	0.0	10.0	10.0	80.0	0.0	30
30 45	45 00	E.S.E.	276	5.8	292	1.1	2.1	*w* 17.0	79.7	19.7	94
30 00	42 54	E.S.E.	118	19.3	140	6.7	17.4	16.0	59.9	9.7	149
27 28	40 00	S.E	215	15.0	247	3.3	*w* 22.9	6.6	67.2	4.2	67
25 00	37 15	S.E	209	16.2	242	6.0	*w* 13.0	9.0	72.0	4.8	100
20 00	35 00	S S.E.	325	2.6	333	0.0	*w* 9.0	0.0	91.0	1.8	56
15 00	32 50	S.S.E.	325	0.3	326	0.0	0.7	0.9	99.1	0.8	116
10 00	30 43	S.S.E.	325	2.0	331	0.0	*w* 7.5	1.5	91.0	0.0	66
5 00	28 37	S.S.E.	325	17.6	381	5.3	13.2	13.8	67.7	16.0	152
Equator.	30 41	S.S.W.	325	8.8	353	2.8	*w* 16.1	2.8	78.3	0.0	106
			3693		3992						
1 00 S.	31 06	S.S.W	65	3.0	67	0.0	*w* 12.0	0.0	88.0	0.0	171
3 00	31 06	S.S.W	330	5.8	138	0.0	28.5	0.0	71.5	0.0	21
5 00	32 46	S.S.W	130	10.0	143	0.0	50.0	0.0	50.0	0.0	12
5 34	33 00	S.S.W	37	10.0	41	0.0	50.9	0.0	50.0	0.0	12
7 00	33 36	S.S.W	93	7.7	100	0.0	33.4	0.0	66.6	0.0	21
7 58	34 00	S.S W	63	6.6	67	0.0	27.0	0.0	73.0	0.0	37
9 00	34 26	S.S.W	67	6.4	71	0.0	24.0	2.0	74.0	0.0	50

Do not, if it can be avoided, go to the east of 28° 30′ after crossing 10° N. The farther you go east there, the more prevalent are the calms. Endeavor to cross 30° N. in about 40°—45° W., so you may get to 25° N. by nearly a south course. It is difficult to get to the SE. between those two parallels Southwest winds are not uncommon here. Between 10° and the equator, calms are much more frequent E. of 30° than to the W. of 30°, and they become more prevalent as you go east. Between 25° and 30° W., from 3° to 5° N., are the calm latitudes in this month. See the Charts, Pilot and Track.

Vessels should aim never to get to leeward of the track here laid down after crossing the line. The winds hang obstinately to the southward in June. Therefore, take advantage of all slants for making easting in south latitude, until you get to 9° S. Don't consider yourself too far eastward, if in this month you cross this parallel in 31° W. No calms obtain in June south of the line, and between 29° W. and the coast. Among 1,000 observations examined in this part of the ocean, for this month, not one calm is recorded.

Between 65° and 70° W., 30° and 33° N., is a great place for calms; also from 25° to 28° N., between 60° and 65°. On the average, you will carry the NE. trades to 8° or 9° N. Equatorial calms are most prevalent between 6° and 10° N., and 25° and 30° W. But between 30° and 35° W., the calms are most prevalent between 5° and 7° N.

Between 30° and 35° W. you sometimes get the SW. monsoons, and you are liable to them from 9° to 1° N.

Time and Crossings to the "Fair Way" off St. Roque—June.

Name of vessel.	From—	Date of sailing.	Longitude of crossing the parallels of—																Total days to—	
			Days.	30° N.	Days.	25° N.	Days.	20° N.	Days.	15° N.	Days.	10° N.	Days.	5° N.	Days.	Line.	Days.	3° S.	Line.	St. Roque.
Messenger*	New York	June 1,1852	8¼	43½	1¾	41¾	2	39	1½	37½	2	33	5	26¾	3½	32	1	32½	24	26
Union*	....do	1,1852	9	43	1⅛	41¾	1¼	40¾	1¾	39½	1¼	37¾	8	27	2¾	30½	1	31¾	25½	27¼
Albany	....do	1,1852	10¼	48	10¼	43	2	40½	3½	36	3½	29½	7	26¼	11½	30¾	1⅛	31	48	50¾
Ariel	....do	2,1850	15	39¾	2¾	37½	2¼	35	1½	32½	2½	29	4¼	30	2¾	33¼	1	33½	31	32½
Flying Cloud*	....do	3,1851	9	39¾	2	40½	1¼	40	1¼	38½	1½	35¼	4¼	32	2¼	33	3¼	33½	21½	23¼
Live Yankee	Philadelphia	3,1854	14	44½	5¼	42¾	1¾	41½	2¼	38	2½	33¾	6¾	30½	4¼	33¼	1½	34	36¾	39¾
Sabine	Boston	4,1852	17	37½	2½	36	1¾	34½	1½	33¼	2	31	5	29¼	3	31¼	1¼	31½	32¾	34¾
Dolphin	New York	6,1854	19	41½	4½	39½	3	37	3	34	4	31	8	29	3	31⅛	2	32	44½	46
Gray Eagle*	Richmond	8,1854	12	42¾	2¼	43	1¾	41¾	2	38½	2	34½	6¼	30½	2¼	33¾	1¼	34	28½	30¾
Winfield Scott	New York	9,1853	16½	45¼	5¾	42	2½	39¾	2¼	37½	3½	33¾	6¾	26¾	2¾	31	1⅛	32¼	40	43
Tarolinta	....do	11,1853	16	39	3	36¼	2	34½	2½	33	2¾	30¼	5¾	28½	4¾	31½	1¼	33	36¾	41¾
Young America	....do	11,1853	8½	56	8	45½	3½	43	2	40½	2	38	7	29½	4	32	1	33½	35	37
Minnetonka	....do	12,1853	13½	42½	4¾	39	2	36½	2½	34¼	2¼	31¾	6½	29	4	30¾	1⅛	32¼	35½	38½
Johanna	Baltimore	14,1853	12¾	44½	5¾	39¼	3⅛	36¾	3	33	4	27	8	34¾	5	31	1¾	31½	42	45¼
Norwester	New York	14,1854	11¾	38½	2	38¼	1¾	38¼	1½	36½	2	34½	9	27½	2	30¼	1¾	32	30	33
Esther May	....do	15,1850	15	48¾	2	49½	1¾	49¼	2	45¼	4	41¾	11½	30¼	2	32¼	1	32¾	38¼	40¼
Cohota	Boston	16,1852	13	46½	2¾	43	2	40	2	37	4¾	31½	6¾	25	1¾	26	1	28¼	33	34¾
Great Britain	New York	17,1850	15	47½	5	43	1½	42	1¾	40	4½	34¾	8½	28½	4¼	32¼	3¼	32¾	40½	47¾
Sunbeam	Boston	17,1853	9	43½	5¼	38½	2¼	35¾	2½	33¼	5¾	29	7½	26¾	6½	30½	1½	30½	38¾	41½
Valparaiso	New York	18,1851	15¼	35½	3¼	35¼	2	35¼	1¾	32½	3½	30¾	5¼	28	3¼	31¾	1¾	32	34¼	37
Victory	....do	18,1854	16	44¾	5½	48¾	2½	48¼	2¾	46	4¼	41	12	25¼	3¼	31	1	32	46¼	49
Reindeer*	Baltimore	21,1853	9½	47¼	4¼	46¾	2¾	44¼	2½	40½	2¾	35	4¾	26¾	2	29½	1	31	28½	30¼
Hero	New York	21,1853	11	49	7¼	44¼	3½	41	2¾	37¾	3¾	33	10¾	25	2¾	28¾	1¼	30½	41¾	44
Flying Dutchman*	....do	21,1853	5¾	50¾	4¼	45¼	2¼	41½	2½	37¼	2	33¼	5	28¼	3¼	32	1¼	33¼	25	27¼
Phantom	Baltimore	21,1853	8¾	50¼	4¾	49¼	2¼	47¾	2	45¼	2¾	42¼	10	29¾	2¼	33	1	34	32¾	35¼
Chilo	Boston	21,1853	13	42¾	3	43	2¼	40	2½	36	2¾	31½	7¼	29	2¾	33	1⅛	34¼	33½	40½
Witch of the Wave*	....do	22,1852	9¾	50¾	1¼	50½	1½	49	1¼	46¾	1¾	44¼	6½	37½	5½	33½	1¼	33½	27½	30¼
Wild Ranger*	....do	22,1853	9½	48½	5¾	46¼	1¾	44¼	1¾	41½	2¼	37½	5	29¼	2¼	32	1	33	28¼	30½
Grey Hound	Richmond	23,1853	14½	43¼	2¾	41¼	2	38½	2¼	35	3¾	31	6	31	5½	32½	2	33½	36¾	39¾
A. Pickering	Salem	24,1853	12	43¼	3¼	41¾	1¾	40¼	2	38	2¾	33¼	8¾	26¾	7¾	30¼	1	31	38¼	41¼
Kanawha	Savannah	25,1853	24	50½	3¾	48½	3¾	45½	4	42½	7½	36¾	6	28½	6½	30¼	2	31½	55½	59¾
Ida D. Rogers, (brig)	Jacksonville, Fla.	25,1857	18	49	4½	45¾	2	43	2	40	2¾	36	8	26¼	3½	30½	1	32	40¾	42¾
Defiance	New York	26,1852	12	43¾	3¼	46¾	1¾	45½	2½	42½	4	38¾	9½	27¾	2	31¾	1½	32½	35	37¾
Arethusa	Portland, Me.	26,1853	11¾	42¾	3¼	40½	3	37¼	3	33	2½	30½	10½	27¾	3½	31¼	1¾	32	37½	40½
Miantonomi	New York	28,1851	17	45	2	43	2	41½	1½	40	2½	36½	7¾	27	2½	32	2¼	33½	35¼	40
U. S. Ship John Adams	Boston	30,1849	18	44¾	2¾	40½	2	37½	2	34¾	2¼	31¾	9¼	21½	3	28	1¾	30½	39¼	41¾

Time and Crossings to the "Fair Way" off St. Roque.—June—Continued.

Name of vessel.	From—	Date of sailing.	Latitude of crossing the parallels of—																Total days to—	
			Days.	30° N.	Days.	25° N.	Days.	20° N.	Days.	15° N.	Days.	10° N.	Days.	5° N.	Days.	Line.	Days.	3° S.	Line.	St. Roque.
Kaduga	Boston	30, 1852	14	48¾	2	48½	2¼	45	2¼	41½	3¼	36½	9	25½	2¾	30¼	1	31¼	35½	37⅛
Live Yankee	New York	30, 1854	10¾	46½	3	47¾	2	47	2	43½	3½	39½	9	30¾	3½	34	1¼	34½	33¾	36½
Means before the 7th edition			1.5	41¾	3.8	40¼	2.2	38¼	2.3	35¾	3.3	32¼	7.1	26½	3.7	30	1.4	31	37.5	40.3
Challenger*	Boston	June 3, 1855	11¼	39½	1¼	40¾	1½	38¼	2¼	36½	1¾	34¼	5½	29	2½	31¾	1½	33½	26	28½
Snap Dragon	Philadelphia	4, 1855	15	44¼	1¾	41	2	39	1¾	36	1¾	33	5½	27¼	3	32	1¾	33½	30¾	34½
Fleetwing	New York	4, 1855	14¾	45	1¾	44	1½	42½	2	40	2	36¾	9½	29	3½	29	1	29¼	35	36¾
Falcon	do	5, 1855	19	41	3½	39¾	2¼	35¾	2¼	31½	2	29	5	27	5	26½	2	29¾	39	42½
John Carver	do	5, 1856	14½	40½	3¾	38½	2¼	36¾	2¼	33¼	2¼	31¼	5½	28¾	3½	28¾	1½	30	34	36½
Magnolia	do	7, 1855	20¾	38¾	2¼	37½	2	35½	1½	33¼	1¾	31	4¾	30	2¾	35	3	35½	35¾	42
Swordfish*	do	8, 1857	10¾	35	3	30½	3¾	29¾	1¼	28½	2	27½	3¼	29	2½	30½	1	31¼	26½	28¼
Moneynick	Boston	9, 1856	22	37	2½	35½	2	33½	2	31½	3	31	6	26½	3½	28	1½	30	41	43
Reindeer	New York	10, 1856	19½	38½	2¾	38¾	2¼	36	2½	33½	3¾	31½	6½	26	4	29½	1	30¾	41	43¼
Black Prince	Boston	10, 1856	21	37½	1½	37½	2	36	2	34	2	32	6½	27½	4½	32	1½	33	39½	42½
Canvas Back*	New York	12, 1855	11¾	44¾	1¾	44½	2	42	1½	39½	2	36¼	5¼	30½	5¾	29¾	1	30	28	31
J. H. Roscoe	Boston	12, 1856	16	39	3½	37	2¼	33¼	2¼	32¼	2	31	6½	25¾	4¼	27¾	1¼	28½	36¾	39¼
J. Darling	Richmond	13, 1856	15½	38¼	2¾	37	2¼	33¾	2¼	31	3¼	30½	6	25¾	4½	28¾	1	31	36½	38½
S. A. Hammond	Hampton Roads	14, 1856	15	36½	1½	34¼	1½	33½	2	32	2	30	7¼	28	4¼	28½	1¼	30¼	33½	35¾
A. A. Drebert	Philadelphia	15, 1857	15	37¾	2¾	39	2¼	36½	2½	34	3¼	30	6¾	23½	3	28¾	1½	29¼	35½	38
Rainbow	New York	17, 1856	17	36½	2	36	1½	34	1½	32½	1¾	31	4¼	27	3½	28¾	1¼	30¼	31½	33¼
Horatio	do	22, 1856	13¾	42¾	3½	39	3½	35¾	3½	29¾	4¼	27½	6¾	24	3½	28	1	29	38¾	40½
Sea Eagle	Boston	23, 1856	11½	45½	2½	43	2	41½	2½	37	3½	31	7½	31	5	31½	7	30	34½	41½
Grape Shot	Philadelphia	28, 1856	11	49	3½	45	3	42	2½	37	2½	33	6	27½	4½	30	1	30	33	35
Means since the 7th edition			13.8	43¼	3.4	41½	2.2	29½	2.2	36½	2.8	33¼	6.9	28	3.7	30¾	1.5	31¾	35	37.9
* Mean of best 10			9.4	44¼	2.6	42¾	2	40¾	1.7	38½	2	35¼	5.2	29¼	3	31¼	1.3	32¼	26	28.2

Ship Canvas Back, (R. S. Clarke, captain,) Boston to Rio Janeiro, seventeen days out.

"June 18, 1856. Lat. 29° 31′ N.; long. 41° 07′ W. Barometer, 30.30; temperature of air, 76°; water, 75°. Winds: S.SE., S.SE., S.SE.; moderate and clear.

June 19. Lat. 27° 06′ N.; long. 41° 55′ W. Barometer, 30.24; temperature of air, 77°; water, 75°. Winds: S.SE., SE., SE. by E. Moderate breezes and small trade-like clouds; small swell from the eastward; large quantities of weed.

June 20. Lat. 23° 58′ N.; long. 41° 15′ W. Barometer, 30.20; temperature of air, 77°; water, 75°. Winds: SE. by E. to E.SE., E.SE., E.SE. Strong breezes and quick flying clouds; passing showers; less weed; at times overcast, again clear.

June 21. Lat. 20° 28′ N.; long. 40° 08′ W. Barometer, 30.20; temperature of air, 76°; water, 75°. Winds: E.SE., E. by S., E. by S. Strong trades and quick flying cumulus from the eastward; a heavy mass of clouds passing slowly from SW. to NE.; very little weed.

June 22. Lat. 16° 40′ N.; long. 38° 40′ W. Barometer, 30.12; temperature of air, 78°; water, 75°. Winds: E. by S., E. by S., E. by S.; strong trades and hazy; at times overcast, again clear; no weed.

June 23. Lat. 12° 49′ N.; long. 37° 30′ W. Barometer, 30.05; temperature of air, 80°; water, 76°. Winds: E., E., E., Steady trades; small SE. sea; weather changing from clear to cloudy.

June 24. Lat. 9° 21′ N.; long. 36° 18′ W. Barometer, 30.03; temperature of air, 80°; water, 79°. Winds: E. by S., E. by S., E. by S.; squally; sharp sheet lightning to the east and SE.; distant thunder to the SE.

June 25. Lat. 6° 36′ N.; long. 35° 05′ W. Barometer, 30.00; temperature of air, 80°; water, 80°. Winds: E. by S., E. by S., E.; light trades and clear; at time light cirrus passing to the NE. very high; a lower mass of thin cumulus to the NW.

June 26. Lat. 5° 15′ N.; long. 35° 00′ W. Barometer, 30.00; temperature of air, 80°; water, 80°. Winds: E. to SE., SE., S.SE. to S. Moderate, with passing cumulus clouds; a short SE. sea; at times light airs from the South.

June 27. Lat. 4° 43′ N.; long. 34° 07′ W. Barometer, 30.01; temperature of air, 83°; water, 80°. Winds: S.SE., S.SE., S.SE., baffling, with rain showers; smooth sea.

June 28. Lat. 3° 12′ N.; long. 34° 58′ W. Barometer, 30.09; temperature of air, 81°; water, 80°. Winds: S.SE., S.SE., SE.; light and baffling winds.

June 29. Lat. 2° 16′ N.; long. 35° 00′ W. Barometer, 29.91; temperature of air, 84°; water, 80°. Winds: SE. by S., SE., SE.; fresh breezes and cloudy; much rain. Current, N. 76° W., ½ a mile per hour.

June 30. Lat. 1° 36′ N.; long. 34° 43′ W. Barometer, 30.02; temperature of air, 82°; water, 81°. Current, N. 76° W., $\frac{9}{10}$ of a mile. Winds: SE., S.SE., S.SE. Light airs and baffling. The current west increases as we get to the South.

July 1. Lat. 0° 14′ S.; long. 35° 09′ W. Barometer, 30.00; temperature of air, 80°; water, 78°. Current, N. 70° W., $\frac{6}{10}$ of a mile. Wind: S.SE., SE., SE by E. Light baffling winds; working ship to the South.

July 2. Lat. 0° 51′ S.; long. 34° 35′ W. Barometer, 30.00; temperature of air, 79°; water, 79°. Current, N. 75° W., $\frac{6}{10}$ of a mile. Winds: SE. by E., SE. by E., SE. Moderate and baffling airs; clear at times with squally intervals. Midnight, heavy rains; very squally.

July 3. Lat. 0° 43′ S.; long. 33° 41′ W. Barometer, 30.04; temperature of air, 81°; water, 78°. Current, N. 75° W., $\frac{6}{10}$ of a mile. Winds: SE. by S., SE. by S., SE. by S. Mod-

erate breezes, baffling two or three points of the compass in as many minutes. The clouds flying to the NW.

July 4. Lat. 3° 40′ S.; long. 33° 45′ W. Barometer, 30.04; temperature of air, 80°; water, 79°. Current, N. 80° W., $\frac{7}{10}$ of a mile. Winds: SE. by E., SE. by E., SE. by E. Fresh breezes and squally; short sea from south; at times rainy.

July 5. Lat. 4° 17′ S.; long. 33° 17′ W. Barometer, 30.01; temperature of air, 78°; water, 79°. Current, N. 85° W., $\frac{7}{10}$ of a mile. Winds: SE., SE., SE. to S.SE.; fresh breezes and cloudy. Passed 5 miles to the westward of Roccas rocks at 2 p. m.

July 6. Lat. 5° 31′ S.; long. 33° 10′ W. Barometer, 30.06; temperature of air, 80°; water, 79°. Winds: S.SE., S.SE., SE. by E. to SE.; moderate and baffling; rainy weather."

Barque Snap Dragon, (Geo. W. Brown, captain,) Philadelphia to San Francisco, fourteen days out.

"June 19, 1855. Lat. 29° 53′ N.; long. 44° 18′ W. Barometer, 30.30; temperature of air, 76°; water, 76°. No current. Winds: SE. by E., SE., SE. Fresh winds and good weather; through the middle part, an occasional squall.

June 20. Lat. 27° 01′ N.; long. 42° 54′ W. Barometer, 30.28; temperature of air, 77°; water, 79°. Current, SE. by E., 12 miles. Winds: E. by S., E. by S., E. by S. Stiff breezes and good weather. During the middle part, inclined to be squally, with light showers of rain; rough sea throughout.

June 21. Lat. 24° 22′ N.; long. 41° 33′ W. Barometer, 30.29; temperature of air, 78°; water, 79°. Current, SE. by S., 12 miles. Winds: E., E. by S., E. Fresh trades and pleasant, for the most part; middle, passing clouds.

June 22. Lat. 21° 25′ N.; long. 40° 01′ W. Barometer, 30.28; temperature of air, 78°; water, 78°. Current, SE. by S., 12 miles. Winds: E., E. by S., E. by S. First and middle, moderate breezes and pleasant. Latter, squally; winds baffling all day; large quantities of sea-weed.

June 23. Lat. 19° 14′ N.; long. 38° 34′ W. Barometer, 30.19; temperature of air, 78°; water, 78°. Current, E.NE., 12 miles. Winds: E., E., E.; trades steady and brisk, with pleasant weather. Passed through several tide rips.

Juue 24. Lat. 16° 42′ N.; long. 36° 49′ W. Barometer, 30.10; temperature of air, 79°; water, 78°. Current, East, 12 miles. Winds: E., E., E. by N. Fresh breezes throughout. Middle part, squally with passing clouds; weather clear and pleasant. On the late edition of Imray's chart, I find a continual NW. current in these latitudes, designated the Equatorial stream. Now, the experience of two voyages through this stream, proves to me that the current is easterly. In the winter, I know not how it sets, but in the summer, I feel confident there is a continual easterly current.

June 25. Lat. 13° 50′ N.; long. 35° 20′ W. Barometer, 30.09; temperature of air, 80°; water, 80°. Current, E.NE., 10 miles. Winds: E., E. ½ S., E. ½ S.; fresh trades throughout; middle squally, with heavy passing clouds; the remainder of the day, weather clear and pleasant.

June 26. Lat. 10° 53′ N.; long. 33° 32′ W. Barometer, 30.07; temperature of air, 81°; water, 81°. Current, E.NE., 8 miles. Winds: E. ½ S., E., E., brisk, with passing clouds during the middle part; the rest of the day pleasant.

June 27. Lat. 8° 07′ N.; long. 31° 57′ W. Barometer, 30.07; temperature of air, 83°;

water, 83°. Current, SW. by W., 15 miles. Winds: E. ½ S., E., E. by N. Fresh trades with passing clouds and fair weather.

June 28. Lat. 8° 10′ N.; long. 31° 34′ W. Barometer, 30.07; temperature of air, 85°; water, 83°. Current, N.NW., 19 miles. Winds: S.SW. to SE., calm, light airs and calms. Fresh trades till 2 p. m.; the wind changed suddenly in a squall to S.SW., attended with heavy rain and thunder. Middle, clear and calm. Latter, squally looking, with light airs and calms. So here I am in the doldrums; but, according to your charts, less liable to calms than if I was further east. Had a strong current which occasioned the water to ripple quite perceptibly.

June 29. No observation. Barometer, 30.00; temperature of air, 80°; water, 83°. Winds: N.NW., SW., S.SW. to W.SW. First part, light breezes and cloudy, with sea all up in heaps; 8 p. m., squall from SW. with rain; remainder of the day squally with light rain, and thick cloudy weather.

June 30. Lat. 6° 13′ N.; long. 27° 45′ W. Barometer, 30.04; temperature of air, 81°; water, 82°. Current, E., 70 miles in two days. Winds: S.SW., S.SW. to S.SE., S.SE. to SE; First, moderate breezes with passing clouds. Middle and latter, brisk, with strong tide rips and nasty irregular swell. By observation, I find we have had a very strong easterly current; so much so, I am alarmed about the accuracy of my chronometers, although in September, 1850, I experienced $1\frac{7}{10}$th miles per hour E.NE. from 9° to 6° north; and from 6° to 4° north, 1 mile E.NE., between long. 26° and 31° West.

July 1. Lat. 5° 40′ N.; long. 26° 21′ W. Barometer, 30.06; temperature of air, 79°; water, 82°. Current, East, 25 miles. Winds: S. and baffling, S. by W. to S.SE., S. to S.W. by S.; winds moderate and baffling with pleasant weather throughout. Tacked frequently, winds not steady an hour.

July 2. No observation. Barometer, 30.03; temperature of air, 80°; water, 83°. Winds: S. by W. to S.SE., S. by W., S. ½ W. First, light breezes with squalls of rain. Tacked to W. by S. Middle, calm till 11 p. m., afterwards, fresh and squally with heavy rain. Latter, fresh and squally with light rain; weather looking bad; wind baffling.

July 3. Lat. 3° 41′ N.; long. 29° 16′ W. Barometer, 30.02; temperature of air, 83°; water, 83°. Current, east, 24 miles in two days. Winds: S., S., S. First steady breezes with passing clouds, and an occasional squall; tacked twice; appearance of trades.

July 4. Lat. 1° 12′ N.; long. 31° 05′ W. Barometer, 30.00; temperature of air, 81°; water, 81°. Current, S.SW., 15 miles. Winds: S. by E., S.SE., S.SE.; fresh trades and pleasant weather; many flying fish; broke the only thermometer on board.

July 5. Lat. 0° 26′ South; long. 32° 28′ W. Barometer, 30.00. Current, W.SW., 32 miles. Winds: S.SE., S.SE., S. to S.SE; first, fresh and steady; middle, strong breeze with passing clouds; murky looking weather and heavy SW. swell. At 6 p. m., tacked to the East; wind baffling. Midnight, on the Equator, long. 32° 15′ W. Latter, moderate, but very baffling. Distance by log since leaving Philadelphia, 4,330 miles.

July 6. Lat. 2° 07′ S.; long. 33° 38′ W. Barometer, 30.09. Current, S. 72° W., 40 miles. Winds: S. to SE. by E., SE. by E. to S.SE., SE. to S.; moderate and baffling, with an occasional squall and light rain; tacked frequently; had a heavy swell, very irregular, all day.

July 7. Lat. 3° 37′ S.; long. 33° 34′ W. Barometer, 30.00. Current, south, 10 miles. Winds: S. by E. to SE. by S., SE. by S., SE. by S. First, brisk, with passing clouds; tacked frequently. Middle, squally with light rain; winds extremely baffling; sea all in heaps; heavy tide rips; tacked. Latter, brisk, with smooth water and fine clear weather. I cannot account

for it, but I have had no westerly current; but instead, a southerly one of 10 miles; now, the winds have been strong southerly, the last week, and I am one of those who do not believe the currents are regulated solely by the winds. I pay every attention to the study of the currents, and keep the ship's run myself; so I feel confident I am not far wrong.

July 8. Lat. 5° 05′ S.; long. 33° 50′ W. Barometer, 30.06. Current, W.SW., 20 miles. Winds: SE. by S., S. by E. to SE. by E., S. by E. to SE. by S. First, brisk and pleasant. Middle and latter, very squally with rain; winds very baffling; tacked frequently. At 2 p. m. made the Roccas; determined their true position, with good observations, to be in 33° 40′ 15″ W.

July 9. Lat. 5° 55′ S.; long. 34° 19′ W. Barometer, 30.07. Current, NW., 30 miles. Winds: S.SE., S. by E. to SE., S.SE. First and middle, fresh gales and smart squalls; latter, moderate with fair, clear weather, and short sea."

Ship Magnolia, (S. Pepper, captain,) New York to Sydney, New South Wales, twenty-one days out.

"June 28, 1855. Lat. 29° 16′ N.; long. 38° 32′ W. Barometer, 29.90; temperature of air, 77°; water, 77°. Winds: NE., NE., E.NE. Light breezes and pleasant.

June 29. Lat. 27° 14′ N.; long. 37° 57′ W. Barometer, 29.83; temperature of air, 79°; water, 77°. Winds: E.NE., E., E.SE. Light breezes and clear.

June 30. Lat. 24° 49′ N.; long. 37° 37′ W. Barometer, 29.83; temperature of air, 78°; water, 76°. Winds: SE., SE., E.SE. Winds light.

July 1. Lat. 22° 34′ N.; long. 36° 55′ W. Barometer, 29.84; temperature of air, 78°; water, 76°. Winds: SE. by E., E.SE., E.SE. First, gentle breezes and fair. Middle and latter, strong breezes and hazy.

July 2. Lat. 19° 41′ N.; long. 35° 21′ W. Barometer, 29.83; temperature of air, 78°; water, 76°. Winds: E. by S., E. by S., E. by N. Strong breezes and very gloomy-looking weather.

July 3. Lat. 16° 33′ N.; long. 33° 44′ W. Barometer, 29.83; temperature of air, 77°; water, 76°. Winds: E. by N., E. by N., E. by N. Strong breezes and cloudy.

July 4. Lat. 13° 23′ N.; long. 32° 32′ W. Barometer, 29.83; temperature of air, 78°; water, 77°. Winds: E. by N., E. by N., E. by N. Strong breezes and cloudy.

July 5. Lat. 10° 53′ N.; long. 31° 17′ W. Barometer, 29.80; temperature of air, 80°; water, 80°. Winds: E.NE., E.SE., E. First, strong breezes and squally; middle, baffling; latter, fine breezes and pleasant.

July 6. Lat. 8° 27′ N.; long. 30° 15′ W. Barometer, 29,80; temperature of air, 80°; water, 80°. Winds: E., E., E. First, gentle breezes and passing clouds; middle, squally; latter, gentle breezes and pleasant.

July 7. Lat. 6° 59′ N.; long. 28° 54′ W. Barometer, 29.80; temperature of air, 80°; water, 80°. Winds: E.NE., calm, S. First, gentle breezes; middle, squally, with rain; lost the trades; latter, gentle breezes.

July 8. Lat. 6° 37′ N.; long. 29° 36′ W. Barometer, 29.77; temperature of air, 82°; water, 81°. Winds: S. by W., S., S. First, rain and baffling winds; at 6 p. m. tacked to W.SW.; middle, gentle breezes; latter, fresh breezes and pleasant.

July 9. Lat. 5° 58′ N.; long. 30° 15′ W. Barometer, 29.77; temperature of air, 81°; water, 81°. Winds: S., S., S. First, fresh breezes and pleasant weather; middle, gentle breezes; southeast trades well south; I shall get to leeward; latter, gentle breezes; at 4 a. m. tacked to E. by S.

July 10. Lat. 5° 16′ N.; long. 30° 05′ W. Barometer, 29.77; temperature of air, 81°; water, 82°. Winds: S., S., S. First, light breezes and pleasant; at 8 p. m. tacked to SW. by W.; latter, the same weather.

July 11. Lat. 3° 24′ N.; long. 31° 29′ W. Barometer, 29.77; temperature of air, 82°; water, 81°. Winds: S. by E., S. by E., S. by E. Gentle breezes.

July 12. Lat. 1° 13′ N.; long. 33° 17′ W. Barometer, 29.77; temperature of air, 82°; water, 81°. Winds: S.SE., S.SE., S.SE. Gentle breezes.

July 13. Lat. 0° 13′ S.; long. 35° 40′ W. Barometer, 29.77; temperature of air, 82°; water, 81°. Winds: S. by E., S. by E., S. by E. Fresh breezes throughout, with occasional heavy squalls.

July 14. Lat. 0° 13′ S.; long. 34° 30′ W. Barometer, 29.77; temperature of air, 82°; water, 81°. Winds: S. by E., S. by E., S. by E. First part, fresh breezes and clear; middle, very squally; latter, moderate.

July 15. Lat. 1° 15′ S.; long. 34° 46′ W. Barometer, 29.75; temperature of air, 80°; water, 79°. Winds: S.SE., S.SE., S.SE. First, gentle breezes; at 7 p. m. tacked to SW.; latter, strong breezes.

July 16. Lat. 3° 13′ S.; long. 35° 44′ W. Barometer, 29.75; temperature of air, 81°; water, 80°. Winds: SE. by S., SE., S. by E. First, fresh breezes; at 4 tacked to the eastward; middle and latter, gentle breezes.

July 17. Lat. 3° 29′ S.; long. 35° 10′ W. Barometer, 29.76; temperature of air, 81°; water, 79°. Winds: SE. by S., SE. by S., SE. First, fresh breezes; at midnight tacked to S.W.; latter, moderate.

July 18. Lat. 4° 50′ S.; long. 35° 40′ W. Barometer, 29.66; temperature of air, 80°; water, 78°. Winds: SE. by E., SE. by E., SE. First, pleasant; middle, squally; midnight, tacked to NE.; at 4 a. m. tacked to S. by W.; latter, pleasant; heavy swell from south.

July 19. Lat. 5° 28′ S.; long. 34° 40′ W. Barometer, 29.56; temperature of air, 80°; water, 78°. Winds: SE., SE., SE. by E. First, moderate; at 4 p. m. Cape St. Roque bore S. by W., distant 10 miles; tacked to the eastward; middle, gentle breezes; at 4 a. m. tacked to the south; latter part, squally." [Observe: he crossed in 35° W., and makes no mention of adverse currents.]

Brig Ida D. Rogers, (George Taylor,) from Florida, 27 days out.

"July 22, 1857. Lat. 10° 54′ N.; Long. ———. Barometer, 30.00; temperature of air, 82°; of water, 75°. Winds: E.NE. First part, passing scuds from the east, and fine breezes; making good progress yet, but I am all the time in a pack of trouble for fear of being delayed by those calms, hope not. I am steering SE., and if the wind will stay where it is, I am trying to be in 5° N. when I am in 30° W. Middle part, wind E.NE. and passing squalls of wind and no rain. Latter part, wind baffling about from SE. to E.NE. and light, with very cloudy weather. I seem to be very much favored so far; hope to continue so. Last voyage we were 32 days to the line, and the brig was very light loaded and in good plight; but now she is deep, and I am sure it makes one mile an hour difference to her speed, and I hope to make as good time as before. At noon light winds and looks like a change; heavy swell from NE.; course and distance this day, SE., 140 miles.

July 23. Lat. 9° 04′ N.; long. 34° 24′ W. Barometer, 30.00; temperature of air, 82°; of water, 78°. Winds: Light airs E. Noon moderate; I wish I was a little further to the eastward, for I am afraid of being bothered now, but hope to get a breeze. The barometer fell $\frac{1}{10}$ ince noon, signs of a breeze; I am in hopes to make an average passage yet. At 2 p. m. tacked

to E., fanning along with a light air from SE. Middle part, continual squalls from SE. to W. and heavy rain; calm between squalls and heavy sea. Latter part, successive squalls from SE. to S.SW., heavy rain.

July 24. Lat. (no observation); long. (no observation). Barometer, 30.00; temperature of air, 77°; of water, 77°. Winds: S. to S.SW. First part, wind varying fron SW. to NW. in squalls of rain, and a tremendous rough sea, and I am rather further to the westward than I want to be in this latitude, but I am in hopes to be favored. I would have been in a better position now if my vessel had not been so deep, but I have to head the sea, or I am afraid of rolling away my masts. I have had a rough passage so far. Middle part, very squally, and wind varying from NW. to SW. in squalls; calm between squalls, and a tremendous sea on. At 8 a. m., no observation. Course and distance, D. R. this 24 hours is E. by S. 110 miles.

July 25. Lat. (not observed); long. (no observation). Barometer, 30.00; temperature of air, 78°; of water, 78°. Winds: S. to W.NW. No observation at noon; and a succession of squalls of rain and very gloomy looking weather, and a very heavy sea from SE. I have not had a chance to get my latitude at noon for two days, but I judge my latitude at noon to-day to be 8° 10′ N. and my longitude to be 31° 20′ W. by calculation only, and I will follow on and try to get out of these doldrums. I have had a head wind, as you my say, most of the time. Middle part, squally and variable wind from S. to W.SW. and squalls. Course, E. by S. Distance, 102 miles by observation.

July 26. Lat. 7° 50′ N.; long. 29° 15′ W. Barometer, 30.00; temperature of air, 80°; of water, 80°. Winds: S. to S. by E. First part fresh breeze from south; and an American barque close to us bound same way. Latitude, 4 p. m., 7° 42′ N., and longitude, by chronometer, 29° 08′ W. I am rather afraid of being bothered, but I am on your track for July exactly to a mile, and have been for the last 15 days, and so far am satisfied. Middle part, fine breezes from south and clear sky; latter part, fine weather and smooth. I am farther to the east than I want to be, but the wind is dead ahead, and we have made poor progress for 4 days back. A barque close to us the last 24 hours, bound same way. Latter part, fine weather and clear. This 24 hours we have headed E.SE. by compass, and made 4 miles northing; so must have a current. Course and distance, made good E. a little northerly 135 miles. Two barques in company bound same way; one is barque Paladon.

July 27. Lat. 7° 54′ N.; long. 27° 15′ W. Barometer, 30.00; temperature of air, 82°; of water, 80°. Winds: South. First part, winds light from south. Barque Paladon in company, close to us, and another American barque to south of us. I now think I will have some trouble to get to the equator, for I am too far to the east I think, but still I am on your track for July, No. 1. Middle part, fine breezes from south. At 10 p. m. tacked to W.SW. At 1 p. m. wind canted to S.SW., monsoons; tacked to SE. again. Latter part, fresh breezes and passing squalls of wind. I am sure I am too far eastward; but the wind has worked very unfavorable with me, and now I expect a long passage.

July 28. Lat. (no observation); long. (no observation). Barometer, 30.00; temperature of air, 79°; of water, 80°. Winds: S. by W. No observation; I judge myself in latitude 7° 10′ N., and longitude 25° W.; and I am sorry to be here with this fresh monsoon. But according to your charts I ought to be in a good place. I am no nearer to the line now than I was four days ago. I head up SE. by E all the time and I make no southing hardly. If the wind don't favor me soon I am bound to go to the westward again, for I now consider myself to leeward, to the eastward. Middle part, fresh breezes from S. to S.SW. and squally; too far

to eastward; a long passage sure; cannot make any southing to speak of. At 8 a. m. an American barque in company. At 9 a. m. tacked to W. ½ S. Cannot stand to eastward any longer. I do not feel as though I had done wrong; if I could have got my latitude and found out how far south I was, I could have done better. But these last 48 hours we have been heading up as good as SE. ½ E. all the time, and our course is not better than E. by S. ¼ S. Latter part, I was in hopes the wind would favor me all the time, but now I found your monsoons. Course made good E. by S. ½ S. till I tacked, 115 miles.

July 29. Lat. 6° 35′ N.; long. 23° 45′ W. Barometer, 30.00; temperature of air, 82°; of water, 80°. Winds: S.SW. to S. by W. First part, wind from S.SW. to S. by W. and fresh. Sharp sea heading up W. by S. and getting along nicely. I cannot find fault with Maury's track; more with myself for not working to windward when I was in 29° 30′ W. instead of going so far east, too late now, hope to do better next time. Middle part, fine weather and fine breeze heading up W.SW. and W. by S.; hope to make a little southing. Barque Paladon in company. I am sorry to have a long passage now, for my chance was good when I was 28 days out, I was only 3 days' sail from the line. Latter part, fine weather. I find I gain a little.

July 30. Lat. 5° 14′ N.; long. 26° 00′ W. Barometer, 30.00; temperature of air, 80°; of water, 80°. Wind: South. First part, fine breezes from the south; wind seems to favor a little in flaws. Barque Paladon in sight to leeward. Hope to take the SE. trades soon. Middle part, fine weather and fresh breezes from south, and passing clouds; latter part, fine breezes from south, and clouds flying very rapidly S. by W.; wind varying sometimes to S. by W. Latitude, by observation, 3° 18′. I made a good course these 24 hours, according to the way we have been heading must have a southerly set current. I am in hopes to meet the trades soon, for I notice by your Sailing Directions and Charts that I am in a position for them. I cannot blame your books nor charts for my passage, only myself; but, still, if I can cross the equator in 40 days from Jacksonville, I shall consider my passage as good as 32 from New York; but I think if I had not gone to the eastward so far, I would have made a good passage to the line.

July 31. Lat. 3° 18′ N.; long. (no observation.) Barometer, 30.00; temperature of air, 82°; of water, 80°. Winds: S. to SW. First part, fresh winds and fine weather, and passing clouds from S. by W., and a large quantity of flying fish, and now and then a petrel; middle part, fine winds from S. by W. to S.SW. and clear; barque Paladon in company again at 8 a. m. wind inclines to head us off to W. by S. Sorry, but I expected to meet the trades before now; barometer rising some; barque Paladon in company; at 9 a. m. Paladon tacked to SE.; latter part, heavy tide rips these 24 hours; at noon tacked to SE. by E.; fine weather; barque Paladon in sight; I must say I meet with very unfavorable winds, and have hard work to get along. I am afraid of a calm, that's all. Course made good SW. this day; 100 miles, true distance; SW. course.

Aug. 1. Lat. 2° 14′ N.: long. 29° 46′ W. Barometer, 30.00; temperature of air, 81°; of water, 78°. Wind: South. First part, fine weather and passing clouds; no signs of trades yet; I have had very few favors from the wind lately; barque Paladon in company. At 9 p. m. spoke Paladon, long. 29° 00′; at 11 wind canted to S. ½ E.; tacked to SW.; fine breeze. Hope to cross the equator these 24 hours. At 8 a. m. fine weather; at 10 a. m. observed a very heavy tide rip, extending S.SW. and N.NE. as far as the eye could extend, from topsail yard, and the water seemed to be all of a foam with light breakers. Passed through it, and water changed color to a very dark green. I have now got the SE. trades, and fresh, and I cross the

line in 38 days. I think I have done well, and I only blame myself for going so far east. Course this day is a good one, and 100 miles.

Aug. 2. Lat. 1° 00′ N.; long. 30° 10′ W. Barometer, 30.00; temperature of air, 81°; of water, 79°. Winds: SE. by S. First part, fine weather and fresh trades, and well to the east. Hope to get along. I consider my passage to the line as good as 30 days from New York, considering my vessel is small and loaded very deep, and a very heavy deck load of lumber. If the wind stands as it is, I shall be able to cross in 31° W. As far as I am concerned, I can say that I have faith in Maury's works, for I found your monsoons, &c.; middle part, fresh trades, and varying a point now and then to southward; made my S.SW. course good from crossing till 4 p. m. I am in hopes to get along without tacking; I shall not tack if I can possibly avoid it till I make something to tack for. I consider my passage to the equator as 30 days from New York.

Aug. 3. (No observation.) I have left the clipper barque Paladon astern. I cannot say I meet with any current yet, for my vessel appears to be in just the position I expected to find her at 4 p. m. Middle part, fine weather and fine breeze from SE. by E.; at 8 a. m. Fernando de Noronha bore by compass, the pyramid, S.SE.; distance, 10 miles. Wind: SE. by E. and fine breeze. I find this morning my chronometer is 20 miles to the east of the vessel, and the reason is because I neglected to wind her in time; and by running eight hours over her regular winding time, she has lost 20 miles; she served us the same last voyaye; latter part, fine breeze and clear weather; all sail set by the wind, and wind seems to freshen at nights; course these 24 hours is S.SW.; Fernando de Noronha is just in sight from deck, bearing NE. ½ N. 25 miles. I hope to clear St. Roque to-night.

Aug. 4. Lat. 3° 54′ S.; long. 32° 35′ W. Barometer, 30.00; temperature of air, 80°; of water, 78°. Winds: SE. by E. First part, more moderate; at 4 p. m. Fernando in sight from deck; winds seem to favor more nights. I am in hopes by to-morrow I can say I am all clear; and I can't say I am sorry; hope the wind will cant free; middle part, fine weather and wind more favorable from E.SE., very light; latter part, very fine weather; wind E.SE., and more light and first-rate weather; at noon fine; at 6 saw a barque ahead; at noon spoke her; proved to be the bark Welkin from New York for Valparaiso, 44 days. He sighted Fernando de Noronha; wind E.SE. and fine, steering S. by W.

Aug. 5. Lat. 6° 02′ S.; long. 32° 50′ W. Barometer, 30.00; temperature of air, 80°; of water, 78°. Winds: E.SE. and SE. by E. First part, fine weather and more moderate, and a heavy swell from S.SE.; middle part, fine weather and wind from SE., steady and fine breeze; I am in hopes the wind will favor me more soon; latter part, fine weather and a little more moderate by spells; get along nicely. I now consider myself clear of all trouble, and fine breeze by the wind. I think that, so far, I have beaten the barque Welkin as good as twelve days; for there is, as I consider it, some difference between Jacksonville, (Fla.,) and New York.

Aug. 6. Lat. 8° 18′ S.; long. 33° 10′ W. Barometer, 30.00; temperature of air, 82°; of water, 78. Winds: SE. to SE. by S. First part, squally; at 3.30 p. m. the wind died away very suddenly; but all at once a whirlwind made almost alongside of the brig, taking the water up, and started off with great rapidity across our bow. It was about the size of our main deck, apparently; went within 20 yards of bow; we did not feel any effects of it; but after passing our bow about 10 minutes, it made into a beautiful water spout, and made a splendid appearance; but went to NW. with a speed of, as near as I could judge, 40 knots an hour; glad it did not touch us; middle part, fine breezes and passing clouds; morning hours squally; no rain; latter part, fine breezes and passing clouds; getting along well; this last day 210 miles."

COMPUTED ROUTE FROM NEW YORK TO RIO—*July.*—No. 1. (*For fast vessels.*)

Latitude.	Longitude.	Course.	DISTANCES.			WINDS; PER CENT.					Total number of observations.
			True.	Per cent.	Average.	Head.	Slants from— N'd or E'd.	Slants from— S'd or W'd.	Fair.	Calms.	
Sandy Hook to—											
39° 11′ N.	70° 00′	E.S.E.	199	11.4	222	2.2	11.8	10.8	75.2	4.0	310
37 33	65 00	E.S.E.	256	5.4	269	0.2	8.2	6.5	85.1	10.7	411
35 54	60 00	E.S.E.	259	7.7	278	2.6	4.7	6.9	85.8	7.5	234
35 00	57 21	E.S.E.	141	5.3	148	0.4	4.7	*w* 7.9	87.9	3.4	256
34 12	55 00	E.S.E.	126	19.2	150	6.2	*w* 18.5	10.8	64.5	12.2	65
32 28	50 00	E.S.E.	272	20.6	297	7.2	9.6	*w* 22.8	60.2	0.0	84
30 00	50 00	S.	148	14.4	173	1.7	*w* 19.9	17.4	61.0	1.7	116
25 00	50 00	S.	300	10.6	352	5.3	*w* 10.5	0.0	84.2	5.0	19
20 24	45 00	S.E.	390	3.5	402	0.0	*w* 0.0	17.4	82.6	0.0	23
20 00	44 34	S.E.	34	5.1	36	0.0	*w* 18.0	0.0	82.0	0.0	28
15 40	40 00	S.E.	368	5.8	389	0.0	*w* 28.7	0.0	71.3	0.0	28
15 00	39 10	S.E.	57	11.5	57	0.0	*w* 1.4	0.0	98.6	0.0	72
10 48	35 00	S.E.	356	5.9	377	0.0	*w* 25.0	0.0	75.0	7.2	64
10 00	34 40	S.S.E.	52	6.4	55	1.0	*w* 8.2	1.0	89.8	5.8	98
8 06	30 00	E.S.E.	299	11.7	334	1.0	*w* 18.6	15.5	61.9	13.4	97
6 03	25 00	E.S.E.	322	14.2	367	2.4	15.6	*w* 18.0	64.0 }	10.7	167
5 00	25 26	S.S.W.	68	29.8	88	8.4	*w* 35.4	12.6	44.6 }		
Equator ..	27 30	S.S.W.	325	7.4	348	1.3	*w* 21.9	0.0	76.8	0.0	78
			3972		4322						
3 36 S.	29 00	S.S.W.	234	6.9	348	2.0	*w* 21.0	2.0	75.0	0.0	401
4 36	30 00	S.W.	85	0.0	85	0.0	*w* 39.8	0.0	69.2	0.0	35
5 00	30 10	S.S.W.	26	2.9	27	0.0	14.2	0.0	85.8	0.0	21
5 50	31 00	S.W.	70	0.0	70	0.0	0.0	0.0	100.0	0.0	33
7 00	31 30	S.S.W.	76	5.0	80	0.0	24.9	0.0	75.1	0.0	12
7 30	32 00	S.W.	42	0.6	42	0.0	3.4	0.0	96.6	0.0	29
8 29	33 00	S.W.	84	2.9	86	0.0	14.4	0.0	85.6	0.0	21
9 00	33 51	S.W.	44	1.9	45	0.0	9.6	0.0	90.4	0.0	42
10 14	34 00	S.S.W.	80	7.2	86	0.0	26.0	0.0	74.0	5.0	39
11 00	34 19	S.S.W.	50	4.2	52	0.0	23.4	0.0	76.6	0.0	39

The difficulties for this month consist in calms and baffling winds, in certain regions, which it is necessary to avoid. I have, therefore, given two tracks for this month, viz: one for bold navigators and fast-sailing vessels, that can lay up within six points of the wind; and the other for dull sailers, that cannot do well close-hauled. Both tracks avoid the calms of the horse latitudes.

There is not much difference between them as they are here given, in point of average sailing distance. The difference consists in better working breezes by route No. 1, than the other, and I now confine myself to this route, viz: No. 1.

In taking this route, if you keep much to the east of the track, when between the parallels of 35° and 30° N., you will get into the calms of the horse latitudes. See, by the Trade-Wind Charts, where these calms most prevail along this route, and at this season.

After reaching the meridian of 50° W., south is given as the course which a vessel will make on the *average* thence to the parallel of 25°.

But it should be recollected that the tracks given in these Directions, and which every navigator who intends to be guided by them is recommended to project on his chart, are in no case the track which the vessel herself is expected actually to make. Suppose a large number of vessels at different times should take this route as their guide, the mean of all their tracks would be represented by the route which I recommend; though perhaps it would not represent the track of a single vessel taken separately. Some would be on one side, some on another; some would cross it in one place, and some in another.

It is difficult to get navigators to comprehend this. Many of them think, that to go the routes recommended by me, they must actually run on the lines which I have drawn to serve merely as guides for them, and for the purpose of my own convenience in illustration.

Vessels that attempt to follow these routes, will sometimes find themselves hundreds of miles on one side or the other of the track, as projected; and when they find themselves so driven off from the track as laid down in the books, they should not attempt to get back upon the line itself, as though it were a channel way; but taking the direction in which it lies, as a guide, and consulting the charts with which they are supplied, they should shape their course, and be governed accordingly.

Every track that I have drawn, shows that head winds may be expected along it; and when these head winds are encountered, the vessel so encountering must expect to be turned aside; and whether she should beat or not, or stand off altogether upon this or that track, the master must decide; and he should be governed in his decision by the Sailing Directions and the Charts themselves.

With this general explanation for *all* the routes, navigators who try this July route will perceive that I do not recommend that they should, after reaching the meridian of 50° W., actually, and whether or no, stretch away due south for 500 miles until they reach the parallel of 25° N., where the wind will allow them to lay up to the southward and eastward.

Suppose that a vessel on this route should, on reaching the meridian of 50°, near lat. 32° 28′, have the wind to come out from SE.—as she will find it to do, on the average, 12 times in 100—she should not, in this case, stand to the northward and eastward, because she would then run up into a part of the ocean where the calms and light airs of the horse latitudes are most vexatious. If she cannot lie south, she should stand down to the southward and westward until the wind hauls, or until she can reach the parallel of 31°, and then go about, taking care not to recross the parallel of 32°, to the west of 45°.

After crossing 30° N., strive not to fall to the westward of the projected track. Consider yourself in the best possible position if you can cross the parallel of 25° N. between 41° and 44°, or the parallel of 20° between 39° and 42°. From either of these positions you will have no difficulty in reaching the meridian of 30° or 31° between the parallels of 9° and 12° N., where you will lose the NE. trades; you will then take the equatorial calms, and they may hang on you obstinately, *if you go much further to the east;* but you will seldom or never carry them with you below 6° N. Cross 6° N. by the shortest possible course. Losing these calms, you will generally get the SE. trades; for to the west of 30° the SW. monsoons seldom blow, though they do sometimes; to the east of 30° they blow quite constantly in July. To the east of 30° the equatorial calms prevail from 15° N. to 8° N., and you will be liable to the SW. monsoons from 11° to 2° N. Hence, you will observe that it is important you should, if the winds will allow you, cross the equatorial doldrums about 30° W., and not go further east than 28° if you can possibly avoid it. The average time from 10° to 5° N. is 6½ days.—(See crossings, pp. 258–9.)

After crossing the line and getting the SE. trades, if you should find yourself unable to clear the land, stand on boldly to the southward, unless the wind should slant so as to allow you to lay well up to the eastward on the other tack, until you cross 5° S. to the west of 33°. Between this parallel and 9° S. you can make either a south or an east course good on the average twice out of three, and in some regions three times in four; or even, when you get near the land, four times in five. It is better to take the chances of these slants, than it is to attempt to make your easting in the doldrums north of the line. If a vessel strike these calms

to the east of 27° west, she may consider herself lucky if she gets clear of them in less than a week or ten days. Don't fear to pass west of Fernando de Noronha.

July is an unfavorable month for quick passages, let a vessel take what route she will.

COMPUTED ROUTE FROM NEW YORK TO RIO.—*July.*—No. 2.

Latitude.	Longitude.	Course.	DISTANCES.			WINDS; PER CENT.					Total number of observations.
			Direct.	Per cent.	True.	Head.	Slants from— N'd or E'd.	Slants from— S'd or W'd.	Fair.	Calms.	
Sandy Hook to—											
39° 11′ N.	70° 00′	E.S.E.....	199	11.4	222	2.2	11.8	10.8	75.2	4.0	310
37 33	65 00	E.S.E..... ...	256	5.4	269	0.2	8.2	6.5	85.1	10.7	411
37 33	60 00	E.....	238	9.0	259	3.4	*w* 8.6	5.2	82.8	7.5	234
37 33	55 00	E.....	238	9.0	259	4.3	3.5	*w* 6.3	85.0	3.4	256
37 33	50 00	E.....	238	6.7	254	1.1	4.9	*w* 9.0	84.1	5.8	262
37 33	45 00	E.....	238	8.2	257	2.9	1.2	*w* 10.2	85.7	2.8	243
35 54	40 00	E.S.E.....	259	5.9	274	1.6	2.0	*w* 11.1	85.3	3.3	244
35 00	38 54	S.E....	77	14.9	88	3.6	9.0	*w* 19.5	67.9	5.5	329
31 41	35 00	S.E.....	274	9.6	300	1.0	*w* 16.0	10.0	73.0	3.8	100
30 00	34 09	S.S.E.....	115	6.2	122	0.0	*w* 17.6	11.0	71.4	8.3	46
25 00	31 49	S.S.E.....	325	8.5	352	3.0	7.0	8.0	82.0	3.0	98
21 00	30 00	S.S.E.....	260	0.3	261	0.0	1 5	0.0	98.5	0.0	130
20 00	29 34	S S.E..	65	0.3	65	0.0	0.0	2.1	97.9	1.4	142
15 00	27 24	S.S.E.....	325	0.5	327	0.0	2.5	0.0	97.5	1.8	163
10 00	25 17	S.S.E.....	325	4.3	339	0.6	*w* 8.2	5.2	86.0	9.2	158
	Thence	S. or S.S.E. to intersection of track No. 1.									

This route is intended for dull sailers and timid navigators. Do not cross 35° N., to the west of 45°; nor 33° N., to the west of 40°. After crossing 30° N. in about 33°, you have, as the track shows, all the chances nearly, of fair winds, in your favor, until you get between 13° and 8° N., between which parallels, if you be between the meridians of 25° and 30°, you may expect to lose the NE. trades, and then to contend with southerly winds, light airs, and calms, (if between these two meridians,) till you get between 5° and 2° N., where the SE. trades will be found. The getting from the NE. into the SE. trades is the difficult part of the passage; and the further you go east, the more difficult this is. In July you can carry the NE. trades two or three degrees further down, by keeping between the meridians of 30° and 35°, than you are liable to do between the meridians of 25° and 30°. In like manner, you will get the SE. trades further to the north between the two former, than you will between the two latter meridians. And in this fact is the great secret of the advantage to be gained by keeping to the west.

Captain W. W. Henry, of the "*Romance of the Sea,*" writes under date of June 2, 1857: "From New York to the equator I think I followed your track as near as possible, and crossed the line 29½ days out, which I think is a fair passage for that time of year, (July.) I found no difficulty in fetching by St. Roque, but from 5° S. to 15° S. had an unusually poor chance. I never saw the trades act so obstinately before, and also coming through the trades, bound home, (which you will perceive by my abstract.) I think the trades must be degenerating fast. Several vessels, that left New York about the same time, I think, were over 40 days getting to the line. They stood to the east, while I was going to the westward, and I shortened my passage over ten days. I think everything of your Sailing Directions, and shall never think of following any other. In the summer months I think no one need fear but what they could get east fast enough. All the difficulty I find is, getting south when I want to."

Time and Crossings to the "Fair Way" off St. Roque—July.

Name of vessel.	From—	Date of sailing.	Longitude of crossing the meridians of—																Total days to—	
			Days.	30° N.	Days.	25° N.	Days.	20° N.	Days.	15° N.	Days.	10° N.	Days.	5° N.	Days.	Line.	Days.	3° S.	Line.	St. Roque.
Queen of Clippers	New York	July 1,1853	11	52	2⅛	51⅛	2⅛	50⅛	1⅛	47⅛	2⅛	43⅛	10⅛	31	2	33¾	1	34½	32⅛	34⅛
John Bertram	Boston	1,1853	11	49⅛	2⅛	50	2	48	2	44⅛	2	41⅛	10	32⅛	2⅛	32	1	32¾	32	34
Weybosset	....do	1,1853	18	44	3	40⅛	2	38	3⅛	33	2⅛	29	6⅛	27⅛	5	31	2⅛	32	40⅛	43⅛
Andubon	New York	2,1853	16⅛	39	1¾	37⅛	1⅛	36	1¾	34	3⅛	32	7	26	2¼	30	1	31	34¼	36¼
Young America*	....do	2,1854	9	44	2	44	1⅛	43	1⅛	40	1⅛	38	4⅛	36	6	33¾	1⅛	34½	26	30
Mermaid	....do	2,1852	9¼	52	2¾	52⅛	2¼	50	2⅛	46⅛	3¼	43	8⅛	31	4	34½	1¼	35	32⅛	35¼
Wild Duck	....do	4,1852	14	48	1¾	45⅛	2	44	2¼	41⅛	4¼	36	6¾	28	2¼	31	1	32	33½	35¼
Pride of the Sea*	....do	6,1853	11¼	47	1¾	44	2	40	2¼	37	2¾	34	5¼	30	2	33⅛	2¾	33	27¼	31⅛
Robert Harding	Hampton Roads	7,1854	17¼	40⅛	5	36⅛	1¾	34⅛	1¾	33	2⅛	30⅛	7¾	26	3¾	31	1⅛	33	39¾	42¾
Phantom	Baltimore	7,1854	16⅛	46	5⅛	45	2¼	44	2	41⅛	2¾	38	10	26⅛	3⅛	32	1⅛	34	42⅛	49⅛
Kremlin	Boston	8,1853	10⅛	46⅛	2	44⅛	2	43	1⅛	41	4	36	7	30	7¼	30	1⅛	31	34¼	36¾
Ottawa	New York	10,1854	16⅛	47	4¼	42⅛	2¼	42	2¼	40	2⅛	35⅛	9⅛	26¼	3	31	1¾	33	40¼	43¼
A. P. Crosby	....do	11,1853	18⅛	37	6¼	35	2	32	1¼	31	3⅛	29	5⅛	27	3¼	31	1⅛	32	40¼	43¾
Aurora	....do	11,1853	19	37	5⅛	35	2	32	1⅛	31	3⅛	28¼	5⅛	27	3	31	1⅛	32	40	44
Telegraph	....do	13,1851	10¼	50	2	48	2	46	2	43	4	36	9⅛	26⅛	3⅛	29	1	30	33¼	35
Rainbow	....do	14,1854	12⅛	46	5¼	45	2¼	44	2	41	3	37	4¾	29	3	30	1	31	32¾	35
Gauntlet*	....do	14,1854	13	46	4⅛	42	1	39	1⅛	37⅛	1⅛	35	5	27	2	32	1⅛	33⅛	28⅛	31
Jamestown*	....do	16,1854	12	47	3¼	44	1⅛	42⅛	1¾	40	2¾	35	5¾	29	3¾	31⅛	1⅛	33	30¾	33¾
Whistler	Boston	16,1853	11	49	2	47	1¾	45⅛	2	42	7¼	34⅛	5	27	3¼	32⅛	2¾	32⅛	32¼	35¾
Gertrude	New York	16,1854	15¾	44	5¼	41⅛	2	40⅛	2⅛	36⅛	3¾	33	4⅛	29⅛	3	32⅛	1⅛	33	36¾	39¼
Manleus	Boston	17,1853	15¾	48	4¼	43	3	38	1¾	35	2	32	8	29	3⅛	31⅛	1⅛	33	38¼	42
Clara Brookman	....do	19,1854	11⅛	50	6¾	42	1¾	40	1⅛	38⅛	3	35	5¼	27	3⅛	34	1⅛	35	33¼	37¾
Cohansey	New York	20,1851	12	46⅛	5⅛	43	2⅛	40	2	37⅛	4	32	6	25⅛	3¼	28⅛	1⅛	30	35¼	37¾
Celestial*	....do	21,1850	11	46	4	39⅛	1	38	1⅛	36	2⅛	34	4	27⅛	2	31	1	31	26	28
Ocean Telegraph*	....do	22,1854	10⅛	45	3⅛	42	1¾	42	1⅛	40	3	37	7	28	2	32	1	33	29¼	31⅛
Agnes Leads*	....do	23,1853	9¾	41⅛	1⅛	40	1¾	37	1¾	34⅛	3¼	31	5¼	29	4	32	1⅛	34	27¼	30⅛
Wizard*	....do	24,1853	8⅛	46	3¾	43	1¾	40⅛	1¾	37	3	32	2¾	28	3⅛	30	1¼	31⅛	25	27
William Sturges	Boston	28,1854	13¼	46	2⅛	43	2¼	41	2¼	36⅛	3⅛	33	4¼	31	3¼	33⅛	1⅛	35	31¼	35¼
Stingua	New York	29,1854	13⅛	50⅛	2¼	48	1⅛	47	2¼	44	2⅛	40⅛	10	27⅛	2¾	31	1¼	31⅛	34¾	37
North Wind	....do	29,1853	11	48	1⅛	46	2	44	1⅛	42	5	35	10	25¼	2⅛	29	1	30⅛	33⅛	37⅛
Mean before the 7th edition			12.8	45¾	3.3	43¼	1.9	41⅛	1.8	39	3.2	35¼	6.8	28¼	3.2	31⅛	1.4	32⅛	33.3	36.1
Intrepid	New York	July 3,1856	13	44⅛	5⅛	40⅛	1½	38⅛	2	36⅛	4⅛	35	7¾	25⅛	2¼	29	1	30	36⅛	38⅛
Romance of the Sea*	....do	4,1856	11	47	4⅛	43⅛	1⅛	43	1⅛	41	2	37	6⅛	29⅛	2⅛	32	1	33	29⅛	31
West Wind	Boston	13,1855	11⅛	46	5⅛	42	2	41	2	38	3⅛	32	4¾	27	3	32	1	33	32¼	35
Rainbow	New York	14,1855	12⅛	46	5¼	45⅛	2¼	44⅛	2¼	41⅛	3	37	4¾	29	3	30	1	31	33	35
Lynchburg	... do	15,1856	18	43	3⅛	42	2	40	3⅛	36⅛	2⅛	34	4⅛	28	3	32	1	32	37	39
May Queen	Baltimore	16,1856	18¼	38	2¼	39⅛	2	37	2¼	34	2⅛	31⅛	5¼	26⅛	2¼	29⅛	1	30⅛	34¾	36¾
Sirocco*	Philadelphia	18,1855	9	43	5	43⅛	2¼	43	1¾	42	4	39	7	28	2¼	31	1½	33	31¼	33¾
Carilla	Chesapeake Bay	18,1856	11	50⅛	5	47	2⅛	45	2⅛	43	4	40	6⅛	29	2⅛	32	1	32⅛	34	36⅛
Bald Eagle	New York	18,1856	16	34	2¾	36	1¼	36⅛	1½	37	4⅛	38	5	30	3	33⅛	1	34	34	36
Mean since the 7th edition			13	45¼	3.7	43	1.9	41¼	1.9	38¾	3.2	35	6.5	28¾	3.1	30⅛	1.3	32⅛	33.5	36.3
Mean of best 10*			10.9	45⅛	3.1	42⅛	1.6	40½	1.7	38	2.5	34⅛	5	29⅛	3	32	1.4	33	28	30.9

Captain Lewis, of the barque Ellen Morrison, writing from Rio de Janeiro, says:

"With your valuable Charts on board, I sailed from Cape Henry, June 15, in a remarkable dull vessel, and arrived here in forty-eight days. I crossed the equator in longitude 31° 50′ W., thirty-five days out, and sailed between Fernando and the Roccas, and, with your advice, stood boldly on, taking advantage of slants. I made no land until I was in the latitude of Cape St. Thomas. The next day, at noon, I anchored in Rio de Janeiro harbor. One of our clipper barques, called the Swan, left Baltimore five days before me, and I arrived in Rio four days after him. I shall send you my journal as in my book, and hope to hear from you on my arrival at Baltimore, with any remarks that you have to make, whether I erred at any time on the route; and as I have been upwards of thirty voyages across the equator, I have never seen in your book of Sailing Directions any of the vessels that I have commanded. I lost the NE. trades in about 11° N., long. 32° 30′ W.; took the SW. monsoons, and was forced as far as 26° 00′ W. and 5° 40′ N. I endeavored then to get to the SW. as fast as possible. I shall likewise send you a journal of a voyage to London from Savannah, in another very dull vessel, in the month of August. I have never had the pleasure of sailing in a fast vessel, and I think the best proof of your Charts being a good guide is, that slow sailers can make a fair passage with them on board. I have at all times recommended them to all my friends sailing to any part of the world. I have never made a very short passage, for I never had a fast sailing vessel; for this vessel that I am in now never was known to go more than seven knots. The distance sailed, by log, from Cape Henry to the equator was 4,373 miles, [computed distance, 4,322,] and to Rio, 6,041 miles.

I endeavored to follow the route recommended by you for timid captains and dull sailers; but I assure you I am not the former, but the latter. I will acknowledge the corn. After crossing the equator I found none of that westerly current so often dreaded, and it is a long time since I have gone to the eastward of the island of Fernando de Noronha."

Ship "Romance of the Sea," (Captain William W. Henry,) eleven days out from New York.

"July 15, 1856. Lat. 29° 11′ N.; long. 44° 18′ W. Barometer, 30.25; temperature of air, 76°; of water, 77°. Wind: S. to SW., moderate and cloudy and squally appearance to northward, light and baffling. Tacked twice. At 9 a. m. breezing up from SW. and clear to SW., heavy nimbus clouds to N.NE; ends moderate head sea on.

July 16. Lat. 28° 09′ N.; long. 42° 41′ W. Barometer, 30.35; temperature of air, 80°; of water, 81°. Wind: S.SE. to S.SW., moderate and variable, passing squalls. Tacked three times, but wind heads us off on every tack. Hard luck. Ends moderate and pleasant, no appearance of NE. trades yet.

July 17. Lat. 27° 33′ N.; long. 42° 58′ W. Barometer, 30.30; temperature of air, 82°; of water, 80°. Wind: S., light airs from southward and splendid weather. At 9 p. m. tacked to W.SW., sea very smooth; ends nearly calm, fine weather; saw lots of gulf-weed.

July 18. Lat. 25° 37′ N.; long. 43° 24′ W. Barometer, 30.25; temperature of air, 80°; of water, 79°; Wind: SE. by S., light airs and pleasant, should like to know where the NE. trades are. From 3 a. m. until 6 a. m. fresh breezes and ship jumping into a heavy head sea. At 6 a. m. wind getting light and smooth sea again, heavy bank of cumulus to the S.SE.; ends calm.

July 19. Lat. 23° 14′ N.; long. 43° 40′ W. Barometer, 30.20; temperature of air, 80°; of water, 80°. Wind: SE., light winds and passing clouds, heavy banks of clouds continually

coming up from south and settling all around the horizon. Think there has been heavy weather south of us to have broken in upon the NE. trades this way. Morning moderate and fine pleasant weather.

July 20. Lat. 19° 40′ N.; long. 42° 49′ W. Barometer, 30.25; temperature of air, 77°; of water, 76°. Wind: E.SE. Commences moderate and clear weather; latter part, moderate, going ten knots, braced up very sharp. At 10 a. m. passed through a tide-rip, sea considerably agitated.

July 21. Lat. 16° 06′ N.; long. 41° 02′ W. Barometer, 30.15; temperature of air, 79°; of water, 77°. Wind: E., moderate and squally appearance, fresh and passing squalls. Saw a brig bound west.

July 22. Lat. 12° 43′ N.; long. 39° 45′ W. Barometer, 30.10; temperature of air, 81°; of water, 79°. Wind: E. by S., moderate and fine pleasant weather. Saw a meteor going from N.NW. to S.SE. Latter part, wind getting light. At 8 a. m. clouds coming up from southward, with light misty rain.

July 23. Lat. 10° 49′ N.; long. 38° 47′ W. Barometer, 30.10; temperature of air, 74°; of water, 75°. Wind: W.SW., calm and cloudy with fine rain. At 7 p. m. a breeze from eastward, cloudy weather, moon shining at intervals. At 3 a. m. wind hauled suddenly to W.SW. and with no cessation in the wind, ship going eight knots. Latter part, moderate and rain; temperature of rain water, 71° at 9 a. m. Ends cloudy and light winds.

July 24. Lat. 8° 40′ N.; long. 36° 35′ W. Barometer, 30.10; temperature of air, 80°; of water, 79°. Wind: W., light winds from NW., heavy nimbus clouds to SW., moderate and 8 p. m. hauling to SW., squally throughout the night, ship going in squalls thirteen knots, no trouble getting to the eastward with this wind; morning, hauling aft and getting light; course and distance run this day S. 45° E., 184 miles.

July 25. Lat. 7° 51′ N.; long. 34° 57′ W. Barometer, 30.15; temperature of air, 82°; of water, 80°. Wind: baffling, heavy nimbus clouds to S.SW. At 7 p. m. wind breezing moderate with light passing squalls and fine rain. From 7 till 2 a. m. going ten knots, when the wind suddenly left us and weather clearing off pleasant. Ends, light airs from NW. to SW.

July 26. Lat. 7° 26′ N.; long. 34° 15′ W. Barometer, 30.15; temperature of air, 82°; of water, 81°. Wind: SW., very light airs from NW. to SW. and fine weather, calm at intervals, swell from SE. and S. Consigned to the care of Neptune a bottle, (which I hope will be picked up,) with a paper of ship's name, position, &c.; ends, nearly calm.

July 27. Lat. 6° 40′ N.; long. 33° 00′ W. Barometer, 30.15; temperature of air, 76°; of water, 79°. Wind: S.SW., light and baffling with rain. At 5 a. m. wind hauling S.SW. and light squalls, all sail set by the wind; ends, moderate and squally.

July 28. Lat. 6° 20′ N.; long. 31° 11′ W. Barometer, 30.10; temperature of air, 79°; of water, 80°. Wind: calm. Commences, light winds and passing clouds coming up from SE.; middle part, the same. At 3 a. m. wind hauled to E.SE., with heavy rain, braced around the yards. At 4 a. m. calm, and remained throughout the remainder of the day, heavy nimbus clouds to SE. and S.

July 29. Lat. 5° 40′ N.; long. 30° 12′ W. Barometer, 30.05; temperature of air, 77°; of water, 78°. Wind: baffling, throughout these 24 hours light and baffling from SE. to SW. and squally, with heavy rain showers, tacked several times as necessary to make the most southing. Temperature of rain water at 3 p. m., 72°; at 9 a. m., 71°. Latter part, squally and variable; not much wind in the squalls, but plenty of water.

July 30. Lat. 5° 05′ N.; long. 29° 10′ W. Barometer, 30.15; temperature of air, 81°; of water, 80°. Wind: S. by W., baffling, tacked three times; middle part, clearing off with fine weather. At 6 a. m. tacked to W. by S., saw a clipper ship on the other tack. Ends, moderate and pleasant, all sail set by the wind.

July 31. Lat. 4° 03′ N.; long. 30° 00′ W. Barometer, 30.15; temperature of air, 78°; of water, 77°. Wind: S., light winds and fine weather, tacked three times.

Aug. 1. Lat. 1° 26′ N.; long. 31° 26′ W. Barometer, 30.15; temperature of air, 81°; of water, 79°. Wind: SE. by S., moderate winds and fine weather. Have now got SE. trades, and with this wind shall fetch well to windward of St. Roque, and have found no trouble in getting to the SE. since leaving the NE. trades. Think I have followed Maury's route as near as possible.

Aug. 2. Lat. 2° 32′ S.; long. 32° 28′ W. Barometer, 30.05; temperature of air, 83°; of water, 79°. Wind: SE. by E., moderate and pleasant. At 9 a. m. crossed the equator in long. 31° 55′ W., 29½ days from New York. Whole distance run from noon to noon of each day, by observation, 3,930 miles; distance calculated in the tables, 3,972 miles. Latter part, heavy swell from S.SE.

Aug. 3. Lat. 5° 18′ N.; long. 33° 32′ W. Barometer, 30.10; temperature of air, 79°; of water, 79°. Wind: S.SE., moderate; at 3 p. m. dark heavy bank of clouds to S.SE.; at 4, squalls with rain, took in light sails as necessary, wind quite light between the squalls; middle and latter, heavy squalls with rain. At 10 a. m. inclining to clear up; at noon clear to southward."

Ship Young America, (D. S. Babcock, captain,) New York to San Francisco; nine days out.

"July 12, 1854. Lat. 28° 56′ N.; long. 43° 56′ W. Barometer, 30.15. Winds: calm, E.SE., E.SE., gentle breezes and fair throughout.

July 13. Lat. 25° 38′ N.; long. 43° 54′ W. Barometer, 30.05; temperature of air, 77°; water, 77°. Winds: SE. by E., E.SE., E.SE. Commences, gentle breezes and fine weather; middle, strong breeze at times, with heavy squalls of wind and rain; latter, more moderate, have been unable to make any easting.

July 14. Lat. 21° 50′ N.; long. 43° 30′ W. Barometer, 30.05. Winds: E.SE., E.SE., E.SE. Commences, moderate breeze and passing squalls with light rain; middle, baffling and unsteady, squalls rising up from SE. killing the wind, and heading us off to SW.; latter, steady from E.SE. A SE. course is recommended in the Sailing Directions, along here, but I fancy it cannot be done in the summer time one time in twenty.

July 15. Lat. 18° 05′ N.; long. 42° 17′ W. Barometer, 29.95; temperature of air, 78°; water, 78°. Winds: E.SE., E. by S., E. by S. Commences, baffling unsteady winds, very puffy, with moderate squalls occasionally; middle and latter, gentle breeze.

July 16. Lat. 14° 47′ N.; long. 40° 10′ W. Barometer, 29.90; temperature of air, 79°; water, 77°. Winds: E. by N., E. by N., E., gentle breezes.

July 17. Lat. 12° 00′ N.; long. 38° 20′ W. Barometer, 29.85; temperature of air, 79°; water, 79°. Winds: E. by N., E. by N., E. by N. Current, NW., ¾ of a mile. ommences, gentle breezes; middle, heavy banks rising from SE., squally appearances; latter, good steady breeze and fine weather, hard work to get to the eastward, many flying-fish.

July 18. No observation. Barometer, 29.80; temperature of air, 79°; water, 82°. Winds: E. by N., E. by N., E. by N. to E.SE., good breezes and hazy weather, sea getting up from

SE.; middle, steady, large head sea; latter, wind light and baffling, dull gloomy weather. [Equatorial cloud ring—notice his barometer.] Squally appearances, trades breaking up, rainy; passed several tide rips.

July 19. Lat. 8° 57′ N.; long. ——. Barometer, 29.80; temperature of air, 79°; water, 81°. Winds: calm, S., SW. First part, calm, dull gloomy weather; middle, heavy squalls with much rain, very sharp lightning and thunder, occasional tide rips, sharp sea from SE. throughout; latter, light airs and squalls, weather the same.

July 20. Lat. 7° 59′ N.; long. 34° 50′ W. Barometer, 29.85. Winds: NW., S., and calm, N. and S.SE., N. and calm, winds very variable; ends calm, heavy rain squalls.

July 21. Lat. 6° 44′ N.; long. 35° 17′ W. Barometer, 29.90; temperature of air, °81; water, 82°. Current, easterly, ¾ of a mile. Winds: calm, calm and S.SE., S.SE. First, calm, dark cloudy weather; middle, calm. At 2 a. m. breezing up from S.SE., weather clearing up, large southerly sea. Latter, gentle breeze and fair weather; am in a bad position, but standing to SW. in hopes of more wind before tacking.

July 22. Lat. 5° 30′ N.; long. 36° 04′ W. Barometer, 29.85; temperature of air, °79; water, 82°. Winds: S.SE. and calm, calm, S.SE, First, light airs and light squalls; middle, mostly calm, occasional light airs from SE. and showers of rain; latter, light airs and squally appearances from SE., large SE. sea, no current.

July 23. Lat. 4° 17′ N.; long. 36° 00′ W. Barometer, 29.80; temperature of air, °81; water, 82°. Winds: S.SE., calm, S.SE. First, gentle breezes and fair weather, standing to the eastward, large head sea; middle, calm and squalls; latter, the same.

July 24. Lat. 2° 22′ N.; long. 37° 05′ W. Barometer, 29.85; temperature of air, 81°; water, 81°. Winds: SE. by S., SE. by S., SE. by S., light breezes and passing showers; stood to the eastward five hours; at 6 p. m. tacked to the SW.; middle, good breeze, undoubted SE. trades, occasional showers; latter, the same, large head sea throughout.

July 25. No observation. Winds: SE. by S., S.SE., S.SE., tacked to the eastward, moderate, with fair weather; middle, moderate with passing clouds; latter, wind unsteady, at noon a heavy rain squall from SE., an ugly head sea throughout.

July 26. Lat. 2° 49′ N.; long. 32° 53′ W. Barometer, 29.90; temperature of air, 81°; water, 81°. Current, W., 1 mile. Winds: SE. by S., SE. by S., SE. by S., wind moderate and puffy, slight squalls; middle, good breeze, squally appearances; latter, at 6 a. m. tacked to SW. ½ S., weather clearing with strong trades. For three days wind has not veered, except in a squall, more than half a point.

July 27. Lat. 0° 3′ N.; long. 34° 28′ W. Barometer, 29.90; temperature of air, 80°; of water, 80°. Current, W. by N., ¾ of a mile. Winds: SE. by S., SE. by S., SE. by S.; decreasing breeze. Middle and latter parts, light trades; sea much smoother. Over 25 days to the equator.

July 28. Lat. 0° 18′ south; long. 33° 49′ W. Barometer, 29.90; Winds: SE. by S., SE. by S., SE. by S. Current, NW., 1 knot. Light trades throughout; tacked several times. No advantage to be taken of slants, as the wind has not varied ½ a point for 5 days.

July 29. Lat. 2° 21′ S.; long. 34° 20′ W. Barometer, 29.90; temperature of air, 79°; of water, 79°. Current, NW., 1 knot. Winds: SE. by S., SE., SE. Light trades and fine weather. Stood 3 hours to eastward. Latter part, good breeze, and inclining to the eastward; hope to squeeze by St. Roque.

July 30. Lat. 3° 56′ S.; long. 34° 50′ W. Barometer, 29.98. Current, NW. by W., 2

miles. Winds : SE., SE. to SE. by S., S.SE. First, good breeze and fair weather; middle and latter, wind baffling and unsteady, with frequent squalls; an ugly head sea, and wet, dirty, disagreeable weather. Have had 50 miles NW. by W. current. Amongst all the recommendations from one and another as to the best course to get by St. Roque after getting jammed, I would simply recommend all navigators to take care and not get jammed at all. Cape Horn is a fool to it.

July 31. Lat. 3° 58′ S.; long. 33° 25′ W. Barometer, 29.95. Current, W.NW., 1 mile. Winds : S.SE. to SE. by S., S.SE., S. by E. to SE. by S. Squally, dirty weather, and an ugly sea from the southward. Have tacked six times.

August 1. Lat. 5° 02′ S.; long. 34° 25′ W. Barometer, 29.95; temperature of air, 79°; of water, 79°. Current, NW., 2 miles. Winds : S.SE., S.SE., S. by E. Unsteady, baffling winds throughout; frequent squalls, with a sharp high head sea. Ship plunging bowsprit under. Stood 7 hours to the eastward. Two days making a degree of latitude.

August 2. Lat. 5° 56′ S.; long. 34° 36′ W. Barometer, 29.90; temperature of air, 80°; of water, 79°. Current, NW. by N., 1½ miles. Winds : S. ½ E., S.SE., south. Stood to the eastward till 6 p. m., then tacked to SW. by S. At 7.30 a. m. tacked to E.SE. In shore the wind seems to blow along the land. Squally, dirty weather thoughout."

Captain Babcock handled his ship very well, but he seems not to have recollected that July is not like February for a passage to the line. After a run of 25 days he crossed in 34° 20′, and was six days instead of three, the usual time, thence into the "fair way" off St. Roque. By crossing so far west he lost three days on this part of the passage, though he had gained 9 days on the other. Of all the July crossings on record, three only, the Gilpin, the Wizard, and the Pride of the Sea, have beat the Young America to St. Roque. The Mermaid, the Hazard, and the Parana, each crossed as far west as 34°, and each had four days from this crossing to St. Roque. The Magnolia crossed in 34°–'5°, and took also 6 days to clear St. Roque. Lieutenant Barnett, who made the extracts to illustrate the route to Rio for this month, and who compiled from the abstract logs the tables of crossings, left, when he was ordered away to sea, the following note :

NOTE BY THE COMPILER.—"*To my successor in the Rio tracks.*—Abstracts are recorded for all the months, except for December. Those I have marked in pencil, "copy," are yet to be entered. I have throughout selected the ships which have gone furtherest *west* when on the equator, for the purpose of showing there is no real difficulty in getting around St. Roque, even when ships fall to leeward of it. J. W. B."

This explains why the abstracts of those ships that have gone well to the westward have been quoted, by way of illustration, not only for July, but for the year round generally. These extracts ought to satisfy navigators as to *that* Cape St. Roque current.

Ship Westwind (George N. Elliot, captain,) Boston to San Francisco; twelve days out.

"July 26, 1855. Lat. 29° 43′ N.; long. 45° 08′ W. Barometer, 30.25; temperature of air, 74°; of water, 74°. Winds : calm, S.SE., calm. First and middle, light airs and calms; latter, moderate and pleasant; NW. swell; sea-weed.

July 27. Lat. 28° 53′ N.; long. 43° 37′ W. Barometer, 30.26; temperature of air, 75°; of water, 76°. Winds : calm, S.SW., SW. by S. Throughout, light airs and pleasant; some weed.

July 28. Lat. 28° 47′ N.; long. 42° 22′ W. Barometer, 30.34; temperature of air, 76°;

of water, 76°. Winds: SW. by S., S.SW., S. Throughout, light breezes and pleasant; tacked several times; strong tide rips.

July 29. Lat. 27° 45′ N.; long. 42° 04′ W. Barometer, 30.36; temperature of air, 76°; of water, 76°. Winds: S.SE. to S., S.SE. to S., S. by E. Throughout, moderate breezes and pleasant; tacked to the SW.; light rain squalls.

July 30. Lat. 25° 58′ N.; long. 42° 33′ W. Barometer, 30.36.; temperature of air, 76°; of water, 76°. Winds: S.SE., S.SE., SE. by S. Throughout, light breezes with occasional light rain squalls; small tide rips. Think I am having bad luck by following your route for July for fast vessels, as my ship is only half clipper.

July 31. Lat. 24° 19′ N.; long. 42° 00′ W. Barometer, 30.28.; temperature of air, 76°; of water, 75°. Winds: SE., SE., SE. Throughout, light breezes; light rain squalls occasionally.

August 1. Lat. 21° 42′ N.; long. 41° 05′ W. Barometer, 30.24; temperature of air, 76°; of water, 76°. Winds: E.SE., E. by S., E. by S. Moderate breezes and passing clouds throughout.

August 2. Lat. 18° 38′ N.; long. 40° 21′ W. Barometer, 30.20; temperature of air, 76°; of water, 76°. Winds: E.SE., E., E. by S. Throughout, strong breezes. Middle, squally with rain; latter, pleasant; first royal breeze since leaving Boston.

August 3. Lat. 16° 00′ N.; long. 37° 04′ W. Barometer, 30.19; temperature of air, 75°; of water, 76°. Winds: E.SE., E.SE., E. by S. Throughout, fresh trades with occasional rain squalls; tide rips. I hope ere long the wind will get some northing, for I have been full and by, almost ever since I left Boston.

August 4. Lat. 13° 49′ N.; long. 37° 00′ W. Barometer, 30.10; temperature of air, 76°; of water, 76°. Winds: E., E., E. Fresh breezes. Middle, squally, with rain; SE. sea and strong tide rips. No indication of losing the trades.

August 5. Lat. 11° 44′ N.; long. 34° 51′ W. Barometer, 30.04; temperature of air, 76°; of water, 78°. Winds: E. by N., E.NE., E.NE. Fresh breezes. Middle and latter, squally with much rain.

August 6. Lat. 10° 40′ N.; long. 34° 15′ W. Barometer, 30.04; temperature of air, 76°; of water, 79°. Winds: E.NE., E.NE., SE. to S. First and middle, light breezes and squally with much rain; latter, moderate and puffy; very irregular sea throughout; no observation. At meridian, wind from SW. in a squall.

August 7. Lat. 10° 02′ N.; long. 32° 21′ W. Barometer, 30.10; temperature of air, 76°; of water, 80°. Winds: calm, E.NE. to E.SE., SW. by S. Variable winds, weather the same.

August 8. Lat. 7° 41′ N.; long. 29° 14′ W. Barometer, 30.06; temperature of air, 78°; of water, 80°. Winds: SW., SW. to W., S.SW. Current, E.NE., 1 mile. Light baffling winds and squally, rainy weather; SE. sea.

August 9. Lat. 6° 22′ N.; long. 26° 53′ W. Barometer, 30.06; temperature of air, 78°; of water, 80°. Current, E.NE., 1 mile, Winds: S.SW., S.SW., S.SW. Light breezes and squally, rainy weather; SE. sea; tide rips. Ends pleasant.

August 10. Lat. 5° 48′ N.; long. 25° 58′ W. Barometer, 30.06; temperature of air, 78°; of water, 79°. Current, E.NE., 1 mile. Winds: S.SW., SW. by S., S.SW. Good breezes and pleasant. Middle, cloudy; tide rips; SE. sea.

August 11 Lat. 4° 43′ N.; long. 27° 48. W. Barometer, 30.09; temperature of air, 78°; of water, 79°. Winds: S.SW., S.SW., S. No current. Moderate, with occasional rain squalls; tacked to the westward.

August 12. Lat. 3° 15′ N.; long. 27° 09′ W. Barometer, 30.07; temperature of air, 77°; of water, 79°. Winds: S., S., S. Throughout, light breezes and pleasant.

August 13. Lat. 1° 50′ N.; long. 30° 55′ W. Barometer, 30.04; temperature of air 76°; of water, 77°. Winds: S. by E., S.SE., S.. First, light breezes and pleasant; middle and latter, moderate breezes and cloudy; occasional rain squalls.

August 14. Lat. 0° 20′ S.; long. 32° 12′ W. Barometer, 30.07; temperature of air, 76°; of water, 76°. Winds: S. by E., S.SE., S.SE. Throughout, moderate breezes and pleasant; cloudy at times; smooth.

August 15. Lat. 2° 59′ S.; long. 32° 54′ W. Barometer, 30.14; temperature of air, 76°; of water, 76°. Winds: S.SE., SE. by S., SE. by S. Light breezes and pleasant; smooth sea. Crossed the line at 9 a. m., in longitude 32° 18′ W. No perceptible current the last five days.

August 16. Lat. 4° 22′ S.; long. 32° 52′ W. Barometer, 30.17; temperature of air, 76°; of water, 76°. Winds: SE. by S., SE. by E., E.SE. Throughout, moderate breezes and pleasant; smooth sea; no current.

August 17. Lat. 6° 39′ S.; long. 33° 52′ W. Barometer, 30.15; temperature of air, 76°; of water, 77°. Winds: SE., S.SE. to SE., SE. to S.SE. Moderate breezes and pleasant. At 8. p. m. tacked to the eastward to clear the Roccas. At midnight tacked to the SW.; no current. At meridian Ferdinand de Noronha in sight, bearing N.NE., distant about 35 miles."

Schooner Lynchburg, (J. L. Groton, captain,) New York to Rio de Janeiro; sixteen days out.

"August 1, 1856. Lat. 29° 57′ N.; long. 43° 11′ W. Barometer, 30.28; temperature of air, 83°; of water, 80°. Winds: E.SE., E. by S., E. Light breezes; sea-weed; tide rips.

August 2. Lat. 28° 51′ N.; long. 42° 28′ W. Barometer, 30.27; temperature of air, 88°; of water, 84°. Winds: E., E., S. by E. Light airs.

August 3. Lat. 27° 46′ N.; long. 42° 48′ W. Barometer, 30.25; temperature of air, 86°. Winds: S.SE. and calm, S.SE., SE. by S. Light airs and calms; very unsteady in strength and direction.

August 4. Lat. 26° 07′ N.; long. 42° 27′ W. Barometer, 30.25; temperature of air, 85°; of water, 82°. Winds: SE. ½ S., E.SE., E. by S. Light breezes and fine weather; passing clouds; trade-like weather.

August 5. Lat. 23° 41′ N.; long. 42° 02′ W. Barometer, 30.30; temperature of air, 82°; of water, 80°. Winds: SE. by E., SE. by E., SE. by E. Fine breezes and passing clouds; trade-like weather.

August 6. Lat. 21° 25′ N.; long. 41° 13′ W. Barometer, 30.28; temperature of air, 84°; of water, 79°. Winds: SE. by E., E. by S., E.SE. Fresh trade-like weather and a rough sea.

August 7. Lat. 19° 17′ N.; long. 39° 38′ W. Barometer, 30.18; temperature of air, 83°; of water, 79°. Winds: E., E. by N., E.NE. Passing clouds; strong trades, and a heavy sea from east. Latter, sharp squalls, but no rain; wind steady.

August 8. Lat. 17° 29′ N.; long. 38° 00′ W. Barometer, 30.16; temperature of air, 83°; of water, 79°. Winds: E.NE., E. by N., E.NE. First and middle, passing clouds and fresh breeze, with heavy sea from east, and occasional light rain squall; latter, calm and light airs and squally appearances.

August 9. Lat. 16° 35′ N.; long. 37° 32′ W. Barometer, 30.12; temperature of air, 88°;

of water, 80°. Winds: E.NE., calm, calm and S.SE. Moderate breezes, calms and cloudy; heavy sea from east.

August 10. Lat. 14° 46′ N.; long. 36° 27′ W. Barometer, 30.11; temperature of air, 84°; of water, 79°. Winds: SE., E., E.NE. First, light airs and calms; middle, moderate and cloudy; latter, fresh trades.

August 11. Lat. 11° 59′ N.; long. 34° 54′ W. Barometer, 30.09; temperature of air, 86°; water, 82°. Winds: E.NE., E. by N., SE. First, fine weather, passing clouds, and strong trades; middle, strong breezes and hard squalls with rain; sharp lightning in the south and southeast, with a heavy sea; latter, moderate.

August 12. Lat. 11° 15′ N.; long. 34° 51′ W. Barometer, 30.06; temperature of air, 82°; water, 82°. Winds: SE. by S., calm, NE. First, light breezes and passing clouds; middle, calm and clear, with a heavy sea from NE; latter, light breeze; heavy swell setting from SE.

August 13. Lat. 8° 34′ N.; long. 33° 22′ W. Barometer, 29.99; temperature of air, 92°; water, 83°. Winds: NE., NE., E.NE. First and middle, passing clouds, strong breezes and a heavy sea from NE., with quite a swell from SE.; latter, light; a rough, tumbling sea.

August 14. Lat. 7° 20′ N.; long. 31° 54′ W. Barometer, 30.05; temperature of air, 85°; water, 82°. Winds: S. by W., SW., S. by W. Current, E.SE., 1 mile. First, moderate. At 3:30, tacked to SE. by E.; weather squally; middle, strong breezes and hard squalls from SW. with rain; latter, fair weather, and fresh. I have had the heaviest sea from SE. since yesterday morning that I ever saw in this part of the ocean, making it almost impossible to get ahead; however, I think I have hit it by running free in the trades, for I have no trouble in making easting.

August 15. Lat. 6° 40′ N.; long. 29° 43′ W. Barometer, 30.10; temperature of air, 84°; water,. 82°. Winds: S. ½ W., S. by W., S. by W. First, pleasant, with SE. sea; middle, cloudy weather, and steady breezes; latter, wind and weather the same; many small fish.

August 16. Lat. 5° 39′ N.; long. 28° 02′ W. Barometer, 30.10; temperature of air, 89°; water, 82°. Winds: S.SW., S. by. W., S.SW. Throughout, passing clouds, heavy S.SE. sea, and strong breezes; tacked twice.

August 17. Lat. 4° 55′ N.; long. 28° 13′ W. Barometer, 30.10; temperature of air, 86°; water, 83°. Winds: S. by W., S. by W., S. by W. Passing clouds and strong breezes, with a tremendous sea from S.SE. and S.SW. both; tacked to W.SW.

August 18. Lat. 3° 29′ N.; long. 30° 19′ W. Barometer, 30.11; temperature of air, 85°; water, 81°. Winds: S. ½ W., S., S. ½ E. Passing clouds and fresh breezes, with a heavy sea.

August 19. Lat. 1° 44′ N.; long. 31° 36′ W. Barometer, 30.09; temperature of air, 84°; water, 79°. Current, W. by N., ½ mile. Winds: S. ½ E., SE. by S. ½ S., SE. ½ E. Passing clouds and moderate breezes; sea smooth; squally appearances.

August 20. Lat 0° 39′ S.; long. 32° 00′ W. Barometer, 30.13; temperature of air, 88°; water, 80°. Current, W.NW., ¾ of a mile. Winds: SE. by E., SE., SE. by S. First, strong breezes with a heavy S.SE. sea, and passing squalls; sharp rain squalls and dirty looking weather; middle and latter, fine, clear weather, but rough; crossed the equator at 8 a. m., in 31° 52′ W., 36 days from Sandy Hook, and am very well satisfied, considering the numerous days of light airs I had in the North Atlantic, and the time of the year.

August 21. Lat. 3° 16′ S.; long. 32° 21′ W. Barometer, 30.11; temperature of air, 86°; water, 81°. Winds: SE., SE., SE. Fine clear weather and pleasant breezes. I perceive no current.

August 22. Lat. 6° 07′ S.; long. 33° 30′ W. Barometer, 30.13; temperature of air, 86°; water, 80°. Winds: SE. by S., SE. by S., SE. by S. Fine weather and fresh breezes. Made Fernando, bearing S. ¼ E., distant 25 or 30 miles. If any current, it has been to SW. My vessel has outrun me 20 miles to-day."

Ship Sirocco, (William H. West, captain,) Philadelphia to San Francisco; twelve days out.

"July 30, 1855. Lat. 27° 47′ N.; long. 43° 30′ W. Barometer, 30.30; temperature of air, 80°; water, 80°. Winds: S., S., S.; variable from S. to S.SE.

July 31. Lat. 26° 41′ N.; long. 43° 26′ W. Barometer, 30.30; temperature of air, 80°; water, 80°. Current, SE., 10 miles. Winds: S.SE., S.SE., SE., variable.

August 1. Lat. 24° 21′ N.; long. 43° 35′ W. Barometer, 30.30; temperature of air, 80°; water, 80°. Winds: E.SE., E.SE., E.SE.; moderate weather. Middle part, sky entirely overcast.

August 2. Lat. 21° 25′ N.; long. 43° 39′ W. Barometer, 30.20; temperature of air, 78°; water, 81°. Winds: E.SE., SE., SE. by E. Stormy breezes with passing clouds.

August 3. Lat. 18° 16′ N.; long. 43° 32′ W. Barometer, 30.20; temperature of air, 79°; water, 80°. Winds: SE. by E., E.SE., E.SE.; strong breezes throughout, with passing rain squalls.

August 4. Lat. 14° 57′ N.; long. 42° 11′ W. Barometer, 30.15; temperature of air, 83°; water, 80°. Current, NW., 24 miles. Winds: E. by S., E. by S., E.; strong breezes and squally; strong northwesterly current, 1 knot per hour. We have had no wind with northing in it since the ship left Cape Henlopen.

August 5. Lat. 12° 23′ N.; long. 40° 30′ W. Barometer, 30.10; temperature of air, 83°; water, 80°. Current, NW., 10 miles. Winds: E., E., E. by N.; strong breezes.

August 6. No observation. Barometer, 30.11; temperature of air, 82°; water, 82°. Winds: E. by S., calm, E.NE.; light airs, calms and rain.

August 7. Lat. 10° 24′ N.; long. ———. Barometer, 30.10; temperature of air, 83°; water, 82°. Winds: calm, E.NE., E.NE.; light breezes with rain; several tide rips.

August 8. Lat. 10° 03′ N.; long. 39° 09′ W. Barometer, 30.10; temperature of air, 85°; water, 82°. Winds: E.NE., calm, E.SE.; light breezes and calms, with rain squalls.

August 9. Lat. 9° 12′ N.; long. 37° 12′ W. Barometer, 30.15; temperature of air, 84°; water, 83°. Current, northerly, 20 miles. Winds: calm, SW., SW.; light breezes.

August 10. Lat. 7° 37′ N.; long. 35° 56′ W. Barometer, 30.10; temperature of air, 83°; water, 81°. Current, northerly, 16 miles. Winds: S.SW., SW., SW.; fresh breezes.

August 11. Lat. 6° 43′ N.; long. 33° 20′ W. Barometer, 30.10; temperature of air, 81°; water, 80°. Current, northerly, 16 miles. Winds: S.SW., SW. by S., S.SW.; fresh breeze.

August 12. Lat. 6° 29′ N.; long. 30° 43′ W. Barometer, 30.10; temperature of air, 81°; water, 80°. Current, northerly, 14 miles. Winds: S. by W., S. by W., S. by W., moderate, with very heavy rain.

August 13. No observation. Barometer, 30.10; temperature of air, 80°; water, 80°. Winds: S. by W., S. by W., S. by W., moderate, with light rain squalls.

August 14. Lat. 5° 20′ N.; long. 26° 30′ W. Barometer, 30.00; temperature of air, 81°; water, 80°. Winds: S. by W., S., S., moderate, with a very heavy sea.

August 15. Lat. 4° 43′ N.; long. 27° 47′ W. Barometer, 30.00; temperature of air, 81°;

water, 80°. Winds: S., S. by E., S. by E.; fresh breeze; tacked to the westward; found that we made very little southing on the eastward tack.

August 16. Lat. 2° 42′ N.; long. 28° 56′ W. Barometer, 30.15; temperature of air, 82°; water, 80°. Winds: S. by E., S.SE., S.SE.; fresh breezes.

August 17. Lat. 0° 22′ N.; long. 30° 48′ W. Barometer, 30.15; temperature of air, 82°; water, 81°. Winds: SE. by S., S.SE., S.SE.; fresh breezes and clear. Crossed the equator at 3 p. m. in 31° W., thirty-one days out. I have gone by Maury's Directions as much as possible. It is the first time I have had them on board; in fact, the first I have seen. If I had stood on to the eastward, contrary to Maury's Directions, I am sure the passage would have been lengthened considerably. Distance sailed per log, 4,335 miles.

August 18. Lat. 2° 00′ S.; long. 32° 20′ W. Barometer, 30.15; temperature of air, 82°; water, 81°. Current, westerly, 12 miles. Winds: SE. by S., SE. by S., SE.; fresh breeze; stood six hours to the eastward.

August 19. Lat. 3° 55′ S.; long. 33° 16′ W. Barometer, 30.15; temperature of air, 82°; water, 80°. Current, westerly, 10 miles. Winds: S.SE., SE., SE. Commences with squalls of wind and rain; passed between Fernando de Noronha and Roccas; saw neither. Strong breezes and heavy head sea; stood four hours to the eastward.

August 20. Lat. 5° 25′ S.; long. 33° 48′ W. Barometer, 30.15; temperature of air, 81°; water, 81°. Current, westerly, 10 miles. Winds: S.SE., S.SE., S.SE.; moderate breezes and clear weather; stood four hours to the eastward."

Barque Corilla, (Jonathan Chase, captain,) Chesapeake to Rio de Janeiro; eleven days out.

"July 31, 1856. Lat. 28° 57′ N.; long. 48° 00′ W. Barometer, 30.20; temperature of air, 84°; water, 82.° Winds: E.NE., E.SE., E.; light airs with intervals of calms.

August 1. Lat. 27° 34′ N.; long. 47° 35′ W. Barometer, 30.22; temperature of air, 86°; water, 82°. Winds: E.SE., E.SE., SE. by E.; moderate breezes and variable; very fine weather; no current.

August 2. Lat. 26° 14′ N.; 47° 03′ W. Barometer, 30.20; temperature of air, 86°; water, 82°. Winds: S.SE., SE. by E., E.SE. to S.SE. No current. Moderate breezes and variable; tacked twice.

August 3. Lat. 24° 48′ N.; long. 47° 15′ W. Barometer, 30.17; temperature of air, 86°; water, 82°. Winds: SE., S.SE., S.SE.; moderate throughout.

August 4. Lat. 23° 47′ N.; long. 46° 29′ W. Barometer, 30.20; temperature of air, 84°; water, 82°. Current, SE., $\frac{3}{10}$ of a mile. Winds: SE. by E., E.SE., E.SE. First, light breezes; middle and latter, good breezes, with fine trade-like weather; the trades at last, but very far to the southward.

August 5. Lat. 21° 23′ N.; long. 46° 08′ W. Barometer, 30.28; temperature of air, 83°; water, 82°. Current, W.NW., $\frac{2}{10}$ of a mile. Winds: E.SE., SE. by E., E.SE. Comes in fair; middle, dark, cloudy weather, with rain; ends fine; the wind hangs obstinately to the southward and eastward.

August 6. Lat. 19° 29′ N.; long. 45° 39′ W. Barometer, 30.15; temperature of air, 82°; water, 81°. Current, W.NW., $\frac{3}{10}$ of a mile. Winds: SE., SE. by S., E.SE. Good breezes, but variable. I am now to leeward of Maury's track for July, and at present it looks doubtful if I regain it till I get the southerly winds of the doldrums.

August 7. Lat. 17° 30′ N.; long. 44° 10′ W. Barometer, 30.10; temperature of air, 84°;

water, 80°. Current, NW., 1 mile. Winds: E.SE., E., E. by N.; fresh breezes and fine; middle, cloudy and rain; latter, fine weather; large sea from E.SE.

August 8. Lat. 15° 37′ N.; long. 43° 30′ W. Barometer, 30.08; temperature of air, 83°; water, 80°. Current, N.NW., ½ mile. Winds: E. by N., E., E.SE. Good breezes and fair weather.

August 9. Lat. 13° 56′ N.; long. 42° 32′ W. Barometer, 30.08; temperature of air, 82°; water, 81°. Current, N.NW., $\frac{3}{10}$ of a mile. Winds: E., E., E. Light breezes and very very fine weather. Saw tide rips; I noticed to-day that the rips came from S.SW.; hove the log in one, and found the vessel going 6 knots; after these rips had passed, was going but 4 knots with the same breeze.

August 10. Lat. 12° 21′ N.; long, 41° 34′ W. Barometer, 30.08; temperature of air, 84°; water, 81°. Current, W.NW., $\frac{4}{10}$ of a mile. Winds: E. by N., E. by N., E. by N., light breezes and fair weather; tide rips in all directions, but generally passing to the N.NE.

August 11. Lat. 10° 40′ N.; long. 40° 40′ W. Barometer, 30.00; temperature of air, 84°; water, 82°. Current, W.NW., ½ mile. Winds: E.NE., E.NE., SE. First, fresh breezes and cloudy; middle, dark and squally, with hard rain; latter, moderate. The NE. trades are done, and I am six degrees west of Maury's track. Strong tide rips all through.

August 12. Lat. 10° 05′ N.; long. 40° 20′ W. Barometer, 29.98; temperature of air, 86°; water, 83°. Current none. Winds: N.; calm, variable. Light, baffling airs and calms; strong tide rips; sometimes passing W.NW. and sometimes N.NE.

Aug. 13. Lat. 9° 39′ N.; long. 39° 12′ W. Barometer, 29.95; temperature of air, 84°; water, 82°. Current, E.SE., ½ mile. Winds: calm, N.NE., NE. First, calm; middle, light breezes, with showers; latter, good breeze, a remnant of the NE. trades. No tide rips this day.

Aug. 14. Lat. 6° 47′ N.; long, 37° 40′ W. Barometer, 29.95; temperature of air, 83°; water, 81°. Current, E. by S., $\frac{7}{10}$ of a mile. Winds: NE. to SE., calm and S.SW., S.SW. First, moderate breezes; dead calm from 11 p. m. to 1 a. m.; at 1 a. m. strong breeze from S.SW.; latter, fresh breezes and fair. I can now get east as I want to. I have seen no signs of current this day, yet I have had 18 miles. Sea smooth.

Aug. 15. Lat. 6° 48′ N.; long. 35° 18′ W. Barometer, 30.03; temperature of air, 82°; water, 82°. Current, N.NE., $\frac{3}{10}$ of a mile. Winds: S.SW., S. by W., S. Good breezes and fair weather; a sharp sea from S.SE. Think I am on the north verge of the SE. trades.

Aug. 16. Lat. 6° 22′ N.; long. 32° 59′ W. Barometer, 30.03; temperature of air, 84°; water, 81°. Current, N.NW., $\frac{7}{10}$ of a mile. Winds: S. by E., S. by W., S. Fresh breezes and cloudy; high sea from the S.SE.

Aug. 17. Lat. 5° 53′ N.; long. 30° 49′ W. Barometer, 30.02; temperature of air, 81°; water, 80°. Current, N.NW., ½ mile. Winds: S., S., S. by W. Fresh breezes and steady, with fair weather; sharp sea from S.SE.

Aug. 18. Lat. 5° 53′ N.; long. 28° 50′ W. Barometer, 30.00; temperature of air, 85°; water, 81°. Current, N.NW., ½ mile. Winds: S. by E., S. by E., S. by E. Good breezes and fine weather; high, sharp sea from S.SE. This is the fourth day since I got the S.SW. winds, and have made more longitude than I could have done in 12 days in 30° N. I am far enough east, and shall tack at 1 p. m.

Aug. 19. Lat. 4° 19′ N.; long. 29° 45′ W. Barometer, 30.04; temperature of air, 83°; water, 81°. Current, NW., ½ mile. Winds: S. by E., S.SE., S.SE. Brisk breezes and fair. Tacked ship to the southward and westward.

Aug. 20. Lat. 2° 09′ N.; long. 30° 45′ W. Barometer, 30.09; temperature of air, 80°; water, 80°. Current, W.NW., $\frac{4}{10}$ of a mile. Winds: S.SE., SE., SE. by S. Fine weather and good breezes,

Aug. 21. Lat. 0° 02′ S.; long. 32° 00′ W. Barometer, 30.09; temperature of air, 85°; water, 80°. Current, W.NW., $\frac{1}{10}$ of a mile. Winds: S.SE., SE. by S., SE. by S. Good breezes and fine. At noon on the equator, 34 days from Cape Henry. Distance sailed by log, 4,228 miles; (computed distance, 4,126.)

Aug. 22. Lat. 2° 25′ S.; long. 32° 30′ W. Barometer, 30.08; temperature of air, 82°; water, 80°. Current, none. Winds: SE., SE., SE. Good breezes and very fine weather; sea smooth. I should think a ship might get eastward very fast here, if necessary.

Aug. 23. Lat. 4° 41′ S.; long. 33° 20′ W. Barometer, 30.02; temperature of air, 84°; water, 80°. Current, W., $\frac{1}{2}$ mile. Winds: SE. by S., SE., SE. Good breezes and fine weather. Saw Fernando de Noronha, east, 25 miles.

Aug. 24. Lat. 6° 04′ S.; long. 34° 30′ W. Barometer, 30.03; temperature of air, 80°; water, 79°. Current, N.NW., $\frac{1}{2}$ mile. Winds: S. by W., S.SE., S. by E. First part, dark squally weather, with rain; at 5 p. m. tacked to E.SE.; at 8 tacked to SW.; latter, more pleasant, with heavy cumulus around the horizon."

Ship Stingray, (Captain Kirby,) New York to San Francisco, thirteen days out.

"Aug. 12, 1854. Lat. 28° 47′ N.; long. 49° 03′ W. Barometer, 29.90; temperature of air, 83°; water, 81°. Winds: E. and E.SE., E. by S., E. by S. and E.SE. Commences fine trades and pleasant. Got the NE. trades in lat. 31° 30′ N. Last voyage I got them in 32° and long. 38° W. in the barque "American."

Aug. 13. Lat. 26° 36′ N.; long. 48° 30′ W. Barometer, 29.90; temperature of air, 82°; water, 81°. Winds: E.SE., E.SE., E.SE. Moderate and baffling trades, with rain squalls. At 8 a. m. a whirlwind passed across our stern, about one mile distant, going to W.NW. at the rate of about ten miles per hour, taking the surface water with it, turning against the hands of a watch.

Aug. 14. Lat. 24° 03′ N.; long. 47° 55′ W. Barometer, 29.90; temperature of air, 82°; water, 81°. Winds: E. by S., E. by S., E. by S. Pleasant breezes and passing squalls.

Aug. 15. Lat. 21° 15′ N.; long. 47° 20′ W. Barometer, 29.90; temperature of air, 82°; water, 82°. Winds: E. by S. to E.SE. throughout.

Aug. 16. Lat. 18° 40′ N.; long. 45° 50′ W. Barometer, 29.85; temperature of air, 81°; water, 81. Winds: E. by N., E. by N., E. to E. by N. Fine trades and pleasant.

Aug. 17. Lat. 16° 16′ N.; long. 44° 28′ W. Barometer, 29.75; temperature of air, 82°; water, 82°. Winds: E. by N., E. by N., E. Moderate and pleasant trades, with passing squalls.

Aug. 18. Lat. 13° 47′ N.; long. 43° 10′ W. Barometer, 29.68; temperature of air, 82°; water, 81°. Winds: E. by S., E., E. by N. Moderate and pleasant, with passing squalls; tide rips.

Aug. 19. Lat. 11° 24′ N.; long. 41° 30′ W. Barometer, 29.63; temperature of air, 82°; water, 82°. Winds: E. by N., E. by N., E. by N. Commences squally, with rain, and continues squally. High sea; tide rips as far as the eye can see.

Aug. 20. Lat. 10° 05′ N.; long. 40° 24′ W. Barometer, 29.60; temperature of air. 81°; water, 81°. Winds: E.NE., E.NE.; calm and SE. Wind and weather variable.

Aug. 21. Lat. 9° 28′ N.; long. 38° 22′ W. Barometer, 29.60; temperature of air, 81°; water, 81°. Winds: calm and S., S.SW., S.SW. Weather variable and squally.

Aug. 22. Lat. 8° 50′ N.; long. 37° 15′ W. Barometer, 29.60; temperature of air, 83°; water, 82°. Winds: SW. by W., W.NW. and calm, NW. and calm, NW. and calm. Light variable airs and calms; ends rainy; thunder and lightning.

Aug. 23. Lat. 7° 45′ N.; long. 35° 20′ W. Barometer, 29.65; temperature of air, 78°; water, 81°. Winds: NW. by W., S.SW., S. Commences squally, with rain; wind very unsteady; a very bad sea from SE., causing the ship to labor hard; middle and latter, squally.

Aug. 24. Lat. 7° 30′ N.; long. 32° 24′ W. Barometer, 29.65; temperature of air, 83°; water, 82°. Winds: S. to SW., S. by E., S.SE. Commences squally; bad sea from SE.; middle and latter, moderate; tacked to the SW.

Aug. 25. Lat. 7° 26′ N.; long. 31° 40′ W. Barometer, 29.65; temperature of air, 83°; water, 81°. Winds: SE. by S., S.SE., S.SE. Moderate breezes, looking very much like SE. trades; have had little or none of the monsoons spoken of yet; I am either having hard luck, or the charts and winds do not agree; tacked twice.

Aug. 26. Lat. 7° 27′ N.; long. 30° 44′ W. Barometer, 29.68; temperature of air, 84°; water, 81°. Winds: S.SE., S. by E., S. Light baffling airs; at 2 a. m. tacked to the eastward; find a strong northerly current, and hard luck follows the "Stingray;" stood SW. 9 hours, and E. ½ S. the rest of the time, and made one mile.

Aug. 27. Lat. 7° 29′ N.; long. 28° 04′ W. Barometer, 29.65; temperature of air, 83°; water, 80°. Winds: S. and calm, S., S. by E. and S. Moderate, with occasional squalls; tacked to W. by S.

Aug. 28. Lat. 6° 29′ N.; long. 30° 15′ W. Barometer, 29.70; temperature of air, 83°; water, 81°. Winds: S. by W., S., S. Moderate and pleasant throughout; at meridian tacked to SE. by E.

Aug. 29. Lat. 5° 38′ N.; long. 28° 33′ W. Barometer, 29.70; temperature of air, 83°; water, 81°. Winds: S. by W., S.SW., S.SW. Moderate and baffling winds. Ends, calm, and heavy rains.

Aug. 30. Lat. 4° 40′ N.; long. 27° 33′ W. Barometer, 29.72; temperature of air, 76°; water, 80°. Winds: S. by W. and calm, calm and SW., calm and SW. Commences calm, with much rain; tacked twice; a northerly current.

Aug. 31. Lat. 3° 46′ N.; long. 29° 20′ W. Barometer, 29.72; temperature of air, 83°; water, 80°. Winds: S. to S.SW., S. to S.SW., S. to S. by W. Pleasant breeze and passing clouds; northerly current; tacked twice.

Sept. 1. Lat. 2° 01′ N.; long. 30° 26′ W. Barometer, 29.75; temperature of air, 81°; water, 80°. Winds: S. by W. and S.SE., S.SE., S. by E. Moderate trades and pleasant.

Sept. 2. Lat. 0° 32′ S.; long. 30° 54′ W. Barometer, 29.72; temperature of air, 79°; water, 78°. Winds: S.SE. and SE., SE. by E., SE. SE. trades and pleasant breeze; at 7 a. m. crossed the equator in long. 30° 50′ W., 34 days from New York. I have been close hauled nearly all the time; have had the wind so as I could carry studding sails only four days. All I have made has been by hard draging. I should like to know if those farther east have made better time. Distance sailed by log, 4,780 miles. Ends, moderate breezes and fine weather.

Sept. 3. Lat. 2° 57′ S.; long. 31° 33′ W. Barometer, 29.70; temperature of air, 80°; water, 78°. Winds: SE. by E. and SE., SE., SE. by E. Moderate breezes throughout. I

have now been south of the equator 30 hours, and *have found no curreut as yet.* I have made a six point course since crossing, very close hauled, and if *I have had any current, it has been easterly;* so much I can truly say about my experience. At 6 p. m. pyramid of Ferdinand de Noronha bore (per compass) W. by S. ½ S., 35 miles distant.

Sept. 4. Lat. 5° 25′ S.; long. 32° 13′ W. Barometer, 29.70. Winds: SE., S.SE., SE. First and middle, light breezes, with passing squalls from S.SE.; ends, fine breeze; *no current perceptible.*"

COMPUTED ROUTE FROM NEW YORK TO RIO, ETC.—*August.*

Latitude.	Longitude.	Course.	DISTANCES.			WINDS; PER CENT.					Total number of observations.
			Direct.	Per cent.	True.	Head.	Slants from— N'd or E'd.	Slants from— S'd or W'd.	Fair.	Calms.	
Sandy Hook to—											
39° 11′ N.	70° 00′	E.S.E.....	199	12.3	223	3.0	13.2	11.4	72.4	5.4	366
37 33	65 00	E S.E.....	256	9.8	281	3.2	5.0	*w* 10.3	81.5	3.5	221
35 54	60 00	E.S.E.....	259	8.0	280	2.2	5.4	*w* 9.7	82.7	4.1	185
35 00	57 20	E S.E.....	141	10.9	156	4.6	3.9	*w* 7.8	83.7	7.2	154
33 04	55 00	S.E.....	165	8.5	178	1.9	*w* 11.4	3.8	82.9	3.6	53
31 19	50 00	E.S.E.....	275	9.6	302	2.6	10.4	*w* 13.0	74.0	0.0	76
30 00	46 17	E.S.E.....	207	15.2	238	4.6	9.2	*w* 25.3	60.9	6.5	43
29 32	45 00	E.S.E.....	72	39.2	100	8.0	*w* 48.0	28.0	16.0	7.4	25
25 00	42 54	S.S.E.....	294	6.4	312	1.5	*w* 19.1	0.0	79.4	2.9	68
22 21	40 09	S E.....	225	7.7	242	0.0	*w* 16.8	7.2	77.0	6.7	42
20 00	38 57	S.S.E	153	4.8	160	2.0	*w* 8.0	0.0	90.0	0.0	49
15 00	36 47	S.S.E.....	325	7.0	347	3.7	*w* 5.5	0.0	90.8	0 0	54
10 50	35 00	S.S.E.....	271	8.5	294	2.8	*w* 8.6	4.7	83.9	7.1	105
10 00	34 38	S.S.E.....	54	11.5	60	3.4	*w* 11.1	6.6	78.9	9.0	90
8 06	30 00	E.S.E.....	297	8.0	320	0.0	8.8	*w* 15.8	75.4	8.1	57
5 00	26 53	S.E.....	263	4.6	275	0.0	4.4	*w* 15.9	79.7	7.4	114
Equator ..	28 57	S.S.W.....	325	10.1	358	1.3	*w* 35.1	0.0	63.6	1.2	78
			3781		4126						
1 00 S.	29 22	S.S.W.....	65	1 4	66	0.2	4.5	0.3	95.0	0.0	402
2 32	30 00	S.S.W.....	99	5.7	105	0.0	28.5	0.0	71.5	0.0	21
3 00	30 12	S.S.W.....	30	13 3	34	0.0	66 6	0.0	33 4	0.0	9
5 00	31 00	S.S.W..	130	6.7	139	0.0	33.3	0.0	66.7	0.0	18
7 00	31 50	S.S.W.....	130	0.0	130	0.0	0.0	0.0	0 0	0.0	18
Thence *ad lib.*											

The only precaution to give with regard to this route—for in August the passage is liable to be tedious by any route—is not to cross the meridian of 50° W. to the north of 31°, whenever the winds will allow

After reaching the meridian of 35°, between the parallels of 11° and 10° N., stand straight as the winds will allow for the equator in about 29° or 30°, not caring if you fall upon the line as far as 33° W. After getting the SE. trades in this month, there is no difficulty in making stretches to the E.; for the SE. trades, frequently, at this season of the year, blow from S.SE.; and if navigators will bear this fact in mind, they should not be discouraged if the wind should force them to cross the equator as far west as 35°; some have even crossed in 41°, and made good passages by taking advantage of slants south of the line to make easting with. But, of course, no navigator would willingly cross so far to the westward as longitude 40°. Actual trial has shown the best crossings to be in 34° for 10° N.; in 27¼° for 5° N.; and in 29¾° for the line: the average passage to this last crossing from the United States being 26 days, and 2 days thence to the fair way off St. Roque.

Vessels from ports south of the Capes of Virginia, that intend to try this route, should run up to 34°, and continue between the parallels of 34° and 35°, until they fall in with the route as projected, which they will do somewhere between the meridians of 55° and 60°. This they are recommended to do on account of the calms of the horse latitudes, with which, by keeping south of 34°, in this season and part of the ocean, they are liable to be bothered.

In August, if between the meridians of 30° and 35°, expect to lose the NE. trades from 14° to 10° N.; to have the equatorial calms from 13° to 9° N.; and the SW. monsoons occasionally, *only* from 12° to 5° N.

Between the meridians of 25° and 30° W., the NE. trades are sometimes lost in 17° N., generally in 12°, though they are occasionally carried to 9°; seldom below. The calms prevail from 15° to 8° N., and the SW. monsoons with considerable regularity from 14° N. to the equator; that is, you are liable to get them somewhere between 14° N. and the equator, as you are liable to encounter the calms and to lose the NE. trades between the parallels above stated. The most difficult part of the route for this month is that which lies between 10° and 5° N.

Time and Crossings to the "Fair Way" off St. Roque—August.

Name of vessel.	From—	Date of sailing.	LONGITUDE OF CROSSING THE PARALLELS OF—																Total days to—	
			Days.	30° N.	Days.	25° N.	Days.	20° N.	Days.	15° N.	Days.	10° N.	Days.	5° N.	Days.	Line.	Days.	3° S.	Line.	St. Roque.
Sea Witch	New York	Aug. 1, 1851	11¾	47	3	45	1¾	41⅛	1¾	38	3¾	34	4	26⅛	3	27	¾	29	29	30⅛
Wessacumcon	Boston	1, 1852	15	42	3	40⅛	2⅛	39	2¼	37	3½	33	8	26	6⅛	29½	1¾	30	40½	43½
Seaman	New York	2, 1852	13¼	40	2¾	39	1¼	38½	1½	37	2¾	34⅛	4	28⅛	3¼	32	1¼	32½	28¾	31¼
Sylvia	Boston	2, 1853	17	49	4	44	2¾	43	2½	41	6¾	33	9	27½	4½	31½	1¾	32	46⅛	49¼
Comet	New York	4, 1853	14	46	3¼	42½	1½	41	1¼	39	3	36	4	27	2	29½	¾	30½	29	30½
Racehorse*	Boston	4, 1850	11⅛	46½	1¾	46	2	45	2	42	4	35	3¾	28	3	27	1	29	28	29¾
Typhoon*	New York	4, 1851	8¾	48⅛	3	46½	1½	45½	2	42	5	35	4½	26½	2½	29½	1	31	27	28⅛
Sovereign of the Seas*	....do.	4, 1852	12	33	2¼	35	1	35	1¼	34	2	32	4	28⅛	2¾	36	1¼	34	25¼	27¾
Samuel Traine	....do.	4, 1853	15¾	52	13	42½	3	40	3	37	4	34	8½	27	3¼	30	1¾	30	50½	53¼
Winged Arrow*	Boston	5, 1852	12¾	47	1½	46⅛	1¾	44½	1½	43	2¼	38⅛	5¼	30	3½	32	¾	33½	28½	30
Hollander	New York	5, 1854	13	49	2	47	2	45	2	42	6¼	39	9	28	6¼	30	1¾	30½	40½	42¼
Raven*	Boston	6, 1851	8	42	2¾	41	1¼	39	1½	38	3½	34	4½	25	3½	28	1	30	25	26⅛
Arcole	New York	8, 1852	10¾	50½	2¼	50	3	48	2¾	45	9¾	35	8¼	26	5¼	31	1¾	33	42	45
Agnes*	....do.	8, 1852	10	46	2	45	2	42	1¾	40½	2½	36	3¾	28	4½	28	1½	30	26½	30
Hurricane*	....do	9, 1853	10	47½	2½	45	2	44	1	43	2½	40	6	26	1½	29	1	31	25½	27½
Maine Law	....do	10, 1853	10½	49	4	44	2½	42½	2½	39	4½	34	7	27½	4½	29½	1	30½	35½	37
Wizard*	....do	10, 1854	9	49	2	46	2	42½	1¾	37	4	32	7	25½	2	28	1	30	27¾	29¾
Mandarin*	....do	11, 1853	10	46½	2	46	2	44	2	42	2	39	7	26½	3¾	32½	1	33	28¾	30¼
Tsar	Boston	11, 1854	14	43	4	41	5¼	40	2½	37	3¼	85	7	25	3½	28½	¾	29	39½	42½
Raven*	New York	13, 1853	8	47	2	47	1¾	46	1¾	44	3¾	37½	5	30	4½	29½	¾	30	26¾	28¼
Nazarene	....do.	13, 1853	21	39½	8	38	2	36	2	33	3	29	5	28	4	29½	1	30	45	46¾
Rapid	....do.	13, 1854	12	49¼	4¼	47	2½	46	1½	44½	1¾	43	11	27	3	31	1¼	32½	36	38
Helena	....do.	14, 1853	16	37½	2	36	1¾	34	2¼	32½	2½	30	7¾	26	2¾	31	1	32	35	36¼
Aukland	Boston	15, 1853	13¾	39½	2½	40	1¾	38	2½	37½	2½	35	7½	27	3¼	31	1½	32	33¾	36¼
Antelope	Baltimore	15, 1853	13½	51½	4	45	2½	42	2	41	4¾	34½	7¼	26½	4	28½	1	29	38	40½
Union	New York	16, 1853	13	36½	2	36	1½	35	2	33½	3	32	6	28	2½	31½	1	33	30	31½
Mary McRae	Wilmington, N. C	16, 1854	15	55	14½	42	2½	40	2	37½	3¾	34½	6¼	29½	3¼	33	1¼	34	47¼	49½
Sheffield	New York	17, 1849	21½	45	7½	41	2½	40½	2¾	38½	4¾	36	10¾	35½	5½	35	3½	34½	55	60½
Channing	.....do.	17, 1850	14¼	43½	3	41½	2¼	40	2¼	37	4¾	31½	4	25	5½	30	¾	31	36	37¾
F. Deming	Richmond	20, 1850	17½	53	10½	43	3½	40½	2¾	36	4¼	29	5¼	27	4½	32	1	33	48¼	50½
Tigris	Salem	21, 1850	14½	50	6¼	43½	5	40	3½	38	8	28½	6	25	6¾	30	2¼	30½	50	53¾
Sea Witch	New York	22, 1852	14	41	4½	37	1½	36	1½	34	2½	30	3	26	3	27½	1	29	30	31¾
Chenango	Baltimore	22, 1853	19	47	8	44	4	41½	6	38	3	35	12	25	5¾	25½	1½	27	57¾	60
John Wade	Boston	24, 1853	14	42½	5	39½	1¼	39	1¾	36	3	31	5	30	2½	33	1	33	32¼	34½
Henry Brothers	New York	27, 1853	20½	45	7	39	4	36	4½	34	4	31½	6½	26½	5½	25	½	22	52	54½
Onward	..... do	28, 1853	20	43½	5	41	3	38	2½	37	2½	34	7	29½	5¼	31	1½	32	45¼	47½
Oliver H. Hays	.....do	28, 1851	20½	43½	2¾	41	2¼	39	3	36	5	34	9	29	8½	28	1¼	29	51	53¼

Time and Crossings to the "Fair Way" off St. Roque—August—Continued.

Name of vessel.	From—	Date of sailing.	Longitude of crossing the parallels of—																Total days to—	
			Days.	30° N.	Days.	25° N.	Days.	20° N.	Days.	15° N.	Days.	10° N.	Days.	5° N.	Days.	Line.	Days.	3° S.	Line.	St. Roque.
Kremlin	Boston	Aug. 28, 1854	17	42⅛	6¼	40	4	38	3½	34⅛	3¾	31	11⅛	25⅛	5¼	28	1⅛	30	51¼	53¼
Monsoon	Baltimore	29, 1852	11½	53	6	47	3⅛	42	2	39	3	34⅛	7⅛	26	2⅛	32⅛	1	34⅛	36	38
Singapore	Boston	31, 1851	10	54	5⅛	52	2¾	51⅛	4¾	48	6¾	42	17	26⅛	2¼	29	1	30	49	51
Average before the 7th edition			13.4	45¼	3.8	42⅛	2.3	40¾	2.2	38¼	3.9	34	6.4	27¼	3.8	30	1.2	31	35.8	38·2
Lighton	New York	Aug. 1, 1856	15	50	4	48	2⅛	46	2⅛	44	3	38	6⅛	29	4¾	30	1⅛	31⅛	38¼	40¾
Flying Dragon	....do	1, 1855	13	47⅛	2¾	46	2	43	1¾	39	3⅛	33	6	27	3¾	29	1	31⅛	32¾	34⅛
Ocean Telegraph	....do	1, 1856	20	47	4⅛	49	2¾	46	1¾	44	5⅛	41	8	27	3¼	32	1¼	34	45¾	47¾
Mary Wilkins	Philadelphia	6, 1856	21	43⅛	2¼	41¼	2	39⅛	2¼	36	4	33¼	4¾	26⅛	2⅛	32	2	33⅛	38¾	41¾
Golden Eagle	....do	7, 1856	17	47⅛	5	41	1¾	39⅛	1¾	36	4¾	33	3¾	28	3	30	1	31	37	39
Ocean Telegraph	....do	9, 1855	16¼	53⅛	7⅛	44	2	43	1¾	41	2	39⅛	7⅛	28	3¾	32	1	33⅛	40¾	42⅛
Bostonian	Boston	15, 1856	12	40⅛	1¾	40	1⅛	40	1⅛	37	3⅛	36	4¾	28	3⅛	33	¾	34⅛	28⅛	32¼
Petrea	New York	18, 1855	14⅛	40	2⅛	41	2¾	39⅛	2¼	33	3	33⅛	5⅛	25	3⅛	28	1¾	30	30	36⅛
Morning Star	....do	18, 1855	13	42	3	44	2⅛	40	2⅛	37	3	31⅛	5	25⅛	3	30⅛	1⅛	32	32	33⅛
Cyclone	Boston	22, 1856	16	45	4¾	43	6	39¾	2	37	5¼	33	8	26¼	5⅛	31	1¼	32	47⅛	49⅛
Mayndia	....do	24, 1856	15½	42	5½	39⅛	6⅛	36	3	33	4	30	7⅛	25	7⅛	29	1	30	49⅛	51
Sea Eagle	....do	24, 1856	13⅛	41	4⅛	41	8	37⅛	2⅛	36	5	31	9	26	6	28	1⅛	30	48⅛	50⅛
N. B. Palmer	New York	29, 1855	5	52	11	38	1⅛	36	1¼	34⅛	1¾	32	6⅛	28	2¾	32	1¼	33	29¾	32
Average since 7th edition			14.5	45⅛	4	42⅛	2.6	41¾	2.2	38¼	3.8	34¼	6.5	27¼	4	30	1.3	31	37.9	40.2
*Mean of best 10			10	45¼	2.2	44¼	1.7	42¾	1.6	40⅛	3.1	36	5.1	27¼	3.2	29¾	1.0	31	26.9	28.8

I shall continue to quote extracts from the abstract logs for each month, hoping that my fellow laborers at sea will study them in connection with the Charts and the extracts given in the previous edition of this work. These extracts are, in fact, the best illustrations that can be given of the routes recommended, and of the routes adopted. They are the best, because they are practical illustrations; and if navigators will, as I hope they will, examine these journals attentively—each navigator addressing himself especially to the logs which relate to the time of year in which he is making his passage, time may be saved; by so doing, they will not fail to perceive where the difficult parts of the passage are, and in what those difficulties consist.

By examining the crossings of the vessels in the table, "Old and Middle Route Crossings," it will be perceived that many vessels take the new route and follow it faithfully to about 10 N. They then get into the doldrums and monsoons, and here, being afraid of St. Roque, they are often forced 10°, or even 20° to the east, by the time they reach 5° N. Being now to leeward *on the other side*, they have to stand back through another 10° or 12° of longitude before they can cross the line and get out of "this horrible place." This occurs not in the month of August alone, but in the summer and fall seasons generally: Thus the

	10° N.	5° N.	Equator.	Making from 10° N to the Line—	
Eagle, in July, crossed	44° W.	23° W.	28° W.	26° of longitude.	
Cohansey..do....do	34	24	29	15	do.
Arab.....do....do	29	19	26	17	do.
Oriental, August.do	35	20	20	15	do.
Sirai .....do....do	46	22	30	32	do.
California.do....do	37	24	28	17	do.
Carolinta..do....do	38	19	25	25	do.
Ocean Telegraph, September	38	28	32	14	do.

An examination of the crossings for both old and new routes will exhibit other cases of the same sort, and, as a rule, *they all show long passages.*

The "*Sea Witch*" is a case in point. I quote her log from the seventh edition.

Ship Sea Witch, (G. W. Fraser,) New York to San Francisco; sixteen days out.

"Aug. 17, 1851. Lat. 21° 37′ N.; long. 42° 39′ W. Winds: E. by S., E. by S., and E.SE. Fresh single reef gale, heavy sea.

Aug. 18. Lat. 18° 42′ N.; long. 40° 26′ W. Wind: E. by N. Fresh breeze and pleasant.

Aug. 19. Lat. 15° 49′ N.; long. 39° 14′ W. Winds: E. by S., E.SE., and E. by S. Fresh breezes with cloudy weather.

Aug. 20. Lat. 13° 06′ N.; long. 36° 44′ W. Winds: E., E. by S., and E.NE. Fresh breezes and squally.

Aug. 21. Lat. 11° 25′ N.; long. 35° 31′ W. Winds: E.NE., calm, southerly. Moderate and light breezes and pleasant.

Aug. 22. Lat. 10° 38′ N.; long. 34° 11′ W. Winds: southerly, S.SW., and S.SW. Variable breezes and squally.

Aug. 23. Lat. 10° 09′ N.; long. 34° 17′ W. Winds: calm, calm, and NE. Calms and light airs.

Aug. 24. Lat. 8° 24′ N.; long. 33° 10′ W. Winds: N.NE., NE., and N. Light breezes and squally.

Aug. 25. Lat. 7° 08′ N.; long. 31° 35′ W. Winds: NW., SW., and SW. by S. Light breezes and squally.

Aug. 26. Lat. 5° 58′ N ; long. 29° 26′ W. Winds: SW., S.SW., and SW. by S. Light airs and squally.

Aug. 27. Lat. 5° 09′ N.; long. 29° 26′ W. Winds: S.SW., S., S. Moderate breezes and cloudy.

Aug. 28. Lat. 3° 50′ N.; long. 24° 44′ W. Wind: S.SW. Moderate breezes and pleasant."

This is another case of falling to leeward on the other side. When the navigator gets as far east in the doldrums, at this season, as he wants to go, he finds the monsoons so changed that they are directly in his teeth. I should advise navigators on such occasions, when they have got as far to the east as 30° west, to beat down on or near that meridian; for there is reason to believe that, by remaining stationary, these doldrums will leave you quite as soon as you can get clear of them by running along with them to the east and back again to the west.

The *Eagle* has been mentioned. Here is her abstract:

Ship Eagle, (John S. Farron,) New York to San Francisco; fifteen days out.

"July 25. Lat. 19° 05′ N.; long. 46° 30′ W. Winds: E. by S., E.SE., E.SE. Fair weather.

July 26. Lat. 15° 20′ N.; long. 44° 55′ W. Winds: E. by S., E., and E. Fresh breezes and squally, with rain.

July 27. Lat. 12° 48′ N.; long. 44° 30′ W. Winds: E. by S., E. by E., E.SE. Pleasant weather.

July 28. Lat. 10° 58′ N.; long. 44° 10′ W. Winds: E.SE., E.SE., and E. Pleasant weather.

July 29. Lat. 8° 57′ N.; long. 43° 47′ W. Wind: E. by S. Occasional squalls with rain.

July 30. Lat. 7° 49′ N.; long. 43° 39′ W. Winds: E. by S., E., and S.SE. Calms, squalls, and rain.

July 31. Lat. 7° 12′ N.; long. 42° 10′ W. Wind: from S. to NW. Baffling, with squalls.

Aug. 1. Lat. 7° 44′ N.; long. 39° 16′ W. Winds: SW., W., and SW. Squally, with hard rain.

Aug. 2. Lat. 7° 56′ N.; long. 36° 41′ W. Winds: S., S.SE., and SE. by S. Squally, rainy weather.

Aug. 3. Lat. 7° 42′ N.; long. 35° 53′ W. Winds: S. by E., and calm. Constant rain.

Aug. 4. Lat. 7° 50′ N.; long. 35° 01′ W. Variable winds, and squally, with rain.

Aug. 5. Lat. 7° 40′ N.; long. 35° 21′ W. Winds, S.SW., SW., and SW. Squally, with rain.

Aug. 6. Lat. 7° 29′ N.; long. 33° 47′ W. Winds: S.SW., S.SW., and SE. Moderate breezes and squally.

Aug. 7. Lat. 7° 03′ N.; long. 33° 16′ W. Winds: calm, SW. by S., SW. by S. Squally, with rain.

Aug. 8. Lat. 6° 56′ N.; long. 29° 52′ W. Winds: S.SW., calm, and S. by E. Squally, with rain.

Aug. 9. Lat. 6° 34′ N.; long. 26° 48′ W. Winds: S., S.SW., and S.SW. Squally, with rain.

Aug. 10. Lat. 5° 45′ N.; long. 22° 53′ W. Winds: S. by W., S.SW., and S. by W. Squally with rain."

The *Eagle* had bad luck, certainly, inasmuch as she found the NE. trades with southing in them. She met the doldrums just south of the parallel of 9° N. and near the meridian of 44°

W. Here Captain Farron availed himself of the monsoons to go east; and at the end of nine days finds himself to *leeward* on the *other side* of his route. On August 8, being in 29° 50′, W. he finds the monsoon S. by E.; right in his teeth. He stands on, and the next day he is so far to the east that the course he wants to make is S.SW.; at that point he gets the wind; and thus he is forced to go as far as 22° W. before he can cross the parallel of 5° N. He then goes back to 28° 30′ W., where he crosses the line 15 days after crossing 10° N.

Ship Forest King, (G. L. Luce, captain,) New York to St. Juan del Sud; twenty-seven days out.

"Sept. 1, 1855. Lat. 29° 45′ N.; long. 40° 34′ W. Barometer, 30.40. Winds: SE. by E., SE. by E., SE. by E. Commences with a pleasant breeze; at 6 a. m., squally; ends, moderate and pleasant.

Sept. 2. Lat. 28° 31′ N.; long. 40° 00′ W. Barometer, 30.30. Winds: E.SE., E. by S., E. by S. Commences with a moderate breeze. Why is it the barometer is falling gradually since we took this easterly wind? I cannot understand why it stood so high during the calms and baffling winds.

Sept. 3. Lat. 27° 11′ N.; long. 39° 47′ W. Barometer, 30.30. Winds: E. by S., E. by S., SE. by E. Commences with a moderate wind and clear atmosphere; at midnight, very light wind. We have been by the wind for 3 weeks, and but a few hours during the time have we had a five knot breeze. Ends moderate and pleasant.

Sept. 4. Lat. 25° 40′ N.; long. 39° 12′ W. Barometer, 30.35. Winds: E.SE., E.SE., E.SE. Commences with a moderate wind, very pleasant; middle, fresher breeze than we have had for three weeks; ends with fresh trades.

Sept. 5. Lat. 23° 58′ N.; long. 39° 00′ W. Barometer, 30.35. Winds: E.SE., E.SE., E.SE. Commences with fresh breezes from E.SE. I crossed lat. 31°, ten degrees east of Maury's August directions, and it is well I did, for it is impossible to make the courses he gives. Although passing so much to the east, and having the wind so as to make some easting, I am now to westward of September track. [See his remarks September 14 and 17.]

Sept. 6. Lat. 22° 00′ N.; long. 37° 43′ W. Barometer, 30.32. Winds: E.SE., E.SE., E.SE. Commences with fresh trades; heavy head sea. Midnight, strong breezes and squally; ends squally; rain very fine.

Sept. 7. Lat. 20° 04′ N.; long. 37° 00′ W. Barometer, 30.28. Winds: East, E. by S., E. by S. Commences with a fresh wind, squally; a. m., dark and cloudy with fine rain; ends very squally; squalls come from the E.SE.

Sept. 8. Lat. 17° 55′ N.; long. 36° 00′ W. Barometer, 30.30. Winds: E. by S., E. by S., E. by S. Commences with squally, gloomy looking weather, and thick atmosphere; 12 m., strong breezes; ends with strong breezes from the east, and squally.

Sept. 9. Lat. 15° 41′ N.; long. 34° 50′ W. Barometer, 30.28. Winds: E. by S., E., E. Commences with a strong breeze from the east, and squally; middle, alternately clear and overcast; ends, strong breezes and squally.

Sept. 10. Lat. 13° 30′ N.; long. 33° 20′ W. Barometer, 30.20. Winds: E. by N., E.NE., E. by N. Commences with strong trades and squally; at 12 m., very clear and pleasant; ends squally.

Sept. 11. Lat. 11° 20′ N.; long. 31° 20′ W. Barometer, 30.15. Winds: E.NE., E.NE., E.NE. Commences with a strong breeze. The squalls commence from SE., but do not change

the wind more than two points; heavy tide rips; 12 m., very squally; tide rips in all directions; 2 p. m., wind changed; calms, squalls, and wind all ways. Ends with heavy rain.

Sept. 12. Lat. 10° 54′ N.; long. 30° 06′ W. Barometer, 30.23. Winds variable throughout. Commences with heavy rain and squally; 6 a. m., clear and pleasant; light breeze from the west at 12 m. The past day we must have had a strong current setting to the E.NE. Expected to make about a SE. course; but, by observation, made E. by S. ½ S. I will here remark that I think we had an easterly current most of the time after getting the trades. Ends very pleasant.

Sept. 13. Lat. 9° 10′ N.; long. 28° 44′ W. Barometer, 30.17. Winds: NW., N., N. by W. Commences with beautiful weather, and a fine breeze from the north; 12 m., nearly calm; ends calm.

Sept. 14. Lat. 8° 24′ N.; long. 28° 00′ W. Barometer, 30.17. Winds, N.NW., calms, SW. Commences with clear and pleasant weather. At 1 a. m., a breeze sprung up from S.SW.; 12 m., wind SW., very squally. We are now not quite 100 miles east of Maury's track for September. The current has set us so much to the eastward, or I should have been nearer to it. Ends pleasant.

Sept. 15. Lat. 7° 46′ N.; long. 26° 20′ W. Current, 56 miles, NE. Winds: SW., SW., SW. Commences with a SW. wind and moderate; 12 m., was surprised to find we had such a current. Ends pleasant.

Sept. 16. Lat. 6° 33′ N.; long. 25° 00′ W. Barometer, 30.18. Winds: SW., variable, SW. Commences with variable wind and rain. Ends with a fresh breeze and squally; strong easterly current.

Sept. 17. Lat. 4° 26′ N.; long. 24° 20′ W. Barometer, 30.16. Winds: W. by S., W. by S., W.SW. Commences with a W. by S. wind and squally; 8 a. m., heavy rips; 9 a. m., took the wind from the S.SW.; 12 m., squally; 4 p. m., tacked to the W. by S. [He is now beating to get west. See his remarks September 5.]

Sept. 18. Lat. 3° 25′ N.; long. 25° 30′ W. Barometer, 30.16. Winds: S. by W., S., S. Commences with fresh breezes and passing clouds; 12 m., very pleasant; p. m., wind S.SE. Hope we have the trades. Ends with fresh breezes.

Sept. 19. Lat. 1° 35′ N.; long. 27° 08′ W. Barometer, 30.14. Winds: S. by E., S.SE., S.SE. Commences with fresh breezes and passing clouds; ends with fine breezes and pleasant.

Sept. 20. Lat. 0° 16′ S.; long. 28° 52′ W. Barometer, 30.16. Winds: SE. by S., SE. by S., SE. by S. Commences with fine weather; 12 m., are south of the equator, 47 days out. I feel perfectly well satisfied with getting through the doldrums. When ten days out, had I had a leading wind for three days, and then had the winds as we have had since passing 30° N., the passage to the equator would have been a good one for this vessel; but those sixteen days in the "Horse latitudes," have caused an unusually long passage. Maury's average is forty-one days for this season. I think, had I kept further to the north, and gone further east before getting into the "Horse latitudes,"* it would not have been as it turned out; but I think it seldom that any one has such winds and calms for so long a time as we had them.

Sept. 21. Lat. 2° 14′ S.; long. 30° 07′ W. Barometer, 30.16. Winds: S.SE., SE. by S., SE. by S. Commences with fine weather and smooth sea; 12 m., very pleasant with exceedingly clear atmosphere; ends with beautiful weather.

* No sailing directions can be given for crossing these calm belts except such as are contained in these emphatic words:—"MAKE THE BEST OF YOUR WAY ACROSS THEM WITHOUT REGARD TO LONGITUDE."

Sept. 22. Lat. 4° 50′ N.; long. 31° 04′ W. Barometer, 30.15. Winds: SE. by S., SE., SE. by E. Commences with a fine breeze; 6 a. m., set steer-sails, ship going 7 knots.

Sept. 23. Lat. 7° 34′ N.; long. 32° 04′ W. Barometer, 30.18. Winds: SE. by E., SE. by E., E.SE. Commences with a fine breeze and very pleasant weather; ends very pleasant, and moderate southeast wind."

Brig Mary Wilkins, (S. Nickerson, captain,) New York to Buenos Ayres; twenty-one days out.

August 27, 1856. Lat. 28° 15′ N.; long. 42° 30′ W. Barometer, 30.20; temperature of air, 83°; water, 82°. Winds: E. by S., E., E.NE. Wind light, first part; latter part, fresh, and fine weather.

August 28. Lat. 25° 28′ N.; long. 41° 25′ W. Barometer, 30.08; temperature of air, 82°; water, 81°. Winds: S. by E., E.SE., E. First part, strong breeze, with passing squalls; middle, the same, with fair weather; latter, squally, with rain; gulf-weed.

August 29. Lat. 22° 46′ N.; long. 41° 18′ W. Barometer, 30.10; temperature of air, 80°; water, 80°. Winds, E.SE., E.SE., E.SE. First part, gentle gales. If these are what are called the northeast trades, I think they should have a new name given to them. Latter part, a sharp sea from southeast; heavy, damp weather. Left all gulf-weed in lat. 24° 00′ N.

August 30. Lat. 20° 35′ N.; long. 39° 40′ W. Barometer, 30.12; temperature of air, 80°; water, 80°. Winds: E.SE., E., E. First part, strong wind and sharp sea; middle, fresher wind; sea sharp and ugly; latter part, the same.

August 31. Lat. 18° 33′ N.; long. 38° 03′ W. Barometer, 30.09; temperature of air, 80°; water, 80°. Winds: E., E. by N., E. First part, strong winds, and damp heavy weather; latter part, same, with sharp sea from the east.

Sept. 1. Lat. 16° 20′ N.; long. 36° 18′ W. Barometer, 30.05; temperature of air, 80°; water, 80°. Winds: E. by N., E. by S., E. by S. First part, strong winds and hazy weather, with light squalls of rain; sharp sea; middle, strong trades, and weather the same; latter, the same.

Sept. 2. Lat. 13° 47′ N.; long. 35° 45′ W. Barometer, 30.03; temperature of air, 83°; water, 80°. Winds: East, SE., E. First part, thick hazy weather with bad looking squalls, with rain; middle, more moderate; wind inclining south and clearing off; latter, fine weather and light breeze. Looks like northeast trades yet.

Sept. 3. Lat. 11° 57′ N.; long. 34° 00′ W. Barometer, 30.05; temperature of air, 84°; water, 81°. Winds: E.NE., E.NE., E. by N. First part, light breeze and fine weather; middle, the same; latter, the same; swell from northeast; water discolored, like soundings.

Sept. 4. Lat. 11° 01′ N.; long. 33° 40′ W. Barometer, 30.00; temperature of air, 82°; water, 82°. Current, ½ mile, NW. Winds: SE., E., E.SE. First part, light winds and pleasant; middle, nearly calm. I expect the trades have left us, and now shall have to take it as we can catch it. We are in the September track as projected by Lieut. Maury; therefore feel satisfied we are in the best place. Latter part, light wind, veering towards the south.

Sept. 5. Lat. 10° 23′ N.; long. 33° 40′ W. Barometer, 30.00; temperature of air, 84°; water, 82°. Winds: calm, SE. and calm, SE. and variable. First part, calm, with a large long swell from southeast; tide rips; middle, calm and light winds; latter part, light and variable. Strong riplings.

Sept. 6. Lat. 9° 31′ N.; long. 32° 50′ W. Barometer, 30.00; temperature of air, 84°;

water, 82°. Current, ½ mile, SE. Winds: calm and variable, calm and variable, variable. Light variable breezes and calms.

Sept. 7. Lat. 7° 45′ N.; long. 30° 00′ W. Barometer, 30.00; temperature of air, 82°; water, 82°. Current, 1½ miles, E.SE. Winds: E.NE., E.NE., E.NE. Light winds and pleasant. Latter part, slight rain.

Sept. 8. Lat. 6° 40′ N.; long. 29° 15′ W. Barometer, 29.97; temperature of air, 83°; water, 82°. Current, 1½ miles, W. Winds: E.NE., SW., S. First part, light wind; middle part: at 9 p. m., a violent squall of wind and rain, blowing till 3 a. m.; latter, light winds; heavy rain squall at 5 a.m.

Sept. 9. Lat. 5° 40′ N.; long. 27° 45′ W. Barometer, 29.96; temperature of air, 82°; water, 82°. Winds: S.SW., S.SW., S. by W. Light winds and cloudy; forced to the eastward very unwillingly.

Sept. 10. Lat. 5° 28′ N.; long. 26° 18′ W. Barometer, 29.96; temperature of air, 82°; water, 82°. Winds: S.SW., S.SW., S. by W. First part, gentle breezes and cloudy; at 4 p. m., tacked to the westward; large swell from the south; at 9, tacked to the southeast; at 11 p. m., very hard squall of wind and rain from south. Latter part, strong gales and cloudy; sharp sea. At meridian tacked to the west. I am further to the east than I intended, but I think I have been forced here.

Sept. 11. Lat. 3° 58′ N.; long. 28° 20′ W. Barometer, 29.95; temperature of air, 82°; water, 82°. Winds: S. by W., S. by E., S. by E. First part, strong winds and rough sea from south; middle, the same; latter part the same.

Sept. 12. Lat. 2° 02′ N.; long. 30° 09′ W. Barometer, 29.98; temperature of air, 82°; of water, 81°. Winds: S. by E. and S, S., and variable, S. by E. First part, strong breezes; ugly sea; middle, the same; sea somewhat gone down; latter, pleasant with a good breeze.

Sept. 13. Lat. 0° 02′ N.; long. 31° 56′ W. Barometer, 30.02; temperature of air, 82°; of water, 80°. Winds: S.SE., S.SE., S. by E. First part, strong breeze and fine weather; sharp sea from south; middle, strong breeze and passing clouds. Shall cross the line to the west of 32° W.; according to your chart we must soon get the wind further to the east. Latter part, the same.

Sept. 14. Lat. 0° 52′ south; long. 32° 22′ W. Barometer, 30.08; temperature of air, 81°; of water, 80°. Winds: S.SE., S.SE., S.SE. First part, strong breeze; middle and latter, wind fine. My faith fails, and tacked ship to the east at 4 a. m. Notwithstanding my long passage, I would again follow the charts by all means, as far as the wind would admit. At meridian tacked to the SW.

Sept. 15. Lat. 3° 23′ S.; long. 33° 32′ W. Barometer, 29.97; temperature of air, 81°; of water, 79°. Winds: S.SE., SE. by S., SE. by S. Strong breezes and fine weather throughout.

Sept. 16. Lat. 5° 26′ S.; long. 34° 00′ W. Barometer, 30.10; temperatnre of air, 82°, of water, 80°. Winds: SE. by S., SE. by S., S.SE. Commences with squalls of wind and rain, with very ugly sea. At 5 p. m. passed to leeward of the Roccas; saw a large flock of birds; it being hazy, saw no land. No current the last 24 hours. Middle and latter, strong breeze and clear. At 11 a. m. made Cape St. Roque, bearing west, distant 12 miles."

The Mary Wilkins had a tedious time from port to the parallel of 30° N. She felt the eastwardly set north of the line, and withal was skilfully navigated, considering the winds she had.

Ship Ocean Telegraph, (George H. Willis, captain,) New York to San Francisco; twenty-one days out.

"August 30, 1855. Lat. 29° 08′ N.; long. 45° 00′ W. Barometer, 30.14; temperature of air, 81°; of water, 79°. Winds: S.SE., S.SE., S.SE. Light breezes throughout. At 11 p. m. tacked to the SW.

August 31. Lat. 27° 33′ N.; long. 45° 30′ W. Barometer, 30.12; temperature of air, 80°; of water, 80°. Winds: SE. to SE. by E., SE. to SE. by E. Throughout, light airs; clouds coming from east, has appearance of trades.

Sept. 1. Lat. 26° 12′ N.; long. 44° 51′ W. Barometer, 30.05; temperature of air, 81°; of water, 80°. Winds: E.NE. to E.SE., E.NE. to E.SE. Throughout, light airs; weather clear and pleasant.

Sept. 2. Lat. 24° 15′ N.; long. 44° 04′ W. Barometer, 30.02; temperature of air, 80°; of water, 79°. Winds: E.NE. to E.SE. Throughout, light breeze and fine weather. Has the appearance of trades during the night.

Sept. 3. Lat. 21° 28′ N.; long. 43° 24′ W. Barometer, 30.00; temperature of air, 80°; of water, 79°. Winds: E.NE. to E.SE. First part, light; latter, fresh breeze and heavy head sea from south.

Sept. 4. Lat. 18° 46′ N.; long. 43° 02′ W. Barometer, 30.03; temperature of air, 79°; of water, 79°. Winds: E.SE., E.SE., E.SE. Commences, fresh breeze and very heavy sea. Throughout the night, squally. Latter, pleasant.

Sept. 5. Lat. 15° 43′ N.; long. 41° 41′ W. Barometer, 30.00. Winds: E. to E. by N. Throughout, good breeze and fine weather; heavy sea from south. Current, north, 17 miles.

Sept. 6. Lat. 12° 44′ N.; long. 40° 24′ W. Barometer, 29.97; temperature of air, 84°; of water, 79°. Winds: E., E., E. Moderate breeze and occasional light showers of rain; several tide rips. Clouds rising all around the horizon, particularly at south, looks like the trades, giving out heat lightning.

Sept. 7. Lat. 10° 42′ N.; long. 39° 40′ W. Barometer, 29.95; temperature of air, 80°; of water, 80°. Winds: E.NE., E. to SE. Throughout, baffling winds and squally with rain; occasional lightning during the night; passed some heavy rips; heavy clouds, cumulus, hanging in the horizon.

Sept. 8. Lat. 11° 06′ N.; long. 38° 44′ W. Barometer, 30.00; temperature of air, 80°; of water, 81°. Winds: calm, SE., S.E. Light airs and calms; passed some heavy rips.

Sept. 9. No observation. Barometer, 29.95; temperature of air, 82°; of water 81°. Winds: E.NE to E., E.NE. to E. From 8 p. m. squally with rain; occasionally lightning; heavy rips.

Sept. 10. Lat. 7° 37′ N.; long. 35° 40′ W. Barometer, 29.90; temperature of air, 79°; of water, 81°. Winds: E.NE. to E.SE. and calm. Commences moderate; during the night squally with very heavy rain; middle, calm. At 8 a. m. wind came out S.SW, fresh breeze; many rips.

Sept. 11. Lat. 7° 24′ N.; long. 32° 26′ W. Barometer, 30.02; temperature of air, 81°; of water, 81°. Winds: S.SE. to S. Moderate throughout, and pleasant; wind baffling; no rips.

Sept. 12. Lat. 6° 32′ N.; long. 31° 16′ W. Barometer, 30.00; temperature of air, 78°; of water, 81°. Winds: S. to S.SE., calm, variable. Begins, light breeze. At 9 p. m. very

dark and heavy rain; composantes on each mast head; water emitting much light. From 8 a. m. light air from S.SW.; weather clearing up.

Sept. 13. No observation. Barometer, 29.95; temperature of air, 78°; of water, 80°; Winds: S. to S.SW., S. to S.SW. Throughout, wind from south to S.SW.; heavy bank with thunder and lightning hanging in the N.NE., occasionally rising up and settling away again as the southerly wind breezes up.

Sept. 14. Lat. 5° 15′ N.; long. 27° 42′ W. Barometer, 29.96; temperature of air, 79°; of water, 79°. Winds: S.SE. to S.SW., very baffling. Fine weather throughout. Tacked many times to get to southward, endeavoring to get to the southward without getting further to the east. Current, E. by N., 26 miles. Three voyages found this same current.

Sept. 15. Lat. 4° 54′ N.; long. 27° 54′ W. Barometer, 29.97; temperature of air, 81°; of water, 80°. Current, east, 22 miles. Winds: S., S., S. Light airs throughout; stood to the westward; water emitting much phosphorescence.

Sept. 16. Lat. 4° 45′ N.; long. 28° 45′ W. Barometer, 29.97; temperature of air, 78°; of water, 79°. Winds: S., S., variable. Commences, fine clear weather and light breeze. At 6 p. m. heavy clouds came up very suddenly from west; wind changed to westward with heavy rain; stood to the westward until wind changed.

Sept. 17. Lat 3° 42′ N.; long. 29 3°2′. W. Barometer, 29.90; temperature of air, 81°; of water, 81°. Winds: calm, S., S. Commences, calm. At 6 p. m. light breeze; stood to westward.

Sept. 18. Lat. 1° 42′ N.; long. 31° 24′ W. Barometer, 29.98; temperature of air, 81°; of water, 80°. Winds: S., S, S. by E. Commences, fine breeze and settled weather throughout; stood to westward.

Sept. 19. Lat. 1° 24′ south; long. 33° 15′ W. Barometer, 29.96; temperature of air, 79°; of water, 79°. Winds: SE. by S., SE. by S., SE. by S. Moderate breeze and fine settled weather throughout. At 2.30 a. m. crossed the equator in 32° 23′ W.; 41 days 14½ hours from New York. Distance sailed, 4,365 miles; Maury gives 4,310 miles. Last year came down same season in 29 days, distance 4,043 miles to same crossing.

Sept. 20. Lat. 4° 40′ S.; long. 34° 05′ W. Barometer, 29.99; temperature of air, 79°; of water, 79°. Winds: SE. by S., SE. by S., SE. by. S. Throughout, moderate breeze and fine weather. At 6.30 a. m., Roccas shoal bore east, two miles distant.

Sept. 21. Lat. 8° 03′ S.; long. 34° 15′ W. Barometer, 30.00; temperature of air, 80°; of water, 79°. Winds: E.SE. to SE., E.SE. to SE. Throughout, moderate and fine weather. Fetched by without tacking, and have had no current since crossing the equator, and very little annoyance from doldrums between the trades; but plenty to the northward of them. Have endeavored to follow the new route as nearly as practicable, and shall continue to do so."

Ship N. B. Palmer, (Charles P. Low, captain,) New York to Hong Kong; fourteen days out.

"Sept. 13, 1855. Lat. 28° 53′ N.; long. 39° 16′ W. Barometer, 30.45; temperature of air, 79°; water, 79°. Winds: S. by W., S.SE., E.SE. Light airs and beautiful weather. Latter, moderate breezes with squally appearances in the east.

Sept. 14. Lat. 25° 25′ N.; long. 38° 05′ W. Barometer, 30.40; temperature of air, 78°; water, 78°. Winds: E.SE., E., E. Light breeze, moderate, fine trades.

Sept. 15. Lat. 21° 39′ N.; long. 36° 43′ W. Barometer, 30.25; temperature of air, 80°; water, 78°. Winds: E., E.SE., E. Fresh trade-wind, at 7, heavy squalls, fine breeze.

Sept. 16. Lat. 17° 43′ N.; long. 35° 10′ W. Barometer, 30.20; temperature of air, 80°; water, 77°. Winds: E., E. by S., E.SE. Fresh trades with heavy clouds.

Sept. 17. Lat. 13° 54′ N.; long. 34° 21′ W. Barometer, 30.10; temperature of air, 80°; water, 77°. Winds: E.SE., E.SE., S.SW. Fine trades and passing squalls, at 10 a. m. heavy clouds rising from the southward, with nasty swell. At times the NE. trades would reach us, and then the southerly wind prevailed, strong tide rips, one would think there was a five-knot current.

Sept. 18. Lat. 10° 37′ N.; long. 32° 13′ W. Barometer, 30.00; temperature of air, 81°; water, 81°. Winds: E., E., E. by N. At 3 p. m., after having lost the NE. trades apparently, they again began to blow and the sea went down, we had a fine breeze and pleasant weather; at midnight dark and cloudy; in the middle watch the water was so luminous that we could almost count the stitches in the royals; ends, moderate breeze.

Sept. 19. Lat. 9° 32′ N.; long. 31° 10′ W. Barometer, 30.70; temperature of air, 80°; water, 82°. Winds: E. by N., S. by W., S.SW. Light breezes and pleasant; latter, moderate, with wild-looking squalls from the SE. to NW., some rain at half-past 11 a. m.

Sept. 20. Lat. 8° 36′ N.; long. 29° 57′ W. Barometer, 30.90; temperature of air, 81°; water, 82°. Winds: SW., S.SW., N. Light and baffling throughout, very many fish, dolphins, bonetas, and albicone; an easterly current of a knot and a half an hour.*

Sept. 21. Lat. 7° 25′ N.; long. 29° 20′ W. Barometer, 30.50; temperature of air, 82°; water, 82°. Winds: N., NW., N. Variable and cloudy with rain; ends, light airs from N. and cloudy.

Sept. 22. Lat. 6° 43′ N.; long. 28° 24′ W. Barometer, 30.50; temperature of air, 81°; water, 82°. Winds: N., SW., S.SW. Light airs throughout with lovely weather, heavy swell from south.

Sept. 23. Lat. 6° 36′ N.; long. 26° 51′ W. Barometer, 30.10; temperature of air, 81°; water, 82°. Winds: S.SW., S. by E., S. Commences with light breezes and light rain squalls; middle, moderate breeze; at 8 tacked to the westward.

Sept. 24. Lat. 5° 56′ N.; long. 27° 13′ W. Barometer, 30.15; temperature of air, 82°; water, 82°. Winds: S., SE. by S., SE. First, light breeze and fine weather; middle, light and variable, with drizzly rain; latter, light airs; must have had 10 or 15 miles current to the eastward the last 24 hours.

Sept. 25. Lat. 5° 13′ N.; long. 27° 38′ W. Barometer, 30.18; temperature of air, 82°; water, 82°. Winds: S.SE., S., S.SE. First, light airs with heavy clouds rising in the south; middle, light airs and calm; ends, moderate breeze with dark rain clouds.

Sept. 26. Lat. 3° 29′ N.; long. 29° 42′ W. Barometer, 30.10; temperature of air, 81°; water, 82°. Winds: S.SE., S., S.SE. Commences, light airs and squally appearances in the south; middle, fresh skysail breeze; latter, fine trades.

Sept. 27. Lat. 1° 26′ N.; long. 31° 11′ W. Barometer, 30.12; temperature of air, 80°; water, 81°. Winds: S.SE., SE. by S., SE. by S. Moderate trades and beautiful weather; middle and latter, the same; am rather pinched with the wind, but shall stand on and trust to Maury.

Sept. 28. Lat. 0° 38′ S.; long. 32° 17′ W. Barometer, 30.18; temperature of air, 80°; water, 79°. Winds: S.SE., SE., SE. Light trades and pleasant weather, no current.

*This is the easterly current already mentioned as prevailing in summer and fall.

Sept. 29. Lat. 3° 05′ S.; long. 32° 48′ W. Barometer, 30.12; temperature of air, 80°; water, 79°. Winds: SE. by S., E. by S., SE. First, light airs and rain squalls with wind baffling from SE. to E.; middle, passing rain squalls; latter, fresh trades from SE. For the last ten days barometer has risen and fallen a tenth every twelve hours.

Sept. 30. Lat. 6° 49′ S.; long. 33° 34′ W. Barometer, 30.15; temperature of air, 80°; water, 79°. Winds: SE., SE. by E., SE. by E. Fine trades and pleasant weather, weathered the Roccas by 37 miles; no current at all since crossing the line; ends, fine trades and pleasant. Thanks to Lieutenant Maury for one day at least saved on the passage by not tacking."

COMPUTED ROUTE FROM NEW YORK TO RIO, &c.—*September.*

Latitude.	Longitude.	Course.	DISTANCES.			WINDS; PER CENT.					Total number of observations.
			Direct.	Per cent.	Average.	Head.	Slants from— N'd or E'd.	Slants from— S'd or W'd.	Fair.	Calms.	
40° 27′ N.	70° 00′	E.	186	13.0	210	2.5	*w* 17.0	*w* 14.0	66.5	3.4	200
38 52	65 00	E.S.E.	249	9.9	274	2.2	*w* 12.4	7.5	77.9	5.1	184
37 14	60 00	E.S.E.	256	7.4	275	0.7	12.6	7.7	79.0	3.3	447
35 35	55 00	E.S.E.	260	7.4	279	1.6	8.8	7.2	82.4	4.0	123
35 00	54 18	S.E.	48	25.3	60	9.4	13.7	*w* 16.6	60.3	3.5	139
33 31	50 00	E.S.E.	232	15.0	267	3.0	3.0	*w* 42 0	52.0	0.0	34
31 47	45 00	E.S.E.	272	15.4	313	6.0	4.0	*w* 22.0	68.0	5.7	50
30 00	42 55	S.E.	151	15.0	174	2.9	11.5	*w* 21.7	63.9	4.2	69
27 27	40 00	S.E.	217	17.9	255	2.8	11.2	*w* 25.2	60.8	2.7	36
25 00	37 16	S.E.	208	16.8	243	3.4	17.9	*w* 16.8	61.9	1.1	89
20 00	37 16	S.	300	4.2	313	4.2	*w* 10.5	0.0	85.3	2.6	38
15 00	35 06	S.S.E.	325	0.0	325	0.0	0.0	0.0	100.0	0.0	23
10 00	32 58	S.S.E.	325	7.8	349	1.6	*w* 11.3	9.8	77.1	6.1	61
8 47	30 00	E.S.E.	191	16.8	223	2.8	3.6	*w* 30.8	60.8	4.0	73
5 00	27 11	S.E.	321	18.4	380	5.8	9.6	*w* 23.0	61.6	7.1	104
Equator*	29 15	S.S.W.	325	14.1	370	6.2	*w* 34.3	1.4	58.1	0.0	70
			3866		4310						
1 58 S.	30 00	S.S.W.	118	17.4	138	4.4	*w* 13.3	5.7	58.6	0.0	297
3 00	31 02	S.W.	88	9.6	96	0.0	*w* 48.2	0.0	51.8	0.0	27
5 00	31 52	S.S.W.	130	12.5	145	0.0	*w* 62.5	0.0	37.5	0.0	24
5 19	32 00	S.S.W.	21	3.4	22	0.0	*w* 16.7	0.0	83 3	0.0	12
7 00	32 42	S.S.W.	108	7.2	115	0.0	*w* 35.7	0.0	64.3	0.0	14
7 43	33 00	S.S.W	47	1.3	48	0.0	*w* 6.0	0.0	94.0	0.0	17
9 00	33 32	S.S.W.	83	8.0	91	0.0	*w* 36·6	0.0	63.4	0.0	30

Captain Willis has made two September passages in the *Ocean Telegraph.* The distance sailed to the line on one was 4,043, and on the other, 4,365 miles. The computed average is 4,310. The close agreement, which is very marked, especially in ships that are well handled, between the computed and the actual distance, may be taken as one of the best practical proofs that can be given as to the accuracy of our knowledge concerning the general character of the winds in this part of the ocean.

It may be said that the NE. trade-winds prevail in September and October along this route only to the east of longitude 50°, and then only between the parallels of 15° and 25° N. They sometimes blow in other parts of the ocean, but it cannot be said that they *prevail.*

Endeavor to cross the meridian of 50°, in September and October, before you do the parallel of 30° N., and do not consider yourself hopelessly to leeward, if you be *forced* to cross

* The best routes for October and November do not differ materially from those for September and December.—See Pilot Charts.

the parallel of 20° N., as far west as longitude 45°, or the parallel of 10° N., as far as 36° or 37° W.; for in September and October, as the Pilot Charts show, you may frequently meet, between 10° N. and the equator, the SE. trade-winds.

The SE. trades may be calculated on with certainty between 7° N. and 13° N., between 35° and 40° W. Occasionally, the SW. monsoons are found between the same parallels; they will enable you to make easting. The SE. trades, when taken in the northern hemisphere in this month, are frequently at S.SE.; and, therefore, it is not difficult for vessels that find themselves as far west as longitude 37°, in latitude 10° N., to get to the eastward of 34° before crossing the line. The best crossings are shown, by trial, to be long. 33° for 10° N., long. 28° for 5° N., and 31° for the equator. This is the worst month in the year, the average to the line running as high as 37 days. From May to October inclusive is the worst time for quick passages. The average for these six months is six days greater than it is for the other six. December gives an average of nine days less than their average, and twelve days less than the average for September. December is the best month for quick runs and small averages.

Between long. 30° and 35° the equatorial calms are found from 4° to 12° N., and between long. 25° and 30° they and the SW. monsoons are found from 12° to the equator; and as a general rule they are found more and more vexatious as you go east.

Captain Sinclair, when in command of the United States frigate Congress, on her way to South America, with that close observation of all the phenomena about him which gives a particular value to his remarks, observed the difficulties of crossing this belt far to the eastward. He crossed it in January, 1818, and inferred that there was a belt of monsoons between the two trades. He was mistaken as to the time of the year. He crossed this belt in January; and though, in January, the winds are sometimes from the SW., yet, at that time of the year, they have nothing of the character of monsoons about them.

I quote a passage from his journal:

"We made a great run from their latitude, (the Cape de Verdes,) to about 7° 30′, when the NE. trade began gradually to leave us, which it did effectually before we reached the latitude of 6° 30′ N., having run from 19° 30′, a distance of near nine hundred miles, between the 31st December and the 5th January; and from this time to the 17th there was little else than a continual calm, except when occasionally disturbed by a thunder squall and violent rains, though, considering we were at one time as far east as long. 19° W., we had very little rain and very few squalls of wind; those we had were principally from S.SW. to W.SW.; indeed, there appears to be, between the NE. and SE. trade-winds, which we found to be from 6° 30′ N. to the equator, a light monsoon from the SW."

Had this remark been made in the summer, instead of the winter, it would have been perfectly correct.

If, after getting within these latitudes, *i. e.* those in which the calms are mentioned as prevailing, and the wind should come out at SE., prefer the port tack; for, before you make the land, you are almost sure to have the wind out from the S.SE., when you can make your easting within the regions of the perpetual SE. trades.

After getting the SE. trades, and finding himself a little pinched for easting to clear the land, the skilful navigator will see, from the Pilot Charts, that, by standing on with the wind at SE., all the chances are in his favor. If the wind haul to S.SE. he can go about and make easting. If it veer to E.SE., or further, he can lay up and clear the land; for whether you go this or that side of Fernando de Noronha, in this or any other month, is a matter of no sort

of consequence, excepting only so far as the difference of longitude is concerned. If you can weather it, do so, but do not waste time simply that you may pass to the eastward of it.

Good passages are sometimes made in September, but, as a general rule, the most tedious seasons of the year are the summer and fall months, for passages.

After losing the NE. trades, the navigator may consider himself fortunate, in this month, if he is not baffled about for more than a week before he gets the SE. trades.

Time and Crossings to the "Fair Way" off St. Roque—September.

Name of vessel.	From—	Date of sailing	Longitude of crossing the parallels of—																	Total days to—	
			Days.	30° N.	Days.	25° N.	Days.	20° N.	Days.	15° N.	Days.	10° N.	Days.	5° N.	Days.	Line.	Days.	3° S.		Line.	St. Roque.
Hornet	Philade phia	Sept. 2, 1854	13¼	44	7⅛	40⅛	2¼	42	4	40	2	38	11	30½	2	34½	4	33¼		40¼	45
Emily	Baltimore	2, 1854	14⅛	43	2½	43½	3	40	2½	37	3	33	8	28	3	31½	1	31¾		36¼	38
Delegate*	Salem	2, 1852	10	47	4	38⅛	3	36¼	2	34½	3	32	4	24¾	4	29	2	31		30	33
Challenge*	New York	5, 1852	10½	43	2	42	1½	40	2	38½	3¾	36	3½	30¼	4	33	¾	33¾		27¼	29¾
Jane A. Faulkingburg*	Boston	6, 1852	9	38	2½	37	2	36	1	35	2	33¼	5½	27½	2½	31¼	1¼	32¾		24½	26½
Anna Bucknam	do.	6, 1852	9	38¾	4	38¾	2½	37½	3½	35¼	2½	32½	10	31	4	32¾	2¾	33½		35½	39
Lowell	do.	6, 1852	10	43	3¾	43½	3½	43	4	39½	3½	37½	19	26	3½	29	1½	31		47¼	50
U. S. Ship Vandalia	Norfolk	6, 1849	7½	59	7	39½	11	37½	2	35	1½	33	8	28	5½	30	2	31		42½	45
White Squall	New York	6, 1850	12¾	42	2	42¼	1½	41	2½	35¾	4¾	28	5½	32¾	3	29	1	31		32	34
Wild Pigeon	do.	6, 1853	12	41½	2½	42½	2	41	3½	37½	3½	34	6½	26	4½	27½	1	29		34½	36½
Swan	Baltimore	7, 1853	14¼	41	2	40¼	2	38	3	36	3	31¼	5½	28½	5	29	1½	30½		35	37½
Greyhound	Richmond	7, 1850	15	39	2	34	3½	30	4	27	2	26	4	25	3½	26½	1	27¾		34	36
Golden City	New York	9, 1852	15	33	3½	27½	3	27½	3½	31	2	30½	4	28¾	4½	33	1	33		35½	38
Winged Arrow	Boston	10, 1853	12½	51	3	48	3	47½	2	46	2	44	6½	39½	10	30¾	1	31¾		39	41
Ambassador	New York	11, 1849	15	42½	4	37½	2¾	34½	2	31½	2	29	12	26¾	4½	31	2	33		42¼	44
John Wade*	do.	12, 1852	10	40½	2	37	2½	35	1½	35	5½	32	6	28	3½	29	1	31¼		31	33
Chanticleer	do.	12, 1854	14	37¼	4	35	4	35½	3	34	3	31	8	26	4	29	2	31		40	43
Senator	do.	13, 1852	15	39	3½	36	3	34½	2	33¾	3	31	5½	26½	5	28½	2	30¾		37	40
Parthenon	do.	13, 1853	19	38¼	2½	37¼	2	35½	2	33½	2½	30½	7	27	4	29½	1	30¼		39	41
Peacock	Salem	13, 1854	7	49	9	41½	1½	40½	2	40	4½	37½	10	28½	4½	28½	1	29½		38½	40½
Weybosset	Boston	13, 1854	13½	37¼	3	35½	4	35¼	3½	34¼	4	31½	7	25	4	29	2	31½		39	42
Kate and Alice	New York	14, 1853	19½	36¾	2	36	1½	35	2	33¾	3	31½	5	28¼	4½	28¼	1½	29½		37½	40
Adelaide Metcalf	do.	14, 1852	11	49½	5	43	4½	41	3½	40½	3	37¾	9	33	9	35	2	36¾		45	53
Siri	do.	14, 1853	9	51¼	11	42½	2	40¾	3	39	3	36¾	13	26¼	6	29	1¼	31		47	50
Duchess	do.	15, 1853	18½	46½	6½	43	2½	41½	3	38	4	35½	8½	29½	8	31½	1½	32		51	54
Flying Dutchman	do.	15, 1854	4½	59	9½	49½	4½	47	2½	44	5	40½	11	29¼	3½	30	1	32		40½	42
Malay	Boston	15, 1852	10	44¾	5½	38½	3½	35¾	2	34¼	2½	31½	6	25¾	5	31	1½	32½		34½	37½
Revere	do.	16, 1852	12½	40	3	37	3	35	2	33½	2½	31	6	27½	5	32¾	1½	34½		34	37½
Lotus	New York	16, 1853	7	50½	11	39½	2	36¼	2	34	2	30½	5	27	3½	29	1	30		32½	34
Hudson	Cape Henry	16, 1852	8½	50	5	42	4	39	1½	38	2½	35½	4	29	5½	31½	2	34¾		31	35
Charles Mallory	New York	16, 1852	8	50½	6½	39¾	3	37	2½	34¼	3	30	5	25¾	5	29	1	30½		33	35
Granada	Boston	17, 1854	10	43	3	42	2	41	2½	39	7	35	10	29	3	32½	1½	33½		37½	40½
Spirit of the Sea	do.	18, 1854	12	49	6	41½	7½	36½	2¾	34½	4	31	8	27	5¼	28½	1	29½		45½	47½
Franconia	do.	19, 1852	15	42¼	8	36	4	34	3½	33½	3	32	8½	28¼	4½	30¼	2	31¼		46½	49
Skylark*	New York	19, 1853	14	37⅞	1½	38	1	37⅞	2	36½	2	35	4½	31	4½	32	1	33		29½	31½
Unknown*	Boston	20, 1853	12½	36	1½	35¾	1½	35	1	34	2	32	4½	26¾	3½	32	1½	33		26½	28½
Flying Fish	do.	20, 1854	12½	43½	3	38	3½	39	2	39	2	36¼	7	28½	2	31½	1	32		32	34
Magnolia	do.	21, 1853	12½	45	4½	44	3½	42	2½	39	2	37	9	31¼	7	29¼	1	30¼		41	44

Time and Crossings to the "Fair Way" off St. Roque—September—Continued.

Name of vessel.	From—	Date of sailing.	Longitude of crossing the parallels of—																	Total days to—	
			Days.	30° N.	Days.	25° N.	Days.	20° N.	Days.	15° N.	Days.	10° N.	Days.	5° N.	Days.	Line.	Days.	3° S.		Line.	St. Roque.
Realm	New York	Sept. 23, 1852	12	41¾	8½	32¼	3½	32	2½	31¼	4½	31	7	28	4½	30¼	1½	31¾		42½	45
Wild Ranger	do.	23, 1854	12½	45½	5	37	3	38	2	38¼	3½	36	7	32¾	5½	32¼	1	33¼		38½	40½
Mary Ellen	do.	23, 1850	15	38¾	2	37½	5	36	5½	37	3½	34	7	26½	4½	30	2	32½		42½	45½
Arthur	do.	25, 1853	17½	40¾	3	38½	2½	37½	3	34½	4	33	12	27	8½	29	1	31		50½	53
Pennamquom	Boston	25, 1853	18	38½	1½	38¼	2	37	2½	35	3½	30¾	10½	28	7	32	3	33¾		45	49
Morning Light	Philadelphia	26, 1853	16½	31	1½	30	1½	29¾	1	30	2½	29½	8	28½	6½	32	1½	34½		37½	41
Anna Bucknam	New York	27, 1852	11½	40	4½	33¼	3½	32	2½	30½	2½	29½	5½	28½	4½	31½	1½	31½		34½	37
Comet	do.	27, 1852	13	45	4	39¾	1½	37¾	1	36¾	3½	33½	7	27¼	3	30½	1½	31½		33	35
Eolus	Boston	28, 1852	14½	37½	3	34	2	32	2½	31	3	28½	7	27¼	5	30	1½	31½		37	39½
Jennie W. Paine	New York	28, 1853	13½	39½	2	38	2	36	1	33	2½	32	8	27½	8	31	1½	33		37	39
Sabine	do.	28, 1854	14½	50	7½	50	11	42	4¼	41	2	38¾	6	35	4	35	1½	34½		49¼	52
Genesee	do.	28, 1850	16¼	48	7¼	38	7	32¾	3½	30	7½	28	5	27	5	29	2	30		51½	55
N. B. Palmer	do.	28, 1853	13½	39½	1½	38¼	1½	37	1	35	2	33	8½	26	4	28½	1	30		32	34
Austiss	Richmond	29, 1852	9	57¾	8	47¾	10	40½	4½	38¼	3	33¼	6½	26	3½	29	1½	30¾		44½	47
Gray Eagle	Philadelphia	29, 1854	11	46	3½	44½	2½	44¾	2½	42	4½	39¾	9	30¼	4	32	1½	33½		37	39
George H. Townsend	Cape Henry	30, 1853	20½	40½	2	39	2	36	2	33	3	31	6½	27½	6	29½	2	32¼		42	45
William Chase	do.	30, 1851	9	53	2	50	1¾	47	6	44	7	39	13¼	29¼	4	32½	2	33¼		43	46½
Lady Arabella	New York	30, 1852	17½	41	2½	38	4	37¾	3	35¾	4	33½	4	30¼	9	28	2	29½		44	47
Average before the 7th edition			12.6	43¾	4.2	39¾	3.3	37¾	2.6	36.0	3.2	33½	7.6	28½	4.8	30½	1.5	32.0		38.4	41.0
Winged Arrow*	Boston	Sept. 1, 1855	13½	34	1¼	34	1½	33	1	32½	2¼	30½	6	30	3	34	1¼	35		28½	30½
Defender	do.	2, 1855	12½	40¼	1	40	2	39	1	38	7½	35	8	30	2	32¾	1½	34		34	36
Sherwood	do.	7, 1856	22	40¾	6	38	5½	36½	2	34¾	3½	31½	6	29	6	30½	1½	32¼		51	53½
Josiah Bradlee	New York	7, 1855	18½	38½	3	38½	3½	35	2½	34	5½	28½	5	26	4	32	2	31½		42	44½
S. H. Talbot	Richmond	8, 1856	17½	42	5	41	2	41	4	40¼	2	37½	7½	29¼	6	33½	2	33¾		44	47
Dashing Wave	New York	12, 1856	13	46	5	43	2¾	43	4	42	3	37	4	33	4	33½	1	33		35¾	38
Union	Baltimore	13, 1856	20½	49	5	49	8½	36	2	34	2¾	31½	3¾	29¼	3	31¼	1	31		45¼	48
Flying Fish*	Boston	13, 1855	12	38	1½	38	1½	36	1¾	32	2¼	31	2	31	4	31½	1	32		25	27½
Nahum Stetson	New York	15, 1855	17	40	6½	32	4	30¼	1½	30½	2	29	5	27	5	32	1¾	33½		41	44
Kate of Baltimore	Baltimore	16, 1856	22	40	5	37½	4½	36½	1¾	34	3	32	3½	30	2¼	31	1½	31½		42	44½
Brewster*	New York	21, 1855	13½	39	2	37	4	33½	2¼	31½	2¼	30	2	29	2	30	1	31¾		28	30
William A. Banks	Boston	22, 1856	12	44¾	6	41½	3	41¼	4½	40	4	35½	7½	28½	6	33¾	1½	35		43	47
Parana	New York	23, 1856	15½	47	5½	39	3½	34½	2¾	33	2¾	32	3½	29½	2¼	32	2	32¾		35¾	39
George Lee*	Boston	24, 1855	13½	38	3	37	3½	28½	1½	28½	2½	25	5	26	2¾	30	2	31		31¾	33
Escort	New York	26, 1855	14	42¾	5	34½	3¾	32	1¾	30½	1¼	30	6	28	4	31¾	4	31½		36	41
Raven	Richmond	26, 1855	14	43	4	37	5	35¾	1½	35	1½	34	8	30	6¼	33	1½	34		40¼	42½
Japonica	New York	27, 1856	19	42½	4½	35	6	31½	1½	30¼	2½	28½	5	28	3½	30	1½	31¼		42	43½
John Jay	New Bedford	27, 1855	9½	48	10	42¼	8	33	3	31	2½	27½	6	26¾	4½	29¼	1½	29¾		43½	46
S. H. Waterman	Boston	28, 1855	19½	43½	5½	39	3	38	2¾	37½	3	34½	8¾	29½	4	32	1½	32		46½	48½
Robert Patten	St. John, N. B.	29, 1856	17½	43	4	39	5	37	2½	35½	3½	33	5½	30	4	33	2	34½		42	46
Average since the 7th edition			15.8	41¾	4.3	38¼	4.0	35¾	2.2	35¾	2.9	31¾	5.5	29	4.0	31½	1.6	32¼		38.8	41.5
* Mean of 10 best			11.8	39.0	2.0	37½	2.2	35	1.6	33¾	2.8	31¾	4.3	28¼	3.4	32¼	1.3	32½		28.2	30.3

Captain Skinner, of the brig *Director*, writes:

"This being my first acquaintance of your Charts and Directions, and my first voyage to the Brazils, I must confess I did feel a little timid; but I followed your directions as near as I possibly could; if I did not, I hope that I will be convinced of my error. I appreciate your Charts and Book of Directions very highly, and will continue to keep the abstract on all future occasions.

You perceive that I had a strong current between the latitude 7° and 5° N., (September 7–10,) not getting an observation for four days. I found the brig nearly 3° further E. than I expected; whether I had it in *one*, *two*, *three*, or the fourth day, I can't say, but suppose had some each day. I was speaking with several captains, and they say that they have always found a strong current about there going to the eastward."

An eastwardly current is often found north of the line in summer and fall; and at those seasons it may be counted on with some degree of certainty.

Ship S. H. Talbot, (W. Burgess,) forty-four days out.

"Oct. 21, 1856. Lat. 0° 06′ N.; long. 33° 25′ W. Barometer, 29.95; temperature of air, 84°; of water, 79°. Winds: SE. by S.; fresh breezes, and fine throughout. I crossed the parallel of 30° N. in long. 42° W.; since then, made all the easting I could without making northing. I had the NE. trades from SE. to E.SE.; lost the trades in lat. 11° N.; took the SE. trades far south, (at S. by E.,) in lat. 3° N., and am now on the line, in long. 33° 28′ W., 44 days from Cape Henry; and if one poor fellow ever had hard luck, surely I have this time, and a pretty good chance of getting back-strapped. [Let us see how it will be.]

Oct. 22. Lat. 1° 47′ S.; long. 33° 45′ W. Barometer, 30.00; temperature of air, 84°; of water, 80°. Winds: SE. by E.; moderate breezes and passing clouds; fine weather.

Oct. 23. Lat. 3° 15′ S.; long. 33° 55′ W. Barometer, 30.00; temperature of air, 86°; of water, 80°. Winds: SE. by S.; fresh breezes. A. m., short sea from SE.

Oct. 24. Lat. 4° 58′S.; long. 34° 45′ W. Barometer, 29.95; temperature of air, 81°; water, 80°. Winds: SE. ½ S.; fresh breezes and passing clouds; fine; stood to the E. by N. 8 hours.

Oct. 25. Lat. 6° 24′ S.; long. 34° 50′ W. Barometer, 30.00; temperature of air, 83°; of water, 80°. Winds: E.SE.; begins, fresh breezes and passing clouds. At 5 p. m., made the land; at 7.30 p. m., tacked off shore; at midnight, tacked to southward. A. m., light breezes E.SE., just shaving the land along, about 8 miles distant.

Oct. 26. Lat. 8° 34′ S.; long. 34 °00′ W. Barometer, 30.03; temperature of air, 83°; of water, 79°. Winds: E. by N.; begins light breezes; laying along the coast within 8 or 10 miles; cleared St. Augustine without tacking. A. m., moderate breezes; fine weather."

It is very hard to disabuse the minds of mariners of the terrible ideas they have of Cape St. Roque and its myths. Lieutenant Bennett, who has compiled many of these crossings and made the extracts from the logs, informs me that he selected the most westerly crossings in order to show its worst side. The logs of vessels that crossed east of 30° are, for illustration, by no means as instructive as those which have been selected, on account of their western crossings. These present the very cases in which navigators, who write daily in their journal as they feel, are most apt to complain; and yet how often does the morrow show the fears and complaints of to-day to have been groundless.

Ship Winged Arrow, (F. Bearse, captain,) Boston to San Francisco; thirteen days out.

"Sept. 14, 1855. Lat. 28° 13′ N.; long. 34° 22′ W. Barometer, 30.04; temperature of air, 80°; water, 81°. Winds: E. by S., E. by S., E. by S. Fresh breezes and light showers of rain.

Sept. 15. Lat. 24° 23′ N.; long. 34° 04′ W. Barometer, 30.03; temperature of air, 78°; water, 81°. Winds: E., E., E. by S. Fresh breeze and squalls of rain.

Sept. 16. Lat. 20° 46′ N.; long. 33° 28′ W. Barometer, 30.03; temperature of air, 78°. Winds: E. by S., E., E. Fresh breezes; light squalls; thick, dark clouds ahead.

Sept. 17. Lat. 17° 09′ N.; long. 32° 45′ W. Barometer, 30.02; temperature of air, 79°. Winds: E. by S., E. by S., E. Fresh breeze and dark cloudy weather. No perceptible current.

Sept. 18. Lat. 13° 23′ N.; long. 32° 30′ W. Barometer, 30.01; temperature of air, 82°; water, 80°. Winds: E.NE., E. by N., E. by N. Fresh breezes and dark cloudy weather.

Sept. 19. Lat. 11° 07′ N.; long. 32° 10′ W. Barometer, 30.01; temperature of air, 82°; water, 80°. Winds: E.NE., SE., S.SE. First part, fresh; at 2 p. m. came on very hard rain, and wind veering SE.; middle and latter, light breezes and squalls; ran north to take the south monsoons.

Sept. 20. Lat. 10° 19′ N.; long. 30° 43′ W. Barometer, 30.01; temperature of air, 84°; water, 81°. Winds: S., S., NW. First part, fresh; at 4 p. m. tacked ship to E.SE., wind veering south; two hours rain; the remainder clear; turbulent sea.

Sept. 21. Lat. 8° 56′ N.; long. 30° 10′ W. Barometer, 30.01; temperature of air, 84°; water, 81°. Winds: N.NW., N., N.NW. Moderate breezes; a sharp head sea from south; slow progress.

Sept. 22. Lat. 7° 48′ N.; long. 29° 03′ W. Barometer, 30.01; temperature of air, 85°; water, 81°. Winds: NW., SW., S.SW.; at 8 p. m. wind changed to south in a light squall; still a head sea.

Sept. 23. Lat. 7° 30′ N.; long. 28° 50′ W. Barometer, 30.01; temperature of air, 86°; water, 81°. Wind: S., S. by W., calm. Light breezes and calms; showers of rain.

Sept. 24. Lat. 7° 05′ N.; long. 29° 00′ W. Barometer, 30.01; temperature of air, 86°; water, 81°. Winds: calm, S., variable. Light variable breezes, with rain; head sea.

Sept. 25. Lat. 6° 31′ N.; long. 28° 50′ W. Barometer, 30.01; temperature of air, 86°. Winds: variable, variable, variable. Light airs; squalls and rainy weather.

Sept. 26. Lat. 5° 36′ N.; long. 29° 57′ W. Barometer, 30.01; temperature of air, 85°. Winds: S., variable, S. First and middle, variable and squally; latter, more settled; tacking occasionally.

Sept. 27. Lat. 3° 36′ N.; long. 31° 57′ W. Barometer, 30.01; temperature of air, 86°; water, 81°. Winds: S., S., S. Moderate breeze, and clear, pleasant weather.

Sept. 28. Lat. 1° 22′ N.; long. 34° 03′ W. Barometer, 30.01; temperature of air, 85°. Winds: S., S.SE., S.SE. Moderate breezes and pleasant weather. The ship is well to the west, but shall stand on, unless a slant happens, and beat up the land.

Sept. 29. Lat. 0° 46′ S.; long. 34° 45′ W. Barometer, 30.01; temperature of air, 85°. Winds: S.SE., SE. by S., SE. First and middle parts, light breezes; latter part, fresh; stood two hours eastward; at 4 a. m. ship on the equator in 34° 40′ W.; in all probability shall fetch to leeward of St. Roque. I do not fear the consequences.

Sept. 30. Lat. 3° 40′ S.; long. 35° 11′ W. Barometer, 30.01; temperature of air, 84°. Current, 16 miles, W. Winds: SE. by E., E.SE., E.SE. Fresh breeze and clear weather. Close hauled.

Oct. 1. Lat. 5° 06′ S.; long. 35° 25′ W. Barometer, 30.01; temperature of air is from "attached" thermometer. Winds: SE. by E., SE., SE. by E. Current, 15 miles, W.NW.

Fresh gales. At 5 p. m. tacked to the eastward; at midnight tacked south; at meridian saw the land, St. Roque, 7 miles, and tacked off; very sharp head beat sea.

Oct. 2. Lat. 5° 37′ S.; long. 35° 00′ W. Barometer, 30.01. Current, 12 miles, W.NW. Winds: S.SE., S.SE., S.SE. Commences with fresh gales; wind veered to S.SE.; at 2 a. m. tacked in shore; at meridian tacked off; land in sight."

Thus he cleared the "bug-bear." Suppose, on the 28th, he had gone about; the chances are he would have been beating there for several days; whereas, by standing on, he stood his chances, and finally beat no more than was necessary to enable him to clear the land.

Ship Defender, (Captain Beauchamp,) Boston to San Francisco; twelve days out.

"Sept. 15, 1855. Lat. 28° 02′ N.; long. 40° 10′ W. Barometer, 30.40; temperature of air, 78°; water, 78°. Winds: SE., E.SE., E. Commences, light breezes; middle and latter, good breezes and pleasant weather, the weather looks very much like the trades.

Sept. 16. Lat. 24° 28′ N.; long. 39° 49′ W. Barometer, 30.35; temperature of air, 78°; water, 78°. Winds: E. by S., E.SE., E.SE. Good whole-sail breeze throughout. First and latter parts, pleasant; middle, squally.

Sept. 17. Lat. 21° 13′ N.; long. 39° 29′ W. Barometer, 30.30; temperature of air, 78°; water, 78°. Winds: E.SE., E.SE., E.SE. Whole-sail breeze; first and latter parts, pleasant; middle part, squally.

Sept. 18. Lat. 17° 40′ N.; long. 38° 58′ W. Barometer, 30.28; temperature of air, 79°; water, 78°. Winds: E.SE., E.SE., E.SE. Whole-sail breeze and pleasant, saw tide rips.

Sept. 19. Lat. 14° 17′ N.; long. 37° 05′ W. Barometer, 30.10; temperature of air, 79°; water, 80°. Winds: E.SE., E., E.NE. Commences, moderate breezes and pleasant; middle and latter, fresh breezes and squally with rain, strong tide rips.

Sept. 20. No observation. Barometer, 30.10; temperature of air, 77°; water, 79°. Winds: E.NE., E.NE., SE. Commences, fresh breezes and squally; middle and latter parts, light breezes and light squalls with heavy rain; strong tide rips.

Sept. 21. Lat. 11° 48′ N.; long. 37° 09′ W. Barometer, 30.07; temperature of air, 80°; water, 80°. Winds: calm, calm, E. Light airs and calms; latter part, light breeze and pleasant, strong tide rips, experienced some NW. current the last two days.

Sept. 22. Lat. 11° 32′ N.; long. 36° 45′ W. Barometer, 30.05; temperature of air, 78°; water, 80°. Current, NW., 1 mile. Winds: E., NW., NW. Light baffling winds and squalls. From 2 to 4 p. m. heavy rain, quite a heavy swell for the last three days.

Sept. 23. Lat. 10° 53′ N.; long. 35° 39′ W. Barometer, 30.05; temperature of air, 81°; water, 82°. Winds: N., NE., calm. Light baffling winds and pleasant, strong tide rips, felt but little current, if any.

Sept. 24. Lat. 10° 46′ N.; long. 35° 19′ W. Barometer, 30.05; temperature of air, 82°; water, 82°. Winds: calm, calm, E. Light breezes and calms. No current, but strong tide rips.

Sept. 25. Lat. 10° 37′ N.; long. 35° 09′ W. Barometer, 30.10; temperature of air, 82°; water, 82°. Winds: calm, calm, calm. This day calm.

Sept. 26. Lat. 10° 12′ N.; long. 35° 06′ W. Barometer, 30.15; temperature of air, 82°: water, 82°. Current, ½ knot, NW. Winds: E., calm, E.SE. Light baffling winds and pleasant; strong tide rips.

Sept. 27. No observation. Barometer, 30.10; temperature of air, 82°; water, 82°. Winds; E.NE. and calm, S.SW., NE. Commences, light airs from E., at 2 p. m. a squall from E.NE., with a good breeze for two hours; middle and latter, squally with rain and lightning.

Sept. 28. Lat. 9° 18′ N.; long. 33° 21′ W. Barometer, 30.10; temperature of air, 84°; water, 83°. Winds: SW., SW., W. Light variable winds and squally.

Sept. 29. Lat. 8° 44′ N.; long. 32° 08′ W. Barometer, 30.10; temperature of air, 86°; water, 84°. Winds: SW., variable, S.SW. Pleasant weather. First part, moderate breeze; middle and latter, light airs.

Sept. 30. Lat. 8° 56′ N.; long. 30° 44′ W. Barometer, 30.10; temperature of air, 84°; water, 84°. Current, 1 knot, NE. Winds: S., variable, variable. First part, light breezes and pleasant; middle and latter parts, light airs and squally. I would get south if I could, but we have had so little wind for ten days that I have not been able to get anywhere.

Oct. 1. Lat. 8° 15′ N.; long. 30° 44′ W. Barometer, 30.10; temperature of air, 83°; water, 82°. Winds: calm, calm, E.SE. Calms and light airs, with heavy swell from all directions.

Oct. 2. Lat. 6° 29′ N.; long. 30° 16′ W. Barometer, 30.10; temperature of air, 83°; water, 83°. Winds: E.SE., E.SE., E. Light breezes and pleasant.

Oct. 3. Lat. 5° 20′ N.; long. 30° 30′ W. Barometer, 30.00; temperature of air, 84°; water, 83°. Winds: SE., SE., S. Commences, moderate breezes and pleasant; middle and latter, light breeze and squally with thunder and lightning.

Oct. 4. Lat. 5° 00′ N.; long. 30° 00′ W. Barometer, 30.05; temperature of air, 84°; water, 82°. Winds: S., S. by E., S.SE. First and middle, moderate and squally; latter, pleasant with good breezes.

Oct. 5. Lat. 2° 40′ N.; long. 31° 08′ W. Barometer, 30.10; temperature of air, 82°; water, 82°. Winds: S.SE., S.SE., SE. by S. Moderate breezes and pleasant weather; quite a heavy swell from the south, some lightning in the north through the night.

Oct. 6. Lat. 0° 17′ N.; long. 32° 40′ W. Barometer, 30.10; temperature of air, 82°; water, 81°. Winds: SE. by S., SE. by S., SE. Moderate and pleasant. Out 35 days, and well to the westward; but as we have a breeze, we can get along some. In looking over my book of directions, I cannot find a ship that has had as tedious a time, after leaving the NE. trades, as I have had. When we had any wind it was generally in our favor, and when I could not make easting, I stood SW., which has caused me to cross the line so far west. [That was right.]

Oct. 7. Lat. 2° 35′ S.; long. 33° 40′ W. Barometer, 30.10.; temperature of air, 80°; water, 80°. Current, ½ knot, W. Winds: SE., SE., SE. Moderate breezes and pleasant.

Oct. 8. Lat. 5° 31′ S.; long. 34° 24′ W. Barometer, 30.10; temperature of air, 80°; water, 80°. Winds: SE., SE., SE. Moderate breezes and pleasant. No current."

Ship Flying Fish, (G. W. Adams, captain) Boston to San Francisco; twelve days out.

"Sept. 24, 1855. Lat. 29° 55′ N.; long. 37° 53′ W. Barometer, 30.30; temperature of air, 78°. Winds: variable, variable, SE. by S. First part, light airs from S.SE.; at midnight, squalls from NW. Ends pleasant. No tide rips, no gulf-weed.

Sept. 25. Lat. 26° 34′ N.; long. 38° 22′ W. Barometer, 30.25; temperature of air, 82°. Winds: SE. by E., S.SE., E.SE. Commences light breezes; at midnight, light squalls; ends, brisk breezes and pleasant.

Sept. 26. Lat. 23° 22′ N.; long. 37° 26′ W. Barometer, 30.10; temperature of air, 87°. Winds: SE. by S., SE. by S., E.SE. Commences brisk breezes. Latter part, very pleasant. Throughout, a swell from S.SE.

Sept. 27. Lat. 20° 00′ N.; long. 36° 17′ W. Barometer, 30.10; temperature of air, 78°. Winds: E. by S., E, by S., E. by S. First part, fine breezes and pleasant weather. Ends the same. No gulf-weed.

Sept. 28. Lat. 16° 43′ N.; long. 34° 11′ W. Barometer, 30.05; temperature of air, 79°. Winds: E. by S., E. by S., E. by S. Commences brisk breezes and pleasant; through the night the same; ends pleasant.

Sept. 29. Lat. 13° 24′ N.; long. 31° 56′ W. Barometer, 30.00; temperature of air, 81°. Winds, E. ½ S., E., E. by S. First part, strong breezes and pleasant; latter part, wind light and pleasant. Swell from south.

Sept. 30. Lat. 12° 12′ N.; long. 31° 49′ W. Barometer, 30.00; temperature of air, 85°. Winds: E., E.SE., SE. Commences light airs. Through the night, light airs. Swell from the north; tide rips; now and then smooth water; every indication of strong current, but none perceptible by experience. [I wish navigators who meet with these tide rips and have an opportunity, would try the currents in them from a boat.]

Oct. 1. Lat. 10° 38′ N.; long. 31° 37′ W. Barometer, 30.00; temperature of air, 83°. Winds, SE., SE. by E., SE. by E. Commences, light airs; middle, light breezes and rain squalls; latter, pleasant. Plenty of tide rips; swell from south; no perceptible current by observation.

Oct. 2. Lat. 7° 51′ N.; long. 30° 51′ W. Barometer, 29.95; temperature of air, 82°. Winds: SE., SE. by S., E. Commences, gentle breezes and pleasant; middle, steady breezes; ends, brisk breezes, and passing clouds. Tide rips less frequent than yesterday.

Oct. 3. Lat. 5° 45′ N.; long. 30° 35′ W. Barometer, 29.95; temperature of air, 83°. Winds: E., SE. and calm, SE. and calm. Commences, brisk breezes and fine weather. At midnight, light rain squalls from SE. At 2 a. m., calm. Latter part, squally appearances all around the compass; ends the same. No tide rips.

Oct. 4. Lat. 4° 46′ N.; long. 31° 29′ W. Barometer, 29.90; temperature of air, 80°. Winds: SE., E.SE. to S.SE., E.SE. to S.SE. Commences with light airs and squally. Through the night, very squally, and much rain and lightning; latter part the same. No tide rips.

Oct. 5. Lat. 4° 46′ N.; long. 30° 09′ W. Barometer, 30.00; temperature of air, 79°. Winds: S.SE., S.SE., SE. by S. First part, strong breezes and very squally, with light rain; middle, brisk breezes and cloudy; ends the same. No tide rips. Current, ½ mile, W.NW.

Oct. 6. Lat. 3° 24′ N.; long. 30° 20′ W. Barometer, 30.00; temperature of air, 84°. Winds: SE. by S., SE. by S., SE. by S. Fine weather throughout. Wind very steady and weather pleasant. No current that we can perceive by observation.

Oct. 7. Lat. 0° 30′ N.; long. 31° 21′ W. Barometer, 30.00; temperature of air, 80°. Winds: SE. to SE. by S., SE. to SE. by S., SE. to SE. by S. First part, light breezes and very pleasant. Same throughout. Experienced no current by the observations.

Oct. 8. Lat. 2° 25′ S.; long. 31° 56′ W. Barometer, 30.00; temperature of air, 80°. Winds: SE. to SE. by E., SE. to SE. by S., SE. to SE. by S. First part, fine breezes; middle and latter the same. At 5 p. m. crossed the equator in long. 31° 28′ W., 25 days, 2 hours from Boston light. No current.

Oct. 9. Lat. 4° 00′ S.; long. 31° 59′ W. Barometer, 30.05; temperature of air, 81°. Winds: SE. to SE. by E., SE. to SE. by E., SE. to SE. by E. First part, light breezes and very pleasant; middle, strong breeze; latter, more moderate.

Oct. 10. Lat. 6° 38′ S.; long. 33° 23′ W. Barometer, 30.00; temperature of air, 79°. Winds: SE., SE. by S., variable. First part, brisk breezes. At 1 p. m., made Fernando de Noronha, bearing NW. by W., 27 miles distant. At 1 a. m., squalls of rain. Ends, wind from SE. and S.SE."

Ship Flying Dutchman, (A. Hubbard, captain,) New York to Port Philip, New South Wales; four days out.

"Sept. 20, 1854. Lat. 29° 00′ N.; long. 59° 00′ W. Barometer, 30.18; temperature of air, 81°; water, 82°. Winds: E. by S., E. by S., E. by S. Moderate winds and hazy sky. Lightning from E., round by S. to SW. At 4 a. m., light rain squalls; wind dying away. Ends with light winds and fine weather.

Sept. 21. Lat. 28° 55′ N.; long. 58° 35′ W. Barometer, 30.22; temperature of air, 85°; water, 84°. Winds: SE. by E. to W.SW., W., W. Light airs and fine; 3.30 p. m., wind hauled to W.SW.

Sept. 22. Lat. 28° 53′ N.; long. 58° 22′ W. Barometer, 30.23; temperature of air, 90°; water, 84°. Winds: W., calm, calm. Light variable airs and calms.

Sept. 23. Lat. 28° 28′ N.; long. 56° 04′ W. Barometer, 30.02; temperature of air, 87°; water, 84°. Winds: SW., S.SW., S.SW. Light airs and calm. At 2 a. m. breeze up. Latter moderate and pleasant. Notwithstanding every appearance of our being in the "Horse latitudes," and Mr. Maury's recommendation to make all southing possible, I decide to make mostly easting. [Sailors have an old saying which recommends those who understand the case better than the Doctor, to take charge of the medicine chest. I am very willing to give it to such men as Captain Hubbard, with this understanding, however, that if things should not turn out well, the blame shall not be laid upon my prescriptions. M.]

Sept. 24. Lat. 27° 55′ N.; long. 53° 44′ W. Barometer, 29.99; temperature of air, 87°; water, 83°. Winds: SW., W.NW., S, At 4 p. m. light rain squalls. A sea rising from the N. and W. Middle, light variable winds with rain squalls; latter, light winds with squally appearances in the west. A high long sea from north.

Sept. 25. Lat. 28° 00′ N.; long. 51° 30′ W. Barometer, 30.10; temperature of air, 87°; water, 83°. Winds: S., S.SE., S.SE. Light winds and fine weather; middle, the same; a heavy sea still from north; latter, the same. Northerly sea subsiding somewhat. A line of light, fleecy, trade-wind looking clouds entirely around the horizon to a height of 10°.

Sept. 26. Lat. 27° 23′ N.; long. 50° 03′ W. Barometer, 30.13; temperature of air, 87°; water, 84°. Winds: S., S. by W., S.SW. Light variable winds with occasional rain squalls throughout: I have noticed for the past few days, (as I have often before in the same kind of light weather,) a visible disturbance in the atmosphere, corresponding with the daily fluctuation of the barometer*—such as squalls, a freshening of the breeze, or a breeze springing up near those hours at which the barometer is the lowest.

Sept. 27. Lat. 27° 04′ N.; long. 49° 25′ W. Barometer, 30.13; temperature of air, 85°; water, 83°. Winds: S.SW., calm, E. Light airs and calm. At 5 a. m. took a breeze from E.NE.

Sept. 28. Lat. 25° 41′ N.; long. 49° 34′ W. Barometer, 30.16; temperature of air, 85°; water, 82°. Winds: E. by S., E. by S., SE. Light winds and variable with cloudy weather; middle, light and unsteady, with occasional rain squalls; latter, moderate and unsteady with frequent squalls.

Sept. 29. Lat. 24° 54′ N.; long. 49° 26′ W. Barometer, 30.15; temperature of air,—; water, 83°. Winds: SE. by E., SE., same. Light variable winds with frequent rain squalls throughout.

Sept. 30. Lat. 23° 56′ N.; long. 49° 30′ W. Barometer, 30.10; temperature of air, 88°;

* I hope you will project daily your barometric curves. See plate XIX, Vol. 1.

water, 84°. Winds: calm, E. by N., SE. by E. Light variable winds, with frequent rain squalls.

Oct. 1. Lat. 22° 48′ N.; long. 49° 18′ W. Barometer, 30.04; temperature of air, 77 ; water, 82°. Winds: E.SE., E.SE., SE. Light winds and variable with fine weather. Middle and latter, squally and calms.

Oct. 2. Lat. 23° 06′ N.; long. 48° 38′ W. Barometer, 30.08; temperature of air, 86°; water, 83°. Winds: variable, variable, SE. First and middle, frequent squalls from SE. to SW., with rain; latter, light winds with fine weather.

Oct. 3. Lat. 20° 59′ N.; long. 47° 52′ W. Barometer, 30.09; temperature of air, 82°; water, 82°. Winds: E. by S., E. by S., SE. Light winds and variable, with occasional squalls; middle, the same; latter, fresh breezes and squally.

Oct. 4. Lat. 18° 10′ N.; long. 46° 24′ W. Barometer, 29.98; temperature of air, 82°; water, 81°. Winds: E., E., E. Fresh breezes and squally; latter, fresh breezes and fine weather.

Oct. 5. Lat. 15° 40′ N.; long. 44° 41′ W. Barometer, 29.95; temperature of air, 78°; water, 80°. Winds: E. by N., E. by N., E. Fresh breezes and passing clouds; trade-like weather; middle, fresh and cloudy; latter, unsteady breezes with frequent showers. At 11. a. m. wind shifted south; wore ship; doldrum looking weather.

Oct. 6. Lat. 15° 16′ N.; long. 44° 08′ W. Barometer, 29.94; temperature of air, 80°; water, 80°. Winds: S., calm, E.SE. Moderate winds, and unsteady with cloudy weather and frequent showers; middle, cloudy and calm; latter, cloudy and light winds.

Oct. 7. Lat. 13° 20′ N.; long. 43° 27′ W. Barometer, 29.89; temperature of air, 84°; water, 82°. No current. Winds: E., E., E. Light variable winds, and squally, and calms throughout, with continual current ripplings.

Oct. 8. Lat. 12° 19′ N.; long. 43° 03′ W. Barometer, 29.92; temperature of air, 85°; water, 83°. Winds: E.SE., E.SE., E.NE. Light variable winds and calm. Current rips throughout; no current perceptible.

Oct. 9. Lat. 11 58′ N.; long. 42° 36′ W. Barometer, 29.96; temperature of air, 86°; water, 83°. Winds: E.SE., SE., S. by W. Light airs, and fine; middle, light airs and calm; At 1. a. m. wind shifted to S. by W., in a squall; latter, variable winds with light rain squalls.

Oct. 10. Lat. 11° 28′ N.; long. 41° 56′ W. Barometer, 29.99; temperature of air, 88°; water, 84°. Winds: calm, calm, calm. Light variable airs and calms; a sea from SE.; a succession of current rips throughout; line of direction, W.SW., and E.NE.

Oct. 11. Lat. 10° 45′ N.; long. 40° 48′ W. Barometer, 29.97; temperature of air, 78°; water, 83°. Winds: calm, calm, E. by N. First and middle parts, light airs all around the compass; latter, heavy squalls and much rain.

Oct. 12. Lat. 8° 55′ N.; long. 40° 52′ W. Barometer, 29.99; temperature of air, 85°; water, 83°. Winds: E. by S., S.SE., SE. by E. Strong breezes, with frequent heavy squalls; middle, moderate winds, with a high irregular sea; latter, fresh breezes and fine. I notice for the last two days, the lines of agitated water appear all to run nearly E.NE and W.SW,, and follow each other at regular intervals of some 4 or 5 miles apart; the motion of the waves running at right angles to the line of rip.

Oct. 13. Lat. 7° 00′ N.; long. 40° 15′ W. Barometer, 29.93; temperature of air, 78°; water, 84°. Winds: E. by S., E.SE., SE. Fresh breezes and unsteady, with frequent squalls middle, unsteady and squally; latter, variable and calm.

Oct. 14. Lat. 6° 46′ N.; long. 39° 04′ W. Barometer, 29.92; temperature of air, 82°;

water 84°. Current, east, 1 knot. Winds: SW., S.SW., S. by W. Light variable winds and calms throughout; no rips in sight the past 24 hours; whales, shark, bonita, albacon, and other fish abounding.

Oct. 15. Lat. 6° 50′ N.; long. 37° 26′ W. Barometer, 29.93; temperature of air, 86°; water, 84°. Current, east, 1½ knots. Winds: S., SE., SE. Light variable airs and calm; latter, light winds and fine weather. One year ago last July, I experienced a similar current in the same latitude, but some 10° further east.

Oct. 16. Lat. 6° 49′ N.; long. 36° 25′ W. Barometer, 29.93; temperature of air, 84°; water, 84°. Current, east, 1¼ knots. Winds: S. by E., calm, calm. Light airs and calms throughout.

Oct. 17. Lat. 6° 29′ N.; long. 35° 18′ W. Barometer, 29.94; temperature of air, 88°; water, 85°. Current, S. 79° E., 2 knots. Winds: S.SE., calm, calm. Light variable winds and squally; calm; middle, light airs and calm; latter, the same.

Oct. 18. Lat. 5° 59′ N.; long. 34° 19′ W. Barometer, 29.92; temperature of air, 86°; water, 85°. Current, east, northerly, 1½ knots. Winds: calm, NW., S. Light airs and calm; middle, light winds and variable, with frequent squalls; latter, light winds and calm; a sea from S.SE.

Oct. 19. Lat. 5° 43′ N.; long. 33° 33′ W. Barometer, 29.92; temperature of air, 87°; water, 84°. Current, east, southerly, 1½ knots. Winds: calm, calm, calm. Light variable airs and calms throughout. I notice slight current rips.

Oct. 20. Lat. 5° 25′ N.; long. 32° 12′ W. Barometer, 29.93; temperature of air, 83°; water, 82°. No current perceptible. Winds: S., calm, S. by E. Light variable winds and calm; middle, calm; at 2.30 a. m. took breeze in a squall with light rain; latter, fresh breezes and cloudy; current rips, not so marked, however, as on the 10th and 12th.

Oct. 21. Lat. 5° 40′ N.; long. 28° 38′ W. Barometer, 29.96; temperature of air, 84°; water, 82°. Winds: S., S., S.SE. Fresh breezes and cloudy. Not obtaining my latitude yesterday, by observation, I find that we must have had a northerly current of — miles, during the last 24 hours.

Oct. 22. Lat. 4° 52′ N.; long. 29° 13′ W. Barometer, 29.95; temperature of air, 87°; of water, 82°. Current, W., ½ knot. Winds: S., S. by E., S. by E. Moderate winds and cloudy. Middle, light winds and unsteady, with passing clouds and fine weather; the commencement of a trade of some kind I hope. Ends, fine.

Oct. 23. Lat. 2° 57′ N.; long. 30° 46′ W. Barometer, 29.94; temperature of air, 85°; of water, 80°. Current, N. 64° W., 1$\frac{2}{10}$ knots. Winds: S. by E., SE. by S., SE. by S. Light winds and fine; slight appearance of current rips; middle, the same; latter, moderate winds and fine trade-like weather.

Oct. 24. Lat. 1° 13′ N.; long. 31° 43′ W. Barometer, 29.97; temperature of air, 83°; of water, 79°. Current, NW., 1 knot. Winds: S.SE., S.SE., S.SE. Moderate, with passing clouds and fine weather. At 7.30 a. m. tacked to eastward.

Oct. 25. Lat. 1° 17′ N.; long. 29° 44′ W. Barometer, 29.99; temperature of air, 83°; of water, 80°. Current, N. 27° W., ½ knot. Winds: S.SE., S.SE., S.SE. Moderate winds and cloudy. Middle, fresh trades. At 7.30 a. m. tacked to S.SW., with a fine fresh trade.

Oct. 26. Lat. 1° 55′ S.; long. 31° 52′ W. Barometer, 30.00; temperature of air, 82°; of water, 79°. Current, N. 79° W., 1½ knot. Winds: S.SE., S.SW., SE. by S. Moderate winds and fine. Middle, fresh breezes and squally; latter, fresh breezes and passing clouds.

Forty-one days from New York; oh horror! and a first class clipper at that, with Maury's Charts on board. Our prospect of making the shortest passage to Australia ruined. [See remarks September 23. M.]

Oct. 27. Lat. 5° 39′ S.; long. 32° 49′ W. Barometer, 30.03; temperature of air, 83°; of water, 80°. Current, N. 10° W, $\frac{6}{10}$ knot. Winds: SE., SE., SE. by E. Fresh breezes and fine. At 1.30 a. m. made Noronha, bearing E. by S.; outline just seen with night glass. Weather beautiful."

Barque Havana, (English,) (John M. Stockton,) from St. John's, N. F.; 17 days out.

"Oct. 3, 1855. Lat 30° 10′ N.; long. 27° 08′ W. Barometer, 30.03; temperature of air, 79°; of water, 78°. Wind: S.SW. to S.SE. Begins with squalls of rain and fresh breeze. At 6 a. m. begins heavy rain and light winds and continue to 11 a. m. At 2 p. m. it began an incessant heavy rain and continued with intermissions to 8 p. m., when the sky showed appearance of breaking away; continues fresh breeze.

Oct. 4. Lat. 29° 40′ N.; long. 34° 00′ W. Barometer, 30.10; temperature of air, 80°; of water, 78°. Wind: SW. Light winds and force as entered throughout; for the most part the sky looking dirty grey; midnight had an increasing swell from the NE.; several porpoises seen; no weed.

Oct. 5. Lat. 28° 30′ N.; long. 32° 38′ W. Barometer, 30.05. Wind: W.SW. Light variable winds as noted; water exceedingly smooth; an increasing light swell from the NE., no weed seen; scarcely steerage way on the ship at midnight. An American barque in company, bound south; suppose it to be one of the two we saw on the 3d instant.

Oct. 6. Lat. 27° 29′ N.; long. 31° 38′ W. Barometer, 29.95; temperature of air, 83°; of water, 79°. Winds: W.SW. Light airs and baffling; water exceedingly smooth; a swell still from the NE. Judging from the barometer, I fancy we are bordering close on the trades; no weed seen; barque still in company.

Oct. 7. Lat. 26° 58′ N.; long. 31° 07′ W. Barometer, 29.93; temperature of air, 79°; of water, 78°. Wind: S.SW. to S. Light winds in the last and first parts. Middle, increasing fresh breeze; from 9 a. m. to 3 p. m. passing squalls; at 2 p. m. tacked west, the wind having hauled in a squall; at 4 p. m. tacked east again. Ends, at midnight a pleasant breeze and fine weather.

Oct. 8. Lat. 26° 02′ N.; long. 29° 23′ W. Barometer, 29.97; temperature of air, 77°; of water, 79°. Wind: SW. to S.SW. Fresh breeze and fine pleasant weather throughout; no weed. I now see my mistake I alluded to in standing to the north and east on the 26th September. Had I kept to the southward and westward I should in all probability have been in the belt of equatorial calms.

Oct. 9. Lat. 24° 27′ N.; long. 28° 02′ W. Barometer, 29.98; temperature of air, 78°; of water, 77°. Wind: SW. by W. Light winds, airs, and calms throughout; northerly swell; several dolphins seen; no weed.

Oct. 10. Lat. 24° 00′ N.; long. 28° 00′ W. Barometer, 29.98; temperature of air, 82°; of water, 78°. Calm. Calms and cats' paws from all points of compass; northerly swell; no weed; several dolphins about the ship.

Oct. 11. Lat. 23° 42′ N.; long. 28° 00′ W. Barometer, 30.00; temperature of air, 80°; of water, 79°. Wind: NW. to N.NE. Begins with light airs and baffling, with calms. At 8 a. m. light cats' paws from the NW.; at 10 a. m. increasing light breeze from the N.NE.

Noon, all stud set; fancy it is the first of the trades. Ends with an increasing light trade Entered tropic at 5.30 p. m. in longitude 28° W.

Oct. 12. Lat. 22° 23′ N.; long. 28° 02′ W. Barometer, 30.05; temperature of air, 80°; of water, 78°. Wind: E. by N. Pleasant, fine breeze throughout, and nearly cloudless sky; all studding sails to the best advantage; ship's course south, true; no weed; water very transparent.

Oct. 13. Lat. 19° 34′ N.; long. 28° 19′ W. Barometer, 30.00; temperatere of air, 80°; of water, 78°. Wind: E. Fresh breeze and pleasant fine weather throughout, and not a cloud to be seen until sunset; a hazy horizon throughout; fancy there are clouds in the haze, but not visible; no weed.

Oct. 14. Lat. 16° 34′ N.; long. 28° 21′ W. Barometer, 29.91; temperature of air, 83°; of water, 89°. Wind: E. by S. Pleasant and fine throughout. Midnight, very light winds; no weed; water very smooth; smoky haze on horizon.

Oct. 15. Lat. 14° 19′ N.; long. 28° 22′ W. Barometer, 29.92; temperature of air, 8°3; of water, 82°. Wind: E.SE. Pleasant light breeze throughout; continually passing tide rips; no weed; during the night the ship's wake was a blaze of illuminated globules.

Oct. 16. Lat. 12° 29′ N.; long. 28° 23′ W. Barometer, 29.90; temperatue of air, 86°; of water, 82°. Wind: E. by S. Pleasant, fine weather throughout; any quantity of tide rips seen during the day; no weed.

Oct. 17. Lat. 10° 40′ N.; long. 28° 23′ W. Barometer, 29.90; temperature of air, 85°; of water, 82°. Wind: E. by S. Begins with fine and continues pleasant; steady breeze up to 5 p. m., when it arose squally and baffling from all points of the compass, attended with thunder and lightning and rain; a westerly and easterly wind, stormy for the ascendancy. At 10 p. m. the wind gradually settled in the eastward again. Ends, showery and smoky looking clouds; at 3 p. m. spoke the ship "Isia," from Chincha; reports took the NE. trades in 3° N., showed longitude, 29° 40′. At 4 p. m. exchanged longitude with a French brig, showed 28° 30′, ours 28° 23′ W., by chronometer; no weed. [N. B.—I think the captain of the "Isia" intended to say lost the SE. trade in 3° N., instead of taking the NE. trades in that latitude, or misunderstood the question as to where he took the NE. trades.]

Oct. 18. Lat. 8° 43′ N.; long. 28° 20′ W. Barometer, 29.87; temperature of air, 84°; of water, 82°. Wind: E.SE. Variable wind as entered, with thunder, lightning and rain during the night, and clouds appear to rise in all points

Oct. 19. Lat 7° 58′ N.; long. 28° 40′ W. Barometer, 29.90; temperature of air, 88°; of water, 84°. Wind: variable. Light variable airs, calms, and squalls of light misty, heavy, and light rain, having little or no wind in them; during the night continual flashes of lightning; cross bubbles of seas; no weed.

Oct. 20. Lat. 7° 13′ N.; long. 29° 00′ W. Barometer, 29.87; temperature of air, 77°; of water, 82°. Wind: E.SE. to S. Light baffling airs with misty squalls of rain throughout, and generally during the night a heavy shower of rain. Ends with an increasing cross swell from the S. and NE. A barque in company; think it to be one of two in company on the 3d instant.

Oct. 21. Lat. 6° 42′ N.; long. 27° 32′ W. Barometer, 29.89; temperature of air, 86°; of water, 83°. Wind: SW. by S. Misty and heavy rain squalls during the night; for the most part of the day pleasant and fine with light variable airs. Noon, a large shoal of dolphin round the ship, caught about 10 of them, weighing from 12 to 33 pounds each, perhaps there

are 50 in the shoal, and several young sharks ; took two of the latter also, weighing about 15 lbs. each. Strong tide rips setting southward and eastward ; southerly swell.

Oct. 22. Lat. 5° 35′ N.; long. 27° 20′ W. Barometer, 29.90 ; temperature of air, 83°; of water, 82°. Wind: W.SW. to W. Light variable airs and high winds in squalls from midnight till 8 p. m., when the winds increased to a pleasant light breeze, and assumed the appearance of the SE. trades ; increasing southerly swell ; no weed.

Oct. 23. (37 days out from St. John's, New Foundland.) Lat. 4° 53′ N.; long. 26° 17′ W. Barometer, 29.90 ; temperature of air, 83°; of water, 82°. Wind : S. by E. Pleasant SE. trades as noted; took them in 5° N. and longitude eastward of 26°. At 4 a. m. tacked west; wind S. by E. I am much, and I may say happily, disappointed in finding a strong southerly and easterly current instead of a westerly, so much spoken of in these latitudes. These currents are frequent, and careful observations by the chronometer and ship's way, and are to be relied upon. I send you the sights and calculations.

Oct. 24. Lat. 3° 12′ N.; long. 27° 59′ W. Barometer, 29.90 ; temperature of air, 82°, of water, 81°. Wind : S. by E. Fine and pleasant throughout, with a light breeze ; water smooth ; high swell from the southward. At midnight the wind was quite faint, and at daylight freshened again. At 8 a. m. a large American clipper ship passed us bound south, name unknown to us ; was on the same tack as we were.

[N. B.—*November* 6 1855. I have no doubt this ship, being a clipper, cleared St. Roque without making a tack. I fancy you will be in possession of her log, and if *worth the trouble*, you can know the truth of this remark.]

Oct. 25. Lat. 2° 30′ N.; long. 29° 20′ W. Barometer, 29.89; temperature of air, 83°; of water, 81½°. Wind: S. Light wind throughout, with pleasant, fair weather; no weed; light set to NW.; the wind veering from S. by E. to S. during the most of the time; southerly swell.

Oct. 26. Lat. 2° 07′ N.; long. 30° 36′ W. Barometer, 29.93; temperature of air, 82°; of water, 81°. Wind: SE. to E.SE. Begins light; at 8 a. m. wind began to veer easterly; noon, wind E.SE.; at 8 p. m. increasing fresh; midnight, ends fresh and fine weather; NW. currents as noted. These currents are by the ship's way and several observations of the chronometer. Southerly swell continues.

Oct. 27. Lat. 0° 47′ N.; long. 30° 52′ W. Barometer, 29.90; temperature of air, 81°; of water, 80°. Wind: SE. by E. Fresh trades and fine throughout; crossed the line at midnight in 31° 32′ W., 44 days. I must refer again to the mistake of 24th September. Had I tacked to the southward and westward that day, I believe my passage would have been at least 8 or 10 days less. You will notice the trouble in getting south again. I have, as I before expressed, (and every intelligent navigator must,) every confidence in your book of Directions and Charts. My last passage to the line, under your direction, 27 days in February.

Oct. 28. Lat. 0° 53′ S.; long. 31° 55′ W. Barometer, 29.92; temperature of air, 82°: of water, 80°. Wind: SE. by S. Fresh trades and fine throughout.

Oct. 29. Lat. 2° 46′ S.; long. 33° 16′ W. Barometer, 29.90; temperature of air, 80°; of water, 79½°. Wind: S.SE. to SE. by S. Strong trades and fine; no weed; passing in the night large and fine pieces medusæ; currents as noted; the winds are very steady, veering little more than half point. I doubt if I clear St. Roque; but I shall keep on, unless the wind hauls a point or more to the southward. I may go clear; and, if not, my chances are as good for beating near the land as here.

Oct. 30. Lat. 4° 38′ S.; long. 35° 07′ W. Barometer, 29.92; temperature of air, 81°; of water, 79°.05. Wind: SE. by S. Strong trades and fair; at 3.30 p. m. saw the land; tacked at 5 p. m. in 7½ fathoms; Point "Lorio" or "Calcanhar" S.SE., 6 or 8 miles; saw several catamarans; midnight, tacked in; at 4 a. m. tacked off, and at 8 a. m. tacked in again. I notice the wind as we draw in shore veers a point or more eastward, and hauls again in the offing.

Oct. 31. Lat. 4° 55′ S.; long. 35° 08′ W. Barometer, 29.84; temperature of air, 82°; of water, 80°. Wind: SE. to SE. ½ S. Fresh trades; at 3 p. m. made the land and tacked; Point "Calcanhar" about the same distance and bearing, as yesterday. Not having made anything to windward, stood off; the wind steady at SE., and at 8 p. m. the wind having hauled ½ to ¾ east, tacked to the south again; quite a heavy sea, and, with the plunging of the ship, it requires — points to keep her good full at times.

Nov. 1. Lat. 4° 05′ S.; long. 34° 48′ W. Barometer, 29.88; temperature of air, 81°; of water, 79½°. Wind: SE. to SE. ½ E. Fresh trades; stood in the offing, and tacked as the wind would favor us with half point or any; but the chances are hard for beating; wind continues veering from SE. to ½ point on either side.

Nov. 2. Lat. 4° 46′ S.; long. 35° 04′ W. Barometer, 29.88; temperature of air, 81°; of water, 79½. Wind: SE. The currents in the offing have been, as you will notice, 8 miles more than in shore; consequently, there is nothing to be gained by keeping well off shore; 2 p. m. saw the land again; made several short tacks in shore, and gained a little; saw a brigantine working up within half a mile of shore; took her to be a coaster, as she came to anchor at dark. I believe the current close in shore is not so strong as it is a few miles from the land. We tacked in 3½ to 4 fathoms.

Nov. 3. Lat. 4° 16′ S.; long. 34° 17′ W. Barometer, 29.88; temperature of air, 82°; of water, 80°. Wind: SE. by S. ½ S. Fine pleasant weather and moderating breeze; stood off 6 p. m. Friday (2d) until Saturday (3d), 7½ p. m.; the wind having hauled SE., tacked south again. Since to the southward of the Roccas, we have had a fall of dew every night, say a medium quantity. The officer's report during the nights, for several past, shooting stars have descended from all points, and converged to the southward. The water here appears to be filled with medusæ, and of two species, fine and large; the fine is only visible by friction in the ship's wake, but the large are seen in large globular pieces in the distance, as well as near the ship, and the flashes are so vivid as to affect the sight.

Nov. 4. Lat. 5° 15′ S.; long. 34° 16′ W. Barometer, 29.86; temperature of air, 81°; of water, 80°. Wind: SE. by E.; moderate light trades and fine; happily disappointed in finding currents *only nineteen* miles. This would appear by the preceding days in this vicinity: the greater force the wind, the more current. (I should like to have the force and direction of the wind two degrees east.) Ends, smooth water.

Nov. 5. Lat. 7° 13′ S.; long. 30° 34′ W. Barometer, 29.90; temperature of air, 81°; of water, 80°. Wind: E.SE. Pleasant fine weather throughout. Sailing with the land in view, 15 or 18 miles distant; am now clear of St. Roque, with less detention than I anticipated. I think, as a general rule, a fair representation of the currents off St. Roque is the coast to the south of Cape Henry, in Virginia. You will notice there is no end to my blunders. I fear I shall be classed under the head of "dull captains and dull ships," (p. 528, 7th Ed.) You will readily notice that, on the 29th of October, I had the wind from SE. by S. to S.SE., and should have availed myself of a slant to the eastward of 12 or 16 hours; perhaps I should then have gone clear of St. Roque. I kept on with the anticipation I would fetch out. I think I was very

fortunate in getting through the monsoons. Every day's experience proves the *value* of your Book of Directions and Charts, and I beg to refer navigators to that part, from the line to St. Roque, in which you quote the Staghound as an illustration, and I must observe, my confidence and presumption is so great in that part of your directions, had you been sailing between St. Roque and the line from your infancy, your experience could not have improved your present instructions."

Ship Raven, (Josiah Crocker, captain,) Richmond, Va., to Sydney; thirteen days out.

"Oct. 10, 1855. Lat. 28° 38′ N.; long. 42° 51′ W. Barometer, 29.55; temperature of air, 80°; water, 78°. Winds: calm, SW., SW. First and middle, calm and light airs; latter, fresh gales and bad sea.

Oct. 11. Lat. 26° 30′ N.; long. 40° 13′ W. Barometer, 29.80; temperature of air, 80°; water, 78°. Current, E.NE., ½ mile. Winds: SW., S.SW., S.SW. First part, fresh gales and squally weather, with sharp lightning in the SE. and NE.; middle, very squally; latter, fine weather and smooth sea.

Oct. 12. No observation. Barometer, 30.00; temperature of air, 79°; water, 78°. Winds: S.SW., S., E.SE. First part, fine weather and passing clouds. Middle, very squally, with thunder and lightning; very hard rains; wind hauling to the southeast; at 6 a. m., tacked to the southwest; latter part, very heavy rain and bad lightning. Wind all around the compass.

Oct. 13. Lat. 24° 50′ N.; long. 37° 07′ W. Barometer, 30.00; temperature of air, 80°; water, 80°. Winds: calm, calm, calm. Calm throughout, and very hot weather.

Oct. 14. Lat. 24° 37′ N.; long. 39° 07′ W. Barometer, 30.00; temperature of air, 80; water, 78°. Winds: calm, calm, calm. Calm throughout.

Oct. 15. Lat. 23° 40′ N.; long. 36° 53′ W. Barometer, 29.90; temperature of air, 79°; water, 78°. Winds: S., S., S.. First part, very light airs and passing clouds; middle, the same; latter, fresh breezes and dark cloudy weather.

Oct. 16. Lat. 22° 34′ N.; long. 34° 40′ W. Barometer, 29.95; temperature of air, 79°; water, 77°. Current, E.NE., 1 mile. Winds: S.SW., S., S. Good breezes and cloudy weather.

Oct. 17. Lat. 21° 30′ N.; long. 35° 30′ W. Barometer, 29.90; temperature of air, 79°; water, 78°. Current, E.NE., 1 mile. Winds: S., S., S. First part, dark cloudy weather, and very light airs; at 5 p. m. tacked ship to W.SW. Middle and latter, the same.

Oct. 18. Lat. 19° 50′ N.; long. 35° 44′ W. Barometer, 29.90; temperature of air, 78°; water, 78°. Current, E.NE., ½ mile. Winds: S., SE., E.SE. First and middle, light airs and cloudy; latter, fine weather and smooth sea. I hope I have the trades, if they can be so called.

Oct. 19. Lat. 16° 30′ N.; long. 35° 11′ W. Barometer, 29.90; temperature of air, 79°; water, 78°. Current, SW., ½ mile. Winds: E., E., E. Fine breezes from east, and cloudy; smooth sea.

Oct. 20. Lat. 12° 40′ N.; long. 35° 00′ W. Barometer, 29.95; temperature of air, 80°; water, 80. Current, SW., ¼ mile. Winds: E.NE., E., NE. Fine trades and smooth sea.

Oct. 21. Lat. 9° 50′ N.; long. 34° 04′ W. Barometer, 29.80; temperature of air, 80°; water, 82°. Current, SW., ¼ mile. Winds: E.NE., E.NE., SE. First part, fine trades and

passing clouds; middle, light airs; latter, hard rain and calm; very squally in the south; dark heavy clouds and threatening appearances.

Oct. 22. Lat. 8° 25′ N.; long. 33° 25′ W. Barometer, 29.90; temperature of air, 80°; water, 82°. Current, SW., ¼ mile. Winds: E., E., E. First and middle, light airs and squally; latter, very squally with rain.

Oct. 23. Lat. 7° 07′ N.; long. 33° 12′ W. Barometer, 29.90; temperature of air, 82°; water, 81°. Current, NW., ½ mile. Winds: E., SE., S. Very squally, and wind hauling to the southward; tacked ship to the eastward.

Oct. 24. Lat. 7° 47′ N.; long. 30° 35′ W. Barometer, 29.90; temperature of air, 82°; water, 81°. Current, NW., 1 mile. Winds: S., S., S. First part, fresh gales and squally; middle, the same; latter, more moderate; tacked to the W.

Oct. 25. Lat. 7° 30′ N.; long. 32° 06′ W. Barometer, 29.90; temperature of air, 80°; water, 81°. Current, NW., 2 miles. Winds: S., S.SW., N. First part, light airs and fine weather; at midnight tacked to the SE.; middle, very light airs; latter, squally.

Oct. 26. Lat. 6° 20′ N.; long. 30° 11′ W. Barometer, 29.85; temperature of air, 80°; water, 81°. Current, NW., 1 mile. Winds: N., W., SW. First part, hard rain and light airs; middle and latter, very moderate, and fine weather.

Oct. 27. Lat. 6° 18′ N.; long. 29° 50′ W. Barometer, 29.90; temperature of air, 81°; water, 80°. Current, NE., 1 mile. Winds: calm, calm, calm. Calm and light airs throughout, with occasional light showers.

Oct. 28. Lat. 5° 24′ N.; long. 29° 50′ W. Barometer, 29.90; temperature of air, 81°; water, 81°. Current, NE., 1 mile. Winds: E.SE., SE., S. First part, light airs and very fine weather; heavy tide rips; middle, hard rain; latter, very squally. Hard chance getting to the line.

Oct. 29. Lat. 5° 10′ N.; long. 30° 00′ W. Barometer, 29.90; temperature of air, 80°; water, 81°. Current, NE., 1 mile. Winds: S., S., S. Light airs and squally, with calms throughout; tacked several times; bound to stick to the track.

Oct. 30. Lat. 4° 40′ N.; long. 30° 00′ W. Barometer, 29.90; temperature of air, 80°; water, 80°. Current, NE., 2 miles. Winds: S., S., S. First part, squally and bad weather; middle and latter, the same.

Oct. 31. Lat. 3° 57′ N.; long. 30° 37′ W. Barometer, 29.90; temperature of air, 81°; water, 80°. Current, NW., 1 mile. Winds: S.SE., S., S. First part, fine breezes; tacked to the eastward; middle, light airs; tacked to the SW.; latter part, light airs.

Nov. 1. Lat. 3° 15′ N.; long. 31° 20′ W. Barometer, 29.90; temperature of air, 80°; water, 80°. Current, NW., 2 miles. Winds: S., S., S. First part, light breezes and fine weather; at 1.30 p. m. tacked to the eastward, at 8 p. m. tacked to the SW.; middle, fine breezes and light showers of rain; latter, very light airs and squally.

Nov. 2. Lat. 2° 09′ N.; long. 32° 05′ W. Barometer, 29.90; temperature of air, 82°; water, 80°. Current, NW., 1½ miles. Winds: S., SE., S.SE. First part, fine weather; stood to the eastward 8 hours; middle, squally; latter, fine weather.

Nov. 3. Lat. 1° 30′ N.; long. 32° 20′ W. Barometer, 29.90; temperature of air, 82°; water, 80°. Current, NW., 2 miles. Winds: S., S.SE., S. First and middle, fine weather; tacked several times; latter, fresh gales.

Nov. 4. Lat. 0° 42′ N.; long. 32° 42′ W. Barometer, 29.85; temperature of air, 82°; water, 78°. Current, NW., 2 miles. Winds: S., S., S. First part, very squally and bad sea;

middle, tacked to SW., after standing 12 hours to the E.SE, and lost 30 miles; latter part, trades from the south.

Nov. 5. Lat. 1° 32′ S.; long. 32° 24′ W. Barometer, 29.90; temperature of air, 82°; water, 78°. Current, NW., 1 mile. Winds: S.SE., SE., SE. by S. First part, fine breezes; at 4½ p. m. tacked to E.NE.; at 8½ p. m. tacked to S.SW.; at midnight on the line, in long. 33° 00′ W., too far west; can't do any better; shall not fetch past, but shall stand for the land. This has been a hard chance for me at any rate; 15 days from 10° N. Do you think I should have done better to have gone as far as 27°, as I did in my last two passages? Please inform me. Middle, fresh gales and passing clouds; latter, bad sea on; ship plunging out of sight forward.

Nov. 6. Lat. 4 ° 30′ S.; long. 34° 47′ W. Barometer, 29.90; temperature of air, 82°; water, 77°. Current, NW., 1½ miles. Winds: SE., SE., SE. First part, fresh trades and squally; cannot fetch past, so much current and bad sea on; ship plunging all under forward; middle and latter, fresh gales.

Nov. 7. Lat. 5° 50′ S.; long. 34° 57′ W. Barometer, 29.80; temperature of air, 79°; water, 78. Current, NW., 1 mile. Winds: SE., SE., SE. First part, fresh gales; at 1½ p. m. tacked to the E.NE.; at midnight to the SW. by S. Middle, fresh trades; latter, the same. Land in sight; 9 a. m. passed St. Roque, but cannot lay along the land. I did not have much trouble to fetch past."

It is very easy after one sees how the winds have been to say what the course should have been. But I hope navigators will not regard my critiques upon their tracks ever in an offensive light. We must profit each by the experience of others. It is my aim to give sailing directions, and to lay them down so clearly that all who will may understand them, and I know no better way of doing this, than by making examples teach by the experience which others are kind enough to spread before me.

Captain Crocker was certainly not favored by the winds. The "doldrums" lasted him from 8° N. to the line, 12 days. His whole effort seems to have been to get south, and so clear them; I do not see how he could have done better. In October, 1852, Captain Crowell, of the Robert Wing, made this passage in 39 days to the "fair way" off St. Roque. She crossed 8° N., 180 miles west of the Raven, made a due south course thence to the line, and with a 9 days beat cleared the "bugbear;" total from 6° N. to the "fair way" off St. Roque, 14 days, against the Raven's 17.

I think that Captain Crocker made a decided gain, or rather avoided a positive loss by not going away further east.

Abstract log of the ship *Robert Patten*, (George S. Paine, captain,) from St. John's, N. B., to Port Adelaide, Australia, 1856. [A dull ship, so says her captain.]

"Sept. 29. Lat. 43° 43′ N.; long. 67° 14 W. At 4 a. m., Machias Seal Islands light bore NE., distance 12 miles; at 8 a. m. islands not in sight from deck. Pleasant weather.

Sept. 30. Lat. 42° 40′ N.; long. 67° 06′ W. Barometer, 29.90; air, 62°; water, 55°. Winds: E.SE. Moderate, weather pleasant. I find the ship very crank, as well as a dull sailer.

Oct. 1. Lat. 42° 30′ N.; long. 66° 05′ W. Barometer, 29.60; air, 62°; water 54°. Wind: SE. Strong and thick weather, with rain.

Oct. 2. Lat. 42° 52′ N.; long. 65° 50′ W. Barometer, 29.90; air, 60°; water, 54°. Winds: SE. to W. Fresh gales and rainy weather.

Oct. 3. Lat. 42° 18′ N.; long. 63° 50′ W. Barometer, 29.90; air, 58°; water, 50°. Winds: W. to NW.; light, and fine weather.

Oct. 4. Lat. 41° 55′ N.; long. 62° 30′ W. Barometer, 29.90; air, 65°; water, 64°. Winds: NW. to NE.; light and baffling; weather thick; gulf-weed seen to-day. We are in the northern edge of the gulf stream.

Oct. 5. Lat. 40° 10′ N.; long. 60° 10′ W. Barometer, 29.80; air 65°; water, 76°. Winds: NE. to N.NE.; fresh and thick weather.

Oct. 6. Lat. 39° 20′ N.; long. 57° 13′ W. Barometer, 29.90; air, 68°; water 78°. Winds: N.NE. to NW. Strong gales and thick weather; ends, pleasant; lots of Carey chickens about,

Oct. 7. Lat. 38° 06′ N.; long. 55° 20′ W. Barometer, 30.05; air, 70°; water, 76°. Winds: NW. to W.NW. Fine breezes and pleasant weather; quantities of gulf-weed about; pass the southern edge of the gulf stream at 8 p. m.; very strong tide rips.

Oct. 8. Lat. 37° 12′ N.; long. 52° 55 W. Barometer, 30.06; air, 76°; water, 77°; Winds: W.NW. to W.; moderate; first part, pleasant; latter part, squalls, with light rains.

Oct. 9. Lat. 36° 16′ N.; long. 50° 25′ W. Barometer, 30.00; air, 74°; water, 76°. Winds: N.NW. to N. Fresh breezes and pleasant; large quantities of yellow sea-weed about; and strong tide rips.

Oct. 10. Lat. 35° 43′ N.; long. 49° 30′ W. Barometer, 29.95; air, 77°; water, 76°. Winds: N.NE. to E.SE.; light and pleasant; middle part, calm, and heavy rains.

Oct. 11. Lat. 34° 59′ N.; long. 47° 30′ W. Barometer, 29.95; air 76°; water, 76°. Winds: W. to N. Light and pleasant; large fields of sea-weed.

Oct. 12. Lat. 34° 52′ N.; long. 46° 56′ W. Barometer, 29.45; air, 76°; water, 76°. Winds: W. to N. Light airs and pleasant weather.

Oct. 13. Lat. 34° 35′ N.; long. 45° 55′ W. Barometer, 29.95; air, 75°; water, 76°. Winds: NE. to SE. Moderate breeze and pleasant.

Oct. 14. Lat. 32° 36′ N.; long. 44° 40′ W. Barometer, 28.98; air, 77°; water, 76°. Winds: E. to E.NE. Fresh breezes and pleasant. A ship in sight, steering S.SE. by the wind; passing us fast; evidently a clipper.

Oct. 15. Lat. 30° 25′ N.; long. 43° 40′ W. Barometer, 29.90; air, 79°; water, 77°. Winds: E. to E.NE. Fresh gales and squalls, with rain.

Oct. 16. Lat. 29° 42′ N.; long. 42° 49′ W. Barometer, 29.95; air, 79°; water, 77°; Winds: E.NE. Light airs and pleasant; hardly got the trades yet, I fear. We are rather far west to fall into the trades; but there is no help for it now, she must go.

Oct. 17. Lat. 28° 30′ N.; long. 42° 00′ W. Barometer, 30.05; temperature of air, 80°; water, 78°. Wind: E.NE. Light and pleasant weather.

Oct. 18. Lat. 27° 20′ N.; long. 41° 24′ W. Barometer, 30.06; temperature of air, 80°; water, 79°. Wind: E.NE. Light and pleasant weather.

Oct. 19. Lat. 25° 42′ N.; long. 39° 48′ W. Barometer, 30.00; temperature of air, 80°. water, 79°. Wind: E.NE. Light breezes and pleasant weather; middle part, squally, with rain.

Oct. 20. Lat. 23° 44′ N.; long. 38° 39′ W. Barometer, 29.86; temperature of air, 79°; water, 79°. Wind: NE. to SE. Fresh trades and pleasant; middle part, squally, with rain.

Oct. 21. Lat. 22° 32′ N.; long. 38° 53′ W. Barometer, 29.85; temperature of air, 83°;

water, 80°. Wind: E.SE. to S. Light baffling airs and fine weather; wind drawing more to the westward. Tacked twice; making every effort to get south without regard to longitude.

Oct. 22. Lat. 22° 20′ N.; long. 38° 10′ W. Barometer, 29.87; temperature of air, 83°; water, 80°. Wind: S. to S. by W. Light baffling airs and pleasant.

Oct. 23. Lat. 22° 20′ N.; long. 37° 25′ W. Barometer, 30.00; temperature of air, 86°; water, 83°. Wind: S. Light airs and calms; dull music this.

Oct. 24. Lat. 21° 40′ N.; long. 37° 00′ W. Barometer, 29.94; temperature of air, 82°; water, 83°. Wind: easting. Light airs and calms.

Oct. 25. Lat. 20° 22′ N.; long. 36° 50′ W. Barometer, 29.93; temperature of air, 81°; water, 82°. Wind: E. to E. by S. by light. Weather pleasant.

Oct. 26. Lat. 18° 38′ N.; long. 36° 30′ W. Barometer, 29.95; temperature of air, 80°; water, 80°. Wind: E. by S. Moderate and cloudy, with rain.

Oct. 27. Lat. 16° 32′ N.; long. 35° 58′ W. Barometer, 29.90; temperature of air, 81°; water, 80°; Wind: E. by S. Moderate breeze and thick weather.

Oct. 28. Lat. 14° 18′ N.; long. 35° 12′ W. Barometer, 29.96; temperature of air, 82°; water, 81°. Wind: E. by S. to E. Fine trades and pleasant weather. An excellent chance for a run if I had a fast ship.

Oct. 29. Lat. 12° 05 N.; long. 34° 36′ W. Barometer, 29.90; temperature of air, 82°; water, 81°. Wind: E. to E.NE. First part, fresh breezes; latter part, light. Weather pleasant; strong tide rips.

Oct. 30. Lat. 10° 14′ N.; long. 33° 50′ W. Barometer, 29.85; temperature of air, 82°; water, 81°. Wind: E. by N. to E.NE. Light breezes and pleasant; tremendous tide rips, the strongest I ever saw.

Oct. 31. Lat. 8° 26′ N.; long. 32° 38′ W. Barometer, 29.80; temperature of air, 83°; water, 82°. Wind: E.NE. Light breezes and pleasant. Current changes to the eastward, ½ knot per hour.

Nov. 1. Lat. 6° 50′ N.; long. 32° 10′ W. Barometer, 29.78; temperature of air, 83°; water, 82°. Wind: E.NE. Light and pleasant.

Nov. 2. Lat. 7° 20′ N.; long. 31° 15′ W. Barometer, 29.76; temperature of air, 84°. water, 83°. Wind: E.NE. Light airs and thick weather. A northern current, 1 mile per hour.

Nov. 3. Lat. 6° 56′ N.; long. 30° 40′ W. Barometer, 29.75; temperature of air, 81°; water, 82°. Wind: light baffling airs and calm, with rain.

Nov. 4. Lat 6° 20′ N.; long. 30° 24′ W. Barometer, 29.75; temperature of air, 82°; water, 82°. Wind: baffling, with thick squally weather.

Nov. 5. Lat. 5° 07′ N.; long. 30° 22′ W. Barometer, 29.75; temperature of air, 84°; water, 82°. Wind: SE. Light airs and pleasant.

Nov. 6. Lat. 4° 48′ N.; long. 31° 06′ W. Barometer, 29.70; temperature of air, 83°; water, 82°. Wind: SE. to S.SE. Light airs and pleasant; middle part, squalls, with rain.

Nov. 7. Lat. 2° 44′ N.; long. 32° 26′ W. Barometer, 29.73; air, 83°; water, 83°. Winds: SE., fresh and moderate; gales and pleasant.

Nov. 8. Lat. 1° 18′ N.; long. 33° 10′ W. Barometer, 29.76; air, 83°; water, 83°. Winds: SE., slight and pleasant.

Nov. 9. Lat. 0° 04′ S.; long. 33° 20′ W. Barometer, 29.76; air, 83°; water, 83°. Winds: SE. by E. Light breeze and pleasant.

Nov. 10. Lat. 1° 20′ S.; long. 32° 45′ W. Barometer, 29.80; air, 84°; water, 82°. Winds: SE. to SE. by E. Moderate breeze and pleasant.

Nov. 11. Lat. 2° 50′ S.; long. 34° 30′ W. Barometer, 29.81; air, 83°; water, 82°. Winds: SE. Light breezes and pleasant. This is my eighth voyage across the equator, and I have never before experienced such light winds, either in the NE. or the SE. trades, as I have this time.

Nov. 12. Lat. 4° 22′ S.; long. 34° 58′ W. Barometer, 29.85; air, 84°; water, 81°. Winds: E.SE. Light and fine weather.

Nov. 13. Lat. 5° 11′ S.; long. 34° 54′ W. Barometer, 29.90; air, 84°; water, 84°. Winds: E.SE. and SE. by E. Light and fine weather. Middle part, squally; at 2 p. m. tacked to the N. and E.; sounded in 7 fathom water; stood 6 hours to the N. and E.," [and then went clear.]

Time and Crossings to the "Fair Way" off St. Roque—October.

Name of vessel.	From—	Date of sailing	Longitude of crossing the parallels of—																	Total days to—	
			Days.	30° N.	Days.	25° N.	Days.	20° N.	Days.	15° N.	Days.	10° N.	Days.	5° N.	Days.	Equator.	Days.	3° S.		Equator.	St. Roque.
Comet*	New York	Oct 1, 1851	9	44½	1⅛	40	3	37	2	35	2¼	32¼	5	29	2⅛	31	1	32		25½	27
Bald Eagle	....do	2, 1853	10½	46	1½	47¾	2	45½	2½	43½	3⅛	38¼	8	30½	5	30¾	1⅛	32		33	35
Squantum	Boston	2, 1853	11½	51¾	11	43½	2⅛	41	3⅛	40	3½	36⅛	5	35	8	32¾	1½	34		45	49
Miantonomi	New York	3, 1852	11	46¾	3½	46	3	44⅛	5	41	4	40½	3⅛	37⅛	8	36¼	2	38¼		38	49
Robert Wing	....do	3, 1852	9½	49	3	45½	2½	44½	5½	39½	4½	37½	4	35	3	35¾	1½	36		32	36
Parana	....do	3, 1852	11	46¼	3	44¾	2	44¼	5½	39¾	4	37½	4	35¼	5½	35¼	3	34¾		35	40
Samoset	Boston	3, 1850	11	50½	6	43½	6½	38	5⅛	34¼	7¾	31¼	4	29½	3	30⅛	1⅛	31		43¾	45
Morning Light	....do	4, 1853	18	36½	2¼	35	1⅛	34	1⅛	32	4⅛	30⅛	5	30¾	3⅛	33	1⅛	34¼		36½	42
Maria	New York	5, 1852	10	50	5	44½	3½	42½	2½	40¼	2½	37½	4½	33	4	33	1⅛	34⅛		32	34½
N. B. Palmer	....do	7, 1854	14⅛	50	7	44	3⅛	40¼	3	40½	1½	38½	3½	36½	2	38¼	1	37¾		35	40
Heber	....do	8, 1850	16	35¾	3	35½	3	36¾	3	33¾	7	32½	4	28¾	3½	30	1½	30¾		39½	41
William G. Lewis	Boston	9, 1853	13	36	2½	35¼	2	35	1	35	3	34	7	30⅛	8½	31½	2	33		37	41
Nestorian	New York	9, 1854	19	36½	2½	35	3½	33	4½	30	3	37¾	7¾	25½	2¼	28½	1	30		42½	44½
Francis Whitney	Boston	11, 1849	12	43½	6	38⅛	2⅛	37½	1¾	35⅛	2¼	34	3½	30½	5	31	2	31⅛		33	35
Wild Pigeon	New York	12, 1852	10⅛	48⅛	9½	38	2	36¼	1½	36¼	1½	33	4	30¼	3½	32½	2	34⅛		32½	36
Union	....do	13, 1854	18½	39⅛	2¼	36	3	33	2½	31⅛	5	30½	4	29½	4	30½	2	31⅛		39⅛	42⅛
Wild Pigeon	....do	13, 1851	10½	40½	3	38	3	31	2	31½	2	31½	5	28½	3	28½	1⅛	31		28½	30
Malay	....do	14, 1853	17½	40	3½	37	3½	37	2½	32½	2	30	4	28½	2	31¼	2	32⅛		35	38
Horatio	....do	16, 1852	8½	50	5	42	4	39	1⅛	38	2½	35⅛	4	29	5⅛	31½	2	34¾		31	35
Samuel Appleton	Norfolk	16, 1853	17	42	2½	36¼	3	36	2	33½	2	31⅛	4⅛	29½	5	32¼	1	33⅛		36	38
Imaum	Salem	16, 1850	13	47	4	40	2	36½	4	36	2½	36	2½	33½	3	35¼	2	35		31	34
Hazard	New York	17, 1852	15	36	2½	34⅛	1⅛	34⅛	2	34	1½	33¼	5½	31½	3½	34	1	34¾		31⅛	35
Angelique	....do	18, 1853	15	43	3	35½	3	34	2½	32	2½	29¼	5	28	6	30⅛	3	32½		37	40
Ringleader*	Boston	18, 1854	9½	45	2	43	2½	42	3¾	42	2	40	5	35½	1¾	36	3	35¾		26⅛	30
Mason Barney	New York	18, 1850	16	41	2	38¾	7	35¼	3	34½	2	33	3	31¼	6½	31½	1	31⅛		39½	42
Capital	Richmond	19, 1852	11	40¾	2½	37⅛	2	35½	2½	33	2	31	5	29	4⅛	35¾	1	32		29⅛	31⅛
Coquimbo	Bangor	19, 1854	22½	40	3½	35	2	35½	2	33	2⅛	29½	5½	28	4	29½	1½	31		42	44½
Samuel Lawrence	Boston	20, 1853	12	38¾	5	33	2	32	1½	30¾	1½	29¼	3	27½	4½	30	1	31¼		29½	31½
Golden City	New York	20, 1853	11	41⅛	2	37½	2½	37	2	36	1½	34⅛	5½	30¼	4	33	1½	34		28½	31
Ringleader	Boston	21, 1853	12	43⅛	1½	39½	3	37	2	36	2	33	4½	30¾	3	34	1	35		28	31
White Swallow	....do	21, 1854	12¾	43⅛	2	45	1½	42	2¼	37	4	34	5⅛	31½	5	32	1	33		33	35
Swan	Hampton Roads	23, 1853	5	56	7½	49¼	5	43	2	41	2½	38½	3½	36	20½	31	1½	32		46	48½
Lotus	Boston	25, 1854	16	39½	2½	35	2½	34½	1½	32	2	29¼	2½	29	2½	31½	1	32		29½	31⅛
Fleetwood	....do	25, 1854	17½	41¼	3	35¾	2½	34	1¾	32	2½	30	4	28	3⅛	31¾	1½	32		34¾	36
Europe	....do	25, 1851	12½	36	7½	30	2	28	3	26¼	2	25½	2	25½	3	26½	1¼	27½		32	34
Georgiana	New York	26, 1851	10½	46	3½	39½	4	31¼	4½	30	2	28½	2½	27½	3	29¾	1½	30½		30	32½
John Adams, (United States ship)	Boston	26, 1851	15	42½	3	34¾	3	31¾	1½	30¾	1½	29½	3	28½	3½	32	1½	33		30½	32½
S. L. Fitzgerald	Baltimore	26, 1854	15½	43	2½	38	3½	34	1	33	2	32	3½	30	3	32½	1½	33½		31	34
Thomas W. Sears	New York	26, 1854	9¼	54	5½	48	2¼	46½	6½	42	2½	40	4¾	37	11	36	3½	35¼		41¾	47
Southern Cross	Boston	26, 1854	15½	39	2½	35	2½	35	2	34½	2	32¼	2½	31¼	4	32¾	1¼	34½		31	33
Phantom	New York	26, 1854	19	38	1½	38	3	38	1½	35½	2	32	4½	28	3½	29	1	31		35	36⅛
Sweepstakes	....do	26, 1854	15½	37½	2½	35	2¼	36	1½	34	1¾	31	2	32	5½	32	1¼	33		31	32½
Piscataqua	Boston	28, 1853	13	50½	14	37	2½	34½	3	34	2½	32	5½	29¼	5½	31¼	1½	32		44	47
Coquimbo	....do	28, 1852	11	40¾	4	38	5	35	3½	33	2½	30	5	27½	11	28½	2	31		42	45
John Gilpin*	New York	29, 1852	9½	36	3½	34¼	3½	33½	2½	33	1½	31	2	30	1½	30¾	1½	31¾		24	26
Icomium	....do	29, 1852	13½	42	4	38	3½	35	2½	34¼	2½	32½	4	30	12	30½	2	32		42	45
Dragon	Boston	29, 1851	10	40¼	5½	32	2½	31¾	2½	30	1½	29½	2	29	3	30¾	1½	31		27	30
Bald Eagle	New York	29, 1854	13	41	2	38½	2¾	39	2	37	1½	35	3	33½	4	34½	2¼	34½		28¼	31½
Helena	....do	29, 1850	10	48¾	4	43¼	4	40¼	2	40¾	2	40	2½	39½	15½	32¼	4	31		40	45
Flying Dragon*	....do	31, 1854	11½	43	3	40	1½	41½	2	38¾	1½	36½	3½	33¼	3½	35¾	2	35¼		26½	30
Average before the 7th edition			13.4	43	3.8	39¼	2.9	37¼	2.6	35½	2.6	33¾	4.1	31	4.8	32	1.6	33		34.2	37.0
Speedwell	Boston	Oct. 1, 1856	14	44	4½	38	5½	36	2	34	2	31	4	28¾	3	31	1½	32½		35	37
Wings of the Morning	Philadelphia	2, 1855	14	43	3½	39	2	39	2	37	4	33	9	29	4½	33	1¼	34¼		39	41
Mamaluke	Boston	3, 1855	13½	43	4	38¼	2¼	37½	3	35½	3	34¼	9	31¼	4½	34½	1¼	35½		39¼	42½
Gladiator	Baltimore	3, 1855	14	45	10	37	5	34½	3	33	5	33	5	32	3	31	3	32½		45	48½
Cyclone	Boston	5, 1855	11½	42	4	36	2	34½	1½	32¼	2½	30	10½	26	2¼	30¼	1½	33½		34¼	36½
Hannibal	....do	7, 1857	7	50¾	2	46¾	5½	39¾	2½	36¾	2	35¾	4½	32	4	33	1½	33½		27½	29½
Antagonist	New York	8, 1856	12	47	2¾	42	5	37	2¼	30½	3¼	31	4	31	5	31	1¾	32½		34¼	36½
Mary	....do	10, 1855	12¾	45	2	40	2¼	39¼	1¾	40	2¼	39	11½	30¼	5	31	1½	31¼		37½	39
Scio	....do	12, 1856	17½	46½	4	43½	10½	35	8	31	2½	30½	3½	29¼	6½	31½	2	31¾		52½	56
Alice	....do	12, 1855	13½	41¾	11	38	3	36½	2½	34½	2½	33¾	3	33	3¼	34½	1¾	34½		36½	41
Messenger*	....do	13, 1856	8	44¾	1½	41½	3	39	4	36	1½	34½	2½	32½	3½	32¾	1	33		24	26
Reindeer	....do	14, 1856	13½	43	3	38	2	35½	3½	33½	3½	33¼	4	31	4½	32¾	2	32½		34	37
Fleetwood	Boston	16, 1855	18	37½	2¼	36¼	3	35	2	33	2	31½	3	29½	2	30½	1	31½		32¼	35¾
Sabine	....do	16, 1855	18½	41	2½	40½	4	41½	2¼	41¼	4	40½	6	39	13½	33	1½	36		50¾	51
Harvey Birch	New York	16, 1856	12	44	3	40	2½	37	2½	35	6	33½	5	31½	3	31	2½	32		34	37
Gertrude	....do	17, 1855	14½	47½	3½	45	4	43½	3	43	3	41½	3	39½	4	39½	1½	38		35	45
Kate, of Baltimore	Baltimore	17, 1857	18	38¾	2½	39¼	3	35	4	32	2½	29½	4	29	5	30¾	1½	32		39	41½
Blandina Dudley	Boston	18, 1856	10½	42	3	38	2	35½	5½	35	2½	32½	4	31	3½	32	1	32½		31	33
Fire Fly	....do	18, 1855	9	39½	5½	37	3	36	5	32½	3	31	4	28	4½	30	1¼	30½		34	36
Sancho Panza	....do	21, 1855	10½	43½	3	42½	4	41½	2	41½	3½	40	4	38	7	35	1½	35		34	40
Louise	New York	23, 1856	9½	43¾	3	40	7	31	4	29	3	28½	3	27	3	30¼	1½	31¾		32½	34½
Reindeer	Cape Henry	25, 1857	10	46	2	40½	5	30¾	5½	32½	2	30¾	5¼	29	3	31	1½	32¼		32¾	34
Golden Era	New York	26, 1855	20½	44½	6½	41½	3½	40½	3	39½	4	36	6½	31	5	29¾	1½	30		49	52
Comet*	....do	26, 1855	6½	49	2	45	4	43	3	42	2½	40	3½	39	2	39¼	2½	38		23½	30
Maury*	....do	26, 1855	7	50	2¼	47	4¼	43½	2¾	42	4	38	2¼	35	2½	26	1	36½		25	28
Maine Law*	Boston	27, 1855	13¾	37	2¼	36½	2	34	1¾	32½	2	29	3	28	2	30½	1	31		26¾	28
Daylight*	Philadelphia	27, 1855	13	38	2¾	36½	2	33	1½	31	2	30	2¼	29	2	30	1¼	31		25½	26½
Ida D. Rogers	New York	28, 1856	12	45¼	3	37¼	3½	33½	5	32	2	31½	3½	30½	3	32¼	1½	32½		32	35
Ringleader*	Boston	28, 1855	12½	42½	2¼	40½	1½	40	2	37	2½	33	2½	31	2¾	32	1½	33		26	28
Union	Philadelphia	28, 1857	9½	49	3½	45	4	36¼	3	33¼	2½	32	5	25½	3	30¼	1½	32½		30½	32½

Time and Crossings to the "Fair Way" off St. Roque—October—Continued.

Name of vessel.	From—	Date of sailing.	Longitude of crossing the parallels of—																Total days to—	
			Days.	30° N.	Days.	25° N.	Days.	20° N.	Days.	15° N.	Days.	10° N.	Days.	5° N.	Days.	Equator.	Days.	3° S.	Equator.	St. Roque.
Henrietta	Cape Henry	Oct. 29, 1856	11¼	44	2¾	38	3	35	5	31¾	2	38⅛	2	29¾	4	31⅛	2	32¾	30	33½
Victory	New York	30, 1855	19¼	42	6	42	2¾	42	2⅛	41⅛	3⅛	37⅛	6⅛	30⅛	3¾	30	1⅞	31	44	47½
Salacia	Boston	30, 1857	10⅛	44	2	39	2⅛	36⅛	2⅛	34¾	3⅛	35⅛	5⅛	28¾	2¼	32	1⅛	33⅛	29	31
Average since 7th edition			12.6	43.0	3 5	40.0	3.6	37.0	3.1	35¼	3.0	33¾	4.7	30¾	4.0	31¾	1.6	33.0	34.5	37.5
*Means of 10 best			10.0	43	2.3	40⅛	2.7	38⅛	2.5	37	2.2	34¼	3.2	33¼	2.4	32½	1.6	33¾	25.3	27.9

Ship "Gladiator," Capt. Wm. H. Whitfield, 46 days out from Baltimore.

"Nov. 19, 1855. Lat. 4° 08′ S.; long. 32° 44′ W. Barometer, 29.6; temperature of air, 84°; of water, 82°. Winds: E.SE. This day brisk trades from E.SE.; heading S., all sail set. At 11 p. m. tacked to the NE.; at 2.30 a. m. to the S. At daylight Ferdinand Noronha bore S. by W., distant 13 miles; ran round to the leeward of it, and steered S.SW.; set studding sails. On the 6th July, 1854, I left Buzzard's bay, bound, as now, around Cape Horn light. The ship would sail 8 miles per hour on a wind; now, we are deeply loaded with coal, and can get but 5* knots out of her on a wind. We crossed the equator on the 44th day out, (long. 28° 31′,) and now have crossed on the same 44th day, (long. 31° 20′,) and have fetched as far to windward as we wish, having stuck to Maury's track all the passage."

Extracts from letter and log of Capt. E. H. Howes, of the barque "Speedwell," on a voyage from Boston to Rio de Janeiro; October 1 *to November* 19, 1856.

"I followed your track out for October, crossed the line in 31° 20′, passed 5 miles to the weather of the '*Roccas*,' and weathered Pernambuco, with topmast studding sails set, without tacking; had a fair passage out for the season, 49 days, which was the least, by ten days, from any port in the United States, that had arrived there for six weeks.

You will see the difference of our passage with the barques 'Mystery' and 'Benjamin Burgess' that sailed, one 15 days before, the other the same day with us, as entered in outward log; also the longitude crossing the line. My passage to New Orleans was as good as any that left about the time we did. You have my thanks, with thousands of others, for the valuable services you have rendered the commercial community, and best wishes for continued success."

Extract from the Speedwell's log.

"Nov. 19, 1856. At 4 p. m. came to off the fort, got a visit, and at 6 anchored on the discharging ground, making a passage of 49 days. The barque 'Mystery' left 15 days before us; arrived in one hour ahead of us. He crossed the line in 29°; we in 31° 20′*, and had the wind so that we weathered Pernambuco at least 60 miles with topmast studding sail set. The 'Benjamin Burgess' left Boston the same time we did; not here yet, the evening of the 23d.

P. S.—The 'B. Burgess' arrived the 13th of December; passage 74 days; crossed the equator in 27° 50′."

Ship Flying Dragon, (James A. Little, captain,) New York to Calcutta; 30 days out.

"Nov. 27, 1854. Lat. 0° 45′ S.; long. 36° W. Barometer, 29.88; temperature of air, 80°; water, 80°.5. Winds: SE. by E., SE., SE. by E. Good steady breezes and pleasant. The meridian of 36° W. is further west than I should like to cross the equator; but there has been no alternative. I was in a good position when I crossed the parallel of 27° N. in 40° W., since which time the winds have had very little northing in them. I could have been further east if I had dallied along in the doldrums; but I prefer a breeze to a calm. Tacked ship twice; the wind holds very steady.

* This ship not being as good as an average sailer, her run is not included in the means; but she shows that 31° is not too far W. for a dull ship.

Nov. 28. Lat. 1° 57′ S.; long. 35° 47′ W. Barometer, 29.88; temperature of air, 80°; water, 80.5°. Winds: SE. by E., E.SE., SE. by E. Current, W.NW., ½ knot. At 6 p. m. tacked to the southward. The winds generally incline more to the east during the night. I have noticed it during several passages. The current increases as I go south and approach the land.

Nov. 29. Lat. 3° 34′ S.; long. 35° 16′ W. Barometer, 29.88; temperature of air, 80°; water, 79°. Winds: SE. by E., E. by S., E.SE. Current, NW., 1 knot. Pleasant weather. I am now clear of Cape St. Roque. Midnight tacked ship in 20 fathoms water; at 3 a. m. tacked. I have cleared the cape in 3 days from the line; stood NE. 15 hours only. I have felt but little current. When a ship is pinched for room, then stick close to Lieutenant Maury's Sailing Directions.

Nov. 30. Lat. 5° 46′ S.; long. 34° 52′ W. Barometer, 29.88; temperature of air, 79°; water, 79°. Winds: E. by S., E., E. by S. Current, W.NW., ½ knot. The land in sight."

Ship Susan L. Fitzgerald, (Edward Pesend, captain,) Baltimore to Valparaiso.

"Nov. 19, 1854. Lat. 10° 35′ N.; long. 32° 29′ W. Barometer, 29.88; temperature of air, 81°; water, 81° Winds: E. and SE., SE., E. and E.SE. Throughout this day baffling and squally winds from E. to SE., shifting frequently, with squalls of wind and rain; at times calm, and then, again, hard puffs. Tried the temperature of the rain, and found it 10° colder than air or sea water, viz: rain water, 71°; air and sea water, 81°; and suppose we are near the equatorial doldrums.

Nov. 20. Lat. 8° 18′ N.; long. 31° 20′ W. Barometer, 29.90; temperature of air, 83°; water, 82°. Winds: E., E., S.SE. First and middle part baffling and squally winds from E. to E.SE., with rain, in squalls and lightning; ends with moderate winds from S.SE., and fine weather. If this should be the SE. trade wind, I am in a bad position, excepting the wind should favor me, which I do not expect. I suppose I must beat to windward.

Nov. 21. Lat. 6° 18′ N.; long. 30° 40′ W. Barometer, 29.90; temperature of air, 83°; water, 83°. Winds: S.SE., calm, NE. First and middle part light airs from S.SE.; ends with calm and light airs from NE. A high sea from southward; squally appearance all round. A ship in sight astern, 2 miles off, apparently a French clipper, bound to the southward. I suppose I crossed her during my tacking in the course of the night.

Nov. 22. Lat. 6° 10′ N.; long. 30° 30′ W. Barometer, 29.90; temperature of air, 80°; water, 81°. Winds: Baffling and E.SE., E.NE., calm. Throughout this day baffling and squally winds and calms, and heavy rain and lightning from all quarters, and a high sea from the southward, the ship plunging very heavily. The French clipper nearly out of sight astern. A marked decrease in temperature of water and air, which I attribute to the heavy rain.

Nov. 23. Lat. 4° 50′ N.; long. 30° 00′ W. Barometer, 29.90; temperature of air, 81°; water, 81°. Winds: E.NE., E.NE., S.SE. First and middle part moderate breezes from E.NE., with a high sea from the southward. Middle and latter part calm, and a moderate breeze from S.SE., with fine weather. All sail set by the wind. During the last 48 hours the current has set to the W.SW. about 60 miles. If the wind continues from S.SE., I shall have to tack to the eastward for awhile.

Nov. 24. Lat. 2° 27′ N.; long. 31° 07′ W. Barometer, 29.90; temperature of air, 83°; water, 84°. Winds: S., S., S.SE. Throughout this day moderate breezes from S.SE. to S. All sail set by the wind. The ship sailed 104 miles E.SE., and 56 miles SW., which ought to have

given her 68 miles easting and 71 miles southing, yet the ship has made but 12 miles to the south and "20 *miles*" to the west—thus showing the current has been setting NW. 3 miles an hour. [This is *north* of the line and showing a very uncommon current.]

Nov. 25. Lat. 2° 15′ N.; long. 31° 27′ W. Barometer, 29.90; temperature of air, 81°; water, 80°. Winds: S.SE., S.SE., SE. Throughout this day squally winds from S.SE. to SE., with a rough head sea. We have run ont of the strong NW. current experienced yesterday, which is shown by the remarkable decrease of the temperature of the water from 84° to 79°. I am now about crossing the equator much further west than I desire; but there has been no help for it. I have had no chance to get to the east.

Nov. 26. Lat. 0° 15′ N.; long. 32° 32′ W. Barometer, 29.90; temperature of air, 83°; water, 80. Winds: SE. by S., SE. by S., SE. by S. Throughout this day brisk breezes from S.SE. to SE. by S., and a rough sea. This is the longest passage I have ever had to the equator, and, besides, I am in a very bad position, not the remotest chance of getting clear of Cape St. Augustine. [O, you doubter, see what he says on the 29th.] I do not think I will ever cross the equator to the west of 30° again.

Nov. 27. Lat. 1° 37′ S.; long. 33° 10′ W. Barometer, 29.90; temperature of air, 84°; water, 80°. Winds: S.SE. and SE., S.SE., SE. Throughout this day moderate and baffling winds from S.SE. to SE., and fine weather. All sail set by the wind; made two short tacks, each to the east. At noon made the Roccas, bearing south 10 miles distant. Either the books and charts are wrong, or both of my chronometers are wrong—the longitude not agreeing by 16 miles. [Their long. is 33° 49′.]

Nov. 28. Lat. 3° 45′ S.; long. 33° 46′ W. Barometer, 29.92; temperature of air, 81°; water, 80°. Winds: SE., E.SE., SE. Throughout this day light and variable winds from SE. to E.SE., and smooth water. Ship on the port tack during the 24 hours; find a very light current to the west; the wind has favored me more than I anticipated, and now think I may fetch by Cape St. Augustine without tacking any more.

Nov. 29. Lat. 6° 07′ S.; long. 34° 00′ W. Barometer, 29.90; temperature of air, 82°; water, 82°. Winds: E.SE., E.SE., SE. Throughout this day light winds from SE. to E.SE. At 4 a. m. checked in the braces, and set all studding sails. I have got by Cape St. Augustine without much trouble; have stood to the eastward but 8 hours altogether since crossing the equator. I was apprehensive at one time that I would be jammed; but have seen no land since passing the Roccas."

Ship Mameluke, (E. Whitney, captain,) Boston to San Francisco; 12 days out.

"Oct. 16, 1855. Lat. 29° 28′ N.; long. 42° 03′ W. Barometer, 29.90; temperature of air, 75°; water, 76°. Current, N. 85° W., ¼ mile. Winds: NW., N.NE., NW. First part, strong winds and passing squalls. Middle, fresh and varying from NW. to N.NE., with heavy showers of rain; lightning from the NE. Latter, pleasant.

Oct. 17. Lat. 27° 42′ N.; long. 39° 01′ W. Barometer, 30.10; temperature of air, 74°; water, 77°. Winds: W.NW., W., SW. by W. First part, fresh winds and fine weather; middle, strong westerly wind, with overcast, cloudy weather; latter, hard SW. gales and squally.

Oct. 18. Lat. 27° 25′ N.; long. 36° 40′ W. Barometer, 30.39; temperature of air, 76°; water, 76°. Current, N., ¾ mile, for two days. Winds: S.SW., S. to SW., S. First part, hard SW. gales. Middle, hard squalls, with rain in torrents; lightning from all quarters; steady till 2 a. m. Latter, moderate southerly winds, and close, muggy air.

Oct. 19. Lat. 26° 05′ N.; long. 37° 45′ W. Barometer, 30.45; temperature of air, 78°; water, 77°. Current, N. 22° E., ¼ mile. Winds: S.SE., S.SE., S.SE. First part, moderate

winds; at 1 p. m. tacked to SW. Middle, light winds and pleasant weather. Latter, wind the same and fine weather.

Oct. 20. Lat. 23° 45′ N.; long. 38° 50′ W. Barometer, 30.45; temperature of air, 80°; water, 77°. No current. Winds: S.SE., SE. by S., SE. First part, pleasant; middle, light breezes and pleasant; latter, light and pleasant.

Oct. 21. Lat. 21° 31′ N.; long. 38° 19′ W. Barometer, 30.44; temperature of air, 78°; water, 77°. Current, W., ¼ mile. Winds: E.SE., E.SE., E. by S. First part, faint airs and fine weather; middle, light winds and weather the same; latter, the same.

Oct. 22. Lat. 19° 18′ N.; long. 37° 16′ W. Barometer, 30.39; temperature of air, 78°; water, 77°. Current, W., ¼ mile. Winds: E. by S., E. by S., E. to E. by S. First part, moderate winds; middle and latter, light breeze and pleasant.

Oct. 23. Lat, 16° 41′ N.; long. 36° 44′ W. Barometer, 30.29; temperature of air, 79°; water, 78°. No current. Winds: E. to E.SE., E.SE., E. by S. First part, variable and squally; middle, brisk breezes and light passing cumulus clouds; latter, brisk easterly winds and pleasant weather.

Oct. 24. Lat. 13° 45′ N.; long. 34° 57′ W. Barometer, 30.21; temperature of air, 82°; water, 80°. Winds: E. by S., E. by S., E. First part, fine breezes and pleasant; middle, fresh easterly winds and pleasant throughout; latter, squally appearances; at meridian a squall of wind and rain from SE. No meridian observation.

Oct. 25. Lat. 13° 00′ N.; long. 35° 59′ W. Barometer, 30.24; temperature of air, 79°; water, 79°. Winds: E. to SE., SE. by S., S.SW. First part, squally; at 5 p. m. heavy squall from SE., hard gales from SE. and S.SE. Middle, hard gales with severe squalls of wind and rain; at 5 a. m. wind canting southerly; wore ship. Latter, light S.SW. airs, and overcast; cloudy weather.

Oct. 26. Lat. 12° 11′ N.; long. 35° 10′ W. Barometer, 30.36; temperature of air, 80°; water, 81°. Easterly current for two days of ¼ mile. Winds: S.SW., calm, E.SE. First part, variable; plenty of rain. Middle, faint airs with some rain. Latter, weather clearing up; light easterly airs.

Oct. 27. Lat. 10° 21′ N.; long. 34° 12′ W. Barometer, 30.24; temperature of air, 77°; water, 80°. Winds: E., E., E. and S.SE. First part, light airs and pleasant; middle, moderate winds and fine weather; latter, variable and squally, with much rain.

Oct. 28. Lat. 9° 25′ N.; long. 34° 26′ W. Barometer, 30.26; temperature of air, 81°; water, 81°. Current for two days, N. 70° E., ½ mile. Winds: SE., SE. by S., light and baffling. First part, light; middle, moderate breezes and fine weather; latter, light baffling airs. At 9 a. m. tacked to eastward; at 11 tacked to southward.

Oct. 29. Lat. 7° 57′ N.; long. 33° 53′ W. Barometer, 30.29; temperature of air, 78°; water, 81°. Winds: E., E. to S.SE., E. to SE. First part, light airs and pleasant. From 6 to 8 p. m. squally; blowing strong in squalls from E. to SE.; raining in torrents. Middle, squally; wind variable; heavy rain; sometimes an eight knot breeze, and then followed by calm. Latter, variable, with some rain.

Oct. 30. Lat. 7° 12′ N.; long. 34° 21′ W. Barometer, 30.25; temperature of air, 80°; water, 82°. Current for two days, W., ½ knot. Winds: E.SE.; baffling from SE. to S., and W.SW., W.SW. First part, faint baffling airs and calm; middle, the same, with frequent showers of rain; latter, light variable airs.

Oct. 31. Lat. 6° 57′ N.; long. 33° 55′ W. Barometer, 30.25; temperature of air, 76°; water, 81°. Winds: calm and N., SE., calm and S. First part, calm; at 8 p. m. light squall from the northward. Middle, light baffling airs and calms; rainy. Latter, the same.

Nov. 1. Lat. 6° 57′ N.; long. 33° 10′ W. Barometer, 30.23; temperature of air, 82°; water, 82°. Current for two days, N., ¾ knot. Winds: SW., W.SW, W.SW. First part, light baffling airs; middle, light airs and fine weather; latter, the same.

Nov. 2. Lat. 7° 02′ N.; long. 32° 31′ W. Barometer, 30.22; temperature of air, 82°; water, 82°. Current, N., 1 knot. Winds: W.SW., calm, S.SE. First part, light airs and pleasant. Middle, calm; at daylight a light air sprung up from S.SE.; tacked to S.W. Latter, light airs and clear.

Nov. 3. Lat. 6° 53′ N.; long. 32° 27′ W. Barometer, 30.28; temperature of air, 77°; water, 80°. Winds: S.SE., variable, variable. First part, faint airs and calm; middle and latter, variable and light, with steady rain.

Nov. 4. Lat. 6° 45′ N.; long. 32° 03′ W. Barometer, 30.22. Temperature of air, 84°; water, 81°. Winds: calm, calm, calm. Calm throughout, with slight rain.

Nov. 5. Lat. 6° 13′ N.; long. 30° 51′ W. Barometer, 30.20; temperature of air, 82°; water, 82°. Current, E., 1 knot. Winds: calm, calm, S.SE. First part, calm. Middle, calm; at sunrise a light air sprung up from S.SE. Latter, the same.

Nov. 6. Lat. 4° 36′ N.; long. 31° 31′ W. Barometer, 30.20; temperature of air, 79°; water, 81°. Winds: S.SE., SE. by S., SE. First part, light winds and pleasant. Middle, moderate breezes, with a large SW. sea; squally occasionally. Latter, the same, with torrents of rain.

Nov. 7. Lat. 2° 36′ N.; long. 32° 49′ W. Barometer, 30.20; temperature of air, 81°; water, 80°. Winds: SE. by S., S.SE., S.SE. First part, moderate breezes, with thick passing clouds; large SW. sea. Middle, squally; sea, the same. Latter, moderate and occasional light squalls.

Nov. 8. Lat. 1° 32′ N.; long. 34° 06′ W. Barometer, 30.20; temperature of air, 80°; water, 79°. Current, N. 47° W., 2 knots. Winds: S.SE., SE. by S., SE. by S. First part, light winds and pleasant; at 3 p. m. tacked to the eastward; at 7 p. m. squall from E.SE., tacked to the southward. Middle and latter, moderate breezes and fine weather.

Nov. 9. Lat. 1° 51′ N.; long. 32° 43′ W. Barometer, 30.18; temperature of air, 80°; water, 80°. Current, N. 63° W., 2 knots. Winds: S. by E., S., S. by E. First part, moderate and pleasant; at 1 p. m. tacked to the eastward. Middle, steady winds and overcast, cloudy weather. Latter part, wind steady; current, 47 miles W.NW. No bugbear about that.

Nov. 10. Lat. 0° 37′ N.; long. 34° 01′ W. Barometer, 30.18; temperature of air, 79°; water, 80°. Current, N. 81° W., 2½ knots. Winds: S. by E. and SE. by E., SE. by S., SE. by S. First part, light winds and cloudy; at 4 p. m. squalls from the eastward; tacked ship. Middle, squally and heavy showers of rain; morning, clearing up and wind steady. Latter, moderate and pleasant; 60 miles westerly current.

Nov. 11. Lat. 1° 58′ S.; long. 34° 51′ W. Barometer, 30.17; temperature of air, 82°; water, 78°. Current, N. 85° W. ½ knot. Winds: SE., E.SE., SE. by E. First part, wind brisk; middle, steady winds and fine weather; latter, brisk breezes and clear.

Nov. 12. Lat. 4° 37′ S.; long. 35° 43′ W. Barometer, 30.20; temperature of air, 80°;

water, 79°. Winds: SE., E.SE., E.SE. First part, brisk breezes and fine weather; middle, steady wind and fine weather; latter, pleasant. At meridian, water slightly discolored.

Nov. 13. Lat. 5° 25′ S.; long. 35° 04′ W. Barometer, 30.20; temperature of air, 80°; water, 79°. Winds: SE. by E., E.SE., E. by S., and E.SE. First part, pleasant; at 1 p. m. saw the land; at 2.30 p. m. tacked off shore; sounded in 7 fathoms. Middle, moderate breezes and pleasant weather; at 12 m. tacked to southward; at 8 a. m. fresh squall from E. by S. Meridian, wind light; Cape St. Roque bearing W. ½ S. by compass."

Ship Samuel Russell, (E. Jones, first officer,) New York to San Francisco; 16 days out.

"Oct. 22, 1853. Lat. 29° 57′ N.; long. 32° 05′ W. Sympiesometer, 29.95; temperature of water, 76°. Winds: SW., calm, SW. Very light airs and calms; swell from N.NW.

Oct. 23. Lat. 29° 09′ N.; long. 31° 38′ W. Sympiesometer 29.90; temperature of water, 75°. Winds: SW., W.SW., W. by S. Very light air; heavy swell from N.

Oct. 24. Lat. 27° 37′ N.; long. 31° 48′ W. Sympiesometer, 29.90; temperature of air, 73°; water, 74°. Winds: W.NW., N., E.NE. First and middle, light air; latter, very light; baffling and squally weather.

Oct. 25. Lat. 24° 32′ N.; long. 32° 08′ W. Sympiesometer, 29.95; temperature of air, 73°; water, 74°. Winds: E.NE., E.SE., E. by S. First part moderate; middle and latter, fresh trades; heavy swell from N. by E.

Oct. 26. Lat. 20° 15′ N.; long. 31° 50′ W. Sympiesometer, 29.80. Winds: SE. by E., SE. by E., SE. by E. Fresh trades; middle part, squally, with rain.

Oct. 27. Lat. 16° 12′ N.; long. 31° 55′ W. Sympiesometer, 29.65; temperature of air, 77°; water, 78°. Winds: E.SE., E.SE., E.SE. First part, fresh, squally, and showers; middle and latter, steady; very light northerly swell.

Oct. 28. Lat. 12° 01′ N.; long. 32° 07′ W. Sympiesometer, 29.60; temperature of air, 79°; water, 79; Winds: E. by S., E. by S., E. by S. Fresh steady trades and cloudy. During the last three days the sympiesometer has fallen in the same manner as it has done before with me, in the same latitude, or about 15° each side of the equator.

Oct. 29. Lat. 10° 17′ N.; long. 32° W. Sympiesometer, 29.60. Winds: SE., SE., SE. Commences, fresh trades; at 6 p. m., nearly calm. Latter, squally, rainy, and calm.

Oct. 30. Lat. 8° 39′ N.; long. 30° 00′ W. Sympiesometer, 29.65; temperature of air, 74°; water, 81°. Winds: S.E., S.E., S.E. First part, light and squally; middle and latter, very fresh gales, rain, and squally.

Oct. 31. Lat. 7° 42′ N.; long. 30° 55′ W. Sympiesometer, 29.62; temperature of air, 76°; water, 81°. Winds: E.NE., calm, W.SW. First and latter, very light air, drizzling rain throughout.

Nov. 1. Lat. 6° 55′ N.; long. 30° 34′ W. Sympiesometer, 29.52; temperature of air, 81°; water, 82°. Winds: W.SW., S. by E., S.SE. Light variable gales. Latter part, squally.

Nov. 2. No observation. Sympiesometer, 29.60; temperature of water, 82°. Winds: SE., SE., calm. Very light airs and calms; rain squalls.

Nov. 3. Lat 4° 07′ N.; long. 31° 37′ W. Sympiesometer, 29.55; temperature of air, 81°; water, 82°. Winds: SE., SE., SE. Light, moderate gales, and squally.

Nov. 4. Lat. 3° 52′ N.; long. 30° 03′ W. Sympiesometer, 29.55. Winds: S. by E., S. by E., S. by E. Moderate gales and very squally and rainy.

Nov. 5. Lat. 2° 01′ N.; long. 30° 52′ W. Sympiesometer, 29.50; temperature of air, 80°; water, 80°. Winds: S. by E., SE., SE. Moderate and steady gales.

Nov. 6. Lat. 0° 23′ S.; long. 31° 21′ W. Sympiesometer, 29.55; temperature of air, 78°; water, 78°. Winds: SE., SE., SE. Moderate gales; at 7 a. m., squally and showers.

Nov. 7. Lat. 3° 25′ S.; long. 32° 03′ W. Sympiesometer, 29.60. Winds: SE., SE., SE. Moderate and steady. At 11 a. m., made Fernando de Noronha, bearing S.SW.

Nov. 8. Lat. 7° 08′ S.; long. 33° 17′ W. Sympiesometer, 29.55; temperature of air, 78°; water, 78°. Winds: SE., SE., SE. Strong trades and fine weather."

The Samuel Russell "split the difference." She commenced on the old route and glided off into the new.

Barque Maury, (C. A. Fletcher, captain,) New York to Shanghae; six days out.

"Nov. 1, 1855. Lat. 29° 54′ N.; long. 49° 58′ W. Barometer, 30.80; temperature of air, 75°; water, 76°. Winds: E., E.NE., E. by S. First part, light breezes from the eastward; cross swell from south and northwest. Middle part, wind, E.NE. Latter part, fine.

Nov. 2. Lat. 26° 43′ N.; long. 47° 45′ W. Barometer, 29.90; temperature of air, 76°; water, 76°. Winds: E.NE., E. by S., E. by S. Brisk breezes and light showers of rain. Looks like trades; hope so.

Nov. 3. Lat. 25° 17′ N.; long. 47° 10′ W. Barometer, 29.86; temperature of air, 76°; water, 76°. Winds: E. by S., W., E. First part, light easterly winds; from 7 p. m. to 4 a. m., variable, with heavy rain; thunder and lightning; past 4 a. m., wind east, variable.

Nov. 4. Lat. 22° 57′ N.; long. 46° 13′ W. Barometer, 29.70; temperature of air, 83°; water, 82°. Winds: variable, variable, variable. Baffling winds throughout; cross swell; thunder and lightning.

Nov. 5. Lat. 21° 59′ N.; long. 46° 07′ W. Barometer, 29.70; temperature of air, 83°; water, 82°. Winds: variable, variable, variable. Brisk breezes until 4 p. m.; rain throughout the rest of the day; squally northeasters; no trades.

Nov. 6. Lat. 21° 43′ N.; long. 43° 19′ W. Barometer, 29.90; temperature of air, 86°; water, 82°. Winds: S.E., S., S. by E. Current, N., ½ knot. First part, brisk breeze; middle part, the same. Tacked to the eastward. Lightning in the northward.

Nov. 7. Lat. 20° 28′ N.; long. 43° 36′ W. Barometer, 29.96; temperature of air, 83°; water, 82°. Current, NW., ½ knot. Winds: S.SE., SE., E. by S. Light airs from S.SE; middle part, the same; latter part, moderate; hard NE. trades blowing from S.SE!

Nov. 8. No observation. Barometer, 29.92. Temperature of air, 80°; water, 82°. Winds: E.SE., variable, variable. Thunder and lightning throughout; rain and variable winds.

Nov. 9. Lat. 17° 10′ N.; long. 42° 23′ W. Barometer, 29.95; temperature of air, 80°; water, 82°. Winds: SE., E., variable. Throughout, variable weather. Hard rain squalls.

Nov. 10. Lat. 15° 00′ N.; long. 42° 12′ W. Barometer, 29.98; temperature of air, 84°; water, 82°. Current, W., 1 knot. Winds: variable, variable, variable. First part, light variable breeze; swell from SE. At 8 p. m. a meteor passes from S. to NE., about 25° above the horizon, showering stars as it went. Middle and latter parts, as the first. Strong tide rips.

Nov. 11. Lat. 12° 38′ N.; long. (not observed.) Barometer, 29.98; temperature of air, 83°; water, 82°. Winds: E.SE., SE. First part, easterly winds and cloudy weather; middle and latter part, SE. wind, with heavy rain.

Nov. 12. No observation. Barometer, 29.88; temperature of air, 82°; water, 82°. Winds: SE., SE., SE. All these 24 hours, SE. wind, and heavy rain.

Nov. 13. Lat. 11° 14′ N.; long. 39° 32′ W. Barometer, 29.87; temperature of air, 82°; water, 82°. Winds: SE., E., E. by N. First part, swell from the eastward, and moderate breeze from the SE.; middle part, wind east; strong tide rips; fine winds, E. by N.

Nov. 14. No observation. Barometer, 29.85; temperature of air, 82°; water, 82°. Winds: E. by N., E. by S., E. by S. First part, brisk breeze; middle, the same; latter part, the same.

Nov. 15. Lat. 7° 18′ N.; long. 37° 34′ W. Barometer, 29.82; temperature of air, 84°; water, 84°. Winds: E. by N., E. by S., E.SE. First part, brisk breeze; 4 p. m., heavy squalls from E. by N., and heavy rain. Ship in sight, standing to the southward. Alter his bearings 3 points in 2 hours in favor of "Maury." Latter part, light breeze from E. by S. No tide rips.

Nov. 16. Lat. 5° 24′ N.; long. 36° 31′ W. Barometer, 29.83; temperature of air, 84°; water, 84°; current, N. by E., 1 knot. Winds: E.SE., E. by S., E. by S. Throughout, light breeze from E. by S.; current, 24 miles, from N. by E. [*Query:* Is not the current S. by W. ?]

Nov. 17. Lat. 4° 14′ N.; long. 35° 32′ W. Barometer, 29.83; temperature of air, 85°; water, 83°; current, N. by E., 1⅓ knots. Winds: E. by S., E., E. by N. First part, moderate breeze; short swell from SE.; heavy (cum.) clouds hanging to the south, with sharp lightning; middle and latter parts, fair.

Nov. 18. Lat. 2° 28′ N.; long. 36° 03′ W. Barometer, 29.81; temperature of air, 84°; water, 83°. Winds: E., S.E. and NE., SE. by S. First part, light easterly winds and fair weather; middle, heavy squalls from the eastward; rain, thunder and lightning; latter, fine wind.

Nov. 19. Lat. 00° 12′ S.; long. 36° 20′ W. Barometer, 29.78; temperature of air, 84°; water, 83°; current, W. by N., ½ knot. Winds: SE., SE., E. by S. First part, fine SE. trades; middle part, same; latter, fair wind well to the eastward. Cross the equator long. 36° 20′ W., new route, and good average for October.

Nov. 20. Lat. 3° 00′ S.; long. 36° 31′ W. Barometer, 29.83; temperature of air, 80°; water, 82°; current, W.SW., 1¾ knots. Winds: SE. by E., E.SE., E.SE. Throughout, brisk breeze from the eastward favoring us, having crossed so far to the westward. This of course is what is called "*Back-strapped.*" Never having been back-strapped, I think myself all right.

Nov. 21. Lat. 4° 47′ S.; long. 36° 08′ W. Barometer, 29.84; temperature of air, 81°; water, 82; current, N., ½ knot. Winds: E. by S., E. by S., E. by S.; fine breeze from E. by S.; middle and latter parts, same. At 8 a. am. tacked to N. E. off St. Roque, flat, 20 fathoms water, coral and shells. At 10 tacked on shore. Ends, fine.

Nov. 22. Lat. 4° 56′ S.; long. 35° 15′ W. Barometer, 29.82; temperature of air, 84°; water, 82°. Winds: E., E., E. At 1 p. m. tacked off shore; at 3.30 tacked on shore; at 6 tacked off shore. Midnight, tacked on shore; at 2 a. m. tacked off shore; at 4 a. m. tacked on shore; and at 11.30 tacked off. 7 fathoms, sand and shells. Meridian, fine. Point Toiro, SW., 5 miles distant.

Nov. 23. Lat. 5° 42′ S.; long. 34° 40′ W. Barometer, 29.84; temperature of air, 83°; water, 82°. Winds: E., E., E. Magnetic variation observed, 11° 05′ W. First and middle

parts, brisk breeze. At 3.30 tacked on shore; at 7.30 p. m. tacked off shore. 10 fathoms, coral and shells. At 1 a. m. tacked to S. by E. Latter part, moderate breeze. *Straps removed.*"

Ship Comet, (Joseph Arquit, captain,) New York to San Francisco, 6 days out.

"Nov. 2, 1855. (Civil time.) Lat. 29° 21′ N.; long. 49° 45′ W. Barometer, 30.28; temperature of air, 72°; water, 73°. Clouds: cir. W.SW.; cum, NW. Winds: E., E., E. First and middle parts, moderate; latter part, brisk winds and pleasant; long heavy rolling swell from E to E.SE. This wind acts very much like the trades; if it is, it is something new in my experience.

Nov. 3. Lat. 26° 33′ N.; long. 47° 14′ W. Barometer, 30.10; temperature of air, 74°; water, 76°. Winds: E.NE., E. by N., east. Brisk winds and passing rain squalls. Heavy swell from east. Ship braced moderately sharp, and close by the wind. Many flying fish.

Nov. 4. Lat. 24° 12′ N.; long. 45° 52′ W. Barometer, 29.90; temperature of air, 73°; water, 77°. Clouds: nimb. Winds: E., E., E. Continued squalls of wind and rain throughout. In some of the squalls, ship going 10 knots with top-gallant sails in; and between some of them only 2 or 3 knots with royals. During some of the squalls the wind would go as far south as S.SE. and SE. for a short time. During the night, frequent sharp flashes of lightning near the horizon, at SW. No observations.

Nov. 5. Lat. 22° 04′ N.; long. 45° 47′ W. Barometer, 29.90; temperature of air 76°; water, 78°. Clouds: nimb. and cum., NW. Winds: E., E., E.SE. and SE. First and middle parts, much rain from heavy, sluggish looking, lead-colored clouds. Sharp lightning in the eastern horizon, at intervals of 10, 15, and 20 minutes; no thunder. Latter part, clouds more broken; wind going gradually to southward. At noon, tacked to east. At noon, in company with barque Maury, which sailed from New York one day before us.

Nov. 6. Lat. 22° 01′ N.; long. 44° 25′ W. Barometer, 30.10; temperature of air, 84°; water, 78°. Clouds: nimb. and cum. Winds: baffling, E.NE to SE., E.SE. to E.NE., SE. Rain, rain. The most contemptible weather I have ever known. Through the night much sharp lightning from all points of the compass. At 9 a. m. cleared off with bright sunshine. Tacked at various times as the wind required.

Nov. 7. Lat. 22° 08′ N.; long. 43° 50′ W. Barometer, 30.15; temperature of air, 78°; water, 79°. Clouds: cum. and stra. Winds: SE., SE., SE. Light winds, and clear throughout. I consider myself in a very bad position for a favorable passage to the equator; especially with the wind SE., as it has been the last 24 hours.

Nov. 8. Lat. 20° 17′ N.; long. 43° 42′ W. Barometer, 30.10; temperature of air, 76°; water 79°, Clouds: cum., NW. Winds: E. by S., E.SE., SE. by E. Light winds, and clear. Hard NE. trades this.

Nov. 9. Lat. 18° 11′ N.; long. 43° 45′ W. Barometer, 30.10; temperature of air, 80°; water, 80°. Clouds: cum. stra., and stratus; very little motion. Winds: E.SE., E.SE., E.SE. Light winds throughout. First and middle parts, clear; latter part, very light passing rain squalls.

Nov. 10. Lat. 16° 43′ N.; long. 43° 20′ W. Barometer, 30.10; temperature of air, 78°; water, 80°. Clouds: cir., no motion; cum., NW. Winds: baffling, SE. to E. by N., E. to SE.,

E.SE. First and middle parts, hard baffling wind and rain squalls, with sharp lightning and loud thunder at all points of the compass; dead calm between the squalls. Latter, light winds, and clear bright weather. Very smooth sea. I am going south, when I can do it without making too much westing, and trust to chances for making easting.

Nov. 11. Lat. 14° 20′ N.; long. 42° 57′ W. Barometer, 30.05; temperature of air, 77°; water, 79°. Winds: E. by S., E., E. Light winds and hazy smoky weather. I think there can be but little wind to the eastward of us, or it would not be so smooth.

Nov. 12. Lat. 11° 52′ N.; long. 42° 45′ W. Barometer, 30.10; temperature of air, 76°; water, 80°. Clouds, nimb. and cum. Current, W.NW., 15 miles. Winds: E. by S., E.SE., E.SE. Light winds and thick rainy weather; much sharp lightning. Latter part, strong rippling on the water, with long smooth streaks running NE. and SW.; the water quite green, and looking very much like soundings. During the 24 hours a current of 15 miles, W.NW. The sea very smooth.

Nov. 13. Lat. 10° 25′ N.; long. 41° 51′ W. Barometer, 30.00; temperature of air, 77°; water, 80°. Clouds: cir. stra., E.; cum., W. Current, NW., 15 miles. Winds: baffling, E.NE., E.NE. First and middle parts, thick, rainy weather; during first part tacked several times, as required. Latter part, clear and pleasant; during the night strong ripplings on the water, which we could hear for a mile from us.

Nov. 14. Lat. 8° 46′ N.; long. 40° 33′ W. Barometer, 30.00; temperature of air, 79°; water, 81°. Clouds: cir. stra. E., cum. W. Winds: E., E. to NE., E.NE. to E. Light winds and light passing rain squalls. Strong tide rips, but do not detect any current.

Nov. 15. Lat. 7° 34′ N.; long. 40° 28′ W. Barometer, 30.00; temperature of air, 80°; water, 82°. Clouds: stra. and cum., NW. Winds: calm, E., SE. First part, dead calm. Middle and latter parts, light winds from E. to SE.; many tide rips, which we had a good opportunity of observing when becalmed. They came up in ridges as long as the eye could reach from all points of the compass, but mostly from E. I examined the ridges very closely, but could not see any fine drift matter of any kind, as you can on the edges of currents in many parts of the ocean. We have had no currents, unless they have been from different directions, and one counteracting the other.

Nov. 16. Lat. 6° 07′ N.; long. 40° 05′ W. Barometer, 30.00; temperature of air, 80°; water, 82°. Clouds: stra. and cir., cum. W. Winds: E.SE., E., E. Current, W., 15 miles. Light winds and pleasant. There has been no time since noon to midnight but that there has been tide rips either in sight or hearing, mostly tending NE. and SW. in long narrow ridges. From 8 p. m. to 9 p. m. the ocean appeared like a boiling cauldron, which we sailed through for three miles. The bubbling made a loud noise, which we heard for a long time after we had sailed through it. The ship had a very singular motion, like striking her keel on a soft muddy bottom in a short rough sea-way—the same as I have felt in the harbor of Montevideo. The motion was noticed by all on board. We have had a current of 15 miles, going W. I have often noticed tide rips in this part of the ocean before, particularly when bound home, (for I have never been where I am now, bound out, before,) and have mentioned them in my abstract log, but they were different from what we had last night. The ship would come-to and fall-off three points without any regard to the rudder.

Nov. 17. Lat. 3° 57′ N.; long. 38° 35′ W. Barometer, 30.00; temperature of air, 78°; water, 82°. Clouds: cum., W.NW. Winds: E. by S., E. by S., E. by S. Light winds and

light passing rain squalls; no tide rips. From good observations I think we have had a current of 20 or 30 miles, going E.NE.

Nov. 18. Lat. 1° 08′ N.; long. 39° 18′ W. Barometer, 30.00; temperature of air, 79°; water, 82°. Clouds: cir. stra. and cum., W.NW. Winds: E., E.SE., SE. Current, 20 miles, W.NW. First and middle parts, light winds and smooth sea. Latter part, brisk and pleasant, with rough sea from SE. A current of 20 miles to W.NW. 40° W. is a hard place to cross the equator; but there is no back out now—I must trust to chances and the good sailing qualities of my ship to get me out of the scrape.

Nov. 19. Lat. 2° 09′ S.; long. 39° 29′ W. Barometer, 29.90; temperature of air, 78°; water, 78°. Clouds: cum., NW. Current, 15 miles, W.NW. Winds: SE., E.SE., E. by S. ½ S. Light winds and hazy; no tide rips; crossed equator in 39° 30′ W. From good observations I judge we have had 15 miles current to W.NW. If we have any luck to get round St. Roque, I think we will beat ships that are to eastward of us; it has been so smooth that I think there has been very little wind east of us. Lieut. Maury will be able to tell.

Nov. 20. Lat. 2° 30′ S.; long. 38° 55′ W. Barometer, 30.00; temperature of air, 77°; water, 80°. Clouds: cum., W.NW. Winds: E., E., E. by S. No current. First part, brisk. Middle and latter parts, light winds and pleasant; at 5.30 p. m. tacked off shore; wind headed us off, a short time after we tacked, to N.NE.; at 4 a. m. tacked in shore and head up SE. by S. a short time, but soon headed off to S. by E. We have had no current; and from our bad luck in tacking I think we have done well. When we tacked first the land was in sight, some ten miles off.

Nov. 21. Lat. 2° 57′ S.; long. 38° 10′ W. Barometer, 30.00; temperature of air, 79°; water, 80°. Clouds: cum., W.NW. Current, 10 miles, W. Winds: E.SE., E.SE., E.SE. Light winds and pleasant. At 4 p. m. tacked off shore; at 4 a. m. tacked on shore. There has been a small westerly current. The wind is very true and steady; no slants; all our gain is by hard work. If we had a strong trade we could soon beat around the Cape.

Nov. 22. Lat. 4° 07′ S.; long. 37° 38′ W. Barometer, 30.05; temperature of air, 79°; water, 80°. Clouds: cum., W. No current. Winds: E. by S., E., E. Light winds, clear, and pleasant. At 6 p. m. tacked off shore; the land in sight, distant 5 miles. At midnight tacked in shore. At 11 a. m. tacked off shore; the land W.SW., 5 miles. Very hazy over the land. All we want is a good strong trade, and we could soon get out of trouble.

Nov. 23. Lat. 4° 24′ S.; long. 36° 57′ W. Barometer, 30.05; temperature of air, 80°; water, 80°. Clouds: cum., W.NW. Current, 26 miles, W. by N. Winds: E. by S. ½ S., E., E. by S. First part, light; middle and latter parts, brisk winds and pleasant. At 8 p. m. tacked on, at midnight tacked off, shore; at 4 a. m. tacked on. I expected to make more these 24 hours than we have made before, but have been disappointed, having had more current than any day previous. More wind; more current.

Nov. 24. Lat. 4° 17′ S.; long. 36° 00′ W. Barometer, 30.10; temperature of air, 76°; water, 78°. Clouds: cum., W.NW. Current, 15 miles, W.NW. Winds: E.SE., E., E.SE. Brisk winds and pleasant. At 2 p. m. tacked off shore; land in sight, quite plain from deck. Tacked at various times after, to get every advantage of the slightest shifts of the wind. At 7 a. m. standing in shore, and land in sight from top-sail yards; saw very heavy breakers from deck, bearing S.SE., 3 miles. Tacked off shore; saw the breakers very plain after we tacked.

Nov. 25. Lat. 4° 35′ S.; long. 35° 17′ W. Barometer, 30.05; temperature of air, 80°; water, 78°. Clouds: stra. and cum., W.NW. Current, 16 miles, W. Winds: E. by S. ½ S., E.SE., E.SE. First part, brisk; middle and latter parts, light winds and pleasant. Tacked at various times, as required. At 8 a. m. tacked off shore; the land S., 15 miles. In all our inshore tacks since on the coast we have found colored or white water before seeing the land, which is a good guide, especially in the vicinity of the breakers we saw yesterday.

Nov. 26. Lat. 5° 22′ S.; long. 35° 01′ W. Barometer, 30.05; temperature of air, 79°; water, 79°. Clouds: stra. cum., NW. Current, 16 miles, W. Winds: E.SE., E.SE., SE. Light winds and pleasant. At 2 p. m. tacked off; at midnight tacked on; at noon the land in sight from foreyard. Well! we are clear of St. Roque, and right glad am I of it. In looking over our route, I do not see where I could have shortened our passage, except by keeping further north the first four days out from New York. Lieut. Maury can tell where I have made mistakes."

NOTE.—Captain Arquit, on concluding his passage at San Francisco, says: "March 14, 1856. The Comet has made the best passage to this port of any ship that sailed from New York during the months of October or November, and passed Cape St. Roque in shorter time than any ship that crossed the equator to the eastward of her. The ship "Charmer," that sailed before the "Comet," tacked near the equator, and crossed it five times, and had a long passage to St. Roque—another striking proof of the loss by "dallying in the doldrums," and of the advantages of standing on for slants and chances.

Ship Ringleader, (Richard Matthews, captain,) Boston to San Francisco, eleven days out.

"Nov. 8, 1855. Lat. 28° 18′ N., long. 41° 30′ W. Barometer, 30.20; temperature of air, 75°; water, 76°. Winds: E. by S., ditto, E.SE. All day brisk breeze from E. to E.SE., and clear; trade appearances; all sail; smooth sea and good weather.

Nov. 9. Lat. 25° 23′ N.; long. 40° 40′ W. Barometer, 30.10; temperature of air, 76°; water, 78°. Winds: E.SE., ditto, ditto. Comes in strong. Middle, light airs and smooth sea. Latter, brisk breeze and puffy; steering full and by; some weed. All day good weather.

Nov. 10. Lat. 22° 40′ N.; long. 40° 40′ W. Barometer, 30.10; temperature of air, 76°; water, 78°. Winds: SE. by E., ditto, E.SE. First and middle, brisk breeze and puffy from SE. to E.; passing clouds, and light showers. Full and by are the orders of the day.

Nov. 11. Lat. 19° 38′ N.; long. 39° 40′ W. Barometer, 30.05; temperature of air, 76°; water, 76°. Winds: E. by S., ditto, ditto. Comes in light and variable. Middle, brisk and puffy; some light showers of rain. Latter, fresh and squally; high wind now.

Nov. 12. Lat. 16° 52′ N.; long. 38° 15′ W. Barometer, 30.00; temperature of air, 79°; water, 79°. Winds: E., ditto, ditto. All day strong breeze and squally; light showers; steering full and by; all sail set.

Nov. 13. Lat. 14° 00′ N.; long. 36° 00′ W. Barometer, 30.00; temperature of air, 79°; water, 80°. Current, W.NW., 20 miles. Winds: E., ditto, ditto. All day strong breeze and puffy, and head sea; all sail; no weed, no fish, nor birds; steering full and by.

Nov. 14. Lat. 11° 05′ N.; long. 34° 35′ W. Barometer, 29.90; temperature of air, 80°; water, 81°. Current, NW., 20 miles. Winds: E., ditto, E. by S. All day strong breeze and passing clouds, and head sea; light showers. Plenty of flying fish; no birds nor weed. Heavy tide rips; steering full and by.

Nov. 15. Lat. 8° 35′ N.; long. 32° 50′ W. Barometer, 29.85; temperature of air, 82°; water, 82°. Current, NW., 24 miles. Winds: E., ditto, ditto. Commences, fresh breeze and good weather; at 6 p. m. black clouds rising in SE., and squally looking weather. Middle, squally, and bad chop of sea; heavy tide-rips all day. Latter, light breeze and squally; steering full and by.

Nov. 16. Lat. 6° 10′ N.; long. 31° 00′ W. Barometer, 29.80. Temperature of air, 82°; water, 82°. Winds: E. by N., E., ditto. Comes in fresh and fine, except now and then light squalls. Middle, fresh and dark; dark clouds in the south, drawing in the doldrums; at 2, squalls from SE., and dark clouds in SW., and heavy thunder and lightning. Latter, strong breeze from the E., and rain and lightning steady.

Nov. 17. Lat. 4° 05′ N.; long. 31° 00′ W. Barometer, 29.80; temperature of air, 82°; water, 82°. Current, SE., 15 miles. Winds: E. by N., SE. by E., SE. Commences, fresh breeze from E., and black squally weather; steady lightning from SE. to SW., and heavy rain. Middle, steady breeze from the E.; at 2 p. m. heavy squalls from S.; all light sails in, and heavy head sea, and torrents of rain. Latter, light breeze, and clouds thin, but overcast; SE. current; steering full and by.

Nov. 18. Lat. 2° 42′ N.; long. 31° 35′ W. Barometer, 29.75; temperature of air, 82°; water, 82°. Winds: E.SE., SE. to E.SE., E.SE. Trade clouds. Comes in light breeze and puffy; light showers of rain, and bobbing sea. Middle, light airs and clear overhead; low down, all around clouds, heavy, but little movement. Middle and latter, squalls from E. to S.SE., and hard rain and lightning.

Nov. 19. Lat. —° 34′ S.; long. 32° 25′ W. Barometer, 29.80; temperature of air, 84°; water, 82°. Winds: S.E., ditto, ditto. Clouds, light trade. Commences, hard squalls from E. to SE., and much lightning all around the compass, and rain; intervening calms; at 8 a. m. breezed up steady breeze from SE., and clearing off. Middle, brisk SE. trades, and fine weather; trade clouds. Latter, the same; smooth sea and fine weather.

Nov. 20. Lat. 4° 00′ S.; long. 33° 25′ W. Barometer, 29.90. Temperature of air, 82°; water, 80°. Winds: SE. by E., SE., ditto. Comes in brisk trades and fine weather; all sail; at 8 a. m. (19th, sea time) crossed the equator, long. 32° 20′ W.; only 23 days and 1 hour from Boston, and fair wind only two days; it is hard to beat; experienced no current this day. Middle and latter, brisk trades and beautiful weather, and smooth sea; passing clouds from S.E. So ends. Made 220 miles full and by. If the wind continues we shall barely shave by the coast of Brazil.

Nov. 21. Lat. 7° 40′ S.; long. 34° 15′ W. Barometer, 29.90. Temperature of air, 82°; water, 81°. Winds: SE. by S., SE., E.SE. Trade clouds. Commences with brisk breeze from SE., and fine trade weather, and smooth sea; at 11 a. m. passed near where the Roccas shoal is laid down on my chart, but saw nothing of it; steering full and by. Middle, strong trades; at 8 p. m. abreast of St. Roque, 25 days 6 hours from Boston; no current this day. Latter, the same, and smooth sea.

Nov. 22. Lat. 10° 48′ S.; long. 35° 15′ W. Barometer, 29.95; temperature of air, 82°; water, 81°. Winds: E.NE., ditto, ditto. First and middle, brisk trades and fine weather; at 2 p. m. abreast of Pernambuco, just 26 days from Boston. Land 30 miles off, but being hazy I cannot see anything. Wind canting to the eastward; braced in and set studding-sails. This

is the first time we have started our braces since the 6th November, then being in lat. 37° N., which is very remarkable, making 2,700 miles diff. lat., and coming through the doldrums too. We had squalls which varied from S.SE. to E., but kept on port tack all the time. During this 16 days tack I have been sharp braced, but was enabled to fetch just where I should have gone had I the wind aft—say in lat. 5° N., long. 31° W., and crossed the equator in long. 32½ W. I think my route is far enough east for any ship crossing to the southward. I think this a model track. The two last voyages I crossed in longs. 34° 30′ and 36° 35′ W., and fell to leeward both times, but had no difficulty in getting past, as I never found anything of the bugbear of N.W. currents, but, if any, a SE. set, slight."

Ship Sancho Panza, (J. B. Hildreth, captain,) Boston to San Francisco; nineteen days out.

"Nov. 1, 1855. Lat. 29° 24′ N.; long. 43° 26′ W. Barometer, 30.00. Winds: E.NE., E., E.SE.; moderate breezes and heavy rain squalls. Middle and latter part, steady heavy rain. Royals and all light sails set. Winds baffling from NE. to SE. during the squalls. Large quantities of sea-weed. Lightning in NE. between 8 and 9 p. m.

Nov. 2. Lat. 27° 08′ N.; long. 43° 09′ W. Barometer, 30.00. Winds: E.SE., E., E.NE. Begins steady, constant rain. Middle, same, with moderate winds; ends cloudy and moderate, with light rain squalls. Large quantities of weed.

Nov. 3. Lat. 25° 56′ N.; long. 42° 56′ W. Barometer, 29.90. Winds: NE. to SE., calm, E.SE. First, winds varying from NE. to SE.; end, moderate breezes and flying clouds; very little weed. The ship has sailed one-third more distance than necessary, from the winds veering ahead.

Nov. 4. Lat. 24° 17′ N.; long. 41° 58′ W. Barometer, 29.80. Begins moderate breezes, but unsteady; middle, squalls from E. to SE., and calm, with abundance of rain; ends, fresh breezes and constant showers and squalls of rain; no regular trades; ends with rain, rain, rain.

Nov. 5. Lat. 22° 24′ N.; long. 41° 52′ W. Barometer, 29.70. Winds: SE., S.SE., E. Begins, thick rain and constant squalls; middle, constant squalls from S.SE., with much thunder and lightning in the SW.; ends, strong breezes and constant heavy squalls of rain. Very bad turbulent sea; more like Gulf-stream weather than trades.

Nov. 6. Lat. 21° 26′ N.; long. 41° 24′ W. Barometer, 29.87. Winds: E.SE., S.SE., E.SE. Begins, strong breezes, and clearing off; much heat lightning; at 10, tacked to E. by N.; middle, moderate light breezes; ends same, with fine weather; find myself 300 miles west of where I ought to be.

Nov. 7. Lat. 20° 47′ N.; long. 41° 33′ W. Barometer, 29.88. Winds: S.SE., E.SE., E.SE. Begins, light airs, calms; middle, light airs; ends, light breezes and fine weather; evidently a SW. set current.

Nov. 8. Lat. 18° 44′ N.; long. 41° 43′ W. Barometer, 29.90. Winds: E., E.SE., E.SE. Begins, light breezes, and fine weather; middle, same; ends, moderate, light breezes, and flying clouds; the first and only day that we have had anything like trade-wind weather.

NOTE.—Have made no account of current owing to the uncertainty of compasses.

Nov. 9. Lat. 16° 46′ N.; long. 41° 33′ W. Barometer, 29.89. Winds: SE., SE., E. This 24 hours something like trade-wind weather, but winds are far, very far south; good breezes and pleasant weather; all sail set, and braced sharp by the wind ever since we crossed 30° N.; think no dull ship should cross 30° N., W. of 40° W. long., unless it be in March or April.

Nov. 10. Lat. 14° 40′ N.; long. 41° 26′ W. Barometer, 29.80. Winds: E. by S., E. by S., E. Fine steady trade-wind weather, but wind far south; ship 400 miles too far west; may the devil take the luck; abundance of flying fish.

Nov. 11. Lat. 12° 27′ N.; long. 40° 54′ W. Barometer, 29.80. Winds: E., SE., E.SE. Begins, fresh breezes and squally from S.SE.; middle same; ends, fresh breezes and squalls from SE.; one squall from S. at 3 p. m.; very pleasant; ship crowded to westward continually; all night sea white from effects of atmosphere on the slime and spawn of the ocean.

Nov. 12. Lat. 11° 27′ N.; long. 40° 52′ W. Barometer, 29.80. Winds: E.SE., SE. by E., variable, with calms. Begins, fresh breezes and squalls from S.SE.; middle, fresh breezes and constant rain, with squalls of wind and much heat lightning. First and second parts, squalls from S.SE. and E.; latter part, squalls of wind from S. by E., and constant rain; abundance of flying fish, porpoises, black fish, and a few albacore; sea surface very bright with phosphorescent light: cause, atmosphere on the spawn and animalculæ with friction of the water.

Nov. 13. Lat. 9° 45′ N.; long. 39° 51′ W. Barometer, 29.80. Winds: E.SE., NE., NE. Begins, dark and gloomy weather and light rains; middle, cleared off, good weather; sea sparkling very bright during the night; ends, fresh breezes and fine weather; numerous tide rips. The surface of the sea by daylight discolored like dirty rain water; whether caused by the heavy rain or animalculæ at the surface cannot say.

Nov. 14. Lat. 9° 13′ N.; long. 39° 43′ W. Barometer, 29.77. Winds: variable, NE. to S., SW. and calms; throughout this day variable light airs, calms, and rain squalls; strong tide rips; constant rain. Never shall cross the limits of NE. trades so far west again.

Nov. 15. Lat. 8° 00′ N.; long. 39° 13′ W. Winds: NE., calms and squalls, E. Begins, heavy rain from NE; middle, rain squalls from NE., SE., and SW., with sharp lightning all around; thunder in southwest at times; ends, constant squalls of pouring rain, with some wind; numbers of flying fish and bonita about. During the night fire-balls at mast head; torrents of rain.

Nov. 16. Lat. 6° 38′ N.; long. 38° 18′ W. Barometer, 29.75. Winds: E. by S., E. by S., E. by S. Current, 31 miles, S. by E. ½ E. First part, light breezes and passing showers; middle part, light breezes and fine weather; ends, light, with very fine weather. Strong S. by E. ½ E. current this day. Tide rips at times throughout the day. Ship sails very dull.

Nov. 17. Lat. 4° 41′ N., long. 38° 19′ W. Barometer, 29.75. Current, 24 miles, E.NE. ½ E. Winds: E., E., E. Begins, fine, with light rain squalls; middle, heavy rain squalls. ends, light rains and calms, with showers of rain, and a bobble of a sea from all quarters. *The Devil take Sancho Panza, the ship is as bad as her namesake was!*

Nov. 18. Lat. 3° 32′ N.; long. 37° 34′ W. Barometer, 29.73. Winds: E., E. by S., E. First part, light airs and troubled sea; middle, light airs and squalls of rain; ends, light airs and cloudy. Noon, tacked to N.NE.; 37 days out and not across the equator. A remarkably long swell from NE.; similar to SE. swell of South Pacific trades.

Nov. 19. Lat. 3° 53′ N.; long. 37° 15′ W. Barometer, 29.70. Current, 88 miles, N.NE. ½ E., (for the last two days.) Winds: Calm, E., E. First part, calm, cloudy, muggy, disagreeable weather, with high sea from NE.; middle, moderate light breezes; ends, brisk breezes and passing clouds. Have had 88 miles, N.NE. ½ E., current the last two days, which probably causes the high swell. Lightning in the northeast during the night. Flying fish and bonita about.

Nov. 20. Lat. 4° 00′ N.; long. 35° 53′ W. Barometer, 29.73. Winds: E.NE. to E.SE. Brisk breezes from E.NE. to E.SE., with flying clouds and a few squalls, though very light. Weather good, with passing clouds. Considerable of a high sea for the tropics.

Nov. 21. Lat. 4° 45 N.; long. 34° 44′ W. Barometer, 29.80. Winds: E.SE., SE. by E., SE. Begins, moderate breezes and light rain squalls; middle, same; ends, fresh breezes and hard rain squalls, with dark heavy weather. Standing to NE. to get my easting made up.

Nov. 22. Lat. 4° 20′ N.; long. 34° 13′ W. Barometer, 29.77. Current, 54 miles, N.NE. ¼ E., in the last three days. Winds: SE., NE., NE. Begins, dark gloomy weather and fine rain; middle, moderate and squally; ends, the same, but passable weather. Have not had as much easterly set as I expected, the last three days, by 40 miles. Hope to get clear of this weather soon.

Nov. 23. Lat. 3° 01′ N.; long. 34° 41′ W. Barometer, 29.77. Current, 15 miles, west. Winds: E.SE., E.SE., SE. by E. Begins, fresh breezes and squally; middle, fresh breezes and bright moonlight; ends, *strong trades*, and bright clear weather. *Royals set; ship throwing water all over the decks. With a crowd of sail, ship goes six knots by the wind.*

Nov. 24. Lat. 0° 50′ N.; long. 34° 41′ W. Barometer, 29.80. Current, 13 miles, west. Winds: SE. by E., SE. by E., SE. by E. Fresh breezes and good weather. Wind steady and no squalls. We have had two days pleasant weather; what a wonder! Shall fall to leeward of St. Roque. 42 days at sea, and expect to cross the equator in eight hours more. Average distance per day, since leaving Boston, 105½ miles.

Nov. 25. Lat. 1° 14′ S.; long. 35° 02′ W. Barometer, 29.83. Current, 10 miles, west. Winds: SE. by E., SE. by E., SE. by E. Crossed the equator last evening at 8 o'clock; 42 days and 9 hours from Boston—the longest passage I ever had to the line. This 24 hours, steady trade-winds and fine clear weather. Sea from SE. increasing; is larger than it ought to be for the amount of wind we have had. Flying fish numerous.

Nov. 26. Lat. 3° 11′ S.; long. 35° 30′ W. Barometer, 29.80. Current, 12 miles, west. Winds: SE. by E., SE. by E., SE. by E. This day, fine pleasant weather throughout. Severa boobies about during the night. Winds moderate and steady.

Nov. 27. Lat. 4° 40′ S.; long. 35° 43′ W. Barometer, 29.82. Current, 18 miles, west. Winds: SE., SE. by E., SE. Tacked several times to NE. Fine pleasant weather and brisk trades. Saw several catamarans this morning. At noon, tacked in 30 fathoms water. Shoal water in sight, south of us. Stood NE. ½ E.

Nov. 28. Lat. 3° 30′ S.; long. 34° 07′ W. Current, 32 miles, NW. by W. ¼ W. Wind: SE. by E., SE. by E., SE. by E. Strong trades and fine weather, and a devil of a current—about 30 miles, this day. Ship not logged correctly; am not positive.

Nov. 29. Lat. 3° 24′ S.; long. 33° 21′ W. Barometer, 29.90. Current, 39 miles, NW. ½ W. Wind: SE., SE., SE. Fine weather, with brisk trades. At 4 a. m., tacked to S. by W. ½ W.; royals and skysails set; ship very wet. Several boobies and guano birds about. Any man that allows himself to cross the equator west of 32° is a d——d fool. Perhaps, if Lieutenant Maury would allow those ships that fall to leeward to be averaged, his route would not be quite so short.

Nov. 30. Lat. 4° 58′ S.; long. 34° 18′ W. Barometer, 29.80. Current, 13 miles, W.NW. Winds: SE. by E., SE. by E., SE. by E. Moderate light breezes and very fine weather.

Number of boobies and guano birds about. Have not had much current to-day. Hope to pass St. Roque some day.

Dec. 1. Lat. 7° 00′ S.; long. 33° 19′ W. Barometer, 29.90. Winds: S.SE., NE., NE. Moderate light airs from S.SW. At 4, tacked to northeast; at 6, tacked to south. Middle, fresh breezes from northeast; what a wonder! Hauled up SE. to fetch off the land. At 8 a.m. set topmast and top-gallant studding sails. A fair wind such a rarity crew have forgotten how to reeve gear. Steered S.SE. Fine weather throughout. Noon, steered south. *Ship goes* 8½ *knots; all staggering full; smooth sea and wind quartering." See abstracts of Barque Maury and Ships Ringleader and Comet, in connection with the foregoing passage—a striking* DIFFERENCE, *truly!*

Captain Hildreth, of the Sancho Panza, attributes his long passage to the Charts; and it is but fair that an examination should be had of the question raised by him. His remark on Nov. 29 implies a grave charge, and he would fain induce others to believe in its truth if we put the remark in the log in connection with the anonymous paragraph* which appeared in the public prints of the day after his return to the United States from this voyage.

It so happens that I have the abstract logs of three other vessels that were making the same passage at the same time that Hildreth was. I have quoted their abstracts, (pp. 319–326,) and I now tabulate their position, side by side with that of the Sancho Panza, that navigators may judge for themselves whether that ship was properly handled, and ascertain whether Capt. Hildreth or Lieut. Maury be most to blame for her long passage.

* "THE NEW SAILING CHARTS.

"NEW YORK, *June* 11, 1857.

"*To the Editor of the Herald:*

"Noticing in your issue of yesterday that a ship is reported ashore about 20 miles north of Cape St. Roque, Brazil, and which is in all probability an outward bound vessel from one of the Atlantic ports, it occurred to me that while Mr. Maury calls public attention to the few examples of speedy passages resulting from crossing the equator far to the westward, he would be conferring a benefit upon those interested in the subject by giving publicity to the cases of delay and jeopardy occasioned by pursuing that route, thereby enabling them to discriminate between the long experience of practical navigators and the anticipations of unsustained theory.—[*New York Herald, June* 21, 1857.] ROCCAS."

Date.	Maury, Capt. Fletcher.		Comet, Capt. Arquit.		Sancho Panza, Capt. Hildreth.		Ringleader, Capt. Matthews.	
	Latitude.	Longitude.	Latitude.	Longitude.	Latitude.	Longitude.	Latitude.	Longitude.
November 1	29° 54′ N.	49° 58′ W.	.....	.....	29° 24′ N.	43° 26′ W.	37 12 N.	54 0
2	26 43	47 45	29° 21′ N.	49° 45′ W.	27 8	43 9	37 16	50 45
3	25 17	47 10	26 33	47 14	25 53	42 56	36 37	47 30
4	22 57	46 13	24 12	45 52	24 17	41 58	36 16	45 20
5	21 59	46 7	22 4	45 8	22 24	41 52	35 48	45 16
6	21 43	43 19	22 1	44 25	21 26	41 24	33 40	44 25
7	20 28	43 36	22 8	43 50	20 47	41 33	30 45	43 0
8	No observation.	No observation.	20 17	43 42	18 44	41 43	28 18	41 30
9	17 10	42 23	18 11	43 45	16 46	41 33	25 23	40 40
10	15 0	42 12	16 43	43 20	14 40	41 26	22 40	40 40
11	12 38	No observation.	14 20	42 57	12 27	40 54	19 38	39 40
12	No observation.	No observation.	11 52	42 45	11 27	40 52	16 52	38 15
13	11 14	39 32	10 25	41 51	9 45	39 51	14 0	36 0
14	No observation.	No observation.	8 46	40 33	9 13	39 43	11 5	34 35
15	7 18	37 34	7 34	40 28	8 0	39 13	8 35	32 50
16	5 24	36 31	6 7	40 5	6 38	38 18	6 10	31 0
17	4 14	35 32	3 57	38 35	4 41	38 19	4 5	31 0
18	2 28	36 3	1 8	39 18	3 32	37 34	2 42	31 35
19	0 12 S.	36 20	2 9 S.	39 29	3 53	37 15	0 34 S.	32 25
20	3 0	36 31	2 30	38 53	4 0	35 53	4 0	33 25
21	4 47	36 8	2 57	38 10	4 45	34 44	7 40	34 15
22	4 56	35 15	4 07	37 58	4 20	34 13	Clear of St. Roque.....	25½ days.
23	5 42	34 40	*4 24	36 57	3 1	34 41		
24			4 17	36 0	0 50	34 41		
25	All clear of St. Roque.....	29 days.	4 35	35 17	1 14 S.	35 2		
26			5 22	35 1	Got clear of St. Roque, Dec. 1.....	49 days.		
			All clear of St. Roque..	28 days.				

* "In company with the barque Maury, which sailed from New York one day before us."

With such an exhibit as this, it is no matter of surprise that Capt. Hildreth should wish to put the blame on any shoulders but the proper pair.

On the 1st of November his ship and the Maury were about the same latitude; but he was 400 miles to the eastward of the Maury, and, consequently, in a much more favorable position. The next day the Comet came along in the track of the Maury.

These three ships sailed in a line abreast for 17 days, and until they reached the parallel of 4° N. In the meantime the Ringleader crossed 30° N. in Hildreth's wake but a week behind him; but she came up "hand over fist," and on the 17th found herself also in line with the rest near the parallel of 4° N.

Have the ships now, as they cross this parallel, preserved the relative position in which they crossed 30° N.? Let us examine: the Ringleader has gained a week, the Comet a day on Hildreth, whose ship has sagged terribly to leeward.

Between 30° and 4° N., the Sancho Panza made	5°	7′	of easting;
the Comet made	11	10	"
the Ringleader made	12	00	"
the Maury made	14	26	"

Why did not Hildreth make 12° or 14° of easting as well as his consorts? He had the same winds. But instead, Fletcher had passed to windward of him in the Maury, and was now near 3° to the eastward of him; Arquit, of the Comet, had gained a day on Fletcher, and two weeks on Hildreth; he was near enough to have seen the unfortunate Sancho Panza in 4° N.;

while Matthews, of the Ringleader, who had crossed 30° N. in Hildreth's wake, was now full 440 miles away to the eastward of him, making fine time and a splendid run.

So far we have had only slipshod navigation in the Sancho Panza; but now we have something worse. She professed to have taken the Sailing Directions for her guide; and but for these three witnesses, we might have inferred that she had been sailed properly. But now her course is such as to show, even if there were no other evidence, that the Sailing Directions are not responsible for this long passage, *for he did not go by them.*

If there be any one point which I have labored to impress upon navigators concerning the "new route to Rio," it is the importance of standing on, and not attempting to beat when you find yourself in a tight place about the line. By standing on when you are well to the westward, the wind may haul so as to take you clear of St. Roque, as it frequently does, or it may give you the benefit of a slant, as it always does, by which you may beat in 4, 6, 8, or 10, instead of 12 or 14 point tacks. And, at any rate, if the worst comes to the worst, and you have to go into a dead beat, you might as well undertake it near St. Roque as in mid-ocean, for I refer each navigator, not to tradition, but to his own experience, and to the hundreds of abstracts that have been quoted in this and previous editions of this work, to sustain me in the assurance that there is no current between the line and St. Roque which any seaman who knows what to do with his ship, and who has a ship worthy of him, need fear. Still, notwithstanding all this array of facts, notwithstanding we challenge any navigator to give us any authority or evidence in favor of *dangerous* currents about St. Roque beyond the alarm raised by hydrographers—Horsburgh and others—because some English transports were wrecked there in the last century; I say, notwithstanding that shipmasters cannot adduce any proof in favor of these terrible currents, the belief in them is so common and deep seated in the minds of mariners, that many, as the abstracts I have quoted will show, are in fear and trembling of these currents of fabulous power when they find themselves on the equator as far west as 30° or 31°. The fear which seamen have been taught to entertain of St. Roque and its currents reminds one of the dread with which the ancient mariners regarded the Sirens; and all that is wanted to break this modern spell is the daring of Ulysses.

An English transport of the last century could not sail over 5 knots, with a favorable wind, at best; and what could she do in turning to windward anywhere in a sea-way, whether there was any current or not. Of course if such a vessel fell to leeward of St. Roque, she was backstrapped with a vengeance. She never could get round. But this is not the case with modern ships. Between the line and St. Roque a current of 1 or 2 knots to the Nd. and Wd. is sometimes met with. But what is such a current to a long-legged ship of the present day?

Of the correctness of these remarks, and of the propriety of standing on for "luck and slants," a beautiful illustration is afforded by the ships whose passages we are considering. On the 17th, being near 4° N., the Comet and the Sancho Panza were almost in sight of each other; they were both well to leeward, and likely, if they kept on, to cross the equator near 40° W. The wind was at east. Under these circumstances Hildreth determined to abandon the Sailing Directions, and to do the very thing he was cautioned and advised and warned not to do. He determined to have a beat of it, though he was in 4° N., and it was more than probable that before he got to the line the wind would haul to SE. or S.SE. and give him a slant; still he must have a dead beat then and there. Why beat in 4° N., instead of 3° S.? The

other vessels wisely stuck to their guide—the experience of thousands faithfully transcribed and spread before them—and they all did well.

Arquit, in the Comet, stood boldly on, and, though he crossed the equator in 39° 20′ W., he cleared St. Roque nearly a week before Hildreth did with his lumbering "old squirm."

Fletcher, in the Maury, took the chances and stood boldly on likewise. He tossed his cap in the breeze off St. Roque as he passed it all clear six days before Hildreth saw it.

Matthews, in the Ringleader, also stood on, Ulysses like, and went by "like a shot" ten days ahead of the Sancho Panza. They beat her this much from 4° N.

But Captain Hildreth failed to catch the spirit of Ulysses which bore his consorts so triumphantly by; instead of following their example he turned aside, in 4° N., from the Sailing Directions and "dallied in the doldrums" for six days on this side of the line. In doing so, he went directly against all of my doctrines and precepts, and, though the name of his ship is in the November catalogue for the new route, I have rejected her passage and crossings for these reasons.

There are good working breezes, and sometimes sharp and sudden squalls, off St. Roque, but I have yet to hear of the first vessel that ever encountered a gale of wind there. There are no hidden dangers about it. Fernando Noronha is above water, bluff and bold; the Roccas shoal has been accurately surveyed, and is well placed on the charts; and with proper attention to the three L's in navigation, there is no more danger of any seaman getting his ship ashore in attempting to beat her by St. Roque than there is in entering the harbor of Rio.

As to passing inside or outside of Fernando Noronha, there is no choice further than a mere question as to longitude—go on the side that is nearest, is the rule.

The passages of these four ships are very instructive, being made at the same time from different crossings of 30° N.; and also since they bear directly with their evidence upon the value of the Sailing Directions.

Experience had proved that the best crossing place of 30° N. in November is near the Ringleader's track, and the passages of these ships bear out the Sailing Directions in every respect. Vessels are recommended in coming out of the Chesapeake and ports north to make as much easting, when the winds are fresh and fair, as they will allow, going to 55°, or even to 50°, before crossing the parallel of 37°–8°. Matthews did this—Arquit and Fletcher dashed on—and the winds were very tempting. And I agree perfectly with Arquit in his remark, when, after passing St. Roque, he reviewed his course to see wherein, if at all, he had erred: "In looking over our route," says he, "I do not see where I could have shortened our passage except by keeping further north the first four days out." Nor do I. Had he kept further north for these first four days, he will see by Matthews' log, who did keep further north, what was the probable loss by this mistake.

However, had I been in the Comet or the Maury—good sailers both—I should at least have felt the force of the temptation, if I did not yield to it as Arquit and Fletcher did. They were six days to their crossing place, against Matthews 11 and Hildreth 19. And though the time from the former crossing to the "fair way" off St. Roque be longer, yet the difference ought not, ordinarily, to be so great as the difference between 6 and 11 days.

If the time from 30° N. to the equator, or the "fair way" off St. Roque, were the only parts of the passage to be considered, we should not hesitate to recommend, anywhere between

the meridians of 35° and 30° as the best crossing of the parallel of 30° N. at this season. But we must consider the time from port to 30° N., as well as the time from 30° N. to the "fair way" off St Roque, and when we come so to adjust the two together so as to give the shortest time from port to St. Roque, we have to bring the crossing of 30° well to the west. See p. 144.

It is remarkable that navigators should have been so deeply impressed with the magnitude of imaginary dangers of St. Roque. Notwithstanding the abundance, and force, and weight of the evidence going to show how exaggerated the notions of these dangers have been, there is scarcely a sailor who crosses the line as far as 31° or 32° west for the first time, but quakes in his shoes in fear of St. Roque. Such remarks as the following are common:

Barque Almatia, (Captain A. B. Richardson.)

"Nov. 26, 1857. Lat. 1° 15′ S.; long. 32° 58′ W. Barometer, 29.9; air, 82°; water, 79°. Current, W.NW., ½ knot. Winds: SE., throughout; moderate breezes, and fine weather. I think that I have done well in crossing the line in less than 24 days, with a very deep ship; thanks to Lieutenant Maury. *I am afraid that I shall fall to leeward of St. Roque;* but I will stand on and trust to Maury.

Nov. 27. Lat. 0° 55′ S.; long. 31° 56′ W. Barometer, 29.8; air, 81½°; water, 80°. Current, W.NW., 1 knot. Winds: SE. by S., S.SE., SE. by S. First part, strong breezes. At 4 p. m. tacked to the eastward; at 11 a. m. tacked to the SW. Ends with good strong breezes and flying clouds.

Nov. 28. Lat. 3° 11′ S.; long. 32° 28′ W. Barometer, 29.9; air, 82°; water, 80°. Current, NW. by W., ½ knot. Winds: SE. Throughout all of this day moderate breezes and fine weather. I notice, for the last four days, that the barometer raises in the forepart of the day and falls in the afternoon.

Nov. 29. Lat. 5° 51′ S.; long. 33° 24′ W. Barometer, 29.9; air, 80°; water, 80°. Current, NW., ½ knot. Winds: SE., SE., E.SE. Commences with moderate breezes and fine weather. At 1 p. m. made Ferdinand Noronha, bearing S. by E., 25 miles distant. At 6 p. m. it bore east, 12 miles distant. Middle and latter parts, light breezes and fine.

Nov. 30. Lat. 8° 38′ S.; long. 33° 45′ W. Barometer, 29.9; air, 81°; water, 81°. Winds: E.SE. Throughout, fine weather and moderate breezes. I find that this *bugbear*, Cape St. Roque, is more in talk than reality; for if I had crossed a degree further to the westward, I should have found no trouble in getting past with the slant I had on the off-shore tack. I think more of Maury's directions than ever."

Ship Brewster, (Captain Wm. Clark,) 26 days out from New York.

"Dec. 17, 1855. Lat. 1° 08′ S.; long. 31° 12′ W. Barometer, 30.00; temperature of air, 83°; of water, 80°. Wind: S.SE. Throughout, moderate breezes. Crossed the equator in long. 30° 45′ W., 26 days 4 hours from Sandy Hook, New York, which is the best passage I ever made to the equator. I fear falling to leeward of Cape St. Roque; but I shall follow Lieut. Maury's Sailing Directions, and trust to luck.

Dec. 18. Lat. 3° 52′ S.; long. 32° 23′ W. Barometer, 30.10; temperature of air, 84°; of water, 81°. Wind: SE. by E. At 10 a. m. made Ferdinand Noronha, and passed 6 miles east of it. Now my fears begin to subside about falling to leeward of St. Roque. Brisk trade winds and hot weather; 28 days out.

Dec. 19. Lat. 6° 53′ S.; long. 33° 16′ W. Barometer, 30.00; temperature of air, 85°;

of water, 81°. Wind: SE. This day, until midnight, prosperous breezes; ship going 8 knots by the wind. Latter, more moderate. Distance per log, 192 miles. Saw two vessels, one steering NE., and one SW. Ends fine weather. 29 days out."

Ship Emilia, (Benjamin Wingate, captain,) thirty-seven days out from St. John's.

"Dec. 20, 1856. Lat. 0° 42′ S.; long. 30° 19′ W. Barometer, 29.84; temperature of air, 81°; of water, 80°. Wind: S.E. I cannot say I have experienced any current the last twenty-four hours, and trust I may not, for my ship is very tender, so much so that I have not had royals, studding sails, or a mizen top-gallant sail set since leaving St. John's, still I find I am only two days over the average to the equator."

Vessels from Newfoundland ought not to have such long passages. The route for them is about the same all the year round. Putting to sea they should make the best of their way to the calm belt of Cancer, aiming to cross it on a meridian anywhere between 30° and 38° W.; and from that, taking the Sailing Directions for the month as their guide, let them make the best of their way for the appropriate equatorial crossing. The passage from St. John's ought to be shorter by at least two days than the passage from New York.

Traders into the other hemisphere from the British American provinces will find it best to take a route from 30° N. to the line intermediate between that from the United States and that from Europe to the equator; and in the Directions, under those two heads, they will find full instructions how to shape their course from 30° N. to the line.

From abstract log of *Ship Chamberlain*, (Isaac Jennings,) from Philadelphia to Calcutta.

"Dec. 30, 1854. Lat. 6° 34′ S.; long. 34° 45′ W. Fine weather and fresh breezes throughout; heading along from S. to S. by E. with the land, about twenty miles distant. At 6 p. m. tacked to the southward; the breeze freshened and hauled more to the eastward, and, to use Maury's own term, 'I went by the cape like a shot.' I am now thirty-four days out, and past St. Roque, which, considering that I have had no NE. trades—I am on the wind all the time, from two to three degrees to leeward of the prescribed route, and crossing the equator in 34° 15′, and after all weathering the land by making a short tack to the eastward of only seven hours, I repeat that, taking all this into consideration, with a light ship of 950 tons register, drawing but twelve feet six inches, is doing well. And now that I am "out of the woods," and breathing more freely than I have done for some days past, I should not in justice fail to acknowledge the great benefit that I have received from Maury's "Sailing Directions" and general remarks upon the routes across the equator; not because I pursued the route prescribed, but, being by adverse winds forced *far* to leeward, I was encouraged by his own opinion, supported by the abstracts of other vessels, to stand along, feeling assured that, under the circumstances, it was the *best* course, and confidently expecting that "something would turn up." That this opinion has been sometimes shaken I must admit. After crossing the line west of 34° I began to make up my mind for a "time of it;" weathering the cape, (a week at least,) and amid the variety of opinions I was much at a loss what to do, to stand down to the land or to beat to windward between the line and two degrees south. I at length resolved to stick to Maury, and if I failed in judgment to "pin it upon his sleeve." It will be perceived that by following his advice I have been rewarded by the happiest results, and consequently it would be ungrateful to withhold from him the credit due.

The wind favored me as I drew south, and, with one short tack, I had no difficulty in clearing the land.

On my last voyage in the "Arcole," September, 1852, I crossed the line in 31°, made the

land off Pernambuco, and was obliged to tack. I then wished that I was two or three degrees to the eastward, and undoubtedly I should think the same now were it not for the reply received from Lieutenant Maury with regard to my previous voyage, in which he very kindly returns me the abstract of another ship, (at that time two or three degrees to windward,) convincing me that, unfavorable as it might appear, my situation was decidedly the best. By a combination of the same abstract around the Horn, and up to the line on the other side, I received much valuable information; and was corrected in other erroneous ideas with regard to the passage from the Horn to San Francisco, and for which I have failed to acknowledge the indebtedness I owe.

I have no doubt there have been many vessels in the same situation as myself during the late passage; and it would be very gratifying to know how they have been rewarded, especially those that have tacked to make easting north of the line, or those that have taken the old route or that have beat to the eastward of the new.

Please notice the fluctuations of the barometer which I have, it rises and falls twice during the twenty-four hours, highest about 10 o'clock a. m. and p. m., and lowest about 4 o'clock a. m. and p. m. I have always noticed this fluctuation within the tropics, near the equator, and believe that I have remarked it in previous abstracts, though I have not been so particular to record its hourly variation."

This barometric tide is noticeable everywhere within the tropics. It is so regular that one may tell by the turn of this tide the time of day within a few minutes. Captain Jennings' remarks as to the time of high and low barometer are perfectly correct.

Ship Bald Eagle, (W. H. Treadwell, captain,) New York to San Francisco, twelve days out.

"Nov. 10. Lat. 30° 17′ N.; long. 41° 14′ W. Barometer, 29.73; temperature of air, 72°; water, 72°. Winds: E.NE., ditto, ditto. Moderate and pleasant; smooth sea; rain squalls at intervals.

Nov. 11. Lat. 27° 25′ N.; long. 39° 31′ W. Barometer, 29.73; temperature of air, 73°; water, 75°. Winds: E.NE., E., E.NE. Gentle breeze; smooth; pleasant. At sundown rain squalls; heavy clouds passing over in the night.

Nov. 12. Lat. 25° 15′ N.; long. 38° 45′ W. Barometer, 29.70; temperature of air, 73; water, 76, Winds: NE. by N., N. by W., NW. Pleasant weather; faint airs; swell from NE.

Nov. 13. Lat. 23° 58′ N.; long. 37° 40′ W. Barometer, 29.75; temperature of air, 76°; water, 76°. Pleasant; wind baffling. Rolling swell from NE.

Nov. 14. Lat. 22° 03′ N,; long. 39° 07′ W. Barometer, 29.78; temperature of air, 78; water, 78. Winds: S., S.SE., E.SE. Begins moderate; from sunset to 11 p. m. hard rains; after midnight fresh from S. by E.; smooth and cloudy; lightning in SE. and S.; morning fresh, SE. by S.; overcast; sun shining through. Ends fresh, E.SE.; smooth.

Nov. 15. Lat. 19° 09′ N.; long. 39° 23′ W. Barometer, 29.81; temperature of air, 78°; water, 79°. Winds: E.SE., SE. by E., ditto. Good breeze; hazy and cloudy on the horizon; clear overhead; southerly sea.

Nov. 16. Lat. 16° 11′ N.; long. 38° 25′ W. Barometer, 29.79; temperature of air, 79°; water, 78. Winds: E.SE. and E. by. S., E., ditto; cloudy and wild on the horizon in E. and SE.; pleasant overhead. Middle part pleasant; ends the same; sharp on a wind.

Nov. 17. Lat. 13° 09′ N.; long. 36° 54′ W. Barometer, 29.75; temperature of air, 79°;

water, 80°. Winds: E., E. by N., E. Pleasant; squalls passing over towards sunset, with slight rain. In night, shooting stars in the east; short sea from east.

Nov. 18. Lat. 10° 00′ N.; long. 34° 53′ W. Barometer, 29.70; temperature of air, 80°; water, 81°. Winds: E., E.NE., E. by S. First part, pleasant; middle part same; rain clouds in morning; ends, pleasant and light breeze.

Nov. 19. Lat. 8° 13′ N.; long. 33° 28′ W. Barometer, 29.67; temperature of air, 80°; water, 82°. Winds: E. by N., SE., E. by S. Begins, moderate breeze E. by N. after sunset; lightning in NE. and W.; clouds passing over; bank of clouds in NE. and SW. at 2 a. m.; sudden shift of wind to SW.; fresh, with rain; after a short time hauls to SE., moderate; cloudy and rainy. In morning light from E. by S.; patches of heavy clouds hanging round. Day ends, pleasant east breeze; light and smooth.

Nov. 20. Lat. 5° 39′ N.; long. 34° 00′ W. Barometer, 29.66; temperature of air, 82°; water, 81°. Winds: E.NE., SE. to E.NE., E. by N. to S.SE. Hard rains; squally; thunder and lightning; smooth. Ends, pleasant, moderate breeze; thunder and lightning high up overhead, and in the NE.

Nov. 21. Lat. 5° 12′ N.; long. 33° 42′ W. Barometer, 29.65; temperature of air, 83°; water, 81°. Winds: S., S. by E., SE. by S. Faint baffling airs; pleasant. Tacked ship four times.

Nov. 22. Lat. 4° 38′ N., (doubtful,) long. 32° 40′ W. Barometer, 29.70; temperature of air, 79°; water, 81°. Winds: SE., E.NE., ditto. Begins faint; during night hard rains; squally and calms; ends same

Nov. 23. Lat. 2° 11′ N.; long. 33° 53′ W. Barometer, 29.70; temperature of air, 82°; water, 82°. Currrent, 1 mile W.NW. Winds: NE. to E., SE. by S., S.SE. Hard rains; squally; moderate. Middle and latter parts, steady breeze; broken clouds passing over; have not been able to get to windward; shall stand to eastward to-morrow if the wind holds at S.SE., and is steady. How could I have shortened this passage so far?

Nov. 24. Lat. 2° 34′ N.; long. 32° 43′ W. Barometer, 29.70; temperature of air, 81°; water, 79°. Current, 1½ miles NW. Winds: S.SE., SE. by S., S.SE. Moderate and pleasant; slight sea from SE.

Nov. 25. Lat. 0° 01′ N.; long. 34° 27′ W. Barometer, 29.70; temperature of air, 81°; water, 78°. Current, 1 mile west. Winds: S.SE., SE., SE. ½ S. Pleasant; trade clouds passing over. Long passage to the line, 28 days, 4,172 miles.

Nov. 26. Lat. 2° 46′ S.; long. 35° 30′ W. Barometer, 29.70; temperature of air, 81°; winter, 79°. Winds: SE., ditto, ditto, Pleasant; short sea from SE.

Nov. 27. Lat. 2° 17′ S.; long. 34° 10′ W. Barometer, 29.70; temperature of air, 81°; water, 79°. Current, 1 mile NW. Winds: SE. to SE. by E., E.SE., SE. by E. Begins moderate and pleasant; short and pleasant sea from SE., standing NE. by E. until 4 a. m., then S. In night smooth. Day ends pleasant; light breeze.

Nov. 28. Lat. 4° 42′ S.; long. 34° 47′ W. Barometer, 29.70; temperature of air, 80°; water, 78°. Current, ½ mile N.NW. Winds: SE. by E., E. to E.SE., SE. Pleasant and smooth; light breeze.

Nov. 29. Lat. 70° 12′ S.; long. 34° 37′ W. Barometer, 29.70; temperature of air, 82°; water, 80°. Winds: SE. by E. to E.SE., E. by S., E.SE. to SE. by E. Light breeze; pleasant and smooth. At 6 p. m. high land near St. Roque, bore W.SW. 40 miles distant. In little more than three days we have passed St. Roque with perfect ease.

Time and Crossings to the "Fair Way" off St. Roque—November.

Name of vessel.	From—	Date of sailing.	Longitude of crossing the parallels of—																Total days to—	
			Days.	30° N.	Days.	25° N.	Days.	20° N.	Days.	15° N.	Days.	10° N.	Days.	5° N.	Days.	Line.	Days.	3° S.	Line.	St. Roque.
Flying Fish*	New York	Nov. 1, 1852	5¼	48	2	44¾	2	40	2	38¾	2	37	2	35	6	34½	1	33	21½	23
Parana	do	1, 1854	12½	43	4¼	39	2	37½	2¼	35	2¼	32	4	29½	3	30	1	31½	3 ¾	32
James Maury	New Bedford	1, 1848	20	39	6½	33	5½	35½	3	33½	3	31½	4	31	5	32	2	34	47	50
Cygnet	New York	1, 1849	13½	37	6	33½	2	34	2	32	2½	30½	3½	27	5½	29	2	31	35	37
Cyclone	Boston	2, 1853	8	49¼	2	47¼	3	45¾	4	40½	1½	38½	4½	34	7	34¾	2½	34	30	33½
California	do	3, 1853	19½	44	3	39	3	35	3	32¾	2	30	2	29	2½	31½	2	32¼	35	39
Cygnet	do	4, 1852	14	39	6	32¼	3½	31½	2½	30½	2½	28	4½	26	4	29¼	2	31½	37	40
Eagle	New York	4, 1852	9½	53¾	10	39	2	37¼	1½	35	3	34½	2	31¾	3	32	1	31¾	31	33
Parana	do	6, 1852	15	42½	3	34¾	3	31¾	1½	30¾	1½	29½	3	28½	3½	32	1½	33	30½	32½
Newton	Boston	6, 1850	15	42	2¾	42¼	2¼	41¼	2	40½	2	38¾	3	35	7½	32½	2	33½	34½	37½
Sophronia	Salem	7, 1850	12	40	3	41¼	2½	40½	2	39	2½	35¾	2	32	7	30¼	2½	31¼	31	34½
Flying Fish*	Boston	7, 1851	5	48	2	43	2½	36	3	35	1½	34	2	3 ¾	3	32	1¼	32½	19	21
Hazard	New York	7, 1850	10½	44	3	43	3	41½	2	39	3	36	3	31½	3	31¾	2	33½	27½	31
R. C. Winthrop	Boston	8, 1850	11	42¾	4¾	42	2	41½	2	40	2½	37½	2	33	7	32¾	2	33	31¼	33
Union	do	8, 1850	13	39¾	1½	40½	1½	41	1½	40	2	38	3	34	10	28	1½	30	32½	34½
Gray Feather	New York	9, 1852	10	38½	3	34	4	35½	2	35	2½	32	3½	29¾	6	32	1½	33	31	33½
Richard Alsop	do	9, 1852	11	42¾	6½	31	2	32¼	2	32	2	30	3½	27¾	4	31	1½	32½	31	33½
Horatio	do	9, 1850	12	47	3½	45	3	43	4	39	2	36	4	30	4	29½	2	30½	32½	34½
Sword Fish*	do	11, 1851	7	44	3½	38	3½	37½	3½	36	2¼	34	1½	30¾	2	31¾	1	32	23¼	25
Whirlwind	Boston	12, 1852	8½	44¾	6½	31	1½	31¼	2	33	1½	32¾	2	30¾	5½	33	1½	34	27½	30
Undaunted	New York	13, 1854	14	43	2	40	3	37	2	33½	3½	31	8	28½	3	30½	1	31½	35½	37
Danube	do	14, 1852	7	49¾	3	42	12	35	2½	32½	1	32	2	29½	8	29½	1½	30¾	35½	38
Trade Wind*	do	14, 1852	5	50	7	29½	1½	30½	1	31	1½	30½	2	30	3	34¼	1	35	21	25
Robert King	do	14, 1853	13	47¼	4	41¾	3	38¼	2	35¾	2½	32	2½	30	3	32	1	32½	30	32
Morning Light	Philadelphia	14, 1854	14	37	4	33½	1¾	31½	2	30½	3¾	30½	4½	29½	4	34	1½	34½	34	39
Cleopatra	New York	15, 1854	12½	48	3½	47	3½	44	2	41	2½	37½	7	30	4½	31½	1½	32	35½	37
Electric	do	15, 1854	13½	39	3½	35	3¾	32	2½	30½	3	30½	4	28½	4½	31	1	30½	34½	35½
Telegraph	Boston	16, 1852	6	48¾	4	40¼	7	34½	2½	34½	1½	31¾	2	30	3	32	1½	32½	26	28½
Contest	do	17, 1852	7	47½	5	37¾	4	35½	2½	36	2	33	2½	29½	3	31	1	32	26	28
Corinne	New York	17, 1854	11¾	47	2½	45	3½	43½	2½	42	2	39½	12	30½	7	31	2	32	41¼	44
Horatio	do	18, 1851	11	42	4¼	32	1½	31	1½	30¼	1¼	29	2½	29	3¼	30½	1	31	25¼	26¾
Esther May	Boston	18, 1851	14	35	3½	33	1¼	32½	1½	32¾	1½	32	2	30¾	3	31¾	1½	32	27	29½
Thomas Church	New York	20, 1852	8	48	7	36½	2	34	2	32¾	2½	29	2½	26¾	4	29	3½	29	28	32½
Syren	do	20, 1853	19½	36½	3½	31¼	6	33¾	1½	33	2	32	1½	29¾	5	31	2½	33	39	42
Lucia Field	Boston	20, 1850	13½	36	2	34	4	31½	2	29½	2	29	2	28½	5	31	2	32	30½	33½
Fredonia (United States ship)	New York	21, 1852	10½	52½	3	46½	2	42	3½	40½	2½	38¼	7	33	21½	27¾	2	29½	50	53
Boston	Boston	21, 1854	19½	36	2½	37	2½	37½	1¾	36	4¼	36	4¼	33	6¼	34	4	34	41	44
Alboni	New York	22, 1852	9	47	3	39¾	2½	37¾	2	36	2½	32¼	2	32	4	32½	1	32½	25	27

Time and Crossings to the "Fair Way" off St. Roque—November—Continued.

Name of vessel.	From—	Date of sailing.	Longitude of crossing the meridians of—																Total days to—	
			Days.	30° N.	Days.	25° N.	Days.	20° N.	Days.	15° N.	Days.	10° N.	Days.	5° N.	Days.	Line.	Days.	3° S.	Line.	St. Roque.
George Brown	Philadelphia	Nov. 23, 1850	13	40	2½	34¾	2	32	2	30	1¾	28½	2	28¼	6	28¾	4	29	29¼	34⅛
Seaman*	New York	23, 1850	9¼	41	2	37	2	35	2	34	2	32	1	31	3	30⅛	1	31	21⅛	23
Kentucky	Boston	24, 1852	8¼	46	2⅛	39⅛	2	36⅛	2	35	2	33¼	2	30¼	5	32½	2	33⅛	24	27
Humboldt	New York	24, 1853	16	36½	4	32	5	33	2	33¾	2	32¾	3	29	4⅛	30	1	31⅛	36½	39
North Carolina	...do	24, 1853	18⅛	40	6	29¾	2	29½	2	28¾	1½	28¾	2	27¾	6	29	1⅛	31	38	41
Mountain Wave	Boston	24, 1854	20⅛	42	4	44	4⅛	40¾	2½	39	3¼	36¾	4	32	3⅛	33	1	33¼	42⅛	44
Tinqua*	New York	25, 1852	7⅛	43	1¼	40	2	39⅛	1⅛	37⅛	2	35	2⅛	31¼	2	33	2	34	19	21⅛
Petrel	....do	25, 1854	15	42	7	37¼	3	38¾	3	36¾	3½	24	2	30	5¼	30	1½	33¼	38¾	41
Living Age	....do	25, 1852	12	43	2	40⅛	3⅛	35½	2	32	2¼	29	2	26	3⅛	28½	2⅛	31⅛	28½	32
Suwarrow	....do	25, 1853	24	38¾	6	35⅛	3	33¾	3	31¾	3	28¾	2	27	5⅛	29	2⅛	30¾	46⅛	50
Europa	....do	25, 1853	12⅛	36	7⅛	30	2	28	3	26¼	2	25⅛	2	25½	3	26⅛	1¼	27⅛	32	34
Harriet H. R. Otis	....do	26, 1853	19¼	41	5	36¼	4	36	4	33	2	31	2	28¾	3½	30¾	2	32	40	44
Chamberlain	Philadelphia	26, 1854	13⅛	38½	1¼	38	2	38⅛	2	38⅛	5	36	5	32	3¾	33½	1⅛	35½	32½	34
Channing	New York	26, 1854	14⅛	41	3	42	4	42	3⅛	39½	3⅛	38½	3	33	4⅛	34	1¼	34	36	38⅛
Dashing Wave	Philadelphia	27, 1853	9⅛	53⅛	3	48¾	7⅛	40¾	2	40	2	37⅛	2⅛	33½	1⅛	33¼	2⅛	34	28	34
Tornado	New York	27, 1854	11⅛	45	2	41	3	38	3	36¾	5	34½	4⅛	30¾	3	31¾	1⅛	33¼	32	33⅛
Uriel	....do	27, 1850	8	45	3	39	3	37	2	33	2	31	3	29	4	29¾	2⅛	31	25	29
Tuscany	....do	28, 1852	17	42¼	3	36½	3	34¼	2	33¼	2	32¼	3	30¼	12	32	2	32¾	42	45
Reindeer	Boston	28, 1854	15⅛	42¾	5	40⅛	3¾	40	2¼	38⅛	3¼	36⅛	3	32	4¼	34½	1⅛	35	37	39
Walter	New York	29, 1852	14	49½	4	45	2⅛	39	2	37	2	34	3⅛	32	4	31	1	31¾	32	34
Horatio	....do	30, 1853	12⅛	39½	6⅛	27¾	1⅛	28¼	1	28	2	28	1⅛	27	6	29¾	1⅛	32	31	33⅛
Means before the 7th edition			12.3	43¼	3.8	38⅛	3.1	36⅛	2.3	35	2.4	32¾	3.1	30¼	4.9	31⅛	1.7	32¼	31.9	34.5
Almatia*	Boston	Nov. 3, 1857	7	39	2½	35	2	32	2	30	2	29	2	28	3½	32⅛	2⅛	32⅛	21	24
Argonaut	....do	6, 1856	15	44¼	2½	43	3	40	3	36	4⅛	33⅛	5	27	5	30	1⅛	30¾	38	40
Granite State	....do	9, 1855	14	37	5½	35	3	31	5	28½	2	26⅛	3	25	2½	26	1	28	35	36
L. Gilman*	New York	9, 1857	8	44¾	1½	40½	1⅛	38	3	34	4⅛	30½	2⅛	29⅛	3	33	1⅛	33¾	24	26⅛
Tinqua	Boston	10, 1855	21	54⅛	2	35⅛	2	30⅛	3	28⅛	1¾	29	3	28¼	3	31¾	1¼	32	35¾	37¾
Emilia	St. John's, N. B	11, 1856	17	40¼	4	35¾	7⅛	32	2	31	1¾	29¾	2¾	28	3¾	30	1¼	31⅛	38¾	40¼
Joseph Grice	Hampton Roads	13, 1856	16	37	1¾	35⅛	3	34	2	31¾	3	30	3	29¼	2¼	30	1⅛	30¼	31	33
Ocean Express	New York	13, 1856	11	42	5⅛	34½	2⅛	33⅛	4¼	33⅛	3	30	4¼	29⅛	2	30	1	31	32⅛	33⅛
U. S. Ship Levant	....do	14, 1856	8	49	8⅛	41	3	35⅛	3	32	2⅛	29	3	28⅛	2	28⅛	1	30⅛	30	32
Rival	Boston	15, 1856	13⅛	40¼	6	34	3⅛	31	5	28¾	3	27⅛	3	26⅛	2	27⅛	1¼	30	36	38
Tangier	....do	15, 1856	13	40	4⅛	34	7	30⅛	2	29	2	28	3⅛	27	3	28½	2	30⅛	35	38
Golden Racer	New York	16, 1855	8	47	7	42⅛	2	38⅛	3	35	2	33	3	31	1¾	31¾	1	32¼	26¾	27¾
Anglo Saxon	....do	16, 1855	8¾	47⅛	6⅛	43¼	2¼	37	2¼	33⅛	3	30	3¼	29	2¼	29⅛	1	30¾	28	30¼
Corinne	Boston	17, 1855	12⅛	38	2⅛	34¾	2⅛	31	3¼	29	2	28½	3⅛	27	3	28	1¼	30¼	29¼	30⅛
Black Fish	New York	18, 1856	10⅛	43½	3⅛	38	7⅛	34⅛	2	32⅛	2	30⅛	2⅛	29¼	4	31	1⅛	32	32	34⅛
Brewster	....do	20, 1856	13	38¼	1⅛	35	4	33⅛	2⅛	31⅛	2¼	30⅛	1¾	29	2½	30⅛	1⅛	32	27⅛	29⅛
Emblem*	Baltimore	21, 1857	9	42⅛	2	38¾	2	36	1⅛	34	1⅛	31¾	2	30¼	5	33¼	1½	34⅛	23	26
Hannibal	Richmond	22, 1856	10	44	3	40	4	38	2	36	2	34	2	30⅛	2⅛	31⅛	1	32	25⅛	27⅛
Kate Howe	Boston	23, 1856	10⅛	41	3	37	4	33	2	32	2⅛	30	2	29	2½	30⅛	1⅛	32	26⅛	28
Fair Wind	New York	25, 1855	11¼	44½	6	37⅛	6	36½	2	33	1⅛	31	2	30½	2½	33	1½	33½	31¼	33⅛
Henrietta	Cape Henry	25, 1857	15	41½	2⅛	38	1½	34¾	2	32½	1½	30	2½	28½	3½	30	1	31½	28½	30⅛
Lowell	Boston	26, 1855	15	40½	4	41	4	36	2	34	3	32	2½	27½	4	30¾	3	32	34⅛	39
Star of the Union	New York	26, 1855	10⅛	43	7	37	5	36½	1⅛	33⅛	1⅛	31	2	29⅛	3	30½	1	32	30½	32⅛
Flying Dragon*	....do	27, 1856	9	42	2½	35⅛	2	36	2	35	1½	34	2	32	2	33	1	34	21	23
Winfield Scott	Boston	28, 1855	11	44	4	41½	6	40	2	37½	2	35¼	3	32⅛	6½	33	3¼	32¾	34⅛	38
Malay	....do	28, 1855	12	41⅛	3½	40	5¾	39	2	34	2	32	2	30	4⅛	32½	1⅛	33	31¾	33⅛
Leighton	New York	28, 1856	10⅛	45	3⅛	40	4¼	39	1⅛	37	1¾	35	2½	32⅛	5	33	1⅛	34	29	31
California	Baltimore	30, 1856	11	41⅛	4⅛	37⅛	2⅛	35¼	7⅛	36¼	3⅛	34¾	3⅛	30⅛	4⅛	31½	1⅛	32¼	37	40
Means since the 7th edition			11.8	42½	4.0	38.0	3.7	35.0	2.7	32¾	2.3	30¾	2.8	29.0	3.2	30¾	1.5	31¾	30.5	32.6
*Means of ten best			7.3	44¼	2.6	38	2.1	36	2.2	34⅛	2.1	32¾	1.9	30¾	3.2	32¾	1.4	33¼	21.4	23.8

Barque Hannibal, (Captain F. W. Kline,) 10 days out, from Richmond, Va., to Rio.

"Dec. 2, 1856. Lat. 29° 44′ N.; long. 43° 43′ W. Barometer, 29.73; temperature of air, 71°; of water, 72°. Wind: W.NW. Fresh and moderate breezes throughout, and changeable weather. A large swell coming from NW.; course, SE.; distance, 170 miles. Observations not good enough to ascertain the set of the current; besides, I have no variation chart, nor azimuth compass. Passed considerable quantities of sea-weed.

Dec. 3. Lat. 27° 10′ N.; long. 41° 30′ W. Barometer, 29.83; temperature of air, 73°; of water, 76°. Wind: W.NW. Fresh and moderate breezes throughout. Middle part, squally; ends pleasant. Barometer gradually rising; sea smooth, with the exception of a N.NW. swell; abundance of sea-weed. Have had an easterly current or an extraordinary variation. I will get an amplitude the first fair sunrise or sunset. Course, SE. ¾ S.; distance, 193 miles.

Dec. 4. Lat. 25° 33′ N.; long. 40° 39′ W. Barometer, 20.98; temperature of air, 74°; of water, 76°. Wind: NW. Moderate and light breezes, and pleasant throughout. Barometer, slowly going up. Passed through considerable quantities of sea-weed. This morning had a beautiful sunrise. I took out the brass compass and got an amplitude. The old swell still rolling heavy from N.NW. Course, S.SE. ¼ E.; distance, 107 miles.

Dec. 5. Lat. 25° 02′ N.; long. 40° 14′ W. Barometer, 29.98; temperature of air, 75°; of water, 76°. Wind: SW. Very light breezes all these 24 hours, amounting to almost a calm. During the middle part passed a large ship with painted ports, bound south. Made more easting than I intended. Course, SE. by S.; distance, 38 miles. The sea smooth, except the old N.NW. swell, which continues. Plenty of sea-weed.

Dec. 6. Lat. 23° 40′ N.; long. 39° 41′ W. Barometer, 29.98; temperature of air, 77°; of water, 77°. Wind: SW. by W. to W. Light winds and calm weather. Ship out of sight, astern. Morning, passed or saw a schooner astern; left him steering southward. Saw a fin-back whale. No grass or weed. Course, S. by E. ¾ E.; distance, 87 miles. Delightful pleasant weather.

Dec. 7. Lat. 22° 17′ N.; long. 38° 44′ W. Barometer, 29.97; temperature of air, 79°; of water: 78°. Wind: NW. First and middle part, moderate and light breezes, from W.SW. to NW.; latter part, light north winds and calms. At midnight, spoke the barque Alfred, (British,) from Bordeaux, bound for Kingston, Jamaica; he wanted our longitude, his chronometer having broken down. Saw a large school of porpoises. The old N.NW. swell still continues. Clouds of various forms; have but little motion. Course, S.S. ¾; distance, 98 miles.

Dec. 8. Lat. 22° 00′ N.; long. 38° 26′ W. Barometer, 30.04; temperature of air, 80°; of water, 79°. Wind: calm. First part, calm, with reddish cumulo-stratus clouds coming from east, and cirrus from west. Middle and latter parts, calm up to 10 a. m., then a very light air from S.SE. Query: Is it calm in the longitude of 40° W? Perhaps, I did wrong by steering from *d* to *d*, as projected. Perhaps it would have been better had I been in 45° and 25°, and now been skinning along the route in the northern edge of the trades. The old N.NW. swell continues. Course made, SE., 24 miles.

Dec. 9. Lat. 20° 05′ N.; long. 38° 09′ W. Barometer, 30.01; temperature of air, 77°; of water, 79°. Wind: E.SE. First part, light SE. winds and calms; middle part, *moderate trades;* latter part, brisk breezes and fair weather throughout. The old N.NW. swell following us. Course made, S. ¾ E.; distance, 116 miles.

Dec. 10. Lat. 17° 40′ N.; long. 37° 15′ W. Barometer, 29.94; temperature of air, 77°;

of water, 78°. Wind: E. by S. First part, brisk breezes and pleasant; middle and latter parts, moderate and brisk breezes, with dry passing clouds and pleasant weather. S. by E. ¾ E.; distance, 154 miles.

Dec. 11. Lat. 14° 48′ N.; long. 36° 01′ W. Barometer, 29.90; temperature of air, 78°; of water, 78°. Wind: E. by S. Fresh gales and dry pleasant weather, with dry passing clouds; plenty of flying fish. Course made, S.SE.; distance, 186 miles.

Dec. 12. Lat. 12° 12′ N.; long. 35° 09′ W. Barometer, 29.86; temperature of air, 78°; of water, 79°. Wind: E. ½ S. Moderate trades and fine pleasant weather, with dry passing clouds. A large ship to the westward, bound south; close-hauled. Course made, S. by E. ½ E.; 164 miles.

Dec. 13. Lat. 9° 34′ N.; long. 33° 28′ W. Barometer, 29.82; temperature of air, 79°; of water, 79°. Wind: E. ½ N. Brisk breezes and dry pleasant weather throughout. All drawing sail set; close hauled by the wind since entering these trades; keeping a tolerable good full; the royal taken in and set as required. Great schools of flying fish, (a large full moon.) Latter part, fresh trades and hazy. Course made, S.SE. ¾ E.; distance, 185 miles.

Dec. 14. Lat. 7° 05′ N.; long. 32° 00′ W. Barometer, 29.77; temperature of air, 79°; of water, 79°. Wind: E. First part, fresh trades and pleasant; middle part, dry passing squalls; latter part, large cum. stratus clouds passing over from E. by S.; all drawing sail set by the wind. Passed through great schools of flying fish. Course, S.SE. ¾ E.; distance, 174 miles.

Dec. 15. Lat. 4° 51′ N.; long. 30° 26′ W. Barometer, 29.75; temperature of air, 80°; of water, 80°. Wind: E. ½ S. First and middle part brisk trades and dry squalls; latter part, moderate. Very large cum. stratus clouds coming from E.SE. The cum. stratus so high as to penetrate the upper strata of clouds. Course made, SE. by S.; distance, 164 miles.

Dec. 16. Lat. 3° 11′ N.; long. 30° 29′ W. Barometer, 29.75; temperature of air, 76°; of water, 80°. Wind: E.NE. to NE. First part, lost the trades; middle part, got the doldrums; latter part, squalls and rain. One squall, which had been brewing in the east and northeast, came out very sudden; was compelled to lower all sail; split the royal (a good sail) before I could get it furled. This was one of the hardest squalls I ever experienced in these latitudes; lasted 20 minutes, and was succeeded by another, which compelled us to let go our topsail halliards; lasted one hour. Course, SW.; distance, 104 miles per D. R. No observation.

Dec. 17. Lat. 1° 22′ N.; long. 31° 14′ W. Barometer, 29.77; temperature of air, 80°; of water, 80°. Wind: SE. First part, very dark, cloudy weather, bearing squalls from E.SE. to E.NE.; 6 p. m., took in the light sails and double reefed for the dark night; at midnight the stars began to appear; made all sail; latter part got the SE. trades, with fine weather, and dry passing clouds. Course, S.SW. ¼ W.; distance, 106 miles.

Dec. 18. Lat. 1° 27′ S.; long. 31° 52′ W. Barometer, 29.75; temperature of air, 77°; of water, 78°. Wind: SE. by E. First part, fresh SE. trades; about midnight crossed the equator in long. 31° 40′ W., with a strong breeze and squally weather, and a rough sea. Course, S. by W. ¼ W.; distance, 174 miles.

Dec. 19. Lat. 4° 29′ S.; long. 32° 20′ W. Barometer, 29.77; temperature of air, 80°; of water, 79°. Wind: E.SE. Fresh trades and pleasant weather. All sail set, close hauled by the wind; 7 a. m., made the *Island of Fernando Noronha*, bearing W.SW. per compass; checked in the yards, and set the topmast studding sail. I now consider myself *clear of Cape St. Roque*. Course, S. ¾ W.; distance, 184 miles."

REVIEW OF THE ROUTE TO THE "FAIR WAY" OFF ST. ROQUE.

The navigator who has read the remarks on the passage to "ports beyond the equator," page 138, and to "the 'fair way' off St. Roque," page 143, and studied the monthly route tables, pages 149, 167, &c., also the monthly time tables, pages 152, 168, &c., will now be prepared to glance back and take a general review of the routes; for he has gained a better point for such a survey than he would have occupied without a previous study of the tables.

The crossings of many vessels are given in the time tables, not so much for any light they themselves throw as to the passage, but because they serve, many of them at least, to illustrate the computed route of the tables; because they demonstrate, in a negative way, the correctness of these routes, and because they serve, or ought to serve, to give navigators confidence in the Charts and Sailing Directions based upon them.

In reviewing these tracks, one thing will not fail to arrest the attention of the navigator, and that is, the success with which the line may be crossed as far westward as 34° or 35°.

Vessels bound from Europe to ports beyond the equator, will be guided with fidelity by the Pilot Charts along the best routes, which for the most part is plain sailing. As a rule, it will be out of their way to come west of 30° before they reach the doldrums. In them, they should beat across rather than steer E.SE. or W.SW., for any length of time along them.

They should also beat when necessary, and when not, stand due south, across the calm belt of the horse latitudes. See the chapter "FROM THE LIZARD TO THE LINE."

In the foregoing Sailing Directions dull captains and dull ships are ignored. In crossing the calm belts and shaving ticklish points, such ships must crab it along as best they may, for I do not pretend to give any directions that are suited to them, especially the latter.

PLATES II AND III.—The tracks with the arrows (Plates II and III) are the tracks which I have recommended, and the dotted tracks are some of the tracks which have actually been performed. They contain also the lanes for the steamers between Europe and America.

Now, suppose we had the tracks of a hundred ships, hence to Rio, all made in the month of January of different years; that in every instance, and with every change of wind, each one of the ships making these tracks had been managed without a mistake; that they had in every instance steered the best course possible; that when necessary to go about, each one had gone about exactly at the right moment; and that whenever the wind came out ahead, they had all, without exception, invariably gone off on the right track; and that the tracks of these hundred vessels, no two of them having, let it be supposed, sailed in company, were projected on a chart before us; What should we have? We should probably have a hundred separate tracks, for it can scarcely be supposed that any two of them would coincide all the way. And the navigator, with that chart before him, would have displayed before him, as clear as he has the sun at mid-day in a cloudless sky, the best route to Rio in the month of January.

Suppose, moreover, that, with these 100 tracks before us, we should wish to draw a line or describe a route which should represent the mean average track of the entire 100 ships. We should then point to this line and say, this is the route pursued by these 100 vessels, and this therefore is the best average route for all vessels to take in the month of January; and when we should come to look at the January route thus recommended, we should find, probably, that not one of these 100 vessels had actually sailed, even for one mile, or for one foot, upon it; that they had crossed this mean path, now in this place, now in that, at one time from this

side, and again from that. Under such circumstances no right-minded mariner would hesitate for a moment about taking this route. But he would not attempt to describe with the keel of his ship, in the ocean, this line that he had drawn on the chart; for that line was drawn merely to designate the parts of the ocean through which she was to pass.

Now, just such lines, obtained from data quite as conclusive, with regard to the routes here recommended, have been actually drawn for different months; they are the mean or average tracks, in some parts of the way, of 700 such vessels in a month; in other parts, only for 20, or whatever be the number of observations that could be procured.

It is true that in the case of the Charts I have not actually had 100 such unerring vessels to give me the mean or best average route for each month, but I have had what perhaps was better. I have had the direction of the wind in each district of the ocean given for 100 times and upwards for each month in different years; and when the navigator is told the direction whence the wind comes, he can tell as well what course he could have steered as though he had himself been there and actually steered it.

I have, therefore, summed up all the winds and calms for each month in every district on the Pilot Chart, and calculated the chances of head winds and of fair winds, for every point of the compass, through every such district. With these, I then proceed to determine, by mathematical discussion, the mean or average route, which, taking both calms, head winds, and increase of distance into account, should give, on the average, the shortest passage, in time, to the equator.

Of course, then, when a vessel comes to try the new route thus computed, and to project on the Chart the track she actually makes through the water from day to day, it is not to be expected that the track so performed will, when laid down, exactly overlay the one already projected on the Chart as her guide. There will be a general conformity between the two, but nothing like the actual coinciding of two lines. Sometimes the vessel will be on one side of the computed track and sometimes on the other.

These remarks are called forth by the fact, that some navigators appear to think that there is some sort of virtue in the black mark on the Chart, which represents any one of these routes, as the April route, for instance; if driven from the April route by head winds, one of these navigators, had he been in the Memnon at *a*, (Plate II,) would have stood north to get her keel on the black mark for April; and again at *b*, he would have stood to the southward and westward to get upon the April track again.

Now, the Memnon at *a* or at *b* was in just as good a position as she would have been had she been "right upon the track." Her very clever master therefore did right; he conformed to the Sailing Directions, and was pursuing the route recommended as closely and as well as though his track had fallen all the way from *b* down to the equator upon the line with the arrows, which is projected on the Charts to represent the April route.

The tracks of the vessels projected on Plates II and III have not been selected on account of their short passages; many other vessels have made passages shorter than these. I have taken them only for the purpose of illustration and demonstration.

In the conformity between the April route of the Chart and the actual track of the Memnon in crossing the calms of Cancer, the Charts show a sharp elbow thence to the equator. The Memnon, without intending to make this elbow, was forced by the winds to make it; and the Sailing Directions indicated that there probably would be an elbow here. The Memnon (Captain Joseph R. Gordon) crossed the line in 19 days; he had no difficulty in clearing Cape St. Roque, and made a fine passage.

It was the same case with the Surprise, (Captain P. Dumaresq,) with the Seaman, (Captain Joseph Myrick,) and with the Dragon, (Captain Andrew,) and with a host of others whom I might mention, were it desired. Those that I have mentioned had to the equator 22, 20, and 24 days respectively. And it is remarkable how the tracks of these vessels, and many others that have followed these Sailing Directions, have conformed in their windings and irregularities to the tracks of the Charts.

From the crossing by these vessels of 5° N., to the place where they crossed the line, it is very nearly a direct south course, and exactly such as is represented by the tracks with the arrows, generally for winter and spring; and, as before remarked, the lines which represent the tracks for these months do not represent the tracks which it is probable that one ship in 100 will actually make, but they represent the mean or average track which 100 ships, sailed by navigators that never were wrong, would make.

Let us now turn to Plate III., which is an illustration of the summer and fall routes:

This is the season of the year in which short passages are the most difficult by any route, old or new.

Track *x* is the track of a ship that had the Charts on board. The captain of that ship, judging from the track that he had made, evidently undertook to do what now and then an opinionated navigator is found with hardihood enough to do, viz: set up his "own experience" against the experience of the thousand of navigators who had gone before him, all of which is spread out upon the Charts before him. Captain Hildreth, of the Sancho Panza, is a striking instance in illustration of this. Her log is given at p. 326. Her example ought to serve the faint-hearted as a beacon and a warning. To that end I have discussed it at length under the route for October.

The track of the brig Acasta is given on the Plate as an illustration of an attempt often made to "split the difference" between the old and new route.

She sailed from Sag Harbor, September 20, 1850; went as far as 22° W., and crossed the line in long. 26°—November 14—55 days. She got the doldrums in about 11° N., and they stuck by her for 15 days, and until she reached 2° N.

The fragment of the track *w* illustrates the case of a vessel that attempted the new route, and abandoned it when she fell in with the equatorial doldrums in 11° N.—September 25. She was going on very well, but here she met the southerly monsoons which the Charts warned her of at this season of the year. The wind came out S.SW., and she went on fanning to the eastward and to *leeward*. From this place it took her 16 days to reach the line.

Such cases as these are becoming more and more uncommon—the errors are generally committed by standing too much towards the old track, or by a sort of superstitious dread of St. Roque, or by a fickleness of purpose.

Navigators often follow the new route bravely, until they get into the equatorial calms; here their heart seems to fail them, and they bolt at the very time when they should stick more closely to their guide. Again, I refer for its teachings to the log of Sancho Panza. Hildreth, with his blunders, is very instructive. His example will help to enforce this lesson.

The region which these calms usually include is in the shape of a wedge; it shifts about, but Plates II and III show its mean place at the four seasons. In each season, it is sometimes above and sometimes below the place assigned it on the Chart. But I have drawn it there to show navigators how they mistake, when, being as far west even as 31° or 32°, they fall into

these calms, and think of making longitude by fanning along to the eastward or an E.NE. or perhaps a NE. course. The further they go on such occasions the broader grows the belt, and the greater becomes the difficulty of getting across it.

I have projected on Plate III, by a dotted line, the track of a ship, and marked it *y*, as an illustration of bad management under such circumstances, though it is by no means an extreme case. This ship had 40 days to the line, took the new route, and followed it bravely until she reached the equatorial calms, in longitude 29°. She was then far enough to the eastward, and not too far west; she should not have been afraid to cross the line as far west as 32°. But instead of proceeding to make the best of her way across this belt where it was narrow, and where two or three days at most would have sufficed for crossing it, she proceeded to flap along to the eastward as far as 21°; and thus, in consequence of the monsoons, found herself to *leeward;* for, as it has been already explained, p. 240, Cape St. Roque has, in summer and fall, two lee sides; and it is as bad, nay, of the two a little worse, to fall to leeward by going too far to the east in the southwardly monsoons, than it is to fall to leeward by going too far west in its east tracks. In either case Cape St. Roque is to windward.

Captain Shackford, of the Chanticleer, has just furnished me, in her abstract log of September and October, 1857, with an excellent illustration of falling to leeward east. He sailed from New York, bound to the Rio de la Plata. On the 29th day out, she reached the doldrums in lat. 12°, long. 26°. She then encountered the SW. monsoons; went as far as 18° 30′ W., and was 21 days from 12° N. to the equator. This is a longer time than any of the vessels that have fallen to the leeward west have had in clearing St. Roque. I quote the illustrative part of her log:

Barque Chanticleer; twenty-nine days out from New York.

"Sept. 23, 1857. Lat. 12° 45′ N.; long. 27° 00′ W. Barometer, 29.58; temperature of air, 81°; of water, 80°. Wind: N. Dark dismal weather all this day, with light variable winds; lightning in S. Noon, something finer; appearances of a strong current.

Sept. 24. Lat. 12° 07′ N.; long. 26° 40′ W. Barometer, 29.61; temperature of air, 82°; of water, 81°. Winds: S., NW. First part, cloudy, winds light and steady; middle part, thunder and lightning in S., heavy showers, light airs; latter part, fine clear weather, nearly calm, great signs of the doldrums.

Sept. 25. Lat. 11° 40′ N.; long. 26° 40′ W. Barometer, 29.65; temperature of air, 84°; of water, 82°. Winds: NE., E.SE., SE. First part, finest kind of weather, with very light breezes, swell from S.; middle part, weather dark and cloudy, wind very light, lightning in S.; latter part, wind variable with light squalls and rain. I have seen no regular "tide-rips," but the water when calm appears like a current.

Sept. 26. Lat. 10° 11′ N.; long. 26° 50′ W. Barometer, 29.65; temperature of air, 84°; of water, 82°. Wind: E.SE. First part, light airs with small showers, thunder and lightning in SE.; middle and latter part, fine breezes with very pleasant weather.

Sept. 27. Lat. 9° 35′ N.; long. 26° 50′ W. Barometer, 29.68; temperature of air, 84°; of water, 82°. Winds: S., S.SE. First part, fresh breezes with heavy squalls and rain, lightning in N.; middle part, wind light and variable with violent squalls and heavy rain; latter part, very light airs, with signs of a clear up. Noon, calm and pleasant. Reefed topsails twice this day.

Sept. 28. Lat. 8° 45′ N.; long. 26° 20′ W. Barometer, 29.66; temperature of air, 84°;

of water, 82°; Winds: E.NE., NE. First part, fine weather with light wind, swell from S.; middle and latter parts, fine breezes with best kind of weather for this country. Passed through some "tide-rips."

Sept. 29. Lat. 7° 16′ N.; long. 26° 00′ W. Barometer, 29.63; temperature of air, 88°; of water, 83°. Wind: N. First part, steady and pleasant breezes with most delightful weather; middle part, wind light and steady with a few heavy showers; latter part, nearly calm and very hot. Swell nearly run down.

Sept. 30. Lat. 6° 14′ N.; long. 25° 30′ W. Barometer, 29.63; temperature of air, 88°; of water, 82°. Wind: SW. First part, light airs with pleasant and very hot weather, lightning in N., wind veered against sun; middle part, squally and changing with thunder, lightning, and rain; latter part, fine breezes with pleasant weather.

Oct. 1. Lat. 6° 15′ N.; long. 23° 30′ W. Barometer, 29.61; temperature of air, 85°; of water, 83°. Wind: S.SE. to S.SW. First part, variable with strong puffs, weather showery; middle and latter parts, wind variable and squally with frequent showers, heavy sea on. Noon, strong squalls; under double-reefed topsails.

Oct. 2. Lat. 6° 25′ N.; long. 22° 30′ W. Barometer, 29.62; temperature of air, 80; of water, 82°. Wind: S.SW. First part, fresh breezes with a few rain squalls; exchanged longitude with a "Bremen," 23° 40′; middle part, steady breezes with fine weather; latter part, fresh breezes with very hard squalls from S. with rain. Noon, nearly calm.

Oct. 3. Lat. 5° 48′ N.; long. 21° 00′ W. Barometer, 29.60; temperature of air 82°; of water, 82°. Wind: S. to SW. First part, heavy squalls with rain enough to make a young flood; middle and latter parts, strong breezes with frequent heavy squalls and lots of rain. The squalls come so thick and fast that it is nothing but "clew down and clew up."

Oct. 4. Lat. 5° 40′ N.; long. 19° 40′ W. Barometer, 29.65; temperature of air, 84°; of water, 82°. Wind: S.SW. First part, nothing but heavy squalls with rain, rain, rain; middle part, strong breezes with heavy squalls and heaps of rain, tide-rips; latter part, fresh breezes and very baffling, with cloudy, dark weather. Noon, a heavy head sea; that with the current shoulders us over to the east; a large swell from SE.

Oct. 5. Lat. 5° 35′ N.; long. 20° 00′ W. Barometer, 29.68; temperature of air, 84°; of water, 81°. Wind: S.SW. First part, light breezes, weather cloudy and unsettled, big circle round moon; middle part, light variable wind with an occasional shower, dark and cloudy; latter part, partly clear with light airs, a barque in company, swell still holds up. I am going to the westward to look for a change.

Oct. 6. Lat. 5° 28′ N.; long. 20° 00′ W. Barometer, 29.70; temperature of air, 84°; of water, 81°. Wind: S.SW. First part, light breezes with cloudy weather, rain squalls all around, two sail in company; at 7 the wind changed to SE. in a squall with light rain; middle part, nearly calm with fine pleasant weather, the first since the month came in. I crossed these parts in October, 1854, but think this a worse chance than I had at that time. Wind veering and hauling; tacked ship twice, but it is "no go."

Oct. 7. Lat. 5° 00′ N.; long. 18° 30′ W. Barometer, 29.64; temperature of air, 84°; of water, 82°. Winds: S. by W., S.SW. First part, wind backing and filling; weather fine; a few rain squalls about; middle part, fresh breezes and squalls with some heavy showers; latter part, fine weather, with good breeze; a heavy head sea on; tacked ship to westward; saw four sails standing to S. and E.

Oct. 8. Lat. 4° 25′ N.; long. 20° 00′ W. Barometer, 29.61; temperatnre of air, 83°; of water, 82°. Wind: S. First part, fine breezes, with dark heavy clouds; middle part, fresh breezes, with pretty fine weather; saw two more fellows standing to eastward; latter part, wind freshening with strong puffs, weather cloudy; wind favors in the puffs; some tide rips; saw a fellow standing "our road" under double-reefed topsail; good luck to him!

Oct. 9. Lat. 3° 50′ N.; long. 20° 24′ W. Barometer, 29.65; temperature of air, 82°; of water, 81°. Wind: SW. First part, fresh breezes and squally, with dark stormy weather; middle part, weather dark and heavy, with light rain; lightning in NE.; at 4 a. m. wind changed suddenly to N.NW., with a flood of rain; latter part, wind light and variable, with a shower now and again; some tide rips; spoke a Portuguese brig, 28 days from Lisbon, longitude 20° 02′ by two chronometers.

Oct. 10. Lat. 3° 45′ N.; long. 21° 10′ W. Barometer, 29.62; temperature of air, 84°; of water, 81°. Winds: SW., S. First part, light baffling airs, with light drizzly rain; middle part, light airs and most parts clear; lightning in the north; latter part, wind light and variable, with small rain; the same awful looking weather; saw a fellow bound N.

Oct. 11. Lat. 3° 23′ N.; long. 21° 15′ W. Barometer, 29.60; temperature of air, 85°; of water 81°. Wind: S.SW. First part, light airs and cloudy; rain squalls all about; lightning in S.; middle part, light variable wind, with sky overcast; it looks bad enough to scare a fellow; latter part, wind veering to south, weather dark and cloudy; three sails in company.

Oct. 12. Lat. 2° 45′ N.; long. 22° 10′ W. Barometer, 29.60; temperature of air, 84°; of water, 81°. Winds: S., S.SW. First part, wind light and variable, with pretty fine weather; middle part, strong squalls, with heavy showers; latter part, fresh breezes, with strong squalls of wind and rain.

Oct. 13. Lat 1° 48′ N.; long. 23° 10′ W. Barometer, 29.60.; temperature of air, 82°; of water, 81°. Wind: S. First part, strong squalls, with fine showers; middle part, fresh breezes, with dark cloudy weather; a heavy head sea on; latter part, steady breezes, with the finest weather for a month; saw English ship homeward bound.

Oct. 14. Lat. 0° 23′ N.; long. 25° 20′ W. Barometer, 29.60; temperature of air, 85°; of water, 78°. Wind: S.SE. Light steady breezes all parts of this day, with real summer weather. At 5 p. m. crossed the line, 51 days' passage, the longest I have ever made, and the worst chance."

In case of falling to leeward on the east, p. 345, one is apt to find an easterly set with squalls, light winds, baffling airs, and torrents of rain. In falling to leeward west, on the contrary, the current is sometimes favorable and sometimes adverse, the weather is always good, and the wind fresh enough to enable a ship fully to show her weatherly qualities. There is always more of a head sea to be encountered in falling to leeward *west* than there is in falling to leeward *east*. But crack captains in weatherly ships will never hesitate which way to fall—if fall to the leeward they must; though there is seldom any necessity of falling to leeward either way. The safe middle course is the best, and the Pilot and Trade-Wind Charts with these Sailing Directions point that out plainly enough.

When at *h*, ship *y* (Plate II) should, instead of making about an E. by S. course, have stood on the other tack, making the best of her way south, and not caring to get east of 30°. She might have been content to keep herself betwen 29° or 30°, and 31° or 32°, while she crossed these calms.

I have not yet found a single case in which there has been, after crossing the line as far as 32°, the least difficulty in clearing St. Roque. Navigators should not hesitate, if they are pinched, to go inside of Fernando de Noronha. But in doing that, they should take care not to run foul of the Roccas, latitude 3° 51′ S.; longitude 33° 49′ W. These shoals were carefully surveyed by Lieutenant S. P. Lee, United States brig Dolphin.

The trans-equatorial trade of Europe as well as that of America is interested in the establishment of a light-house or beacon on the Rocas. Grass Island is ten feet or more, so says Lieut. Lee, above the water, and the cocoa nuts would grow finely there. It is to be hoped that the request contained in the following letter will be complied with at an early day:

OBSERVATORY, *Washington*, *October* 29, 1858.

SIR: The new routes to the line have brought the Rocas of Brazil in the fair way of all vessels bound hence to Rio, to California, India, China, Australia, or to any of the ports beyond either of the two great southern capes.

These shoals were well surveyed by Lieut. S. P. Lee, in the Dolphin, in 1852, when she was sent, under the law of 1849, to assist in the investigations of this office. They are in lat. 3° 51′ S., long. 33° 49′ W. Two small islands, Grass and Sand islands, are on these shoals. They are a few feet above the water. The first warning that a navigator has of his approach to them is generally by the breakers.

Captain Samuel G. Brooks, of the barque "Inman," thinks that cocoa nut trees would grow on them, and serve as an admirable beacon to the numerous ships that pass that way.

Seeing that these shoals lie in such a great thoroughfare, for they are also in the track of all homeward bound traders from South America and coasters from California, and considering the importance of the suggestion, I have to request that some of the vessels on the coast of Brazil be directed to procure both the nut and plant of the cocoa palm, and plant them on the Rocas as they pass them.

The vessels of the Paraguay expedition,* as they return home, afford an excellent opportunity of carrying out this suggestion.

Respectfully, &c.,

M. F. MAURY, *Superintendent.*

Hon. ISAAC TOUCEY, *Secretary of the Navy, Washington.*

I have the track of one vessel that dashed on, crossed the line in 41° on the 19th day out, and on the 32d day was south of the parallel of Rio. This, though, was in the winter and spring, when vessels can afford to keep to the westward, and it was going further west than I should advise.

But suppose a vessel to cross in 32° or 33°, and to get the SE. trades at SE. By standing on S.SW., she keeps herself in a position in which any change of wind is favorable. If it haul to the eastward, she can lay up and clear the land; if it haul to the southward, she can go about and make easting, and get along rapidly by stretches on long and short legs.

The current so much dreaded off St. Roque is a good deal of a bugbear. Navigators have been frightened at this current ever since some English transports were cast ashore by it, some time in the last century. But it should be borne in mind that it was quite as much of an undertaking for the clumsy transport-built ships of England in the last century to contend against a current of one knot, as it is now for one of our first-rate clipper built ships to contend with one of 4 or 5 knots.

* Flag Officer Shubrick has been, November 2, instructed accordingly by the department.

The log-book of the Celia, quoted in the 3d edition of this work, is an example. It would have been impossible for that ship to beat against a one-knot current. In the days of this wreck, the passage from England to India averaged nine months. Warren Hastings, when he went out, was 10 months on the way. The passage is now often made by our ships in less than 3 months. Therefore, the ships of those days might be well cautioned against currents as dangerous, which the ships of the present day would scarcely regard.

Now, my investigations show that there is rarely off Cape St. Roque, and in the fair way from the equator south, either a sweeping or a horsing current. Indeed, many accurate and close observers pass there without reporting any current at all; and though navigators should always, especially in summer and fall, be on the lookout for a current there, and should always make allowance for one that is to set them back with the land, yet when they do encounter a current there, they may be assured that, as a general rule, it is neither difficult to overcome, nor dangerous on account of its set.

For the guidance of navigators who follow the new route, and are pinched in clearing St. Roque, as they no doubt will occasionally be, I repeat the following suggestions:

From the line, in longitude 33°, Cape St. Roque bears S.SW. From this crossing-place, in a smart ship, that will fetch where she looks, a SE. wind all the way from the line would just prevent the vessel from clearing. But the chances are more than a hundred to one that the wind will not hang steadily at SE. all the way from the line to St. Roque. If it haul to E.SE. you can lay up and clear. If it haul to S.SE you can put about and make easting.

But suppose the wind holds steadily at SE. or at any other point which will prevent you from clearing the cape; draw a line from your place on the Chart to the cape, and avoid falling to the west of that line, by taking advantage of slants, or by beating accordingly as you may have the wind, and making long and short stretches. I quote the case of the Stag Hound as an example:

"Six days out from New York," writes Captain Richardson, "broke off main topmast, and that in its fall took all three topgallant masts. Soon after took a W.SW. and west gale; run the ship dead before the sea and wind; in consequence of this, crossed the equator in about longitude 28° 30′ W., in twenty-one days from New York. Losing topmast, we had no main topsail in the ship for nine days, and no top-gallant sails for twelve days; had we not met with this accident, I think we should have been down to the line in sixteen days.

In latitude 4° N. the NE. trades left us, then baffling down to latitude 2° N. Then took the wind at S.SE. and SE. until near the coast of Brazil, when the wind hauled, so we did not have to make a tack; presume, had we crossed in longitude 30° W. we should have fetched along the coast."

This letter of Captain Richardson is quoted as an illustration of what I have endeavored to impress upon navigators, with regard to their course, after crossing the line well to the westward, and when it appears to be touch and go, as to clear St. Roque, viz: stand boldly on, and take advantage of slants and short legs to make long ones.

I received the abstract of another vessel about the same time that crossed in 31°, and I notice in the remarks, after crossing the line—"back-strapped"—"no chance of weathering Cape St. Roque"—"shall evidently fall to leeward," "bad luck," &c. Yet this desponding navigator stood boldly on, took advantage of a slant, stood off for eight hours, went past St. Roque like a shot, and the thirty-second day out from New York crossed the parallel of Rio. The log books of this office afford many cases of this sort, but one is a sample of the whole.

Mistakes in the route to Rio are, I am happy to say, becoming much less frequent. The Charts are evidently much better understood now than they were formerly.

In truth, the old route is nearly broken up. It is now rarely attempted. But occasionally vessels evidently aim to "split the difference" between the *old route* and the *new*, by steering a sort of middle course between them. This I have called the MIDDLE ROUTE.

Many of the vessels which take this middle route, evidently set out with the intention of trying the new route, but they get a little pinched; or the winds are too favorable; or the dread of that bugbear off Cape St. Roque—a westwardly current—seizes them; or, through fear of falling to leeward, of getting back-strapped, &c., they go too far east, get delayed in the doldrums or southwardly monsoons, and so *fall to leeward of St. Roque by going too far east.*

Now and then, I hear of a mariner who, like Hildreth, of the Sancho Panza, "does not believe in the new route." I hope all who are skeptical will examine the foregoing tables attentively. The crossings by the new route afford an example of one vessel for every 8 hours during the year; and of the thousand vessels there recorded, but four have fallen to leeward of Cape St. Roque, and, in consequence thereof, their passage from the United States to the fair way off St. Roque was prolonged only three days on the average; their mean place of crossing the equator was in long. 36°. Notwithstanding this, the average passage of the four, from the United States to the parallel of St. Roque, was one week less than the average to the same parallel by the old route.

The table of crossings by the *old* and *middle routes* gives the passages of 281 vessels. The masters of these evidently did not have faith enough in the Charts to justify them in their opinion in sticking to the Sailing Directions; some disregarded them altogether; some attempted to "split the difference," and take a middle course between the old and the new routes; but the table shows how dearly they paid for their doubts—their passages on the average being about 25 per cent. longer than the average from the United States by the new route; the difference being as 31.4 to 38.5.

Mean monthly crossings of 281 *vessels by old and middle routes.*

	30° N.	25° N.	20° N.	15° N.	10° N.	5° N.	Long. W.	Days to line by routes.	
								Middle.	Old.
January	38° 48′	33° 26′	32° 01′	31° 28′	29° 21′	27° 20′	28° 58′	37.2	36.8
February	36 41	33 23	31 18	30 01	28 32	27 41	27 19	32.7	37
March	35 52	31 45	30 56	29 45	28 01	27 07	26 56	31.7	35
April	37 00	32 00	31 36	30 04	28 03	26 43	28 27	35.5	36.3
May	35 04	33 04	31 25	29 47	27 21	26 14	27 21	43	45.9
June	37 38	35 22	33 16	31 10	28 30	24 00	27 56	40.8	43.8
July	41 29	39 02	35 37	33 23	30 08	22 41	28 25	38.9	43.3
August	37 03	36 47	35 55	30 29	32 22	24 57	27 38	46.7	49.7
September	36 49	34 47	33 31	31 51	27 57	23 44	26 43	41	43.7
October	34 18	31 32	30 37	29 35	27 55	25 34	28 15	40.2	42.5
November	35 07	31 00	30 23	29 21	27 56	27 52	28 55	36	38.5
December	34 52	32 40	31 46	29 48	28 12	25 54	26 54	38	41.5
Means	.....	.....	.....	.....	.....	.....	.....	38.5	41.2

Now, if we take the mean of the best six passages, for each month by the new route, we shall have the elements for a mean monthly average, derived from 72 vessels, which gives 23.7 days to the line; the mean crossing place being on the meridian of 30° 50′, or about 30′ west of the average of the whole 913. The shortest monthly runs being from November to April

inclusive, and varying, for these months, from 15 to 22 days. The longest are from June to October inclusive. Long. 32° 23′ is the most westerly crossing of these monthly means—being the mean place of crossing of the best six in December.

"This," says Captain Chase, of the L. Gilmore, "is my sixth voyage across the line to the south with Mr. Maury's 'Wind and Current Charts' on board;" and he thus sums up his passages to the line:

"Brig Georgiana, left New York December, 1850,	28 days.
" " " " November, 1851,	31 "
"Barque Minitonka, (lost topmast in 9° N.), June, 1853,	36 "
" " December, 1854,	33 "
" Carilla, from Cape Henry, July, 1856,	34 "
"Schooner L. Gilmore, New York, November, 1857,	24 "
"Average	31 days."

Lieut. Kennedy, commanding the U. S. storeship Supply, on her recent voyage to Rio, mentions a striking instance of the advantage of sticking to the Charts, and conforming to the Sailing Directions. He crossed in the month of February, 34 days out, in long. 33° W. He was pinched, and made the land 7 miles to leeward of Cape St. Roque. He stood boldly on; took advantage of a slant, as recommended, and got by without any difficulty. The barque Polka, however, which was in company, stood off to the northward and eastward in order to get an offing, and pass to windward of the Island of Fernando de Noronha. This brig, though a better sailer than the Supply, did not arrive at Rio until several days after the Supply.

The following table shows the names of fifty-three vessels that have crossed the line west of 33° W. and of twenty-seven that have crossed it east of 25½° W., with the time from port to the line, and thence to the offings of St. Roque via each crossing.

Name.	Month.	Whence.	Equatorial crossings—		Days.		Total days to St. Roque, *via* crossings.	
			West of 33°.	East of 25° 30′.	Equator.	St. Roque.	W. of 33°.	E. of 25° 30′
Hudson Trask	January	Cape Henry	35° 04′		26	2	25½	
Governor Morton	do	New York	33 20		20½	2½		
Boston	do	Boston		24° 50′	27	4		31
Isabelita Hyne	February	New York	33 20		22	3	25	
Empress	do	do		19 19	46	2		48
Michael Angelo	March	do		23 30	26	6		
Vandalia	do	Baltimore		24 36	45	3		40
Huma	April	New York	37 10		40	8	46½	
Levanter	do	do	35 28		26	19		
Queen of the East	do	do		23 0	31	5		36
Flying Cloud	May	do	33 41		29	2		
Ottawa	do	do	33 0		35	2		
Golden State	do	do	36 38		24	7	35½	
Belle of the West	do	Boston	35 45		34	3		
Sea Serpent	do	New York	33 35		25	6½		
Rubicon	do	do		20 48	42	3		
Union	do	do		24 37	44	3		
Nestorian	do	do		25 40	33	3		48¾
St. Andrew	do	Philadelphia		24 10	45	2		
Flying Cloud	June	New York	33 0		22	2		
Witch of the Wave	do	Boston	33 25		27	5		
Chilo	do	do	33 0		29	3	31½	
Grey Eagle	do	Cape Henry	34 0		28	3		
Canvas Back	do	Boston	35 10		31	7		

TABLE—Continued.

Name.	Month.	Whence.	Equatorial crossings—		Days.		Total days to St. Roque, *via* crossings.	
			West of 33°.	East of 25° 30′.	Equator.	St. Roque.	W. of 33°.	E. of 25° 30′
Inez	May	Boston		24 34	48	2		49½
Jamestown	do	Baltimore		25 25	44	5		
Mermaid	July	New York	34 0		33	4		
Hazard	do	do	34 0		32	4		
Wild Pigeon	do	do	33 30		33	4		
Robert Wing	do	do	35 40		33	4	37	
Parana	do	do	34 45		38	4		
Pride of the Sea	do	do	33 26		26	4		
Queen of Clippers	do	do	33 43		33	2		
Magnolia	do	do	34 10		36	6		
Sovereign of the Seas	August	do	36 0		25	3		
Witch of the Wave	do	Boston	33 34		29	3	40¼	
Sheffield	do	New York	34 34		55	6		
Manchester	do	do		18 34	55	3		
Edwin	do	Boston		24 0	54	3		
Tarolinta	do	New York		24 40	46	2½		
Sea Witch	do	Boston		22 42	35	2		51
Chenango	do	Baltimore		25 39	58	3		
Raritan	do	Norfolk		24 50	55	3		
Oriental	do	Boston		20 25	55	3		
Cohota	do	do		24 0	29	3		
Morning Light	September	Philadelphia	33 01		38	2	36½	
Winged Arrow	do	Boston	34 40		30	3		
Monterey	do	do		25 10	34	2		
Medford	do	do		25 54	44	2		
Margaret	do	Philadelphia		24 35	32	2		40½
Lady Franklin	do	New York		24 12	43	3		
Miantonomi	October	do	34 0		47	4		
Golden City	do	do	33 27		28	3		
Ringleader	do	Boston	34 0		28	3	42	
Roscoe	do	New York	34 15		53	3		
Mameluke	do	Boston	34 15		37	3		
Lucy Elizabeth	do	do		25 0	41	3		42½
Edwin	do	do		25 0	38	3		
Trade Wind	November	New York	34 0		22	4		
Cyclone	do	Boston	34 55		30	3		
Dashing Wave	do	Philadelphia	33 15		23	5		
Gertrude	do	New York	38 50		35	11		
Sabine	do	Boston	34 30		50	9		
Comet	do	New York	39 30		23½	7½	37	
Maury	do	do	36 20		24	4		
Bald Eagle	do	do	34 25		28	3½		
Sancho Panza	do	Boston	35 0		42½	6½		
Alice	do	New York	34 25		38	2		
Flying Dragon	do	do	36 0		27	3		
Hurricane	December	do	34 0		27	3		
Golden Gate	do	do	33 56		20	3		
Storm	do	do	35 30		18	7		
Telegraph	do	Boston	33 45		22	4		
Winfield Scott	do	do	33 0		33	4	29	
Reindeer	do	do	34 30		36	2		
Great Republic	do	New York	35 0		15¾	3¾		
Leighton	do	do	33 10		27	2½		
Wm. Chamberlain	do	Philadelphia	34 20		31	2½		
Retriever	do	St. John's		20 2	50	4		46
Ludwig	do	New York		25 19	35	3		
Average							35	43.2

This table is very instructive; it contains a list of all the vessels that have crossed west of 33°—a point from which it was considered, a few years ago, that a vessel would be certain of falling to leeward of St. Roque. Nevertheless, it appears that, though some of the crossings be as far as 39° W., the average of all to the fair way off St. Roque is eight days less than the average of those that have crossed to the east of 25½. A more conclusive proof of the advantages of the new route, and of the disadvantages of the old, could not be offered. With this exhibit, no more may be said of the time that is lost by pursuing the old route. The demonstration is complete. The longest passage west of 33° is that of the Sheffield: she crossed in 34° 34′ in August, and had 61 days. The longest passage east of 25° 30′ is, in the same month, by the Chenango, from 25° 30′; she also had 61 days. The furthest crossing point for this month was 36° west, 28 days; the furthest east was in 18° 30′, with 58 days; the average difference for this month, throwing out the exceptional cases of the Sheffield and the Chenango on each side, is 20 days in favor of falling to leeward *west*, instead of *east*.

The chief point of information as to the new route appears now to be, not where should the navigator cross the equator, but in the practical answer to this question: Which is the best way of crossing the "equatorial calms?" The region most liable to these calms is, as I have before explained, wedge-shaped, with the point of the wedge directed towards South America.

The winds in these calm regions are often from the southward and westward; indeed, as you approach the coast of Africa, in summer and fall, these southwardly winds assume the character of a regular monsoon.

The place of these calms varies, too. It is sometimes at the equator; sometimes in 5°, 10°, or even in 15° north, according to the season of the year.

And the answer to the question, "How to cross them?" having entered them, is this: Unless you are fearful of falling to leeward, or you are already too far to leeward, and want to make easting in the southwardly winds of the doldrums, do your best to make southing, for by that course you will clear them soonest. By that course you run directly across them; by an east or west course you run along with them.

It appears, however, by these tables, that the average passages to the equator by the new route have been greatly reduced.

Moreover, by comparing the new route crossings with the "middle route," as the tracks made by those navigators who attempt to "split the difference" between the old route and the new are called, we shall see how much they lose. They lose, on the average, during a portion of the year, a week or more, and several days at any season.

It will not escape the notice of men who study these tables as carefully as they ought to be studied, that, from May to November, inclusive, vessels that go the new route cross the parallel of 5° N. further to the eastward, on the average, than they do the equator. The cause of this is obvious: it is owing to the monsoons of the doldrums. Hence, we deduce a rule which will apply to all months, and it is this: When you cross the parallel of 10° N. in 30°, or 31°, or 32° W., and can make a south course good, don't care to go any further east. Of course, if you meet these southwest monsoons, as in the summer and fall you will sometimes do, even as far west as 32°, you will, in that case, be compelled to obey the winds, and make easting; but when you are between 27° and 32°, always prefer the tack that will give you most southing, because it will put you across the doldrums soonest; and if it bring you across no further west than 32°, or even 33°, you may consider yourself in a good position, and clear of a region of light airs and baffling winds.

It is hoped that this exhibit will serve to convince the skeptical that these Charts are what they purport to be—*i. e.*, the result of the experience of all the navigators whose logs I could lay hand on for comparison, and that they are not based on *any* theory of *anybody*.

Some vessels are put down on the middle route which did not intend to take it. They were forced further to the eastward, before crossing the horse latitudes, than they intended to go. They did the best they could, and might have been classed under the new route; for, when winds are ahead, the "new route" expects the navigator to do the best he can, for head winds will now and then drive him broad off the track.

If the few passages that come under this category had been so classed, the contrast in favor of the new route would have been still more striking than it is.

There is a remarkable conformity between the average track by the crossing tables and the computed route, or what may, in some sort, be called the theoretical route, inasmuch as it was predicated on the Pilot Charts, and is the deduction entirely of figures and calculation.

Thus, the average crossings of the six vessels that made the best passages in February were, in reality, for the parallels of north latitude, viz: 30°, 25°, 20°, 15°, 10°, 5°, in longitude 42° 36′, 38° 14′, 35° 16′, 33° 14′, 30° 20′, 30° 20′, 30° 8′ W. The computed route crosses these parallels in 45° 40′, 37° 45′, 35° 35′, 33° 28′, 31° 23′, 31° 23′ W.

It appears, from this, that the best average route which, according to the Pilot Charts, a vessel should take to reach the equator in February, is just such as the mean of the six best tracks that have been actually made, show it to be.

Thus, we find that the computed routes of the tables have stood every test. The time it would take to make the passage by them was computed beforehand, entered in the tables, and recommended to navigators for adoption. Ships try the route, and find the time correct.

The distance to be sailed through the water, taking into the account the detour which a vessel under canvas must make on account of head winds, was calculated. Trial proves the tables surprisingly correct here, too, for navigators have kept their run by the log, summed it up at the equator, turned to the computed distance to be sailed by the new route for that month in the tables, and found the two agreeing, in some cases, within ten miles of each other, and seldom differing in any over a hundred. In a voyage of four thousand or five thousand miles, a steamer could not run closer to the actual distance than this.

But of all the tests to which these calculated routes were to be subjected, perhaps the severest one was that which related to the track which the vessel should make through the water—the path she was to follow over the ocean—in order to make these quick runs.

The winds had been tabulated, the currents had been considered, and, taking into account these fickle and very subtle elements, with such arguments as might be legitimately drawn from the doctrine of chances, the actual course which a vessel under all these influences would make from day to day on her destination was, like the path of a comet through the skies, made the subject of calculation, determined and announced.

Now, when we come to compare the mean track, for any month, of the vessels that have best fulfilled the requirements of the new route, with the track of the tables, we find the two tracks identical. These tracks are quite as close together as would be the tracks of the individual vessels of a fleet attempting a voyage of such a length in company.

Practical illustrations of this are frequently afforded, especially by smart ships, ably commanded and well navigated. A striking case of this is afforded in the abstract log of the clipper ship Sword Fish, (H. N. Osgood,) during a voyage of circumnavigation, which she ha

accomplished, including thirty-five days in port, in ten months and ten days. In this time she logged 39,977 miles, and averaged 153 miles per day.

She sailed from New York, bound to California, April 3, and the following remarks are entered in her abstract log for the 22d of that month: "Fine weather; at meridian, I am on the equator, after a passage of 18 days and 15 hours from Sandy Hook; and believed to have followed Maury's track for this month, and am satisfied of its correctness. Distance logged to line, 4,002 miles."

Maury's computed distance for April, 4,051 miles, and for this part of the voyage she averaged 8.95 knots the hour. Thus, these Charts are bringing out the fact that there are, upon the broad ocean, great highways or turnpikes, if you please, almost as clearly marked out by the winds and the currents as are the common highways of the earth by marks upon the land.

I have frequently recommended vessels that happen, as now and then they will, in attempting the new route, to find themselves too far to the westward, as they approach the doldrums, not to tack and stand back to the northward, but rather to stand on and take advantage of all the chances that will be offered. There are two occasions on which they should do this, especially in summer and autumn: the first is when they enter the belt of southwardly monsoons in the doldrum region; the other is when they get the SE. trades; for, in each of these two regions, the wind is often so well to the southward as to admit of an east course. That it is so in the latter region has been illustrated in the course of this work by numerous examples; and at last I am enabled to quote an actual experiment made in illustration of the former by the barque Edna, (J. L. Groton,) from Pensacola to Rio, in August. Her master, however, has returned a very imperfect abstract log, and which he thinks can be of no possible use. He promises to do better next time, it is true, but he should have recollected his promise, and done his best from the beginning. His excuse is not an uncommon one, and, therefore, I take this occasion to say to all such, do your best every voyage, keep the log according to the form for every day you are at sea, send it to me, if you please, and allow me to be the judge as to its value; perhaps I may find something of value in it, as in this instance, where the navigator himself little dreams there is anything that is worth noting.

The Edna appears to be a dull sailer. Coming out of the Gulf of Mexico, she fell to the westward of the August track, crossing 18° N. in long. 40° 41′, instead of long. 30°, as per the new route. She had the wind at east, and stood on boldly to the southward for the monsoons, resolved to take her chance of making easting in that belt. She reached the parallel of 8° N. in 41° W., and thought her chances better, for the wind was still at east. But if the worst should come to the worst, she could but go about, tack, stand to the northward, and beat. She therefore stood on, and accordingly, the next day, in lat. 7° N., long. 40°, she got the monsoons from south, and ran east with them along that parallel for a week, when she found herself in long. 25°. Now, she had overshot the mark, for these monsoons being, for most of the time, at S.SW., again placed her to leeward, but on the opposite side of her proper track. She had now to put about, beat, and go back to the meridian of 29° before she got far enough south to clear these monsoons. Her mistake was in not edging more to the south when she was standing to the eastward in the monsoon belt.

The monthly average to the line and the "fair way off St. Roque" is given up to the time of the previous edition, and also since. It will be perceived that the gain "since" is very marked. Now, to what should this be ascribed? To improvements in ship building? The

previous edition was published in 1855, and the rage for clipper ships had then very much subsided. The ships built within the last four or five years have been modeled more for capacity and less for speed than they were in the "era of clipper ships." Still there is a decided improvement in the time of passage. The passages since the previous edition are, for most months, considerably shorter than they were before; and the fact is fairly attributable to the circumstance that the Sailing Directions are better understood and more implicitly followed now than formerly. If they be good, those who follow them doubtingly will be apt to be profited no more by them than those patients are who follow the doctor's directions when they are well, but resort to their own nostrums when they are sick. When winds are fresh and fair, the navigator is not in need of sailing directions; but when winds and weather oppose, the Sailing Directions, like the physician's remedies for the man, come most in play. Hildreth, of the Sancho Panza, and Fletcher, of the bark Maury, (see the route for October, pp.319–26), afford a case in point: one had faith in his guide, the other not; so also had Arquit and Matthews. They stuck to their guide; and, while doubting Hildreth turned aside to "dally in the doldrums," they went by St. Roque "like a shot."

MISTAKES IN THE ROUTE TO THE "FAIR WAY" OFF ST. ROQUE.

We have had a most elaborate discussion and review of the route from the United States to the fair way off St. Roque. I now give the crossings of the disbelievers and the doubters, and of those who attempt to "split the difference" by taking a middle course between the old route and the new. Of these last there are two classes. One of these classes fall into error by going too far east to cross 30° N., and then go off upon the new route; these cross that parallel to the east of 35° W. The other class take the new route at the first going off, and cross 30° N. to the west of 35°; they then, either through fear of that "bugbear of St. Roque," or because the winds appear adverse, make for the old route, and go east of 25° before they cross the line. I have classed among these some who were forced to the east, and who are not to blame for their course. All such ought to be classed with the followers of the new route, for they did follow it as closely as the winds would permit. Many of them have made good passages. Nevertheless, as a rule, all who crossed 30° N. to the east of 35°, or who went east of 25° north of the line, are arranged in the following tables of old and middle route crossings, that no more might be claimed for the new route than all will admit as its due. Thus there will be found in the old and middle route crossings—in December, the J. Maxwell, 27 days to the line, in 28°; in January, the Eagle, 24 days to the line, in 29°; in February, the Don Quixote, 22¾ days to it, in 28° W.; in March, the Shooting Star and Sword Fish, each crossing the line in 29°, with a passage of 24 days; in April, the Cleopatra crossed the line in 31½°, after a run of 24½ days, but she crossed 30° N. in 28½° W.; the Helena, in June, crossing 30° N. in 34°, and the line in 31¾°, after a run of 25¼ days; in July, the Indian, with a passage of 29 days; she went to 20° W., after crossing 30° N. in 47° W.; in August, the Witch of the Wave: her passage was 27¾ days to 33½° on the line, after crossing 30° N. in 33° W.; the Warren White, 27¾ days to 30° on the line, in October; and, finally, the Boothnia, which made the fine run of 29 days to 30° on the line, in November. All these vessels, save one, passed the equator on a new route crossing; still I have not claimed them for the new route.

Time and Crossings to the Line by the Old and Middle Routes.

Name of vessel.	From—	Date of sailing	Longitude of crossing the parallels of—																Total days to—	
			Days.	30° N.	Days.	25° N.	Days.	20° N.	Days.	15° N.	Days.	10° N.	Days.	5° N.	Days.	Line.	Days.	3° S.	Equator.	St. Roque.
J. Maxwell	Cape Henry	Dec. 2, 1853	9	36	3½	34	4½	30½	3½	29	2	28	2	26½	2¾	28½	1½	30	27	29¾
Ann Kimball	New York	2, 1852	13	36	4	29	1½	29	1½	28	1½	27	3¼	25	3¼	28	1½	29	27¾	29½
Siam	Boston	3, 1854	9½	47½	21	28	2	28	1¾	26	1½	24	4½	23½	2¾	27	1¼	28½	43	44¾
Siraco	Eastport, Me	6, 1849	11	37	5	34	2	31	6	27	2¼	25½	2¾	24½	9½	27	1¾	29	38½	42
Panchita*	Baltimore	7, 1845	14	31	2	31½	2½	31½	2½	30	2	26	2¼	24	2¾	24½	1½	26	27¾	30
Grafton	New York	8, 1851	13	35	4	31	2¼	33	1¾	33	2	32	2	28	4¼	28½	1¼	29	29¼	31¼
Retriever*	St. John's	8, 1853	27	31	3	28	2½	24½	1¾	23	1¾	22½	2½	22¼	8¾	20	2	23	47¼	51¼
Lepanto	New York	9, 1854	20½	34	3	32	1½	33	2	34	1½	34	4½	32	2	32¼	1½	33	35	37
Pequat*	Boston	14, 1854	17	31½	4	29	9	24½	2	26	2	23½	3	21	9½	25	1½	30	46½	49
Sceargo*	New York	14, 1852	14	36	2	33	1½	31	1½	29	1½	28	2	25	10½	29½	3½	29½	33	37½
John Stuart	....do	21, 1853	20	29¼	4	33	2	35	2	34	1½	31	2	29	3¾	31¼	1¾	33	35¼	38
Morning Light	....do	21, 1855	13½	36	5	33	1½	28	2¼	28¼	1¾	27	4	26	5	30½	1	32½	33	35
Aldebaran	Boston	26, 1853	16	39	4	36	6	36	3	32	2	29	2¼	26	4¾	29	1	29	38	46
Philip Howe*	New York	28, 1837	20½	25	3½	25	3¼	26	2	26	2	24	2	22	6¾	25	2¼	26½	40	43
Burlington*	....do	30, 1849	21	30	9	30	2	30	2	29	2	28	2	27	3½	29	1¾	31	41½	44¼
Means for December			15.9	34¾	5.3	31¼	3.1	29¾	2.4	28½	1.8	26¾	2.6	25	5.2	27¾	1.7	28¾	36.2	39.3
Maria*	New York	Jan. 1, 1837	10	36	5	23	3	22	2	25	1¼	23	2¾	20	5½	21	2¼	24	29½	33
Diadem	....do	1, 1850	18	35	6½	29	4½	30	1½	29	2	27	2	27	3¼	29	2½	31	37¾	41¼
Boston*	Boston	1, 1851	12	32	4	29	1½	27	1¼	26	1¼	25	1¼	24	5	24	3¼	29	26¼	30½
Astrea	New York	2, 1853	20½	35	2½	34	2	32	2¼	30	2	29	2¼	27	7	28	4¾	29	38½	44¼
Dashaway	Bath, Me	5, 1855	15	34	1¼	32	1¾	30½	2¼	30	2¾	30	2	28	4½	26	2	29	29½	32½
Emily Miner	New York	6, 1853	20	35	3	31	2	29	3	28	2	27	2¾	27	7	26	1¾	29	39¾	42¾
Masconoma*	Boston	6, 1853	17	34	2	34	2	31	2½	28	1¾	26	2	23	6¾	25	3	29	34	38½
Huguenot	New York	6, 1853	16	34	3	35	2¼	34	1¾	34	2	32	1¾	30	2¼	30	1¾	31	29	31½
Imaum	Salem	6, 1853	16	34½	2	36	1¾	35	1½	33	2	31	2	30	1½	29½	2	30	26¾	29¾
Eagle	New York	7, 1853	15	33½	1½	35	1½	33	1½	32	1¾	31	1¼	29	1¾	29	1¼	29½	24¼	26½
Francisco*	Boston	8, 1851	21	32	2	31	3	30	3	28	2	26	2	26	5½	25	3¼	27¼	38½	43
Forrest*	...do	11, 1849	18½	35	4½	35	2½	33	2½	29	2	25	2½	23	8¾	20	2¾	24	41¼	45
Wisconsin	New York	20, 1852	14¼	30	1¾	30	1¼	31	1	31	2	29	1½	26½	2½	27	2	30	24¼	27
Maria	....do	20, 1838	13	40	7	33	3	29	2	26	2	23	3	20	6	22	2	24	36	39
Herald of the Morning	Boston	21, 1854	12	32	2¼	30	1½	31	1½	31	1	30	2	29	3	30	1½	33	23¼	25½
Emily	Philadelphia	21, 1853	17	34	2	32	2	30	2	29	2	29	1¼	28½	2½	29	3	31	28¾	33
Wing of the Morning	New York	22, 1853	23	36½	3	32	3	27	3	27	2	27	3	27	3¾	27	1¼	30	40¾	43½

*Old route.

Old and Middle Route Crossings.

Name of vessel.	From—	Date of sailing.	Longitude of crossing the parallels of—																Total days to—	
			Days.	30° N.	Days.	25° N.	Days.	20° N.	Days.	15° N.	Days.	10° N.	Days.	5° N.	Days.	Equator.	Days.	3° S.	Equat'r.	St. Roque.
Vandalia*	New York	Jan. 28, 1850	23¼	31½	1¾	29	2¼	28	2	26⅛	1¾	27	2	26	4¼	28	1¾	30	37¼	40
Star of the Union	do	29, 1853	15	36	1¼	35	6	29	3¾	30	2	30	3	29	4	30	1¼	31	35	37
John Gardner	Boston	30, 1854	15	34	2	31⅛	2⅛	30	1⅛	27	1⅛	27	2¼	25	4⅛	27	1¾	29	29¼	32
Means for January			16.5	34½	2.9	33	2.4	30¾	2.4	29.	1.9	28.	2.1	26¼	4.4	26⅛	2.5	29	32.5	35.4
Delia Maria	New York	Feb. 3, 1851	13	38½	3	31	1¼	29	2	27	2	25	2	23	9¼	22	1	23	32½	34⅛
James H. Shepard	do	7, 1853	20	34	2¼	33⅛	2	33	2	32	1¾	30	2	30	2¾	30	5¼	31	32¾	39¾
Hellen McGaw	Hampton Roads	7, 1851	9	45	3	36	1¼	35	2	33	2	30	3¾	24	6⅛	22¾	2⅛	25	27½	31
St. Lawrence	New York	8, 1853	24	31½	2	30	2	28	1⅛	28	1¾	28	1¾	28	3	28	3	29	36	40
Art Union*	Boston	8, 1857	21¼	32½	1¾	31	1¼	29	2¾	27	1	26	2	26	3¾	26	1¾	28	33¾	36¼
Don Quixotte	do	11, 1856	10⅛	30	2¾	27	1¾	27½	1	27½	1¾	27	1⅛	27	3½	28¼	1¼	30	22¾	24¾
Restitution*	Salem	12, 1829	12	33	4	28	3	28	2	27	2	24	3	20	8	23	1¼	24	34	36¼
Hope*	New York	17, 1834	22	31	4	30	2	29½	2	27⅛	2⅛	26	2	25	4	26	2⅛	28⅛	38⅛	42
Maria	do	20, 1836	8	41	2	37	2	33	2	29	3	22	3	17	6	18¾	2	22	26	28⅛
Emily	Philadelphia	20, 1853	18⅛	33	1½	32	2	30½	2	29⅛	2	28½	1¼	28½	2⅛	28½	3⅛	30¾	29¾	33
Flying Eagle	Boston	22, 1853	17	30	1½	29	2	29	2	28⅛	2⅛	27	2¼	27	4	26½	4	28	31	37
Empress*	New York	22, 1854	15	24½	6	19⅛	3	21	3	23½	8	21	4	19½	8	19	2	19½	47	50
Means for February			15.8	33¾	2.8	30¼	1.9	29½	2.	28¼	2.5	26¼	2.4	24⅛	5.1	28	2.6	26⅛	32.6	36.2
Vernon	New York	Mar. 1, 1849	16	42	6	41	4	39	3	35	3	31	4½	23	7	23	2⅛	26	43½	48
Rose Standish	do	1, 1850	15	32	2	29	2½	28	1⅛	26¾	2	26½	2¼	26	3½	27	1¾	29⅛	28¾	31¼
E. Corning*	do	3, 1853	16	31¾	5	27	2	27	2	27	1⅛	26	2⅛	25⅛	3¼	27¾	1¾	30	32¼	35
Amity*	Boston	6, 1850	13	33	4	30	2	29	3	27⅛	2	25	2	24	10	27¾	3	29	36	41
Rosario	New York	6, 1853	13	33	5	27¼	2⅛	27	1⅛	27	1¼	26¾	2	26	2⅛	27	2¼	30	27¾	30⅛
Vandalia*	Baltimore	9, 1853	22	31½	5	29	3	28	2	29	2	27⅛	3	25	8¾	24½	1⅛	25½	43¾	48¾
Ariel	New York	10, 1851	14⅛	33	1⅛	31	3	30⅛	1⅛	30	1¾	28¼	1¾	26⅛	5	26⅛	2⅛	28	29	32¼
Fleetwing	Boston	11, 1854	15	28	1⅛	28	1½	28	1	28	2	28	1⅛	28	5½	28⅛	2⅛	28	28	31¼
R. B. Forbes	New York	11, 1854	15	29¾	2	29	1	29	1⅛	29	2¼	28½	1	28	5	28	2⅛	28¾	27¾	31
Ino	do	12, 1851	13	32	1	31	2⅛	30½	1⅛	29⅛	1¼	29	1¾	28	6	30	2	30	27	30
Grand Turk	Salem	12, 1792	13⅛	38	5	33	3	30	4	26	3⅛	20	2⅛	17¾	7¾	21	2	24	39¼	41
Young America	Boston	12, 1856	21	30⅛	3	26⅛	3	28¾	2	29	2	28¾	2	28½	4	28	3	29	37	41⅛
Messenger	Philadelphia	13, 1854	12	29	2⅛	30	1	30	1⅛	29¾	1⅛	29	1⅛	29½	6	29½	2	29½	26	28¾
Eagle	New York	16, 1855	16	34	1½	34	2⅛	35½	1⅛	33	1½	30	1	28½	5½	29½	3	31	29½	34
Shooting Star	do	21, 1855	11⅛	33	2	32⅛	1	33	2	32⅛	1	31	1½	29	5½	29	1⅛	31	24½	26¾
Sword Fish	do	23, 1855	10⅛	31	1¼	31⅛	2¼	34	1⅛	33	1⅛	31⅛	2	29	5	29	3	30½	24	28¾
Rockland	do	22, 1853	17	29	2	28	2	27½	2¼	27	¾	27	3¼	27	5¾	30	1¾	31½	33	35⅛
Harriet Hoxie	do	24, 1852	12	30⅛	5	26¾	2	28¾	1¼	28⅛	1⅛	29	1¾	29½	3	30	1⅛	31	26½	29
Boston*	Boston	25, 1852	11½	34	4⅛	28	2	27	1⅛	26¼	1⅛	25	2⅛	24	3½	24	4	26	27	34
Splendid	New York	26, 1838	18	38⅛	5	33	4	27¾	3	25	2	21	4¼	19¼	4	21½	1	23½	40¼	42¼
Maria	do	27, 1839	10	39	7	31	3	27	2	25	2	23	2⅛	21	4	19¼	1½	21	30⅛	33
George & Albert*	Philadelphia	28, 1816	18	27	3	24½	2	25	2	26	5	20	6	19	9	17½	1⅛	20	45	47
Adriana*	do	28, 1819	18	30	7	25	1⅛	26	2⅛	25	2	23	3	20	6	20¾	3	22	40	44
Means for March			14.8	32⅛	3.5	30	2.3	29½	1.9	28¼	1.9	27¼	2.4	25¼	5.5	27	2.1	27½	32.40	35.80
Santiago	Boston	April 1, 1857	22	34⅛	2	33½	5	32½	2	32⅛	2	31	1½	29	2½	29	1½	29½	37	39
Black Hawk	New York	2, 1857	19	33	2	31	3	29	4	29	1	28	1½	28	2½	28	1½	29	33	35¼
Parthian, (barque)*	do	3, 1855	21	35⅛	3	35	6	32	2½	28½	2	25	3⅛	24½	8½	28¼	2⅛	30	36⅛	49¾
Thomas W. Sears	do	3, 1855	21	27	1⅛	27	1⅛	27	1½	26	1	26	2	25⅛	5	29	1	30⅛	33⅛	35⅛
Bonito*	do	6, 1855	18	32	2⅛	29½	2½	29	2⅛	27	1½	25	3	23½	7½	27	1½	29	37⅛	39¾
Queen of the East*	do	8, 1852	12	31⅛	3	28	1¼	27	1¾	26	2⅛	25	2	23⅛	6¾	23	2	27	29	32¼
Restitution	Salem	11, 1815	17	36	2	33	3	29½	2	25½	2	23	5	20	3	22	2	25	34	38
Bengal*	Philadelphia	11, 1804	14	28	2	27	2	26	2	25½	1	24	8	23	8	24½	1½	25½	37	39⅛
John Baring	New York	11, 1852	20	30	2½	29½	1½	29¾	1½	30	1⅛	30	1½	30	6	28½	2⅛	28½	34⅛	39
Joshua Bates	do	12, 1855	19	34	6⅛	35	2	35	1½	31	2	29¾	2	28½	6½	28	1¼	30	39½	42
Augustine Heard*	do	13, 1855	23	34⅛	3	35	2	33	1½	30	2½	28	4	24	6	26	1½	26⅛	42	45
Southerner	do	15, 1851	10	28½	1½	29	2½	29	1¼	30	1⅛	30	2	27	5¼	26	2	27	24	26¾
Sophronia	Boston	16, 1853	20	29	3	28	2	28¾	1⅛	29	1¾	28¼	1¾	27¾	4¼	30¾	1¾	31½	34¼	37¼
Nancy Trent	Wilmington, N. C	16, 1850	10	43	5	36	10	34	4	31	4	27	8	24¼	4	27½	2	29¼	45	48
Heber*	Boston	16, 1847	14	30½	1½	29	1½	28	1¼	27⅛	1¾	26	2	24	7¼	25½	1¾	27	29¼	32¼
Orissa	do	17, 1856	14	32	3	32	1¾	32	1⅛	32	1¾	30	3	29	3⅛	30¼	1	31	28⅛	30¼
Corsair	do	18, 1850	15	41	6	31	4	29	2	28	4⅛	26½	5½	25¼	5¼	29	2	30	42¾	45¼
W. S. Lewis	do	19, 1853	26	32	3½	30	2	30	1⅛	30	1¼	30	1¾	29½	2⅛	31¼	1¼	32	38½	40¾
May Flower	New York	19, 1853	16	32½	4	30½	1½	30½	1½	30	2	28½	1½	28	2¾	30½	1¾	31¾	29¼	32
Houqua	do	19, 1856	15	37½	2	35¾	2	35	2	30	2	28	4	24½	6¼	26½	1¼	27	33¼	35⅛
Uncle Toby	Boston	20, 1853	14	33½	4½	31	1½	32	1½	31	1¼	30½	1½	29½	2½	31¼	1	32	26¾	28¾
Mechanics' Own	New York	20, 1853	15	32	4	30	1	30	2	29	2	28	2	27	4	29⅛	1½	30	30	32¼
William Goddard	Boston	21, 1853	15	30	3	29	2	29¾	1½	29	2	27	2½	25¾	8¾	26⅛	1¾	27	34¼	37
Rockland	New York	21, 1853	19	29	2	27	2	28	2⅛	27	⅛	27	3½	27½	5⅛	30	2	31½	35	38⅛
Cleopatra	Boston	23, 1853	13	28½	2½	28	2¼	28	1¼	27¾	1⅛	27½	1½	27½	2⅛	31½	1	32½	24½	26
Pilot	Salem	25, 1852	16½	31	1⅛	31	2	31½	1¼	31	1¾	30	1½	29	4¼	30¼	2	31½	28¾	31¾
Shooting Star	New York	25, 1854	20½	31¾	3½	33¼	1½	32¼	1	31⅛	1½	30	2	28½	5	29	1¼	29½	35	37
Rome*	do	26, 1850	17	32¼	4	30½	3½	30	4⅛	28½	3⅛	26½	6½	24	3¼	26	1	26½	41¼	43¾
Panama	do	26, 1856	15	33	1¾	31⅛	1½	30	1¾	29	1¼	28	1¾	28	4	28	1	29	27	29⅛
Siam	Boston	27, 1850	10	45½	5	36	6	34	3	33	4	29	8	25	3	28	1	28	39	41
Sappho	do	27, 1847	10	38	3	34	2	31	1¾	28	1½	25	4¾	21⅛	4¼	23	1¾	28¼	27¼	30
Niguelon	Salem	29, 1851	20	35⅛	5	35½	3	36	2	34	1⅛	32	3½	28½	7	28¼	1¼	30	42	46

*Old route.

Old and Middle Route Crossings.

Name of vessel.	From—	Date of sailing.	Longitude of crossing the parallels of—																Total days to—	
			Days.	30° N.	Days.	25° N.	Days.	20° N.	Days.	15° N.	Days.	10° N.	Days.	5° N.	Days.	Equator.	Days.	3° S.	Equator.	St. Roque.
Fenelon	New York	April 29, 1852	22	27	4	24	3	23	2	26	3	27⅛	7¾	31	2¾	32⅛	1⅛	33	44⅛	47
Nestorian*	do.	30, 1852	18¼	35	2	32⅛	1¾	30	1¾	28⅛	1¾	27	1¾	24⅛	2⅛	24¾	1¼	27⅛	30	32
Means for April			16.8	33	3.1	31	2.6	30¼	2	29	1.9	27¾	3.3	24¾	4.7	28	1.5	29¼	34.2	37.1
Falcon*	Boston	May 1, 1854	15	35	3	31	2	30	1	29	2	27	3	25	4	26⅛	1	26¾	30	32
St. Andrew*	Philadelphia	1, 1853	22	37	4	35	3	31	3	28	4	25	10	21	3⅛	23	1⅛	24	49⅛	52¼
Garrone	New Bedford	4, 1850	25	30⅛	2	29	2	29	2	28	2	27	5	25⅛	7¼	28¼	1¾	29	45¼	47¾
Penguin	New York	9, 1854	23⅛	31	3⅛	30	1¼	29	1¾	29	1	28	3	27	4	26⅛	1	26⅛	38	40
Harrisburg	do	10, 1853	21⅛	32⅛	3⅛	30¾	2⅛	29	1¾	28⅛	2	28	5	27	7¼	29⅛	1⅛	31	43¼	45¾
Milton	Boston	11, 1850	13	48	5	43	6	36¼	2	33⅛	2⅛	30	5⅛	24¼	5⅛	29	1¼	30	39⅛	41⅛
Marion	Philadelphia	11, 1853	20⅛	32	2⅛	31	2	30	2	30	1¼	30	2¾	29¼	3	31⅛	1⅛	32	34	36⅛
Texas	New York	11, 1853	20⅛	32	2⅛	30⅛	2	30	1⅛	30	1⅛	30	3⅛	29¼	3¼	31¾	1¾	32⅛	34¾	37⅛
Anglo Saxon	do	14, 1853	17⅛	32⅛	2⅛	31⅛	2	31¼	1¼	31¼	1	30	3	29	3	30	2	30¾	30¼	33¾
Mary Mankin	Georgetown	14, 1853	17⅛	33	1¾	32	2¼	32	1⅛	31	2	29	3⅛	28	2¾	30	2	31	31¼	35
Union*	Boston	15, 1853	16⅛	32⅛	2	31	2⅛	29⅛	1	28⅛	1¾	26	7¼	21	3¼	26	1	28	34¼	35¾
Rubicon*	New York	15, 1852	26	29¾	2⅛	28¼	2	27¾	1¾	26	2¾	23¾	5⅛	17⅛	3	20¾	1⅛	22⅛	43⅛	46
Golden West	Philadelphia	15, 1854	25	32	2¼	33	1¼	32	1⅛	29⅛	1¼	28	3¾	29	4	32¼	1	32¾	39	41
William H. Stewart	New York	18, 1856	21	34⅛	2	33	2¼	32	1¾	30	2	29⅛	8	26⅛	4	30¾	1¾	32	41	44
Heber*	do	18, 1848	16	32¾	2	30	2¼	29	1¾	28	2	27⅛	8	24⅛	3⅛	30	1¼	32⅛	35⅛	38
Nightingale	do	19, 1854	14⅛	35	4⅛	33⅛	1⅛	32	1⅛	31	1	30	3	28	3¾	29	1	29	29¾	31⅛
Relief, (U. S. storeship)	do	21, 1855	22	35	3	34⅛	1⅛	32⅛	2⅛	31	2	28	8	26	10	29⅛	1	30	49	51¼
Judge Shaw	Boston	21, 1853	18¼	36⅛	1¾	36	2¼	35	1	34⅛	1¾	32	3	30	4¾	31⅛	1⅛	32	32¾	35¼
Rockland	New York	22, 1853	17	29	2	27	2	28	1¼	27	2	27	3¼	27¼	5¾	30	1¾	31	33¼	35⅛
Caledonia*	Philadelphia	23, 1853	22	31⅛	5	29	1⅛	28	1⅛	26	3	21	7	12⅛	5	17	1¾	19	45	47⅛
Henrietta, (barque)	Cape Henry	25, 1856	14	48	12⅛	36	2⅛	34	2	30	2	27⅛	6	24⅛	2⅛	31	3⅛	33	41⅛	46¼
Agnes	New York	25, 1850	11	49	11⅛	39	2	36	1⅛	32⅛	3	31	10	19	3¼	24	1	25	42¼	44
Probus	do	25, 1853	32	34⅛	4	32	2	30	2	29	3	28	6	26¾	4¼	30	1¾	31	53¼	56¼
Theodor, (Hamburg brig)*	Baltimore	26, 1853	31	35¼	3⅛	33	2⅛	31	2⅛	29	4⅛	26	6	19¾	4	23⅛	1⅛	25	54	56⅛
Restitution*	Boston	27, 1831	17	30	3	29	1	28	1	26	3	23	6	19⅛	5	22⅛	2	26⅛	36	39
Candace	New York	27, 1850	13	44⅛	3	42⅛	2	40	2	37	2	35	15	19	3¾	24⅛	1¼	25	40¾	42¾
White Swallow	Boston	27, 1853	28	38⅛	5⅛	35⅛	1¾	33⅛	1¾	33	3	30¾	6	28	5	32⅛	2	33	51	55⅛
Nestorian*	New York	28, 1853	30	32¼	2	30⅛	2⅛	29	2⅛	28¾	3	26¼	8⅛	19¼	4	25¾	1⅛	26⅛	52⅛	54⅛
Jamestown	Baltimore	28, 1856	20	42⅛	4	40	3	36	4	31	5	25	5	22	3	25⅛	3	27	44	48
Rapid	New York	29, 1856	22	41	2	41	2	39	1	38⅛	2	35	7	25	3	32	2	33⅛	39	42
Means for May			20.4	35⅛	3.6	33¼	2.2	31⅛	1.8	26¾	2.3	28	5.9	24¼	4.3	27¾	1.6	29	40.4	43.1
Horsburgh	New York	June 1, 1853	26	34⅛	3¼	32	2	31	2¾	31	3	29⅛	7	23⅛	3¾	27	1	29⅛	47¾	49¾
Columbia	Boston	1, 1850	17	39	4	35	3	31	2	37⅛	5	24	5	21	2	24⅛	1⅛	26	38	40⅛
Inez	do	3, 1853	21	35	3⅛	32⅛	2	30	2⅛	29	5	25⅛	7	21	3¼	25	1¾	26⅛	44¼	48¼
Messenger	Philadelphia	4, 1853	17	37⅛	2⅛	37	2	34	1⅛	32	2	28	4	24	2	28	1	29	31	32⅛
Nestorian	New York	9, 1850	18⅛	31	2	30	1¼	29	1¼	28	3	27	7¾	25	2⅛	28	1¼	30	36⅛	38
Lamartine	do	10, 1851	16	34	3	32	2⅛	31⅛	1⅛	31	3⅛	29	4¾	26⅛	2	28¾	1	30	33	37⅛
Oceola	do	13, 1850	29	23	3	24⅛	2	25	3	25	4	25	6	17	3¼	23	1¾	25	50¼	53
Hero	do	21, 1853	11	49	7¼	44	3⅛	41	2¾	38	3¾	33	10¾	25	2¾	29	1¼	30⅛	41¾	44
Sarah H. Snow	Boston	23, 1851	16	38	3¼	36	2	33⅛	2¼	30⅛	4⅛	29	7¼	23	3⅛	27⅛	1⅛	28	38¾	42
Talbert	New York	27, 1830	14	35⅛	8⅛	33⅛	1⅛	30⅛	2⅛	28	3	25	5⅛	19	8	25	1¼	26⅛	43	44⅛
Thactus	do	29, 1851	20¼	34	3⅛	32	2	29⅛	2¼	27	4	25	6	24¼	4	30¾	2	32	42	45¼
Woodward	do	1, 1853	25	34	3¼	31⅛	2	31⅛	2⅛	31⅛	2⅛	30⅛	4¼	31¾	6	31¾	1⅛	32¾	45⅛	50¾
Regatta	do	2, 1853	16¼	40¼	3	37⅛	2¾	35¼	2¼	32	5¼	26	5⅛	20	2⅛	23¾	1¼	24¼	37⅛	39¾
Navigator	Boston	2, 1850	24¾	32	2¼	30⅛	1¾	29⅛	1⅛	28¼	4	26	9	20	2¾	24⅛	1¼	25¾	46	48¾
Kate Hayes	Philadelphia	3, 1853	23	34⅛	3¼	33⅛	1¾	33¾	2⅛	32⅛	2¾	29¾	5¾	27⅛	4¾	30¼	1¼	32¾	43¾	46
Russell	Salem	6, 1852	15	34¾	3	33¾	2	31⅛	1¾	29⅛	2¼	26⅛	5	23⅛	3	28¼	1	29¼	32	34
Northern Queen	Boston	7, 1855	21	32¾	1¾	32⅛	1⅛	31	1⅛	29⅛	2	28¾	3	30	3⅛	33	3	34⅛	34¼	39¼
Free Trade	New York	8, 1855	19	33⅛	2	32	1⅛	31	2	30⅛	2	30⅛	4	31	3	32⅛	2	32	33⅛	37
Helena	do	9, 1851	12¼	34¼	2¾	33⅛	1¼	33	1⅛	32	1¼	31⅛	4¼	29¼	2	31¾	2¼	32	25¼	28⅛
H. W. Moncure	Jacksonville, Fla.	10, 1855	29	33	3⅛	30⅛	1¾	28⅛	2⅛	27	2	25⅛	12⅛	22⅛	5	28¾	2	30	56	59¼
Lantao	New York	14, 1855	13	33	2¼	31⅛	1⅛	31	1⅛	30	2⅛	28¼	3¼	28⅛	2	31⅛	1	32⅛	26	30
Jos. Maxwell	do	15, 1853	11¾	39	3	36⅛	2	34⅛	2⅛	32	2¾	29⅛	9	24¾	3	30¾	0¾	31⅛	34	36
L. D.	do	15, 1852	14¾	39	3¼	37⅛	2¼	35⅛	1⅛	34	3¼	32¾	8	24⅛	2	28⅛	1	30	35	37
Le Cocq	Boston	16, 1854	25	40¼	2¾	39⅛	2¼	36¾	3	34¾	3	32⅛	8⅛	24¼	4	30¼	1⅛	31¾	48⅛	51¾
Pristis	New York	17, 1855	18⅛	35	4	33	2	31	2	30	3	28¾	9	28	8	29⅛	2⅛	31⅛	46⅛	50
Clifton	do	18, 1851	9	49	6⅛	40	2¼	37¼	2¾	34	2¼	30¾	7¼	23⅛	3⅛	28¼	1⅛	30¼	33⅛	36
Matilda	do	18, 1852	18	46¾	6⅛	45¼	3⅛	41¾	3⅛	38	6⅛	29	7	19	4	24	2¼	26	49	52⅛
Grace Darling	Boston	18, 1854	16¾	43	6⅛	38⅛	1¾	35¾	2¼	31¼	2⅛	27	5¾	22¾	1¾	26⅛	1¼	28⅛	37¼	39⅛
Robt. Burton	New York	19, 1852	16¾	47⅛	11	40	2⅛	37⅛	2¼	35⅛	4¼	30¼	6¾	20¾	4¼	26⅛	1	28⅛	47¾	49¾
Borneo	do	21, 1852	24	34	2	32¼	2⅛	30¼	2⅛	28¼	4¼	25¼	6	17⅛	8⅛	23⅛	2¾	25⅛	49¾	54
John Wm. Dare	do	24, 1850	14⅛	47¾	3⅛	46	4¾	43⅛	4¾	39⅛	8¾	30¾	8	19⅛	7¾	26¼	1⅛	28¾	51¾	54¼
California	Boston	25, 1854	20	35	2⅛	32⅛	2⅛	30	2⅛	28	2¼	27	8¼	25	6	31	2	33	44	47
Hopewell	New York	30, 1843	18⅛	42¾	3¾	41⅛	2	39⅛	2¾	36⅛	4¾	32⅛	10¾	17	4	24	1¼	26⅛	46⅛	48⅛
U. S. Ship John Adams	Boston	30, 1849	18	44¾	2¾	40⅛	2	37⅛	2	34¾	2⅛	31¾	9¼	21⅛	3	28	1¾	30⅛	39¼	41¾
Means for June			18.6	37⅛	3.8	35¼	2.2	33¼	2.3	31⅛	3.4	28⅛	6.5	23⅛	3.8	27¾	1.5	29⅛	40¾	43¾
Restitution*	Salem	July 1, 1821	24	32	4	27	2	26	2	25⅛	6	22⅛	5	17⅛	6	20⅛	2	22	49	52
Arnold*	New Bedford	1, 1848	42	23	2	25	1¾	25	2⅛	26	2¾	24⅛	4	19	4¼	21⅛	1⅛	23	59¼	62
Plata	Boston	1, 1852	15	40	2¼	36⅛	2¼	33⅛	2	29	3⅛	25¾	6⅛	20¾	3	27	1	28	34⅛	36⅛
Midnight	do	1, 1853	13	41	1⅛	41	1⅛	39	2	38	3⅛	34⅛	9¼	24¼	2¾	30	1	31	33⅛	35¼
Sweden	New York	2, 1855	23⅛	32	3	32	1⅛	32	1¾	31⅛	2	31	7¼	23	4	30	1¼	31⅛	43	45⅛
Boston	do	4, 1853	16	41	2	39	2	35⅛	2	32	4	29	7	22	3	28⅛	1⅛	30	36	38⅛
Wm. Sturgis	Philadelphia	4, 1855	28¾	30⅛	4	30⅛	1¾	30	2⅛	29	4⅛	29	7¾	26¼	5¼	30	1¾	32	54⅛	58
Almena	New York	4, 1855	13⅛	49	4⅛	49	2¾	46⅛	6	39⅛	3¾	34	6¾	23⅛	2¾	30	1¼	31¾	40	42¼
Wessacumson	Boston	6, 1850	22	41	5⅛	39	3⅛	35⅛	4	30⅛	4	25	7	23	5	29	1⅛	31	51	54⅛

* Old routes.

Old and Middle Route Crossings.

Name of vessel.	From—	Date of sailing.	Longitude of crossing the parallels of—																Total days to—	
			Days.	30° N.	Days.	25° N.	Days.	20° N.	Days.	15° N.	Days.	10° N.	Days.	5° N.	Days.	Line.	Days.	3° S.	Line.	St. Roque.
Wisconsin	New York	July 7, 1853	12½	42	1¾	39	2¼	36½	2½	32½	5	27½	7	22½	4	27¾	2	30	35	38
Arab	Boston	7, 1853	13	44	2½	41	2¼	38	3	34	3¾	29½	6¼	19	3½	25½	1¼	28	34¼	36¾
Eagle	New York	10, 1851	11	49	1¾	48	1¾	46½	1¼	45	2½	44	13	23	2¼	28	1½	30½	33½	36¾
Conquest	do	10, 1856	23	35	4	34½	1¾	32½	2	30½	3¾	28	6	22	4½	28½	1½	30	45	47½
Boston	Boston	13, 1829	19½	32	2½	30	2½	28½	2	27	3½	26	5	24½	2½	29	1½	32	37½	40
Azzen	New York	18, 1856	22	37	4¼	36½	1	37	2	36½	3	34	6½	24	4½	26½	1½	28	43¼	46
Siri	Boston	18, 1855	10	41	6	48	1¾	40	2½	48	4¼	46	13½	22½	8¾	30	1¼	32½	46¾	48¾
Caledonia*	Philadelphia	19, 1820	23½	32	1¼	31	2¼	28½	2	25	3	20	5½	13	7	17¼	2½	20	44½	48
California	Portland	20, 1855	13½	46	8¼	42	2¼	40	2¼	38½	3½	37	9¾	24	5½	28	1¾	29½	45	47¾
Indian	Boston	20, 1857	7½	47½	3	45	2	42	3	38	5	30½	6	20½	2½	25½	1	27	29	31
Hornet	New York	22, 1855	15	39	3	37½	1½	36	1¼	33	2¾	32	4½	24½	3¼	31¼	¾	32	31¼	32½
Falcon*	do	23, 1856	16½	35	3	35	2	33	1½	31½	3	30	6½	21	3½	22½	1½	23	36	38
Martha Allen	Savannah	23, 1853	15	44	2½	41	2¼	38	1¾	36½	6½	30	10½	23¼	3	30	2	31½	41½	44½
U. S. ship Relief	New York	25, 1853	16	46½	4¼	43	2¾	42	2¼	39	3¼	35¼	9¾	24	2¾	28	1¼	30	41	43¾
Arabella*	Boston	27, 1853	15	36	3	34	2¼	32	1¾	30	7½	27	7½	17½	5¾	22	1¼	24	42¾	45
Tzar	New York	30, 1856	27	45	3½	42½	2½	41	2½	37½	3½	34½	6½	25½	4½	30	2	32	50	52
Means for July			18.3	39¼	3.3	38	2.	37¾	2.2	33¾	3.8	30½	7.4	22.	4.	27.	1.5	28¾	41.5	44
Raven	New York	Aug. 1, 1852	15	34	2½	34½	1	35	1½	34½	3	32	4½	25½	4¾	30¼	¾	32	32¼	34
Restitution*	Salem	2, 1816	21	38	7½	29½	2½	25½	2¼	24	5	22	5¼	17	6¾	23	1½	25½	50¼	52¾
Gertrude	New York	3, 1852	13½	36½	3¼	34½	1¾	33	2	31½	4	28½	3	24	4½	31	1¼	32	32	34
Forest King*	do	4, 1855	28	40½	3½	39	2¾	37	2¼	34½	3¼	29½	4¼	24½	3¼	29	2¼	30½	47¼	50½
Sarah and Amel *	do	5, 1840	16½	32	1¾	30	1¾	30	1¾	28	6	24½	11½	17	5¼	22	2	26	44½	48
Director	Cape Henry	5, 1856	22	41½	2½	40	2½	38	2	37	3	34	6½	24½	5½	24	1¾	30	44	47½
Rajapoor	New York	6, 1854	12½	46	1½	44	1½	42	2	37	3½	32	7½	24	3	29¾	1½	30¾	31½	33
Trade Wind	Philadelphia	6, 1853	12½	50½	4¼	43½	1¾	42	2½	38	3	34	6½	23	2½	27	¾	27½	33	34¼
Argo*	Boston	9, 1850	21	35	2¼	33	2	31	3¼	29	4¼	27	3¾	21	4¼	26½	1½	29	40¾	43
Sea Witch	New York	9, 1853	10	48	3	44	2¼	41	2¼	37½	3	34	6¾	22½	3¼	22½	1	23½	30½	32½
Monterey*	Boston	10, 1852	16½	37	2¼	37	3½	36½	2¾	34	3	30	7	16	3¾	16¼	1¼	18	38¾	41¾
Cohota	do	11, 1854	10½	44½	4½	41½	2	39	2	36	3¼	28½	3½	19	3¾	25	1¼	28	29½	31¾
Marine	Baltimore	12, 1851	12¼	51½	5¼	49	17	39	3½	37	7¼	31	6¾	23	9¼	25	1½	27	61¼	63¼
Fanny	New York	12, 1850	17½	35½	2½	35½	1¾	36	2½	35	4½	31	4½	24	3¼	29½	2¼	31	36½	39¾
Oriental	Boston	12, 1853	18½	39	3¾	38	3	37	2¼	36	3½	35	17¾	19	8¼	20¼	2	23	57	60
Midnight	New York	12, 1856	16	41½	2	40	1½	39	2	37	4	34½	6½	22½	4	26½	1	29	36	38
Saxonville	do	13, 1856	18	49	14½	42	7½	37	3½	35	4½	32	9½	25½	6½	28	1½	29	64	66½
Robert Putsford	Boston	14, 1849	20½	38½	2½	38½	3	38½	2¾	37	4¾	32	7¼	22	5¾	28	1¾	31	46¼	49¼
Maverick	do	15, 1856	14	45½	5½	40	3½	37½	2½	33½	4½	29½	6½	23½	6	30	1½	30½	42½	45
Witch of the Wave	do	16, 1853	12¾	38	2	32½	1¼	32	1¼	31	3¼	30	4¾	27½	2½	33½	1	34	27¾	31
Monterey	do	16, 1855	15¾	38	2¾	38	2	36½	2	34	4½	31	4½	24	4¾	25½	1	27	36	38
Defiance	New York	17, 1854	9¾	42	3½	39	4¾	38	1½	35	4¼	32	5¼	24	2¾	30	1	32	31¾	34¼
J. Montgomery	Boston	18, 1856	20¼	39½	5½	38½	4¾	36	2¾	32½	5	28½	6¼	23	5½	31	1¾	32	50	53¼
Manekeetch	New York	19, 1852	20	42	7	33	4	29	2	27	8	23½	8	19	5	18½	1¾	21½	54	57
Ocean Express*	Boston	22, 1854	16	29½	3½	29¾	1¼	30½	1¼	31½	3¼	29½	5	27¾	5¼	28½	1½	31	35½	37¾
Bonito*	New York	22, 1854	22	27	3	27½	1½	27	2	27	6	24½	8½	21	4	24	1½	25	47	49½
Plymouth	Norfolk	23, 1851	35½	18	2¼	22	2¼	25	1½	26	4	27	6	23	3½	29	1	30	55	56¾
Argonaut	Boston	24, 1855	16	43½	4¼	38	2	35½	1¾	33½	4¼	29	10¾	23½	2½	26	1¼	27	41½	43½
Edwin	do	26, 1853	15	47	8	44	4	41½	8	35	7	28	6	23	5½	24½	1½	27	53½	55½
Emily	Philadelphia	27, 1853	25	37	3	34	3	32	2	31	3	28½	10¼	24	5¼	30	1¼	31	51¾	53¾
D. S. Goodwill	Bangor	27, 1853	14	44	8	40	5	37	6	31	3	26	9	18	5	21	2	25	50	53¼
Antagonist	New York	29, 1855	17½	35½	2	35	1¼	34	2	32	6¼	29½	7¼	28	2½	30	1¼	32	38¾	40¾
Means for August			17.3	39½	4.	37	3.1	35¼	2.4	33	4.3	29½	6.9	22½	4.6	26½	1.4	28¼	39.7	45.2
Tonia	Cape Canso	Sept. 1, 1853	11	40	3	39	2½	37	2½	34½	7	26½	5	21½	6	26¼	2½	28½	31	40
Marianni*	Baltimore	1, 1848	16	36¼	3	33¾	3	32½	3	27¼	2¾	26	6¼	17¼	4¾	19¾	3	23	38¾	42
Minna	Portsmouth	1, 1851	9	48¾	3	42½	4	40½	3	37¼	3½	35¾	13½	24¾	4	27	1	28	40	42
Lady Franklin*	New York	2, 1853	19½	35	3	32	2	30	2	29	3½	28	8	24	5	24¼	2½	27¼	43	46
Sweepstakes	do	3, 1853	15	42	3½	42¾	1½	42	4	40	2½	39	10½	25½	7½	29	1	31½	44½	46
John Wade	Boston	4, 1851	13	45¼	2	42¾	2½	41	2	38	4½	32¼	8	24	2½	29	1½	30½	34½	36½
Restitution *	Richmond	11, 1825	17½	35	3	31½	3	30	1½	29½	2½	26	8½	24	7½	22¾	1½	22½	43½	45
Anna Maria*	New York	11, 1853	25	29¾	2½	29	2	28	2	25½	2	24	6	22	3½	26¾	2	28½	43	46
Elora*	do	12, 1850	26	33	2	30½	2	28¾	3	28	4	25¼	5	20	8	28½	1½	30	50	52½
Haranna	St. John's, N. B.	14, 1855	20½	35	5	28	4	28	2½	28	3	28	5	26½	4	31	2	34	44	47
Arthur	New York	25, 1853	17½	40¾	3	38½	2½	37½	3	34¼	4	33	12	27	8½	29	1	31	50½	53
Siam *	do	16, 1853	19½	33½	1½	33	2	32	2	30	2½	27½	6½	23½	3	27	1	29	37	40
Black Sea	do	17, 1855	17	32	5	26¾	4	27½	2	28¼	3½	27½	5	27	4½	30¼	2	32¾	41	45
Susan Fitzgerald	Baltimore	17, 1855	17	34	5	30	4	29½	1¾	29½	2	29	6	26½	2¼	30	2	32	38	40
Virginia	New York	18, 1855	19	36¼	5	33	5½	35	2	35	3	30½	8	28½	6¾	29½	2	30	45¼	52¾
Medford*	Boston	19, 1852	16½	34	9	29½	2	29	2½	27¾	2½	26	8½	21¼	4	25¾	1	26¾	45	47
Hound	New York	21, 1855	27½	32½	2¼	36½	2½	35	2	32½	2¼	30	8	28	4½	31	1½	32	49¼	52
Dolphin*	do	22, 1855	14¼	34	8	27	2	25¾	2	25½	2¾	25½	5	23	4	27½	1¼	29½	38	39¼
Siri	do	14, 1853	9	51¼	11	42½	2	40¾	3	39	3	36¾	13	26¼	6	29	1¼	31	47	50
Kate & Alice	do	14, 1853	19½	36¾	2	36	1½	35	2	33½	3	31½	5	28¼	4½	28¼	1½	29½	37½	40
Relief, (U. S. storeship)	do	27, 1853	19	42½	4	38	4	37	7	31¾	4	26¾	7½	25½	7½	27¾	2	29	53	57
Means for September			17.4	36½	4.0	33½	2.8	33¼	2.7	31.0	3.3	29½	7.2	24½	5.0	27½	1.6	29¼	42.4	44.4
Le Cocq	Boston	Oct. 2, 1853	20	35¼	2½	34¾	2	34	2	33	2½	31	7	28½	9	30¼	1½	32	45	48
America	New York	4, 1853	18	30¾	3½	29½	1	29½	1½	29½	1½	29	5½	29	4	30½	2	32¼	35	38
Eureka	do	5, 1853	17	33½	2½	33½	2	31½	1	31	1½	30½	5½	28	3½	29¾	1	30½	33	35
Samuel Russel	do	5, 1853	17	32	2¾	32	1	32	1¼	32	2	31½	4	30½	4	31	1	32	32	33½
Samuel Russel	do	6, 1854	17	32	2¼	31½	1½	31¾	1½	32	1½	32	4½	31½	3½	31½	1	32¼	32	33½
Lewis	Salem	10, 1851	12	37	2	33½	3¼	30½	4	27	2	26	6	25	4	28	1½	30	33¼	37

* Old route.

Old and Middle Route Crossings.

Name of vessel.	From—	Date of sailing.	Longitude of crossing parallels of—																Total days to—	
			Days.	30° N.	Days.	25° N.	Days.	20° N.	Days.	15° N.	Days.	10° N.	Days.	5° N.	Days.	Line.	Days.	3° S.	Line.	St. Roque.
Edwin*	Boston	Oct. 11, 1853	19½	31	3	28	2	27	2	25½	3	23½	5	21¾	4½	25½	1½	27½	39	41
Marian*	Philadelphia	11, 1853	21	23	3½	24¼	2	25	2	26	2½	26	3	26¼	4	30½	1	32¼	38	40½
Lucy Elizabeth*	Boston	12, 1852	19	25½	4	23¾	2	24¾	1½	25½	3	24	4½	22½	4	25¾	1	26½	38	40
Hussar	New York	12, 1854	19	33	2½	32	3	24½	2	28½	2½	27	4	27	4	28½	1¼	30	37	39
George Raynes	Boston	13, 1852	17½	29	3½	27½	1½	27	2	26¾	1½	26½	5	27	4	29	1½	30	35	37½
Restitution*	Salem	15, 1817	18	28½	2½	26¾	3	26	2	24	2½	22½	5	23½	4	25¾	1	25½	37	39
Winged Arrow	Boston	15, 1854	13½	31	4	33¼	3½	28¼	2½	28½	1½	28½	3	31¼	2	33¼	1	33½	30	32
Westward Ho	....do	17, 1852	13½	29	3	27½	2	28	1	28¾	2	28¼	3	28	3½	29¼	1½	32	28	30½
St. Lawrence	New York	17, 1849	12	40	3	37½	10	31	3½	28	2½	25	6	22½	4	26¼	1½	28½	41	43½
Ohio*	New Bedford	18, 1848	15½	35½	3½	29¼	5	26½	2½	25	2	23¾	3½	24	6	29¾	1½	31	38	40
Warren White	Providence	22, 1855	13¼	25	3	25	3	26	2	28½	1½	29	4	27¾	1	30	1¼	32	27¾	29
Sartelle	New York	22, 1851	17	37½	8	28	5¾	29¼	3	28¼	3	27	3½	24	4	27	1½	28	44¼	46½
Sartelle	....do	23, 1851	15	39½	9	28	5½	29½	3	28½	3	27	3½	24¼	4	27	1½	28	43	45
Pleiades	*Boston*	23, 1856	18½	30	6	30	5	31	2½	31½	2½	28	4½	27½	5	30½	1½	31½	44	46½
America*	New Bedford	24, 1848	21½	30	2	25	2	26	4	24	3	23½	10½	19½	5½	23	2	25	48½	51
Means for October			16.9	32	3.5	29	3.3	28	2.1	27½	2.2	26½	4.8	25½	4.1	28¾	1.2	29	37.0	39.4
Loo Choo	Boston	Nov. 1, 1850	18½	35½	3	35	2	35	2½	32½	2	30	3	27	4	30	2	32	35	38
Minnehaha	New York	6, 1856	26	29½	6	26½	3	25½	1	26	2	26½	3	26	4	27	1½	29	45	47
Janet*	Westport	7, 1848	24	32	4½	28	4½	27	3	25	2	23	2	21¾	4	25	1½	27¾	44	45½
Lowell	Boston	8, 1856	18½	36¾	7	32	6	30¾	2	30¾	2	29¼	3	27½	3½	29½	1½	31¼	42	45
Canton	New York	12, 1849	21½	30	4½	28½	2	28¾	2	29	2	28	3	27	5	29½	2	31	40	43
Sartelle	....do	14, 1849	13	46½	15	33	4½	30½	3	29	2	27	5½	23½	9½	26	3	29½	52½	56¾
Gravina	....do	16, 1853	26	30	4	26½	3½	27	1	27	2	26½	2	26¼	2	28	1½	29½	40½	42½
Caledonia*	Philadelphia	18, 1821	16	31	2½	29	1¾	27	2	26	2	22	3½	20	3½	22½	1	24½	31¼	33
Audubon*	New York	20, 1850	15	33¼	2	30¾	3	29½	2	27½	1¼	25½	2½	23¾	6	27¼	1½	28¼	32	34½
Potomac*	Portland	20, 1850	17	33½	7	25	4½	25¾	2	26	1¾	25¼	4	25¾	3¼	27¾	1½	28½	39½	42
Bothnia	New York	21, 1850	15½	34	1½	31½	2½	32	2	30	1½	29	2	27½	4	30¼	2½	31½	29	31½
Fenelon	Boston	22, 1853	20½	39	5½	30	3	29¼	2½	28	3	25¾	3½	25	6½	28	1½	30¾	44½	47
Juniata	Baltimore	22, 1857	17	29	2½	27½	2	27½	1½	27¾	1½	27½	1½	27¼	3	28¼	1	29¾	29	31
Hannibal*	Boston	22, 1849	18	29	4	28	2	28½	2	28½	2	27	2	24½	6	28¼	2	30	36	48
Lewis D. Hutchinson*	New York	25, 1853	16½	33½	4½	29¼	3	30	1½	28¾	2	26½	4½	24½	5	24	2	26¾	37	40
Commodore	....do	29, 1854	25½	34¼	2	34¾	3	35	3	33¾	3	33½	2	30¼	4	32½	1¾	33¾	42½	45
Means for November			19.3	33½	5.1	29¾	3.1	29¼	2.1	28½	2.0	27	3.0	25½	4.0	27¾	1.1	29½	38.2	41.8

* Old route.

FROM EUROPE TO THE "FAIR WAY" OFF ST. ROQUE.

(Extracts from the Seventh Edition of Maury's Sailing Directions.)

"Since the publication of the sixth edition of this work, and the impulse which the Brussels Conference has given to the objects of it, I have received abstract logs enough to justify a preliminary discussion of the route from England and Europe in the Atlantic generally to the line. The results of this investigation surprised me, and I am encouraged by them to think that that route, as beaten as it is, and notwithstanding it has been the great highway to India and the South Seas ever since the passages around the Cape of Good Hope and the Straits of Magellan were discovered, may be even now materially altered for the better. I think that this system of research will enable us to lay out tracks and project routes by which the passage from Europe to the line may be shortened several days, perhaps a week or more. Now this part of the route is common to all vessels bound from Europe into the other hemisphere: whether their destination be South America, Australia, or California, India, China, or the South Sea ports, the road for all is the same, as far, at least, as the equator; and even beyond; for this road is common also as far as the parallel of Cape St. Roque, indeed I might say as far as the polar edge of the SE. trades. Now, considering the number of vessels that travel this common part of this grand highway, the merchandise they carry, the business they do, it will be at once perceived that if we can shorten the voyage along it, even by the saving of a single day, we shall effect an achievement of some consequence to the business of the world. If an engineer of some highway on the land, over which as much merchandise, property, and life are continually passing, should, by the display of any skill, device, or artifice whatever, discover some short cut, which required no outlay to open or put in order, that would save the time and expense of even one hour's transportation; and if, further, he should secure the right to the discovery, with license to rig up a toll-gate, that all who use this new way should be reasonably taxed, people would willingly pay, and his revenue would be princely. But happily there are no toll-gates upon the high seas, and so far from taxing those whom we invite along this road, we offer them guides, charts, and sailing directions, without price.

Notwithstanding all the light which abstract logs and pilot charts and philosophical disquisitions have of late years thrown upon the subject of the winds in the North Atlantic, I find, by this preliminary examination, that the route from Europe to the line is at this day substantially that along which the early navigators and the buccaneers groped their way to the South Seas.

By analyzing all the crossings on file when the seventh edition went to press, we found what the Pilot Charts might have induced us to expect, viz: the closer in shore, the longer the average passage to the line. The analysis gave the average time to the equator from the several crossings of latitude 30°, as follows:

		East of 16°	24	days	from	the	mean	of	6
Between	long.	16° and 17°	23	"	"	"	"	"	6
"	"	17° and 18°	24	"	"	"	"	"	14
"	"	18° and 19°	24	"	"	"	"	"	22
"	"	19° and 20°	23	"	"	"	"	"	19
"	"	20° and 21°	22	"	"	"	"	"	6
"	"	21° and 22°	21	"	"	"	"	"	7
"	"	22° and 23°	18	"	"	"	"	"	6

Thus, as the place of crossing the parallel of 30° is further and further to the west, so is the average passage thence to the equator diminished. East of the meridian of 19°, the average passage, as far as the data of these tables may be relied on, is about 24 days. To the west of 19° the ratio of decrease as to length of passage, according to this showing, is most rapid.

Now the winds along this route are an exact counterpart of those that are found in the Pacific, on the route from California to Peru, Chili, or Cape Horn: for the deserts of Mexico and the United States hold very nearly the same relation to the NE. trade-winds of the Pacific that the deserts of Africa do to those of the Atlantic; and though quick runs may be made now and then, both along the west American and west African coast, yet, in the long run, experience in the Pacific has amply proved that the navigator saves time by keeping off from the coast, and so I apprehend it will be here. Indeed, experience in the Atlantic goes directly to show the same thing, and to place the opinion almost out of the category of conjecture, for this is the very point upon which the advantages of the new route from the United States to the line are based.

The passage to the line from England and the English Channel ought not, on the average, to be as long by several days as it is from the United States. In the first place, the distance from the Land's End is not so great by two or three day's sail; and, in the next place, the winds are fairer. Vessels bound to the line from any of the Atlantic ports of this country have to sail close hauled most of the way, but from Europe they go free.

If the performance of the ships whose abstract logs I have, and which furnish the data for these tables, be a fair specimen of what ships generally do on this route, and I suppose it is rather above than below, it would appear that the average passage the year round to the line from England and the English Channel is 36 days; the months giving the longest averages, such as they are, being January and March 47 days, August 46, and June 39. The first two are evidently too long, their averages being determined from only two or three passages each. The average to the line from the United States has been brought down from 41 to 31 days; and the average from the British Isles and English Channel can be, I am encouraged to believe, reduced to less than the American average; and the observation, to be contained in the abstract logs that shall be kept for us during the next year or two will, probably, enable us to decide this question.

In the mean time, the route which I ventured to recommend—not, however, without some misgivings, arising from the want of more ample data—is the same, very nearly, for all vessels from whatever part of Europe.

They should aim, whenever the wind will allow the option, to cross the parallel of 30° N., between the meridians of 25° and 30° W., but should not contend with adverse winds for it; having reached this crossing, their course thence is due south for the line, between the same meridians. In summer and fall they should enter the southern hemisphere about the meridian of 30°, but during the rest of the year they will generally not be forced so far over to the west, though they should not care to go east of longitude 25°.

Vessels from as far north as the English Channel should aim to cross the parallel of 40°, between the meridians of 20° and 25°; and for this reason—besides that of winds a little more propitious—viz: In crossing the calms of Cancer the navigator wants to be in such a position that he may always be able to go on that tack which will carry him most rapidly across this belt of calms. In other words, he wants to be in that position where it is immaterial to him whether he be making easting or westing, provided he be on the tack which will give him the

most southing. For this reason he should aim to enter the calm belt between longitude 25° and 30° W.

The average crossing place of 30°, at present, is about the meridian of 19° W.

Navigators wishing to try the more westerly route are referred to what is said under the head of the route to the "Fair Way" off St. Roque, for their guidance through the equatorial doldrums and other calm belts at the various seasons of the year.

There is room, also, for the gain of a day or two from the line to Europe on the return voyage. On this voyage vessels aim to cross the equator too far east, where they are so very liable to be baffled by calms and light winds. It is the passage over again, so far as the winds are concerned, from the line in the Pacific to California.

There is, especially for emigrant ships to Australia, another recommendation in favor of what may be called this western route from Europe; this recommendation consists in better weather and more healthful breezes, especially in the region of the equatorial doldrums, where the weather, even in January, is so singularly sultry and oppressive. The account given of it by Com. Sinclair, p. 59, is graphic and true. I have the abstract log of an emigrant ship, from England to Australia a year or two ago, by which it appears that she lost in these doldrums no less than thirteen of her passengers. They were healthy until the vessel reached this region, and they were again healthy for the rest of the voyage after crossing it. I notice an entry in the log, made a day or two after getting clear of this almost *steaming* heat, this damp belt of perpetual calms and ceaseless rains, "sick recovering fast." The women and children were the principal sufferers. This calm belt to the east of longitude 25° may be considered as the burial place on the wayside from Europe to the other hemisphere. To the west of this meridian this belt is neither as broad nor as difficult to pass; consequently, both time and health invite navigators to pass it west of longitude 25°. The Trade-Wind Chart, and the Pilot Charts together, afford all the information that the navigator can desire concerning the winds and the calm places along the routes between the meridians of 25° and 30° W., from the parallel of 30° north to the equator. My logs show that vessels which cross the equator to the east of 25° are frequently baffled by these doldrums for three weeks or more at a time. The average time of crossing these is from a week or ten days to the east of 25°; and from three to four west of that meridian. The shape of the belt is cuneiform, with its base towards the African Coast. The Trade-Wind Chart shows the navigator, at a glance, the parallels between which he may expect to lose the northeast trades and enter those calms every month in the year.

Attention to that Chart and to what has been said under routes to "Ports beyond the Equator," pp. 138, 143, about the calm belts, the trades, and crossing the line, and the influence of the African Desert upon the winds at sea, will enable intelligent shipmasters to follow this route from Europe without further directions."

Such were the views and opinions expressed according to the lights before us in 1855, when the previous edition of this work was in course of preparation for the press. Since that time our own collection has been enriched by many abstract logs kept on board of co-operating vessels on their voyage from Europe to ports beyond the equator. We have had, also, from the Dutch most valuable contributions, in their excellent treatise entitled "Results of Theory and Experience concerning Winds and Sea Currents in some parts of the Ocean." Published by the Royal Netherland Meteorological Institute. 2d revised edition."

Let us resume this discussion with the new lights which subsequent experience and a more

abundant supply of materials cast upon it. Referring to what has been repeated above from the previous edition, we resume the discussion under the heading of—FROM THE LIZARD TO THE LINE.

FROM THE LIZARD TO THE LINE.

The route from the Lizard to the Line, like the route from "EUROPE TO THE 'FAIR WAY' OFF ST. ROQUE," p. 369, is the same for all trans-equatorially bound vessels whose destination is other than a South African port. Whether the destination be Cape Town or Rio, the route, until the Fair Way off St. Roque be gained, is one and the same.

Our Dutch co-operators at the Meteorological Institute of Utrecht have, in the sailing directions published from that office, given tables of time and crossings of 455 vessels from the Lizard to the Line. To the monthly mean of these the time and crossings of 144 vessels, chiefly American, have been added by Lieutenant Guthrie, making a total of 599 vessels. These enable us to do much more than we could do in the seventh edition towards establishing "finger boards" and setting up "mile stones" at sea, for the guidance of mariners along their pathless ways.

Those that pass inside the Cape Verde Islands are classed together in these tables, while the crossings of those that went outside are also arranged to themselves. It appears from this that the passage both of the American and Dutch vessels that go east of those islands is prolonged thereby about a day on the average; at some seasons more, at some less, but most in summer. It moreover appears that the numbers are not sufficiently large to afford reliable monthly averages concerning the inside passage; though the Pilot Charts, though our knowledge of the winds, and our experience derived from the study of various routes, already discussed, through this part of the ocean, all indicate as a rule that the further from the land a vessel shapes her course from the Lizard to the Line the better she will find the winds; and that also, as a rule, the further she keeps to the west, provided she do not go beyond certain limits, the quicker will be her passage. This is what was said in the 7th edition, and this is what we should expect without any suggestions from the tables now before us; and with them before us we may conclude that on the long run vessels lose by taking the inside passage, and therefore we advise navigators never to take it from choice. If winds or casualties force them into it, then let them try it, but never voluntarily.

I propose now to discuss these tables of crossings, and the navigator who follows me can, after he has mastered the subject, turn to his time table for the month, and find in that and the charts, and the extracts quoted from the logs in illustration, all the information that it is in my power to give, or that he can at present expect to have concerning this route.

Number of vessels, Dutch and American, and their average time from the Lizard to the Line, by the passage east and by the passage west of the Cape Verde Islands.

	AMERICAN.				DUTCH.			
	EAST.		WEST.		EAST.		WEST.	
	Days.	Vessels.	Days.	Vessels.	Days.	Vessels.	Days.	Vessels.
December	29.5	4	27	4	32.1	11	33.6	16
January	28.5	3	31.5	6	31.5	17	31	17
February	27.8	2	28.9	11	35.3	9	32.9	11
Average and sum	28.6	9	29.1	21	32.9	37	32.5	44
March	29.7	3	30.5	6	36.6	5	30.5	15
April	24.2	1	26.1	8	31.8	23	28.6	39
May	32.1	5	31.8	12	33.2	9	32	34
Average and sum	28.7	9	29.5	26	33.9	37	30.4	88
June	36.7	2	29.7	17	32.5	4	33.1	37
July	34.5	3	30.6	9	35.5	4	33.9	53
August	30.2	2	34.5	11	35.4	4	33.8	38
Average and sum	33.8	7	31.6	37	34.5	12	33.6	128
September	42.4	2	33.3	14	36.3	9	36.2	31
October	33.2	4	32	10	32.4	9	32.9	24
November	29.7	3	32	3	36.8	10	36.8	26
Average and sum	35.1	9	32.4	27	35.2	28	35.3	81
Total average and sum	31.5	34	30.6	111	34.1	114	32.9	341

NOTE.—It appears that the passages east are uniformly longer for the Dutch, except in December, June, and October; and that for the American they give the shorter averages for January, February, March, and April; for August and November. But the averages for these are derived from an insufficient number of passages, only two or three, fourteen in all, for each month.

In this table the Dutch outnumber the American vessels, and the outside exceed the inside passages in the proportion of nearly 3 to 1. The Dutch and the outside passages, therefore, give the most reliable averages. Nevertheless, the monthly means for the passage west of the Cape Verde Islands are uniformly in favor of the American vessels, except for January and August, when for January the mean of 17 Dutch passages is half a day shorter than the mean of 6 American; and for August, when the mean of 38 Dutch passages is 18 hours short the mean of 11 American. The general mean of the outside passages for the year, however, is 2.3 days in favor of the American vessels, and one day in favor of those that go outside as against those that go inside of the Cape Verde Islands.

To what is this difference owing? Is it owing to difference of heels or of *head*, or of winds, or of all combined? for the American vessels pursue generally a more westerly route than the Dutch, and in these times the quickest passages have become to be as much the result of the head of the master as of the heels of his ship. At present, however, we are not able in such cases to separate the *head of the master from the heels of his ship*, or to say how much of this difference is due to the one or the other. The Dutch cross 30° north about 40, and the equator

about 200 miles further to the east than the Americans usually do. The Dutch track is shorter in distance but longer in time; hence it seems that the American not only go further than the Dutch but they actually go in less time. Is this owing to heels or winds? Perhaps the following comparative statement may help us to form a conjecture:

Days and crossings from the Lizard to 30° N., *and thence to the Line.*

	AMERICAN.				DUTCH.			
	To 30° N.		Thence to 0°.		To 30° N.		Thence to 0°.	
	Days.	Longitude.	Days.	Longitude.	Days.	Longitude.	Days.	Longitude.
		W.		W.		W.		W.
December	11.9	21.1	15.1	26.5	15.9	19.2	17.7	22.7
January	14.6	18.7	16.9	25.5	11.9	20	19.1	22.7
February	11.8	22.2	17.1	23.7	14.6	18.7	18.3	21
Means	12.8	20.6	16.4	25.2	14.4	19.3	18.6	22.1
Average miles per day	.....	106	.....	111	.....	93	.....	97
March	13.1	19.2	17.4	25.5	12.2	20.2	18.3	21.7
April	10.5	20.5	15.6	26.5	11.3	18.7	16.1	23.7
May	12.4	19.5	19.4	24.2	12.5	19	19.5	23
Means	12	19.7	17.5	25.4	12	19.3	18	22.8
Average miles per day	.....	112	.....	106	.....	112	.....	101
June	11.2	20.5	18.5	27.7	12.5	19	20.6	24.2
July	10.3	20.7	20.3	25.5	12.3	19.2	21.6	21.7
August	14.8	19.6	19.7	26.1	12.8	19.2	21	20.5
Means	12.1	20.3	19.5	26.4	12.5	19.1	21.1	22.1
Average miles per day	.....	112	.....	94	.....	107	.....	85
September	12.1	19.8	20.9	25	12.8	18.5	23.4	21.7
October	12.9	19.2	19.1	27.7	13	19.5	19.9	25.7
November	11.2	20.2	20.8	31	12.9	19.2	20.7	23.7
Means	12.1	19.7	20.3	27.9	12.9	19.1	21.3	23.7
Average miles per day	.....	112	.....	91	.....	104	.....	85
Yearly means	12.2	20.1	18.4	26.2	13.0	19.2	19.7	22.7
Yearly average miles per day	.....	111	.....	100	.....	104	.....	92

NOTE.—The remarks in relation to that part of this route which lies between the Lizard and the trades should be studied by navigators who sail between Europe and the Southern States, West Indies, Spanish Main, &c., p. 92; as well as those coming from the Mediterranean, pp. 105, 120. In confirmation of what is in those chapters said in favor of the trade-wind route for the homeward passage, and of the northern route for the outward voyage, Captain Higgins, in transmitting his abstract log of the Timoleon, from Boston to Constantinople, says:

"Noticing in your sailing directions you expressed a wish for masters to mention whether they followed the track recommended by you, and, if so, requested them to express an opinion whether their passage was shortened thereby, I would remark: I followed your directions; taking adverse winds into consideration, think my passage to Gibraltar was materially shortened thereby, as I passed Gibraltar one day before a barque that sailed from Boston six days prior to myself. The

This table shows us the effect of seasons as well as of longitude. It also shows that the American ships make better time both before and after they cross 30° N. than the Dutch do; but it does not reveal the cause of this difference, nor indicate whether the better speed be due to the more westerly track of the Americans or to their superior sailing qualities. It shows, indeed, that in the winter time, and in the winter time alone, both the Dutch and Americans make better time *from* than they do *to* 30° N. Consequently we infer that in winter the northeast trades are more reliable than the "variables" on the polar side of 30°, and the northeast trades are freshest in spring.

Let us pause to review a little more closely the winds, and survey the part of the ocean through which these vessels hold their way.

I am surprised to find the prevailing character of the winds between the Lizard and 30° N. as baffling as they are thence along the coast of Africa to the Line. The American track from the Lizard to 30° N. is a little more westwardly, and we find the winds, as indicated by the average distance made good per day for the several seasons, much more steady by the American than they are by the Dutch track.

Average miles made good per day from the Lizard to 30° N. in each of the four seasons.

	American.	Dutch.	Difference.
Winter	106	93	13
Spring	112	112	0
Summer	112	107	5
Fall	112	104	8

According to the seasons and the average rate of sailing, it appears that the Americans are remarkably uniform; the Dutch not so much so; and this we attribute, without hesitation, to the circumstance that along the American track the winds, if not fresher, are at least less baffling than they are along the Dutch track, which lies, on the average, more inshore.

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barque, I have since learned, kept further south. Any comments from me upon the utility of your charts and sailing directions would be superfluous; they speak for themselves, as their benefit to the mercantile community has already shown. If I should not be deemed presumptuous, I would express an opinion in regard to the passage through the Grecian Archipelago to Constantinople or Smyrna. The usual route is, I believe, through the Zea and Doro channels, yet during the 'Etesian winds,' which prevail from July until the autumnal equinox, I think the passage through the Mikoni channel preferable. Through the latter there is scarcely any perceptible current, and the winds are such as to enable a vessel to fetch through without tacking; whereas through the former you often have one or two knots current to contend with, and are obliged to make short tacks. My experience in regard to it is meagre, I admit, as my information is derived principally from old and experienced pilots in those parts, yet, so far as my experience goes, proves the assertion of my informants."

Also Captain Richard W. Dixey, of ship Robert H. Dixey, February, 1858, says:

"On my way back from Bordeaux to Mobile, (December and January—see pp. 115, 116,) and through the trades, we saw no sign of the stormy petrel, and scarcely any birds. We sailed many leagues also through the trades before we saw any flying fish. As I have often passed through these seas and never before observed such an absence of birds and fish, should be much obliged to you for your opinion upon this; also the almost entire absence of the jargusso weed. During all this route the weather was extremely delightful.

"I followed your valuable instructions so soon as the winds allowed of it, and came to anchor off Southwest Pass in forty days against a majority of long passages from different ports in Europe. I cannot say how or what courses they steered who performed them."

He crossed 35° in 25° W., 13 days out; 30° in 25½° W., 17 days out; 20° in 40°, 23 days out, and so on; steering west between 19° and 20° N. to long. 80°, 35 days out. He would have done better if he had crossed 20° N. in 25°—30° W.

Materials for this work are accumulating. These extracts should be placed in the context, pp. 92, 120, &c., but the materials for it were not at hand when those chapters went to press

This is what the pilot charts have indicated, and this is what all our investigations of routes running through this part of the ocean have suggested. But I did not expect to find the prevailing character of the winds between the Lizard and 30° N., nor on the old route thence to the Line, so adverse and unpropitious as they appear to be, for their average force is here expressed by good ships in terms of 4½ knots an hour.

A track still further from the land even than the American; indeed one that leads from the Lizard to the meridian of 23° or 25° W., at its intersection with 30° N., would, I conjecture, take the navigator through a part of the ocean that would give him an average speed of five knots. Though the distance from the Lizard to 30° N. would be eighty miles greater by this route than it is to the present crossing of that parallel at its intersection with 20° W., the time from the Lizard would, on account of both winds, sea, and speed, be shortened; and it is time, not distance, that our researches seek to shorten.

In corroboration of this view I refer to the track of the Aetos, McLaughlin, among the April crossings, to her abstract log, and to a letter from her very clever master, written in Liverpool the day before sailing for Bombay. It will be observed that her first effort was to get to the westward; that she crossed 45° N. nearly 3° to the west of the usual track. After this she followed as nearly as may be the average American route. As a rule, the best route is to aim to cross 40° N., in 19°—20° W.; 35° N., in about 22°; 30° N., in 24°—25°, and then aim for the line anywhere between 28° and 31° W. This route may be varied a little according to the seasons, and in each case according to the circumstances of wind and weather by the way; but that it is the route which will prove the quickest on the long run, I have no doubt. It is less boisterous than the route inshore, which is at present followed, and the wind along it is more steady.

For vessels that come through the channel, sailing directions *here* would be out of place; hence all that pass that way are taken up off the Lizard.

Captain McLaughlin, writing from Liverpool, April 22, says, in the letter above mentined:

"There is one thing which I have to contend against this passage, that is, three British clippers which have all sailed to-day for Bombay. Ship Conflict, 1,320 tons, iron, and an extreme clipper, also celebrated for her last voyage to Bombay, (83 days;) iron clipper Kunjee Oadunjee, 1,000 tons, very sharp and in good time; ship Tiger, built in St. John's, N. B., 1,000 tons, very long, draught 17 feet. These ships all have the advantage of me, as they are in much better trim, and these clippers are old traders to Bombay.

"In the first place, my ship is American tonnage 1,430, and English 1,352. She has on board 1,768 tons of cargo, 1,236 tons dead weight, 532 tons light freight, at 1,600 cwt. to the ton. She is drawing aft 21 feet, and forward 21 feet 3 inches; this mistake has happened by her being on the ground when finished loading in the dock.

"Now, as it is against the principles of a Yankee to *get beat*, I will try these fellows hard. Now, as to the track which I must pursue, my view is: I will, if the wind will allow me to do so, say, pass 3° to the east, Western Isles, [that's right;] then straight for the west cape of De Verde Isles, [it would have been better to have passed 2° or 3° to the west of them,] cross the line, as circumstances will permit, from 26° to 28° W.; let her go with a good full sail through the SE. trades; then get into the west winds as soon as possible; pass the Cape in lat. 38°, and go to 50° E. in 30° S.; then go to the E. of Madagascar, and cross the line in 62° or 64°; then run straight for port. [This route was well projected.] Now, it is my opinion that I can cross the Line in 25 days, [he did it in 29,] the Cape in 50 days, [he did it in 52,] and port in

80 days, [he did it in 77½, and led his squadron of competitors,] which will satisfy me if the other ships do not beat me, this time."

I have alluded to seamanship and navigation as elements which, in the present state of our knowledge concerning winds, weather, and currents, along different thoroughfares of the ocean, ought to be taken into account whenever we attempt to calculate the length of the voyage. These qualifications, if possessed and exercised, will do quite as much as the speed of the vessel herself in the saving of time by the way. This was remarkably exemplified in this case. The competitors of the Aetos were quite if not more swift-footed than she, and it was the head of the master, not the heels of his ship, that enabled him to bear the palm. Some got into Bombay two and some ten days after he did. The "Conflict," one of our crack co-operators and Fitzroy's prize observers, made the passage in 80 days. The voyage before she did it in 83. This is no chance or luck; it is the fruit of meteorological knowledge, of nautical information, and professional skill.

But let us return to the question under discussion, which is to account for the difference of the average distance run daily by the Dutch and American vessels on the route from the Lizard to the Line. Whether this difference be owing to difference of winds or to difference of sailing qualities with the same winds, it is important to know. For, knowing this, we should then be able to compare the Dutch and American vessels together, to speak more confidently in other cases, and to project the best route for this voyage with still greater confidence.

It is, moreover, of importance that this question as to speed between the two flags should be rightly settled, for my colleagues in Holland are already beginning, with their contributions and digests, to play an important and valuable part in these investigations; and it is of great consequence, therefore, that, in order to arrive at correct conclusions when we compare theirs and ours together, we should be able to know whether the difference in the length of passages by their ships be owing to winds or to heels.

At p. 147 is a table giving the average rate of sailing per day between 30° N. and the Line by the new, middle, and old routes from the United States to the "fair way" off St. Roque. Repeating that table, we have the following means of comparison:

Average miles per day from 30° N. to the Line, by vessels from America to the Line, and by vessels from the Lizard to the Line.

	AMERICA TO THE LINE.			LIZARD TO THE LINE.	
	Miles per day.			Miles per day.	
	New route.	Middle route.	Old route.	American ships.	Dutch ships.
Winter	134	114	92	111	97
Spring	119	101	92	106	101
Summer	102	86	88	94	85
Autumn	90	87	84	91	85
Average crossing of 30° N	42°. 55′ W.	36°. 30′ W.	31°. 10′ W.	19°. 55′ W.	19°. 18′ W.
Average crossing Line	30°. 35′	28. 45	25. 30	26. 25	22. 40
Average distance—miles per day	111	97	89	100	92

This table would, if we suppose all the vessels to have the same sailing qualities, seem to conflict with the idea that the nearer the coast of Africa the lighter or more unsteady the NE. trade winds; for, on the route from the Lizard to the Line, the average rate of sailing on the track of the American vessels is greater than it is by the middle route from the United States, and the rate on the track of the Dutch vessels is greater than it is by the old route from America; the average difference being in each case three miles a day in favor of the tracks from the Lizard, which are east of the routes from America, and therefore more littoral to Africa.

The American ships that follow this route from the Lizard to the Line are principally engaged in the trade from England to India, China, and Australia. They are fine ships, and, as a class, are better sailers than the average of those which trade into the southern hemisphere from the United States. Many of the former are large ships, of 2,000 tons, or more, and with the same winds the average of these ships would make better runs than the average of those that take the middle route from the United States; and consequently, with winds not quite so good, they would average quite as many miles the day; and this, it appears, they have done.

But this being admitted with regard to the American ships from the Lizard and those that take the middle route from America, how shall we account for the fact that the Dutch ships make as good average runs along the African shore as the old route Americans do some 10° to the west? The Dutch ships are, as a rule, smaller than the American, and therefore can fan along with the baffling winds through which their track lies faster than large ships could.

At any rate, it is probable that the full effect of the difference of strength in the trade-winds, nearer and further from the coast of Africa, is, in this table, masked somewhat by the character of the ships and their masters which pursue the old route from the United States, as contrasted with that of those which follow the American and Dutch tracks from the Lizard to the Line.

Were the American ships, which have given name to this track from the Lizard, to follow the old route from 30° N. to the line, as pursued from the United States, their time would, I conjecture, be less than it is between said old route crossing of 30° and the Line. Consequently, the average rate of sailing would be greater, for I hold that the further from the coast of Africa, until you get quite half way across the Atlantic, the stronger and more steady are the NE. trades. This is a well established fact.

Again, were these same American ships to follow the Dutch track from 30° N. to the Line, they would not, I apprehend, make as good time as the Dutch do. The Dutch ships are smaller, and in light winds small ships will make better way than large ones.

For reasons suggested by this train of remarks, I feel persuaded that time between the ports of Europe and the Line is to be saved for all vessels trading from her marts to Brazil, to the Pacific, to Australia, to the Cape of Good Hope, to India, or to China; for this discussion shows that they may get to the Equator in less time by crossing 30° N. about long. 24°, and the Line about 30° W. than they can by any of the routes now pursued.

Being on the Equator in 30° W., are they then in as favorable a position for the continuance of their voyage as they would be in a more eastwardly crossing, as, for instance, that of the Dutch in 22° 40′? If so, then the route now proposed will certainly afford the shortest passages on the average. Let us consider this question:

If Brazil be their destination, then there is no room for a difference of opinion as to the answer; for the daily experience of navigators shows that near the meridian of 30° is,

for all vessels bound to South American ports south of St. Roque, or around the Horn, a better crossing than about the meridian of 24°.

Now, if this fact can be made to appear with regard to the Cape of Good Hope also, and if navigators can be convinced that the average passage from the Line to the prime meridian of Greenwich, on the way thither, be less for a western than for an eastern equatorial crossing, the question as to the best route from the Lizard to the Line is settled, both theoretically and practically for all routes.

This point will be further discussed in the chapter on the south Atlantic: "FROM LATITUDE 0° TO LONGITUDE 0°." The navigator is referred to that chapter, but I will state here that, from the discussion there, it appears that vessels which cross the Line east of 26° W. have no advantage as to time in the run thence to the prime meridian over those that cross west of 26°.

Those that cross the equator east of 26°, cross it usually in 22° 40′, where the Dutch from the Lizard cross it. Of those that cross it west of 26°, the mean crossing place is in 29° W.; and from this crossing their average run to the prime meridian in 38° 12′ S. is *four* hours less than it is to the same meridian in 37° S. from the Line in 22° 40′; and thence, for the continuance of the voyage, this parallel of 38° 12′ is more advantageous for running down easting than 37° is.

American ships that cross the equator east of 26° cross it where the Dutch do, *i. e.*, in about 22° 40′. They cross the prime meridian also at the same place, and the average time taken to run from the Equator in longitude 22° 40′ to longitude 0°, latitude 37° S., is 24.8 days by the Dutch and 24.7 by the American; to reach 37° S. from 22° 40′ W. by this route the average rate of sailing per day is about 120 miles, showing that with a 5-knot breeze the two flags are about equal as to the speed of the ships under them, and reminding us to look to the winds and currents along the different routes to account for difference in the length of passage.

Lieutenants Young and McCauley are preparing a set of time tables from the Straits of Sunda to the Cape of Good Hope, with the view of settling the question as to the comparative sailing qualities of Dutch and American vessels. Therefore the navigator who is bound through the part of the ocean now under discussion is referred to those tables: "TIME AND CROSSINGS FROM THE STRAITS OF SUNDA TO THE 'FAIR WAY' OFF GOOD HOPE" for further information under this head.

Hamburg ship "Edward," (Captain Zybrantz,) from Iquique to Hamburg.

"Ever since I have been master of a ship (1839) I have kept a kind of log, something like yours, only on a much smaller scale, noting winds, currents, barometer, atmosphere, &c.—all that I found worth notice. I had at first command of a 150 tons schooner, which I had ten years. My first trip was from Hamburg to Valparaiso, Manilla, and back to Hamburg. I then followed the directions given by English books, (outward bound.) Coming homes, I, like a fool, crossed the Line far eastward, and was long in the doldrums, and came just as far to the west as on Brazil voyages. Afterwards, in 1845, on a voyage to Pernambuco, in XII, (Dec.,) I met the winds east, with south in them, off the Cape Verde Islands, chock down to the Line, which I crossed, terribly frightened, in 30° W., and arrived, after a quick passage, safe in Pernambuco. Returning in January, I crossed in 35° W., and had a quick voyage; no calms, and, to my astonishment, did not get further west as above. There I had a glimmering of your new highway, which I have sought, going down in 28° W. from the Cape Verdes, and returning in 35° W. In Philadelphia I first heard of your labors, and got a small book for passages to Europe and back. Two years after I got from the United States consul in Leipzic, and have still, your fifth edition, without charts. The log I sent you last year.

This voyage I had your seventh edition and charts, and send you forthwith this log. Having sufficient and good instruments you can rely on the observations made, directions of currents as far as to become at by difference of dead and 0. reckonings.

I have nothing more to add, and remain your most obedient servant,

P. ZYBRANTZ."

AUGUST 3, 1857.

With the lights at present before us touching the best route from the Lizard to the Line, we may conclude—

1st. That the best route from the Lizard to the Line is to cross the parallel of 40° N., about the longitude of 19° or 20°, and then to proceed as recommended at page 372.

2d. That the Dutch vessels that follow this route are lighter, and therefore better sailers than the Americans in light winds. This question, however, cannot be definitely settled until Lieutenant Young's time tables of American vessels from the Straits of Sunda to the offings of the Cape of Good Hope shall have been finished, so that I may compare the average daily run of several hundred American vessels with the runs of 550 Dutch vessels given in the tables of Utrecht. As Lieutenant Young has, since the above was written, been ordered to sea, the data for that discussion will not be ready before this goes to the printer; therefore I refer the navigator for further information to the route from the Line to the prime meridian, thence to the Straits of Sunda, and so back to the line in the Atlantic.

3d. That both the NE. trades and the variables are most baffling near the shore, and for that reason a good offing, both from the Peninsula and Africa, is desirable.

4th. That for vessels bound from Europe to or through any part of the Indian ocean, a western crossing of the Line is more desirable than an eastern one.

5th. That it is better to go outside than inside of the Cape Verde Islands.

6th. That from the Lizard to the Line we may look, in winter and spring, for the best passages, summer and fall being unfavorable to quick runs.

7th. That the average passage by the outside track from the Lizard to the Line is at present 31½ days, and that, by taking the more westerly route here recommended, the average passage from the Lizard to the "Fair Way" off the Cape of Good Hope may be reduced 3 or 4 days, and the voyage to India and China 6 or 8.

8th. That these time-tables and this system of physical research into which all the maritime nations have entered as joint co-operators, are calculated to raise the standard of qualifications among sea captains, and to keep them in their race against time continually up, each one to his mettle. As those qualifications are raised there is practically to follow both a saving of time on the voyage and a lessening of the dangers of the sea. Consequently we may expect the average time of passage by the routes here recommended to be gradually diminished more and more for several years yet to come, and until navigators generally shall master practically all the knowledge concerning winds, weather, and sea that shall be developed in the progress of these researches, when the dangers of the sea also will diminish.

"I consider the keeping of a journal such as you require," says Captain Nichols, of the John Carver, "a very useful and profitable exercise, not only for the benefit that may accrue to navigators in general, but individually to those who keep them, as it enlarges their field of observation, and by those frequent observations improves the faculties of discernment and calculation in regard to the winds, &c., in those regions where such observations have been carefully made."

This track from the Lizard passes through the famous red fog region. I would be glad to have specimens of the dust. The United States sloop-of-war Jamestown fell in with one of these fogs in February, 1856, which lasted for six days, and which so obscured the sky as to hide the sun and limit vision to a few ship's lengths.

"In regard to the dust fogs, said to occur in the spring and autumn, in the region of the Cape de Verdes, we have seen," says Dr. Clymer, the surgeon of the fleet, on board that ship, "but one; though the atmosphere is there often filled with a dry, dusty haze.

The red dust fog that we saw, we passed through on our return from St. Paul de Loando to Porto Praya, in February, 1856. It was in the belt of the equatorial calms, which we en ered from the southeast trades on the first of February, in two degrees north latitude, and between twelve and thirteen degrees west longitude.

We were immersed in the dust fog six days, entering it abruptly on the night of the 9th of February, in lat. 7° 30′ N., and long. 15° W., and emerging from it (and at the same time from the zone of the equatorial calms into the northeast trades) on the 15th instant, in lat. 9° N., and long. 19° W. With these winds we beat to Porto Praya, (in lat. 14° 54′ N., and long. 23° 30′ W.,) crossing a southwest current of nearly a mile an hour, arriving at Porto Praya on the 22d of February.

The red dust settled thickly on the sails, rigging, spars, and decks, from which it was easily collected. It was an impalpable powder, of a brickdust or cinnamon color. The atmosphere was so dusky that we could not have seen a ship at midday beyond a quarter of a mile.

The nature and source of these red dust fogs are matters of speculation: whether they are of the animal, the vegetable, or the mineral kingdom, and whether they are wafted from the plains of Africa by the northeast trade-winds, or transported from those of South America, by the return atmosphere currents in the upper strata, against the direction of the surface trades, and precipitated in the belt of calms."

For this extract I am indebted to notes made during the late cruise in the Jamestown on the African station, under date of March 1, 1857, by George Clymer.

The following, from a letter, and the log of Captain Sewall, of the Lepanto, have come to hand just in time to find a place here by interpolation. This log and letter go to confirm the views already expressed concerning the advantages of the western route. Indeed here is another instance afforded, quite unexpectedly, as to the difference between the force of the wind near and further from the coast of Africa.

"I have added" (says Captain Sewall) "in my abstract from Gibraltar to Sumatra, directly beneath* our position at noon, the position at noon, for each corresponding day, of the ship Comoro, Captain Lord, who sailed in company with us, and you will perceive that she arrived the same time on the coast, though a much faster vessel than the Lepanto. You will perceive our gain was in crossing the Equator in the Atlantic more westward than he, and also in running easting down in a higher latitude, as I endeavored to follow a great circle course after clearing the southeast trades. But I now think I hauled up to the eastward too soon on temporarily losing the trades. I should have made more southing before projecting my 'circle track.' I think the comparison of our track with the Comoro's, day by day, is a beautiful illustration of the value of your advice and Sailing Directions for the East Indies; and I doubt not but that if I cou'd have followed your directions more perfectly there would have been a much greater difference shown in favor of your routes."

* The position of the Comoro is printed in brackets, just after the position of the Lepanto, p. 378.

Barque "Lepanto," E. T. Sewall.

"Feb. 8, 1858. Lat. 35° 22′ N.; long. 8° 18′ W. ["Comoro,"* 35° 55′ N.; long. 8° 17′ W.] Barometer, 30.50; temperature of air, 67°; of water, —. Winds: E.SE. At 4 p. m. left Gibraltar bay for west coast of Sumatra; fine breezes and fair weather. American ship "Comoro," Captain Lord, in company, same destination; 6 p. m. passed Tarifa light, and carried away topmast studding sail boom. Strong breezes; latter part, light winds and large NW. sea.

Feb. 9. Lat. 34° 59′ N.; long. 9° 28′ W. [Comoro, lat. 35° 25′ N.; long. ——.] Barometer, 30.27. Temperature of air 64°; water, —. Wind: East. Throughout this day very light breezes and pleasant weather; latter part, somewhat cloudy; very heavy dew; large swell from the NW.; passed a brig, same course. Comoro not in sight since last night.

Feb. 10. Lat. 34° 28′ N.; long. 10° 14′ W. [Comoro, lat. 34° 57′ N.; long. 10° 14′ W.] Barometer, 30.17; temperature of air, 64°. Wind: N.NW. All these 24 hours light and baffling airs, and cloudy weather; squally appearances in the night; wind veering to every quarter; heavy dew, as usual; large swell from NW.

Feb. 11. Lat. 33° 48′ N.; long. 11° 40′ W. [Comoro, lat. 34° 04′ N.; long. 12° 25′ W.] Barometer, 30.30; temperature of air, 63°. Wind: North. This day continues light and variable winds and calms, with occasional sprinkles of rain; a large NW. sea; latter part, more settled. Saw a barque and brig steering westward.

Feb. 12. Lat. 33° 35′ N.; long. 11° 36′ W. [Comoro, lat. 33° 40′ N.; long. 13° 19′ W.] Barometer, 30.35; temperature of air, 63°. Wind: S. by W. Continues light and variable airs, with calms; a large sea still rolling from the northwest; hazy sky and heavy dews.

Feb. 13. Lat. 33° 59′ N.; long. 13° 22′ W. [Comoro, lat. 34° 10′ N.; long. 15° 20′ W.] Barometer, 30.22; temperature of air, 60°. Wind: W.SW. Moderate winds, and cloudy, hazy weather; a very large sea from NW.; passed a barque on the same tack. At 10 a. m., wind veered to the NW., with mist; cold and chilly.

Feb. 14. Lat. 32° 32′ N.; long. 15° 50′ W. [Comoro, lat. 32° 24′ N.; long. 17° 27′ W.] Barometer, 30.25; temperature of air, 60°. Wind: NE. This day fresh breezes and squally, with rain, and a heavy NW. swell, as usual; 8 a. m., made the island of Porto Santo, N.NW., 30 miles by estimation.

Feb. 15. Lat. 29° 54′ N.; long. 18° 05′ W. [Comoro, lat. 31° 20′ N; long. 19° 56′ W.] Barometer, 30.30; temperature of air, 62°. Wind: NE. Continues fresh breezes, with a large sea from the NW. First part, thick and cloudy; middle and latter parts, clear and pleasant; trade-like appearances; lightning in the W.NW at midnight.

Feb. 16. Lat. 27° 21′ N.; long. 20° 00′ W. [Comoro, lat. 29° 09′ N.; long. 20° 00′ W.] Barometer, 30.37; temperature of air, 65°. Wind: NE. by E. Fine trades and pleasant weather throughout; large sea from NW. yet, causing the ship to roll heavily; all sail set. Passed two brigs on same course.

Feb. 17. Lat. 24° 42′ N.; long. 21° 38′ W. [Comoro, lat. 25° 58′ N.; long. 20° 09′ W.] Barometer, 30.35; temperature of air, 68°. Wind: NE. Brisk trades and pleasant weather, with flying clouds; all sail set, "alow and aloft," fore and aft; strong easterly current.

Feb. 18. Lat. 22° 08′ N.; long. 23° 10′ W. [Comoro, lat. 22° 47′ N.; long. 20° 13′ W.] Barometer, 30.30; temperature of air, 70°. Wind: NE. Moderate trades and cloudy; irregular rough sea; saw a ship standing by the wind; starboard tack. Think there may have been an error in longitude yesterday, as we have but little current to-day.

* Ship Comoro's position for each corresponding day at noon, as copied from her abstract at Sumatra.

Feb. 19. Lat. 19° 28′ N.; long. 24° 51′ W. [Comoro, lat. 19° 03′ N.; long. 20° 26′ W.] Barometer 30.24; temperature of air, 70°. Wind: NE. Fine trades and pleasant weather; all sail set; passed a barque steering SW. by W. Saw, to-day, the first "Portuguese man-of war." No birds—no flying fish yet.

Feb. 20. Lat. 16° 32′ N.; long. 26° 29′ W. [Comoro, lat. 15° 30′ N.; long. 20° 27′ W.] Barometer, 30.22; temperature of air, 72°. Wind: NE. Brisk trades and very fine weather; all sail set to the best advantage, &c.

Feb. 21. Lat. 13° 11′ N.; long. 26° 02′ W. [Comoro, lat. 12° 17′ N.; long. 20° 20′ W.] Barometer, 30.15; temperature of air, 75°. Wind: E.NE. Brisk trades and pleasant weather; Saw, to-day, the first school of flying-fish; also, saw a few "Portuguese men-of-war;" all sail.

Feb. 22. Lat. 10° 15′ N.; long. 25° 34′ W. [Comoro, lat. 9° 44′ N.; long. 20° 16′ W.] Barometer, 30.13; temperature of air, 75°. Wind: E. by N. Trades moderate, and veering from E.NE to E. by S.; fine weather. Latter part, hazy sky; considerable fall of dew this night; numbers of flying fish seen; all sail.

Feb. 23. Lat. 7° 16′ N.; long. 25° 13′ W. [Comoro, lat. 7° 06′ N.; long. 20° 02′ W.] Barometer, 30.10; temperature of air, 77°. Wind: E. by N. First part, brisk trades; saw a barque steering 2 points more eastward; saw a large number of birds like the small sea-gull. Latter part, gentle trades and hazy sky.

Feb. 24. Lat. 5° 15′ N.; long. 24° 51′ W. [Comoro, lat. 5° 51′ N.; long. 20° 00′ W.] Barometer, 30.09; temperature of air, 82°. Wind: N.NE. First part, light and variable trades veering from E. to NE. frequently, and back again; middle, heavy appearances around the horizon, indicating a change; ends, with light airs and hazy, warm, &c.

Feb. 25. Lat. 3° 32′ N.; long. 24° 27′ W. [Comoro, lat. 4° 37 N.; long. 19° 51′ W.] Barometer, 30.11; temperature of air, 82°. Wind: NE. Begins with very light breezes and pleasant; at 7 p. m., flash lightning in the south; 4 a. m., entered the "Equatorial cloud ring;" variable airs; thunder, lightning, and rain squalls; ends, pleasant.

Feb. 26. Lat. 2° 08′ N.; long. 24° 10′ W. [Comoro, lat. 3° 05′ N.; long. 19° 55′ W.] Barometer, 30.08; temperature of air, 80°. Wind: "Doldrums." First part, light airs varying from north to south by the east; pleasant weather; middle, gentle breezes and cloudy; lightning. Latter, thunder, lightning; much rain; brisk squalls from all quarters; "*doldrums;*" sea, from S.SE.

Feb. 27. Lat. 1° 36′ N.; long. 24° 10′ W. [Comoro, lat. 2° 25′ N.; long. 20° 00′ W.] Barometer, 30.08; temperature of air, 79°. Wind: "Doldrums." All these 24 hours light baffling airs from all quarters; squalls of rain; thunder and sharp lightning; complete "equatorial doldrums;" wish we were more westward. Sail to the north.

Feb. 28. Lat. 0° 40′ N.; long. 24° 10′ W. [Comoro, lat. 2° 00′ N.; long. 20° 00′ W.] Barometer, 30.04; temperature of air, 76°. Wind: N.NE. This day continues light variable airs from all points, with hard squalls; torrents of rain; filled up all our water casks. A large sea from S.SE. for the past three days.

Feb. 29. Lat. 0° 18′ N.; long. 24° 10′ W. [Comoro, lat. 1° 45′ N.; long. 20° 20′ W.] Barometer, 30.04; temperature of air, 82°. Wind: Calm. Throughout this day lightning, rain squalls, calms, &c.; 10 a. m., sent the mate on board an iron steamer and schooner sail with letters for the United States. The stranger reported to be the "Congo," 32 days from London for Pernambuco, but from appearances is a slaver, being strongly manned, armed, &c.

March 1. Lat. 0° 57′ S.; long. 26° 22′ W. [Comoro, lat. 0° 50′ N.; long. 20° 40′ W.] Barometer, 30.04; temperature of air, 82°. Wind: S. by E. First part, variable airs, calms, and squalls; middle and latter, moderate trades and fine weather; crossed the Equator at 6 p.m., 22 days and 2 hours from Gibraltar. I think we should have had less "doldrums" and trades more to the east in 30° W.

March 2. Lat. 3° 11′ S.; long. 28° 21′ W. [Comoro, lat. 0° 11′ S.; long. 22° 34′ W.] Barometer, 30.04; temperature of air, 82°. Wind: SE. by S. This day moderate trades and very fine weather throughout; all the "kites" out; saw a ship far to leeward. Longitude, by two good lunars, this day, 28° 12′ W.; 9′ east of chro. Distance made good from day to day from Gibraltar to the line, 2,747 miles.

March 3. Lat. 5° 58′ S.; long. 29° 40′ W. [Comoro, lat. 2° 04′ S.; long. 24° 53′ W.] Barometer, 30.12; temperature of air, 82°. Wind: SE. by S. First and middle parts, moderate trades and very fine weather; latter, fresh breezes and cloudy sky; 7 a. m., brisk rain squall from E.SE.; ends, fine and pleasant; all sail.

March 4. Lat. 8° 34′ S.; long. 31° 15′ W. [Comoro, lat. 4° 02′ S.; long. 26° 41′ W.] Barometer, 30.15; temperature of air, 84°. Wind: SE. by S. Moderate trades and fine weather; all sail by the wind; trades hold for southward, I think; saw a flock of "boatswains" or tropic birds.

March 5. Lat. 11° 04′ S.; long. 31° 25′ W. [Comoro, lat. 6° 49′ S.; long. 27° 24′ W.] First part, moderate and clear; middle, much the same, with a very little rain sprinkle; latter part, brisk trades and cloudy; ship pitching; heavy sea from southeast."

Time and Crossings from the Lizard to the Line—December.

Name of vessel.	From—	Date of sailing.	Longitude of crossing the parallels of—																				Total days to—	
			Days.	45° N.	Days.	35° N.	Days.	30° N.	Days.	25° N.	Days.	20° N.	Days.	15° N.	Days.	10° N.	Days.	5° N.	Days.	Equator.	Days.	3° S.	Equator.	St. Roque.
Leontine	Lisbon	Dec. 8, 1851	.....	.....	1½	12½	4	16½	5	17½	4	20¼	3	22	2	21¾	3½	22¼	3	25¼	2	28½	26	27
Jenny Pitts	Cardiff	15, 1853	3½	13	4	14¼	4	18	3	18½	2	23	1½	22	2	23½	2	24½	7½	27½	1½	29½	29½	31
Stormway	Liverpool	27, 1853	3	12¼	5½	14¾	2½	17	2	19¾	1½	21	1½	21½	1½	22	1½	22	8	22½	2	25¼	27	30
Thomas Strickland	London	29, 1847	8	12¾	3	17¼	1½	18	2½	18½	7	19	2	19	1½	18¼	2½	15½	7	15¼	2½	21¼	35	39½
Means east of Cape de Verds			4.7	12¾	3.5	14¾	3	17½	3	18½	3.6	20¾	2	21	1.7	21¼	2.4	21	6.4	22½	2	26½	29.4	31
Means of 11 Dutch vessels east			3	11½	6.4	17	3.7	19	2.8	19¾	1.9	20½	1.8	20¾	1.9	20¼	4	19¼	6.6	23¼	.....	.....	32.1	.....
Architect	London	Dec. 11, 1854	3	9¼	4	17½	3	24	2	25¼	2	28¼	2	27¾	2	27¼	2½	28¼	3½	30¼	1	31	24	26
Rosario	Malaga	13, 1851	.....	.....	1	7½	4½	17½	2	20½	2	24	2	25½	2	25	1½	24½	2	25¾	1½	28	17	19½
Avondale	Gottenburg	17, 1853	5	12¼	5½	18½	2½	20¾	2	22¼	2	24½	1½	25½	2½	25¼	2	25	6	26	2	28½	29	32
Frothingham	London	28, 1854	5	11¼	6	20¾	5½	22¼	3½	20¾	3½	24¾	3½	26	2	25	2	24¼	7	25¾	1½	28½	38	40½
Means west of Cape de Verds			4.3	11	4.1	16	3.9	21	2.4	21¾	2.4	25¼	2.2	26¼	2.1	25½	2	25½	4.6	26½	1.5	29	27	29.5
Means of 16 Dutch vessels west			5	11¾	8.2	17¼	2.7	19¼	2.5	21¼	2.3	24¼	1.9	25¾	1.9	23½	2.8	21¼	6.3	22¾	.....	.....	33.6	.....

Ship Architect, (George A. Potter, captain,) London to Hong Kong; ten days out.

"Dec. 20, 1854. Lat. 28° 39′ N.; long. 21° 38′ W. Barometer, 30.33; temperature of air, 68°; of water, 69°. Winds: E. by N., E.NE. Trade-winds and fine, beautiful weather. The barometer, I expect, will range from 30.30 to 30.10 for a few days.

Dec. 21. Lat. 25° 06′ N.; long. 23° 57′ W. Barometer, 30.22; temperature of air, 68°; of water, 73°. Winds: NE., E. by N.; a glorious trade-wind, with occasional squalls attended with light rain. I have put Massey's log over, and, if I do not lose it, will keep it going until I clear Cape St. Roque; and with the thermometrical observations we may possibly contribute to the location of the limits of the equatorial current.

Dec. 22. Lat. 21° 44′ N.; long. 25° 35′ W. Barometer, 30.18; temperature of air, 72°; of water, 74°. Winds: E.N.E. No current to-day. Apparently, the distance run by observation is four miles greater than that shown by Massey's log. We veered it out about twenty fathoms astern, but this morning I observed the rotator skipping along at times, when the stern of the vessel rose in the sea. I shall give it more line to-day, as it is essential to have a proper scope of line in order to obtain correct results; and a full ship aft requires more than a sharp one, as she draws more water after her; a high vessel also requires more than a low one.

Dec 23. Sun obscured; no observations to-day. Barometer, 30.15; temperature of air, 75°; of water, 76°. Winds: E.SE.; passing squalls and light rain. Massey's log shows 230 miles these twenty-four hours.

Dec. 24. Lat. 14° 12′ N.; long. 28° 09′ W. Barometer, 30.03; temperature of air, 79°; of water, 79°. Winds: SE., E.SE., moderate. The atmosphere to-day has been hazy, with considerable moisture in it. Saw a barque standing northerly.

Dec. 25. Lat. 10° 56′ N.; long. 27° 48′ W. Current, 7 miles, south. Barometer, 30.07; temperature of air, 80°; of water, 80°. Winds: E.SE., E. I expected to find a small westerly current the past twenty-four hours, but I have kept her up pretty well, and find we have made a little easting.

Dec. 26. Lat. 7° 46′ N.; long. 27° 45′. Barometer, 30.05; temperature of air, 83°; of water, 82°. Winds: SE. by E., variable. The weather looks rainy and unsettled. I expect to lose the trades very soon. The observations to-day are not good, and I think we have had some currents to the southward and westward. Barometer very unsteady. Massey's log shows 188 miles.

Dec. 27. Lat. 6° 01′ N.; long. 28° 11′ W. Current, 23 miles, S. 80° W. Barometer, 30.00; temperature of air, 82°; of water, 82°. Winds: NE., E.SE. A squall came up from the NE. at 2 a. m., attended with much thunder, lightning, and rain. I am sorry we did not get first-rate observations yesterday; but I think, out of the current marked in the column, this day's share is sixteen miles west, with no southing.

Dec. 28. Lat. 4° 42′ N.; long. 27° 39′ W. No current. Barometer, 30.00; temperature of air, 84°; of water, 83°. Winds: E.SE., NE., variable, light. A ship to the westward, standing northerly.

Dec. 29. Lat. not observed. Barometer, 30.00; temperature of air, 80°; of water, 81°. Winds: Variable, SE., light. The Pilot Charts show that chances for getting across the Equator speedily are as good between the meridians of 20° and 25° as between 25° and 30°. I think, in crossing from England again, I shall endeavor to cross further east; but from the United States the crossing to the westward of 30° is decidedly the best.

Dec. 30. Lat. 2° 35′ N.; long. 29° 06′ W. Current, 36 miles, N. 85° W. Barometer, 30.02; temperature of air, 81°; of water, 82°. Winds: S., S. by E., moderate. We are again one of the unfortunates: the Pilot Chart shows that, out of the thirty-three vessels that have been in this square, not one had the wind dead ahead. I hope the wind will haul more easterly; if it does not, we shall fetch a long way to leeward of St. Roque. It would seem foolish in coming from the British channel to get to leeward.

Dec. 31. Lat. 0° 24′ N.; long. 30° 12′ W. Current, 24 miles, N. 60° W. Barometer, 30.08; temperature of air, 84°; of water, 81°. Winds: SE. by S. Beautiful weather, but light trades. The wind has been veering easterly, and I think there is no chance of being forced to leeward.

Jan. 1, 1855. Lat. 1° 39′ S.; long. 30° 14′ W. Current, 8 miles, S. 41° W. Barometer, 30.09; temperature of air, 80°; of water, 80°. Winds: SE. Moderate breezes, and clear, pleasant weather.

Jan. 2. Lat. 4° 14′ S.; long. 31° 05′ W. Current, 39 miles, S. 57° W. Barometer, 30.09; temperature of air, 82°; of water, 81°. Winds: E.SE., SE. Amplitude observed, 11° W.

Jan. 3. Lat. 7° 36′ S.; long. 31° 36′ W. Current, 38 miles, S. 57° W. Barometer, 30.03; temperature of air, 82°; of water, 82°. Winds, E.SE., E. by S., SE. by E. A full breeze, the ship making good way. I can steer higher than south, but don't care, as I think that is the proper course until the calms of Capricorn are cleared, letting her go a good hard full. The current we have now is the equatorial current, deflected to the southward; this side of the equator it is somewhat strong, and I presume the trades have been blowing fresh."

Ship Leontine, (W. T. Ariant, captain,) Lisbon to Rio de Janeiro; six days out.

"December 14, 1851. Lat. 29° 25′ N.; long. 17° 54′ W. Barometer, 29.99; temperature of air, 69°; of water, 68°. Winds: SE., E.SE., SE. Light airs and calms.

December 15. Lat. 28° 57′ N.; long. 18° 34′ W. Barometer, 29.90. Winds: S.SW. Squally weather.

December 16. Lat. 28° 00′ N.; long. 17° 43′ W. Winds: SW., W., S. Moderate and light breezes, with rain showers.

December 17. Lat. 26° 46′ N.; long. 17° 13′ W. Variation observed by amplitude, 17° west. Winds: SW., W.SW., W. Moderate breezes and showery.

December 18. Lat. 25° 17′ N.; long. 17° 30′ W. Winds: SW., W. Moderate breezes, with light rain.

December 19. Lat. 23° 39′ N.; long. 17° 39′ W. Barometer, 29.80; temperature of air, 69°. Winds: W.SW., W.NW. Light airs and bright atmosphere. Variation of compass by azimuth, 18° W.

December 20. Lat. 23° 25′ N.; long. 17° 53′ W. Winds: Calms and light airs, with a high swell from the NW.

December 21. Lat. 22° 20′ N.; long. 18° 40′ W. Barometer, 29.80. Variation observed by azimuth, 19° W. Winds: SW., S., E. Light, variable winds and calms.

December 22. Lat. 20° 47′ N.; long. 20° 10′ W. Winds: N.NE, SE. Changeable and squally, with rain and lightning.

December 23. Lat. 19° 01′ N.; long. 21° 05′ W. Barometer, 30.00. Winds: SE., E.SE. Light winds and fine weather throughout.

December 24. Lat. 17° 23′ N.; long. 21° 29′ W. Winds: E.SE., E. Light winds and fine weather throughout this day.

December 25. Lat. 15° 11′ N.; long. 21° 33′ W. Winds: East. During this day light winds and a bright atmosphere.

December 26. Lat. 12° 45′ N.; long. 21° 29′ W. Barometer, 30.00. Winds: East. Brisk winds and pleasant weather throughout. By a lunar observation of sun and moon the chronometer was 40″ fast of Greenwich mean time.

December 27. Lat. 10° 20′ N.; long. 21° 49′ W. Barometer, 30.20. Winds: E., E.NE. Moderate winds and pleasant weather.

December 28. Lat. 8° 04′ N.; long. 21° 40′ W. Winds: E.NE., E. Moderate winds and pleasant. Observed an easterly current.

December 29. Lat. 6° 25′ N.; long. 22° 20′ W. Winds: E., E.NE. Light winds and pleasant. Lunar observation shows chronometer to be 42″ fast of Greenwich mean time.

December 30. Lat. 4° 08′ N.; long. 21° 48′ W. Barometer, 29.90. Winds: E., E.SE. First and middle parts, light airs and fine weather; latter part, squally, with a high southerly swell. Observed an easterly current.

December 31. Lat. 2° 33′ N.; long. 22° 05′ W. Barometer, 29.70. Winds: E.SE., S.SE. Squally throughout, attended with rain.

January 1, 1852. Lat. 1° 11′ N.; long. 23° 43′ W. No current. Barometer, 29.90. Winds: S. by E., S., S. by E. Light winds and cloudy.

January 2. Lat. 0° 11′ S.; long. 25° 08′ W. Barometer, 30.00. Winds: S. by E. Light winds and a bright atmosphere.

January 3. Lat. 1° 05′ S.; long. 26° 22′ W. Barometer, 30.00. Winds: S. by E. Light and moderate winds and pleasant.

January 4. Lat. 3° 00′ S.; long. 28° 04′ W. Barometer, 30.00. Winds: S.SE. Brisk winds and pleasant weather.

January 5. Lat. 5° 25′ S.; long. 29° 42′ W. Barometer, 30.00. Winds: S.SE., SE. by S. Very pleasant winds and weather this day.

January 6. Lat. 7° 54′ S.; long. 31° 13′ W. Barometer, 30.10. Winds: S.SE., SE. by S., SE. Very pleasant winds and weather throughout this day."

Jenny Pitts, (J. L. Snow, captain,) Cardiff to San Francisco; twelve days out.

"December 27, 1853. Lat. 30° 03′ N.; long. 20° 00′ W. Current, 8 miles S. by W. Barometer, 30.07; temperature of air, 68°. The thermometer fell and broke; no other thermometer on board. Winds: S. by W., S.SW. First part, fresh breezes and cloudy; middle part, gales, with squalls of rain; latter part, strong breezes and cloudy; NW. sea running.

December 28. Lat. 28° 52′ N.; long. 18° 10′ W. Current, 6 miles S.SW. Barometer, 30.16; thermometer attached, 67°. Winds: SW. During this day strong breezes and squally; a heavy NW. sea.

December 29. Lat. 27° 37′ N.; long. 17° 56′ W. Barometer, 30.16; thermometer attached, 67°. Winds: SW. by W., W. by SW. Commences with strong breezes and heavy rain squalls; middle part, fresh gales; latter part, strong breezes and squally. At 6 a. m. passed to eastward of Island Ferro, 8 miles distant.

December 30. Lat. 25° 26′ N.; long. 18° 26′ W. Current, 8 miles S. by E. Barometer, 30.17; temperature of air, 69°. Winds: W. by N., N. During this day fresh gales and squally; heavy sea.

December 31. Lat. 22° 51′ N.; long. 19° 51′ W. Barometer, 30.18. Winds: NE.,

E.NE., E. Commences with fresh breezes and squally; middle and latter parts, strong breezes and heavy squalls of rain; a heavy sea.

January 1, 1854. Lat. 19° 51′ N.; long. 22° 55′ W. Current, 8 miles, S. by E. Barometer 30.19; temperature of air, 69°. Winds: E.NE., NE. by E. Commences with moderate gales and squally appearances; thunder and sharp lightning to the S.; latter part fresh from NE.

January 2. Lat. 16° 42′ N.; long. 21° 23′ W. Current, 10 miles, S. Barometer, 30.18; temperature of air, 72°. Winds: E.NE., NE. by E. Commences with strong breezes and squally appearances, with lightning.

January 3. Lat. 13° 42′ N.; long. 22° 00′ W. Current, 8 miles, S. Barometer, 30.19; temperature of air, 75°. Winds: NE., NE. by N. During all this day, strong breezes and clouy.

January 4. Lat. 11° 15′ N.; long. 23° 05′ W. Barometer, 30.00; temperature of air, 77°. Winds: NE. This day fresh breezes and cloudy, with hail.

January 5. Lat. 9° 11′ N.; long. 23° 25′ W. Barometer, 30.00; temperature of air, 79°. Winds: NE. by N., N.NE. This day fresh breezes and cloudy.

January 6. Lat. 6° 52′ N.; long. 24° 20′ W. Barometer, 30.00; temperature of air, 80°. Winds: N.NE., NE. Moderate breezes and cloudy.

January 7. Lat. 4° 50′ N.; long. 24° 50′ W. Current, 6 miles, N.NW. Barometer, 30.00; temperature of air, 80°. Winds: E.NE., S., SE. First part, light breezes; latter part, squalls of rain.

January 8. Lat. 4° 01′ N.; long. 25° 34′ W. Current, 5 miles, W. Barometer, 30.00; temperature, 82°. Winds: SE. to S. Light breezes and heavy rain squalls.

January 9. Lat. 3° 36′ N.; long. 25° 44′ W. Barometer, 30.00; temperature of air, 82°. Winds: S. by E., calms, N.NW. First part, light airs; middle part, cloudy and calms; latter part, light airs, with heavy rain.

January 10. Lat. 3° 11′ N.; long. 25° 40′ W. Barometer, 30.00; temperature of air, 82°. Winds: N.NE., calms. Commences with light breezes, and rainy; latter part calm and cloudy.

January 11. Lat. 1° 57′ N.; long. 25° 45′ W. Barometer, 30.00; temperature of air, 82°. Winds: calms, N.NE., NE. Commences calm; middle and latter parts, light breezes, with heavy rain squalls.

January 12. Lat. 1° 49′ N. long. 25° 45′ W. Barometer, 30.00; temperature of air, 81°. Winds: variable; light, variable airs and cloudy, with much rain; boarded the American schooner Flying Eagle, 25 days from Boston.

January 13. Lat. 1° 37′ N.; long. 25° 53′ W. Barometer, 30.00; temperature of air, 81°. Winds: NW. to NE. During this day light airs, shifting from NW. to NE; cloudy.

January 14. Lat. 1° 01′ N.; long. 26° 16′ W. Barometer, 30.00; temperature of air, 81°. Winds: SE., SE. by S. Moderate breezes and cloudy.

January 15. Lat. 0° 40′ S.; long. 27° 28′ W. Barometer, 30.07; temperature of air, 82°. Winds: SE., S.SE., S. by E. Fresh breezes and clear weather.

January 16. Lat. 2° 40′ S.; long. 29° 35′ W. Current, 8 miles, S. by E. Barometer, 29.98; temperature of air 81°. Winds: S. by E., S.SE. Fresh breezes and clear weather.

January 17. Lat. 4° 47′ S.; long. 30° 51′ W. Current, 10 miles, E.SE. Barometer, 30.00; temperature of air, 81°. Winds: S.SE. Moderate breezes and pleasant weather.

January 18. Lat. 6° 27′ S.; long. 32° 27′ W. Current, 8 miles, E. by S. Barometer, 29.98; temperature of air, 81°. Winds: S.SE., E. by S. Moderate breezes and clear weather."

Time and crossings from the Lizard to the Line—January.

Name of vessel.	From—	Date of sailing.	LONGITUDE OF CROSSING PARALLELS OF LATITUDE.																				Total days to—	
			Days.	45° N.	Days.	35° N.	Days.	30° N.	Days.	25° N.	Days.	20° N.	Days.	15° N.	Days.	10° N.	Days.	5° N.	Days.	Equator.	Days.	3° S.	Equator.	St. Roque.
Don Fernando	Lisbon	Jan. 1,1854	.....	.....	5	12	3	17¾	2⅛	18⅛	2⅛	21⅛	2⅛	23⅛	3⅛	24	2⅛	23¾	9	24¼	1	25¾	30⅛	32⅛
Margaret Mitchell	Greenock	1,1854	1	10	6⅛	12⅛	2⅛	17½	2⅛	20⅛	2⅛	20⅛	2	20¾	1⅛	22¼	3	22⅛	4⅛	27⅛	1⅛	30¾	26	28⅛
Restitution	Gibraltar	4,1820	.....	.....	2	11	5	16⅛	4	20	5⅛	20¾	2	19¾	2	19¾	4⅛	19⅛	4	21¼	3⅛	22	29	34
Means, east of Cape de Verds			3	3¾	4.5	11¾	3.5	17¼	3	19¾	3.5	21	2.2	21	2.3	22	3.3	22	5.8	24¼	2	26¼	28.5	31.6
Means of 17 Dutch vessels			3.6	11¾	6.8	16⅛	2.9	18	2.7	19	2.5	20¼	2.2	21	2.2	20¾	2.9	20¾	5.7	23¼	.....	.....	31.5	.....
Hydaspes	Swansea	Jan. 6,1854	6	11⅛	10	14¾	2	17⅛	2	20	4	22⅛	2	26	2	25¾	2	25¾	5	24¾	1⅛	28¾	35	38
Antilla	Plymouth	10,1856	2	10⅛	7	17	6	18	5	20¾	4⅛	22¾	2⅛	26⅛	2	27¼	2⅛	27⅛	4⅛	28¼	1⅛	29⅛	36	38⅛
Caspar	Liverpool	10,1851	12	14¾	9	15⅛	2	18¼	3	22⅛	3	25⅛	2	26¾	2	24¾	2⅛	22	3⅛	21¼	1⅛	23¾	39	41⅛
Hornet	London	12,1857	3	11	4⅛	17⅛	2	19⅛	1⅛	22⅛	1⅛	24¾	1⅛	26¾	2⅛	25¾	2	24⅛	3	26⅛	1¼	27⅛	21⅛	23⅛
Moses Taylor	Downs	11,1854	2⅛	10⅛	5	17⅛	4	21	3	22	5	24⅛	3	26⅛	2⅛	26	1⅛	25	5	28¼	2	30⅛	31⅛	34
Civilian	Liverpool	16,1557	6	12⅛	3	15¼	2¼	17⅛	3	21¼	2	24¼	1¾	26¼	2	23¾	2	22¾	5	24¼	1¼	26¼	27	29¼
Means, west of Cape de Verds			5.2	11¾	6.4	16¼	3	18¾	2.9	21⅛	3.3	24	2.1	26⅛	2.2	25⅛	2.1	24⅛	4.3	25⅛	1.5	27¾	31.5	34.1
Means of 17 Dutch vessels west of Cape de Verds			3.2	11⅛	5.5	17¼	3.2	20	2.8	22	2.7	24⅛	2.2	26	2.2	24	3.0	21⅛	6.2	22¾	.....	.....	31	.....

Ship Hornet, (Benson, Captain,) thirteen days out.

"Jan. 21. Lat. 31° 07′ N.; long. 19° 39′ W. Barometer, 30.10; air, 62°; water, 63°. Wind: N.NE. Rain squalls, heavy sea from N.NW., cloudy.

Jan. 22. Lat. 27° 59′ N.; long. 21° 34′ W. Barometer, 30.06; air, 66°; water, 65°. Wind: NE. Rain squalls, much sea from north.

Jan. 23. Lat. 24° 48′ N.; long. 22° 25′ W. Barometer, 30.00; air, 66°; water, 66°. Wind: E.NE. Hard rain squalls; much sea from north.

Jan. 24. Lat. 20° 59′ N.; long. 24° 40′ W. Barometer, 30.00; air, 68°; water, 67°. Wind: E. Rain squalls; much sea from north.

Jan. 25. Lat. 27° 26′ N.; long. 26° 42′ W. Barometer, 29.90; air, 69°; water, 71°. Wind: NE. Rain in squalls; much sea from the north and northwest.

Jan. 26. Lat. 14° 06′ N.; long. 26° 51′ W. Barometer, 29.80; air, 71°; water, 74°. Cloudy. Wind: moderate, east. Sea regular. Pleasant.

Jan. 27. Lat. 10° 44′ N.; long. 25° 47′ W. Barometer, 29.55; air, 75°; water, 78°. Cloudy dark weather. Wind fresh, E.NE. Smooth.

Jan. 28. Lat. 7° 18′ N.; long. 25° 09′ W. Barometer, 29.81; air, 77°; water, 79°. Pleasant smooth sea. Wind light, E.NE.

Jan. 29. Lat. 4° 37′ N.; long. 24° 27′ W. Barometer, 29.90; air, 79°; water, 79°. Cloudy, showery, variable; and NE. Passed through a tide rip.

Jan. 30. Lat. 2° 50′ N.; long. 24° 52′ W. Barometer, 29.90; temperature of air, 80°; of water, 80°. Winds: N.NE., variable. Light breezes and pleasant weather, with a long swell from the north.

Jan. 31. Lat. 1° 46′ N.; long. 25° 41′ W. Barometer, 29.90. Winds: SE., S.SE. Air, 82°; water, 81°. Light airs.

Feb. 1. Lat. 00° 11′ N.; long. 26° 36′ W. Current, half knot west. Barometer, 29.88; temperature of air, 81°; water, 82°. Winds: SE., variable. Light winds and showery.

Feb. 2. Lat. 1° 30′ S.; long. 27° 13′ W. Current, ½ knot west. Barometer, 29.92; temperature of air, 82°; water, 82°. Winds: SE., variable, S. and E. Light breezes and showery, with a smooth sea.

Feb. 3. Lat. 4° 08′ S.; long. 28° 10′ W. Barometer, 29.90; temperature of air, 82°; of water, 82. Winds: E., E.SE., SE. by S. Moderate breezes and heavy squalls with rain.

Feb. 4. Lat. 7° 17′ S.; long. 29° 28′ W. Current, W., ¼ knot per hour. Barometer, 29.88; temperature of air, 83°; of water, 82°. Winds: SE. by S., SE. Fresh breezes and passing clouds. Smooth sea. Many small fish about the ship this morning."

Ship Margaret Mitchell, (Thomas Jameson, captain,) Greenock to Bombay; ten days out.

"Jan. 11, 1854. Lat. 30° 16′ N.; long. 17° 35′ W. Current, E. by S., 22 miles. Barometer, 30.54; temperature of air, 63°. Winds: N., N.NE., NE. First part, fresh breezes with light showers of rain, a long rolling sea from the northward; middle and latter part, moderate and pleasant.

Jan. 12. Lat. 27° 49′ N.; long. 19° 33′ W. Current, 25 miles NW. Variation observed, 2 points west. Barometer, 30.55; temperature of air, 67°. First part, moderate breezes and cloudy; middle part, strong breezes; latter part, moderate. Winds: generally from the S. and E.

Jan. 13. Lat. 26° 07′ N.; long. 20° 24′ W. Current, S. 39° W., 14 miles. Barometer,

30.34; temperature of air, 65°. Winds: E.SE., E.NE., NE. Moderate and pleasant, with a little rain.

Jan. 14. Lat. 24° 15′ N.; long. 20° 11′ W. Current, 12 miles, E. by S. No observations of barometer or of time. Winds: N.NE., N.NW. First and middle parts, light and pleasant; latter part, breeze increasing, with showers of rain.

Jan. 15. Lat. 21° 50′ N.; long. 21° 17′ W. Variation observed, 18° W. Barometer, 30.40.; temperature of air, 71°. Winds: N.NW., N., NE. Light breezes and pleasant weather throughout.

Jan. 16. Lat. 20° 18′ N.; long. 20° 34′ W. Current, 18 miles S. ¾ W. Barometer, 30.32; temperature of air, 69°. Winds: N.NE., E.SE. Light winds and fine weather throughout.

Jan. 17. Lat. 17° 27′ N.; long. 20° 40′ W. Current, 10 miles W. Barometer, 30.22; temperature of air, 70°. Winds: E.NE., E. First part, light breezes; middle part, strong; latter part, moderate breezes and pleasant.

Jan. 18. Lat. 15° 05′ N.; long. 20° 41′ W. Barometer, 30.15.; temperature of air, 72°. Winds: E.NE., N.NE. Throughout moderate breezes and fine weather. Sailed through a track of discolored water for a distance of 30 miles, such as I would expect to find in soundings of 60 or 80 fathoms.

Jan. 19. Lat. 12° 14′ N.; long. 21° 49′ W. Current, 17 miles S., 40° W. Barometer, 30.15; temperature of air, 72°. Winds: NE. by N. Moderate winds and fine weather, with a smoky horizon.

Jan. 20. Lat. 9° 39′ N.; long. 22° 04 W. Current, 21 miles SW. Variation observed, 15° W. Barometer, 30.20; temperature of air, 76°; of water, 78°. Winds: NE., E.NE. Throughout this day moderate breezes and fine weather.

Jan. 21. Lat. 7° 48′ N.; long. 22° 10′ W. No perceptible current, but strong rippling. Variation observed, 14° W. Barometer, 30.18.; temperature of air, 79°; of water, 78½°. Winds: E.NE, variable, E.NE. Light breezes and clear weather; passed through strong ripplings, as if there was a strong current.

Jan. 22. Lat. 6° 17′ N.; long. 22° 25′ W. A small current of 4 miles SW. during the day. Variation observed, 14° W. Barometer, 30.08; temperature of air, 78°; of water, 80°. Wind: N. Light breezes and fine weather.

Jan. 23. Lat. 4° 36′ N.; long. 22° 25′ W. Current, 13 miles E. by S. in 24 hours. Barometer, 30.08; temperature of air, 78½°; of water, 79°. Winds: N., N.NE. Light breezes and fine weather; small nimbus clouds floating in the atmosphere.

Jan. 24. Lat. 3° 01′ N.; long. 22° 30′ W. Current, S. by E., nearly one mile per hour. Barometer, 30.10; temperature of air, 80°; of water, 80°. Winds: N.NE., E.. Light winds and fine weather throughout.

Jan. 25. Lat. 2° 07′ N.; long. 23° 30′ W. Current, 43 miles, S., 80° W. Barometer, 30.12. Temperature of air, 80°; of water, 80°. Winds: E., S., S. by W. First part light, and clear weather; middle and latter parts, cloudy with a few spits of rain; took in all the studding sails and braced sharp up.

Jan. 26. Lat. 0° 49′ N.; long. 25° 17′ W. Current, 44 miles, W. by S., these 24 hours. Barometer, 30.04.; temperature of air, 80°; of water, 80½°. Winds: S., S.SE., S. Light and passing clouds.

Jan. 27. Lat. 0° 21′ S.; long. 27° 23′ W. Current, 25 miles W., 81° N. Variation

observed, 12° W. Barometer, 30.08; temperature of air, 80°; of water, 80°; Winds: S., S. by W., S. by E. Moderate and clear.

Jan. 28. Lat. 2° 03′ S.; long. 28° 59′ W. Current, 8 miles, S. 40° W. Barometer, 29.98; temperature of air, 80°; of water, 80°. Winds: S., S.SE., S. by E. Throughout the day moderate winds and clear.

Jan. 29. Lat. 4° 38′ S.; long. 30° 40′ W. Variation observed, one point westerly. Barometer, 29.75; temperature of air, 80°; of water, 80°. Winds: S. by E., S.SE., SE. by S. Moderate breezes and pleasant weather.

Jan. 30. Lat. 7° 33′ S.; long. 31° 38′ W. Barometer, 29.80; temperature of air, 80°; of water, 80°. Winds: SE. by S., SE. Throughout these 24 hours moderate breezes and clear weather."

Barque Hydaspes, (William Reid,) Swansea, England, to Coquimbo; nineteen days out.

"Jan. 25, 1854. Lat. 30° 47′ N.; long. 17° 24′ W. Barometer, 30.32; temperature of air, 61°; of water, 63°. Winds: NE. by E., E.NE. Fresh breezes and squally, with showers of rain.

Jan. 26. Lat. 28° 12′ N.; long. 18° 52′ W. Variation observed, 22° 30′ W. Barometer, 30.37; temperature of air, 62°; of water, 63°. Winds: E.NE., E., N. First and middle parts, fresh breezes and cloudy; latter part, variable and cloudy.

Jan. 27. Lat. 25° 45′ N.; long. 19° 53′ W. Variation observed, 22° W. Barometer, 30.30: temperature of air, 64°; of water, 67°. Wind: E.SE. Moderate breezes throughout, with occasional squalls.

Jan. 28. Lat. 22° 42′ N.; long. 21° 11′ W. Variation observed, 20° W. Barometer, 30.32; temperature of air, 64°; of water, 68°. Winds: E.SE. Strong winds and hazy weather, with a high sea.

Jan. 29. Lat. 19° 52′ N.; long. 22° 36′ W. Barometer, 30.30; temperature of air 64°; of water, 68°. Wind: E. by S. Throughout, strong breezes and hazy weather. It was my intention to have gone inside the Cape Verde Islands, but finding the winds so strong I kept away to the westward of them.

Jan. 30. Lat. 17° 54′ N.; long. 24° 50′ W. Variation observed, 17° W. Barometer 30.20.; temperature of air, 65°; of water, 69°. Winds: E., E. by N. Strong breezes and cloudy weather.

Jan. 31. Lat. 15° 50′ N.; long. 26° 04′ W. Variation observed, 16° W. Barometer, 30.12; temperature of air, 70°; of water, 72°. Winds: E., E. by N. Fresh breezes and hazy weather.

Feb. 1. Lat. 13° 26′ N.; long. 25° 56′ W. Barometer, 30.13; temperature of air, 70°; of water, 74°. Winds: E. by S., E. Moderate breezes and thick hazy weather.

Feb. 2. Lat. 10° 48′ N.; long. 25° 41′ W. Barometer, 30.12; temperature of air, 72°; of water, 75°. Wind: E. Fresh breezes and cloudy weather.

Feb. 3. Lat. 8° 30′ N.; long. 25° 42′ W. Barometer, 30.12; temperature of air, 75°; of water 78°. Wind: E. throughout. Light and pleasant weather.

Feb. 4. Lat. 6° 18′ N.; long. 25° 43′ W. Barometer, 30.12; temperature of air, 78°; of water, 79°. Winds: E. by N., E.NE. Light breezes and fine weather.

Feb. 5. Lat. 4° 19′ N.; long. 25° 21′ W. Barometer, 30.09; temperature of air, 79°; of water, 80°. Wind: E.NE. Light breezes and passing showers.

Feb. 6. Lat. 3° 31′ N.; long. 25° 03′ W. Variation observed, 14° W. Barometer, 30.08; temperature of air, 80°; of water, 81°. Winds: E. by N., E. Light airs and rain.

Feb. 7. Lat. 2° 45′ N.; long. 24° 57′ W. Barometer, 30.07; temperature of air, 77°; of water, 80°. Winds: N.NE., variable. Light airs and cloudy; heavy showers of rain during the latter part.

Feb. 8. Lat. 2° 04′ N.; long. 25° 11′ W. Barometer, 30.09; temperature of air, 79°; of water, 81°. Winds: variable, N.NE., E. Light variable winds, with heavy rain.

Feb. 9. Lat. 1° 34′ N.; long. 25° 10′ W. Current, 13 miles, NW. Barometer, 30.09; temperature of air, 79°; of water, 81°. Wind: variable throughout, and squally, with rain.

Feb. 10. Lat. 1° 16′ N.; long. 25° 10′ W. Barometer, 30.07; temperature of air, 78°; of water, 80°. Winds: variable throughout, and calms, with rain.

Feb. 11. No observations. Barometer, 30.10; temperature of air, 78°; of water, 80°. Winds: variable and light, with frequent showers of rain.

Feb. 12. Lat. 00° 14′ N.; long. 24° 42′ W. Current, 17 miles, NW. Barometer, 30,08; temperature of air, 78°; of water, 80°. Winds: variable, S., SE. by S. First and middle parts, light variable airs, with rain; latter part, moderate breezes and fine weather.

Feb. 13. Lat. 1° 11′ S.; long. 26° 55′ W. Barometer, 30.08; temperature of air, 78°; of water, 80°. Winds: SE., S.SE. Light breezes and fine pleasant weather throughout.

Feb. 14. Lat. 2° 51′ S.; long. 28° 46′ W. Variation observed, 13° W. Barometer, 30.05; temperature of air, 76°; of water, 80°. Winds: S.SE., S. by E. Steady breezes and fine weather.

Feb. 15. Lat. 4° 40′ S.; long. 30° 11′ W. Current, 16 miles, west. Barometer, 30.05; temperature of air, 76°; of water, 80°. Winds: S.SE., SE. by S., SE. by E. Fine breezes and clear pleasant weather.

Feb. 16. Lat. 6° 54′ S.; long. 30° 51′ W. Current, 12 miles, W. Barometer, 30.07; temperature of air, 78°; of water, 81°. Winds: SE. by E., SE. Moderate breezes and fine clear weather.

Time and Crossings from the Lizard, England, to the Equator—February.

Name of vessel.	From—	Date of sailing.	LONGITUDE OF CROSSING THE PARALLELS OF—																				Total days to—	
			Days.	45° N.	Days.	35° N.	Days.	30° N.	Days.	25° N.	Days.	20° N.	Days.	15° N.	Days.	10° N.	Days.	5° N.	Days.	Equator.	Days.	3° S.	Equator.	St. Roque.
Henry A. Oscar	Hamburg	Feb. 16, 1856	3½	10¾	4½	16¾	2	18¾	2	21	2	22	2	22½	2	22½	2	22½	3	26	1	8	23	25
Hector	Leghorn	23, 1856	.....	.....	.....	.....	6	13¼	4	18½	4½	22¼	3	23¾	2	22½	5	18¾	8	20¼	2½	21½	32½	36
Means east of Cape de Verds			1.8	5¼	2.2	8¼	4	16	3	19¾	32	22	2.5	23	2	22½	3.5	20¾	5.5	23	1.8	24¾	27.8	30.5 E.
Means of 9 Dutch vessels east of Cape de Verds			5.2	11½	6.6	15	3	17½	2.4	19½	2	20¾	2	20¾	2.2	19¾	4.2	18¾	7.7	21¼	.....	.....	35.3	.....
Windward	London	Feb. 1, 1856	4	13¼	5	13¼	5	17	1½	18¾	2	21¾	2	25	2	27¼	1½	25¼	4½	24¾	1½	28	27½	3^{0}
David Brown	do.	1, 1855	2	13½	3	15¾	2	18¼	2	19½	3	22	5	25¾	2	26	2	26	2	28¼	1	29½	23	2^{5}
Broxbonberry	Portsmouth	4, 1842	6	9½	9	16¼	2¼	19½	2½	22	2	25½	1½	26	2	23	3	19½	8	16½	3	18¾	36¼	4^{0}
Gravina	London	7, 1855	2	11	7	18¼	4	18¼	3½	20½	1½	23¾	1½	25½	3½	25¾	1½	25¾	5	28¼	1½	31	29½	3^{2}
Romance of the Sea	do.	8, 1855	2	10¾	4	17¼	3	18¼	2½	19¾	2	23¾	2	26¾	2	27½	1½	27¾	2½	28¾	1	30½	21½	$2^{3\frac{1}{2}}$
Pilgrim	Cardiff	11, 1852	6	14	4	21½	2	23¾	2	25	2	26	2	27	2½	23	4	24	15½	20	4½	23	40	4^{5}
Frothingham	London	14, 1854	4	13¾	4	18½	2	20	2	23¼	1½	25¼	1½	25½	2	23¾	2	23	7	23¼	2	25	26	$2^{8\frac{1}{2}}$
Ganges	do.	19, 1856	2	13¼	4½	23¼	2½	25	5	23	2½	24¾	3½	26	2	24¾	2	24	5½	25¾	2	27½	29½	$3^{2\frac{1}{2}}$
Broxbonberry	Portsmouth	19, 1840	6	14	5	19½	4	22¼	2	23	2½	25½	2	26	3	26	2	20	5	20½	2½	22¾	31½	35
Roman	London	22, 1851	4	12¾	5	17¼	1½	19½	1½	22	1½	25	1	26	1½	27	1½	26	3½	25	1½	27½	21	23
Emu	Gloucester	26, 1849	7	12¾	5	20	2	21¾	1½	23½	2	24½	2	26	2	24	2	22	8½	21¼	2	22¼	32	36
Means west of Cape de Verds			4.1	12½	5	18¼	2.7	20¼	2.4	21¾	2	24¼	2.2	26	2.2	25¼	2.1	24	6.1	23¾	2	26	28.9	31.9 W.
Means of 11 Dutch vessels west			4	12¾	6.6	16¼	4	18¾	2.5	21¼	2.5	24½	2.2	25¾	1.9	23½	2.6	21¼	6.6	21	.....	.....	32 9	.....

Ship Romance of the Sea, (William W. Henry,) London to Canton; 10 days out.

"Feb. 18, 1855. Lat. 30° 10′ N.; long. 18° 10′ W. Current, NE., 1½ knot per hour. Barometer, 29.55.; temperature of air, 68°; of water, 64°. Winds: SW., W.SW. Strong breezes and a heavy sea rolling down from the NW.

Feb. 19. Lat. 29° 20′ N.; long. 19° 00′ W. Current, NE., 1½ knot per hour. Barometer, 29.65; temperature of air, 67°; of water, 65°. Winds: W.SW., W.NW. Strong breezes and a heavy sea; wind varying in squalls; tacked several times as it became necessary.

Feb. 20. Lat. 26° 00′ N.; long. 19° 28′ W. Current, E.NE., 1 mile per hour. Barometer, 29.85; temperature of air, 68°; of water, 67°. Winds: NW., N., NE. moderate breezes and pleasant weather.

Feb. 21. Lat. 24° 13′ N.; long 21° 10′ W. Barometer, 29.95; temperature of air, 67°; of water, 67°. Wind: NE. Throughout, moderate breezes and pleasant weather.

Feb. 22. Lat. 22° 01′ N.; long. 22° 40′ W. Barometer, 29.95; temperature of air, 68°; of water, 70°. Winds: E.NE., NE. by E. Light and pleasant weather; passed a ship bound the same way.

Feb. 23. Lat. 19° 38′ N.; long. 24° 30′ W. Current, ½ mile per hour, N. ½ E. Barometer, 29.90; temperature of air, 70°; of water, 71°. Winds: NE. by E., E.NE. Moderate trade-winds and pleasant weather.

Feb. 24. Lat. 16° 21′ N.; long. 26° 24′ W. Current, if any, setting north. Barometer, 29.85; temperature of air, 71°; of water, 73°. Winds: NE., NE. by E. Moderate trade winds and pleasant throughout.

Feb. 25. Lat. 12° 12′ N.; long. 27° 13′ W. Barometer, 29.70; temperature of air, 74°; of water, 75°. Winds: NE., NE. by E., E.NE. Moderate trades and pleasant weather.

Feb. 26. Lat. 9° 12′ N.; long. 27° 35′ W. Fifteen miles of current during the day, N. by E. Barometer, 29.70; temperature of air, 74°; of water, 77°. Wind: E., Light winds and pleasant weather; passed a ship standing north.

Feb. 27. Lat. 5° 10′ N.; long. 27° 42′ W. Current, N., half a mile an hour. Barometer, 29.65; temperature of air, 77°; of water, 79. Winds: E., SE. Moderate trades and cloudy.

Feb. 28. Lat. 2° 48′ N.; long. 28° 15′ W. Barometer, 29.80; temperature of air, 76°; of water, 78°. Winds: SE., S., NE. Commences moderate; clouds coming from the south; middle and latter parts, baffling, with thick weather and rain.

March 1. Lat. 00° 58′ N.; long. 28° 27′ W. Barometer, 29.75; temperature of air, —°; of water, —°. Winds: NE., SE., SE. by S. Magnetic variation observed, 8° 10′ W. Commences, cloudy and squally, with rain; at 4 a. m. wind hauling to SE., and clearing up; hope it is the beginning of the SE. trades; I have been very fortunate in getting through the doldrums; ends clear.

March 2. Lat. 1° 55′ S.; long. 29° 55′ W. Barometer, 29.75; temperature of air, 78°; of water, 79°. Winds: SE. by S., SE. Moderate SE. trades and beautiful weather.

March 3. Lat. 4° 35′ S.; long. 31° 07′ W. A slight current perceptible, setting west. Barometer, 29.70; temperature of air, 79°; of water, 79°. Winds: SE., SE. Eby., E.SE. Moderate trades and fine weather.

March 4. Lat. 7° 20′ S.; long. 31° 16′ W. Barometer, 29.80; temperature of air, 79°; of water, 80°. Winds: E.SE., SE. Fine trades and very pleasant weather."

Ship David Brown, (George L. Brewster,) London to Bombay; 7 days out.

"Feb. 7, 1855. Lat. 29° 21′ N.; long. 18° 22′ W. Barometer, 30.15; temperature of air,

62°; of water, 65°, Winds: W.SW., SW. Moderate and pleasant; tacked several times during the night.

Feb. 8. Lat. 27° 29′ N.; long. 18° 44′ W. Barometer, 29.94; temperature of air, 65°; of water, 67°. Winds: SW., W., baffling from SW. to W. A heavy swell from the N.; ends cloudy.

Feb. 9. Lat. 25° 48′ N.; long. 19° 30′ W. Barometer, 30.15; temperature of air, 67°; of water, 67°. Wind: W. Strong breezes and squally, first part; middle and latter parts, pleasant.

Feb. 10. Lat. 22° 48′ N.; long. 21° 00′ W. Barometer, 30.10; temperature of air, 68°; of water, 68°. Winds: W.NW., N.NW. Light and pleasant.

Feb. 11. Lat. 21° 55′ N.; long. 19° 45′ W. Barometer, 30.10; temperature of air, 68°; of water, 68°. Winds: W.NW., N.NE. Moderate and overcast; swell from northward and westward.

Feb. 12. Lat. 20° 02′ N.; long. 21° 03′ W. Barometer, 30.15; temperature of air; 67°; of water, 69°. Winds: N. to E. Cloudy and overcast weather, with intervals of calms; great swell from NW.

Feb. 13. Lat. 19° 02′ N.; long. 23° 25′ W. Barometer, 30.18; temperature of air, 68°; of water, 72°. Winds: N.NE., E. Faint baffling airs, with intervals of calms.

Feb. 14. Lat. 18° 25′ N.; long. 24° 50′ W. Barometer, 30.21; temperature of air, 68°; of water, 72°. Winds: E. to N. Light and pleasant; the Island St. Antonio in sight all day; a shoal of black fish around us; have not seen any flying fish so far.

Feb. 15. Lat. 17° 24′ N.; long. 25° 33′ W. Barometer, 30.07; temperature of air, 72°; of water, 75°. Winds: variable and calms. A heavy ground swell from the northward; sky overcast, and with broken clouds; the Island of St. Antonio in sight.

Feb. 16. Lat. 16° 55′ N.; long. 25° 40′ W. Barometer, 30.10; temperature of air, 73°; of water, 76°. Winds: N.NE., NE., E. First part, faint airs; middle and latter parts, light breezes and pleasant weather.

Feb. 17. Lat. 14° 58′ N.; long. 25° 48′ W. Current, W., ½ knot per hour. Barometer, 30.13; temperature of air, 73°; of water, 76°. Winds: N.NE., NE., N. by E. Moderate breezes and pleasant; passing clouds; not much swell to day; the water very luminous during the night.

Feb. 18. Lat. 12° 28′ N.; long. 26° 03′ W. Current, W., ¼ mile per hour. Barometer, 30.02; temperature of air, 76°; of water, 79°. Winds: N. by E., E., SE. Irregular trades through the day; a very heavy dew during the night, and luminous appearances in the water.

Feb. 19. Lat. 10° 19′ N.; long. 26° 01′ W. Barometer, 30.10; temperature of air, 78°; of water, 81°. Winds: NE., E. by N., E. Moderate breezes and pleasant weather throughout the day.

Feb. 20. Lat. 7° 56′ N.; long. 26° 00′ W. Barometer, 30.09; temperature of air, 79°; of water, 81°. Winds: E.NE., NE. Moderate, with pleasant weather and a changeable sky.

Feb. 21. Lat. 4° 59′ N.; long. 26° 03′ W. Barometer, 30,03; temperature of air, 80°; of water, 83°. Winds: E.NE., E. by S., E.SE., Unsteady breezes, and heavy squalls, at times, of wind and rain; a swell from the southward.

Feb. 22. Lat. 2° 47°′ N.; long. 26° 25′ W. Barometer, 30.04; temperature of air, 82°; of water, 83°. Winds: SE., SE. by S. First, light, with some heavy rain; wind settling more

to the SE.; middle and latter parts, pleasant; crossed the equator 23¼ days out, which with the winds we have experienced is not so very bad.

Feb. 23. Lat. 00° 26′ S.; long. 28° 11′ W. Barometer, 30.04; temperature of air, 81°; of water, 83°. Winds: SE. by E., S.SE. Moderate breezes and fine pleasant weather.

Feb. 24. No. observation. Barometer, 30.03; temperature of air, 83°; of water, 82°. Winds: southward and eastward. Moderate breezes, with spits of rain.

Feb. 25. Lat. 6° 14′ S.; long. 30° 25′ W. Barometer, 30.04, temperature of air, 82°; of water, 82°. Winds: E.SE. throughout, heading up south; pleasant weather; changeable clouds."

Ship Gravina, (Caleb Sprague,) London to Shanghai; 13 days out.

"Feb. 20, 1855. Lat. 30° 28′ N.; long. 18° 14′ W. Current, S. 19° W., 1 mile per hour. Barometer, 30.12; temperature of air, 60°; of water, 60°. Winds: W.NW., and calms. Fresh breezes and squalls, first and middle parts; latter part, calm.

Feb. 21. Lat. 29° 05′ N.; long. 17° 32′ W. Barometer, 30.12; temperature of air, 63°; of water, 62°. Winds: calm, W. First part, calm; middle and latter, light airs and pleasant.

Feb. 22. Lat. 29° 50′ N.; long. 18° 20′ W. Barometer, 30.15; temperature of air, 64°; of water, 62°. Winds: W., NW. Light breezes throughout, with passing clouds.

February 23. Lat. 27° 27′ N.; long. 19° 47′ W. Barometer, 30.20; temperature of air, 65°; of water, 63°. Winds: N.NW, N., NE. High breezes throughout.

February 24. Lat. 24° 28′ N.; long. 21° 26′ W. Barometer, 30.17; temperature of air, 66°; of water, 66°. Winds: E.NE. Moderate breezes and fine weather throughout.

February 25. Lat. 20° 51′ N.; long. 23° 43′ W. Magnetic variation, 21° W. Barometer, 30.10. Winds: E.NE. Fresh breezes and a heavy swell from the W.NW.

February 26. Lat. 17° 58′ N.; long. 25° 34′ W. Barometer, 30.10; temperature of air, 67°; of water, 69°. Winds: E.NE., NE. All these 24 hours moderate breezes and pleasant.

February 27. Lat. 14° 55′ N.; long. 25° 42′ W. Barometer, 30.02; temperature of air, 70°; of water, 71°. Winds: NE., E.NE. Light breezes and pleasant weather. The island of St. Antonio in sight; distant about 20 miles.

February 28. Lat. 11° 49′ N.; long. 25° 40′ W. Barometer, 30.00; temperature of air, 72°; of water, 74°. Winds: E.NE., NE. Moderate breezes and cloudy horizon.

March 1. Lat. 8° 52′ N.; long. 26° 08′ W. Barometer, 29.98. Winds: E., E.NE., NE. Light breezes throughout.

March 2. Lat. 5° 53′ N.; long. 25° 46′ W. Barometer, 29.99; temperature of air, 75°; of water, 78°. Winds: NE. to E.NE. Light breezes throughout.

March 3. Lat. 4° 09′ N.; long. 25° 48′ W. Barometer, 29.95; temperature of air, 75°; of water, 78°. Winds: E.NE., N. Moderate and pleasant; latter part rain.

March 4. Lat. 2° 48′ N.; long. 26° 46′ W. Current, S. 34° E., about 17 miles in 24 hours. Barometer, 29.90; temperature of air, 74°; of water, 78°. Winds: variable, S.SW. First part squally, with heavy rain; latter part pleasant.

March 5. Lat. 2° 16′ N.; long. 27° 32′ W. Barometer, 29.97; temperature of air, 79°; of water, 79°. Winds: S.SW., S., S.SE. Light airs and calms throughout, with a heavy swell from the NE.

March 6. Lat. 1° 22′ N.; long. 27° 43′ W. Current, ½ mile per hour, N. by E. Barometer, 29.95; temperature of air, 78°; of water, 78°. Winds: S.SE. Light winds, with a NE. swell.

March 7. Lat. 00° 26′ S.; long. 28° 21′ W. Variation observed, 11° W. Barometer, 29.95; temperature of air, 77°; of water, 77°. Winds: SE. by S., SE. Light airs and pleasant.

March 8. Lat. 1° 40′ S.; long. 29° 05′ W. Barometer, 29.90; temperature of air, 78°; of water, 77°. Winds: SE. by S., S.SE. Light breezes, with occasional light squalls.

March 9. Lat. 3° 32′ S.; long. 31° 04′ W. Barometer, 29.92; temperature of air, 78°; of water, 78°. Winds: variable, S. SE. Light airs and light squalls.

March 10. Lat. 5° 38′ S.; long. 32° 17′ W. Barometer, 29.93; temperature of air, 76°; of water, 78°. Winds: S.SE. Throughout light and pleasant.

March 11. Lat. 6° 53′ S.; long. 32° 49′ W. Barometer, 29.90; temperature of air, 76°; of water, 78°. Winds: SE., variable. Light and pleasant weather."

Time and Crossings from the Lizard to the Line—March.

Name of vessel.	From—	Date of sailing.	LONGITUDE OF CROSSING THE PARALLELS OF—																				Total days to—	
			Days.	45° N.	Days.	35° N.	Days.	30° N.	Days.	25° N.	Days.	20° N.	Days.	15° N.	Days.	10° N.	Days.	5° N.	Days.	Line.	Days.	3° S.	Equator.	St. Roque.
Bremen	London	Mar. 14, 1854	2	10	5	15½	3	18¾	2	20	2	20¾	3	21½	3	21¾	2½	21½	5	23	1½	23½	27½	30
Eglantine	Lisbon	20, 1855	.....	.....	2½	11½	7	17½	2	20½	3	24¾	2	24½	1½	24½	2½	24	7	24¾	3	25½	27½	32
Thomas Strickland	London	24, 1849	2½	12	4½	13	3	17½	1½	19	2	19¾	1½	19½	2	18	5	15¾	12	13½	1½	16	34	36½
Means east of Cape de Verds			1.5	7½	4.	13½	4.3	18.	1.8	19¾	2.3	22	2.2	21¾	2.2	21½	3.3	20½	8	20½	2.	21½	29.7	32.8
Means of 5 Dutch vessels east			7.6	10¾	5.3	16	2.6	18¾	2.3	20	2.5	20½	2.2	20½	2.3	19¾	3.3	20½	6.5	20½	.....	.....	36.6	.....
Titania	Hamburg	Mar. 3, 1857	5	11½	4½	15½	4	20½	2	22¾	2	25½	1½	26½	1½	26½	2	25½	6½	25½	3	25¾	29	33
Paulista	Havre	7, 1854	2	12½	3½	16¾	2	19¾	2	22½	2	26½	2	28½	2	28½	2	29½	4	33	1½	33½	21½	23½
Thomas Campbell	Greenock	15, 1851	9	10½	6	17	2½	20	2	22	2½	25½	2½	25½	2	23	2½	20	7	24½	1½	26	36	38½
Broxbonburg	Portsmouth	16, 1844	3	9¾	5	16¾	2½	19½	3	22	2	24	2	26	2	24½	2½	21¾	10	19½	2	20	32	35½
Abbot	Bordeaux	20, 1852	1	5½	10	12	5	17½	3	21½	2	23¾	2	25	2	24½	2	23½	6½	22¾	5	25	33½	39
E. F. Willets	Cardiff	26, 1856	3½	13½	7½	14	3	19	4	23½	2	26	3	27½	2½	26½	2½	26	3	27½	1½	29½	31	33½
Means west			3.9	10½	6.	15½	3.2	19½	2.7	22½	2.1	25	2.2	26½	2.	25½	2.2	24½	6.2	25½	2.4	26½	30.5	33.8
Means of 15 Dutch vessels west			3.1	11½	6.1	17½	3	20½	2.6	22	2.2	24½	2	25¾	1.9	23½	2.5	21½	7.	21¾	.....	.....	30.5	.....

Ship Paulista, (F. Calenge,) Havre, France, to Valparaiso ; seven days out.

"March 14, 1855. Lat. 29° 58′ N.; long. 19° 45′ W. Barometer, 30.07 ; temperature of air, 65°; of water, 63°. Winds: E.NE., NE., E.NE. Moderate, with a little rain.

March 15. Lat. 27° 15′ N.; long. 21° 51′ W. Barometer, 30.06 ; temperature of air, 66°; of water, 68°. Winds: E.NE., NE. Light irregular breeze and cloudy.

March 16. Lat. 24° 38′ N.; long. 22° 20′ W. Barometer, 30.00 ; temperature of air, 68°; of water, 66°. Winds : NE. Light and pleasant ; smooth sea.

March 17. Lat. 22° 14′ N.; long. 24° 42′ W. Barometer, 30.01 ; temperature of air, 70°; of water, 72°. Winds: E.NE., NE., NE. by E. Light winds and cloudy, with a little rain ; sea smooth.

March 18. Lat. 19° 55′ N.; long. 26° 27′ W. Barometer, 30.04 ; temperature of air, 71°; of water, 72°. Winds : NE., E.NE. Moderate, and overcast with threatening appearances.

March 19. Lat. 17° 15′ N.; long. 27° 52′ W. Barometer, 30.07 ; temperature of air, 74°; of water, 75°. Winds : NE., E.NE. Moderate, and weather cloudy; made the island of San Antonio.

March 20. Lat. 13° 54′ N.; long. 28° 10′ W. Barometer, 30.06 ; temperature of air, 75°; of water, 77°. Winds: NE. by E., E.NE. A short calm first part; middle and latter parts a fine breeze.

March 21. Lat. 10° 32′ N.; long. 28° 38′ W. Barometer, 30.01 ; temperature of air, 76°; of water, 79°. Winds: NE., E.NE. Cloudy weather and stiff breeze.

March 22. Lat. 7° 31′ N.; long. 29° 14′ W. Barometer, 30.02 ; temperature of air, 81°; of water, 81°. Winds: E.NE. Throughout moderate breeze and fine weather.

March 23. Lat. 4° 45′ N.; long. 29° 37′ W. Barometer, 30.00 ; temperature of air, 80°; of water, 82°; Winds : E.NE., NE., S.SE. Moderate, light breeze ; sky overcast, with a few drops of rain.

March 24. Lat. 3° 03′ N.; long. 30° 00′ W. Barometer, 30.00 ; temperature of air, 80°; of water, 82°. Winds : variable, from NE. to SE. Light ; very cloudy, with heavy rains, thunder and lightning ; calms between the showers.

March 25. Lat. 2° 44′ N.; long. 30° 15′ W. Barometer, 30.00 ; temperature of air, 82°; of water, 84°. Winds: variable, S. and E. and N. and E. Light airs and calms, with frequent rains; sea smooth.

March 26. Lat. 1° 47′ N.; long. 31° 18′ W. Barometer, 30.02 ; temperature of air, 82°; of water, 83°. Winds: SE., E., S.SE. Light breezes and calms throughout, with occasional showers.

March 27. Lat. 0° 08′ S.; long. 33° 01′ W. Barometer, 30.04; temperature of air, 82°; of water, 83°. Winds : S., S.SE., SE. ¼ S. Light breezes and pleasant.

March 28. Lat. 2° 47′ S.; long. 33° 30′ W. Barometer, 30.04 ; temperature of air, 84°; of water, 84°. Winds: S.SE., SE. Light breezes and beautiful weather ; smooth sea.

March 29. Lat. 5° 18′ S.; long. 34° 09′ W. Barometer, 30.02; temperature of air, 84°; of water, 84°. Winds: E.SE., E.NE., SE. Moderate breezes ; cloudy weather, with slight rain at times."

Barque Eglantine, (Gleason,) Lisbon to Rio de Janeiro; ten days out.

"March 30, 1855. Lat. 30° 04′ N.; long. 17° 28′ W. Barometer, 30.20; temperature of air, 62°; of water, 62°. Winds: NW., N., NE. Fine breezes and pleasant weather, with a heavy swell setting from the NW. At 11 p. m. made the island of Palma, one of the Canaries.

March 31. Lat. 27° 37′ N.; long. 18° 48′ W. Barometer, 30.10; temperature of air, 64°; of water, 67°. Winds: E.NE., E., NE. Fresh trades and cloudy weather.

April 1. Lat. 25° 29′ N.; long. 20° 28′ W. Barometer, 30.10; temperature of air, 65°; of water, 70°. Winds: NE. Fresh trades and cloudy; saw some turtle.

April 2. Lat. 23° 08′ N.; long. 22° 02′ W. Barometer, 29.90; temperature of air, 68°; of water, 71°. Winds: E.NE., NE. First and latter parts, fresh breezes and cloudy; middle part light.

April 3. Lat. 20° 57′ N.; long. 23° 07′ W. Barometer, 30.00; temperature of air, 70°; o water, 71°. Winds: NE., E.NE. Moderate breezes and pleasant weather.

April 4. Lat. 18° 47′ N.; long. 24° 30′ W. Barometer, 30.01; temperature of air, 70°; of water, 72°. Winds: NE., E.NE. Moderate breezes and fine weather.

April 5. Lat. 16° 57′ N.; long. 25° 30′ W. Barometer, 29.90; temperature of air, 73°; of water, 72°. Winds: NE. Moderate breezes and pleasant. Made the island of San Antonio. The air is quite cool for this latitude.

April 6. Lat. 14° 12′ N.; long. 24° 50′ W. Barometer, 29.90; temperature of air, 75°; of water, 73°. Winds: E.NE., E. First part, fresh breezes and flawy. I experienced here an easterly current of about half a mile an hour. Middle and latter parts, moderate breezes and hazy.

April 7. Lat. 11° 28′ N.; long. 24° 25′ W. Barometer, 29.95; temperature of air, 76°; of water, 75°. Winds: E.NE. Fine breezes and pleasant throughout; latter part somewhat hazy. Nothing of note occurred except that I find the current sets us to the eastward, although we are steering S. by W. ½ W., with one point westerly variation.

April 8. Lat. 8° 56′ N.; long. 24° 22′ W. Barometer, 29.90; temperature of air, 75; of water, 78°. Winds: E.NE., NE. Light and pleasant; a swell setting from NE. The air very phosphorescent at night.

April 9. Lat. 7° 16′ N.; long. 24° 16′ W. Barometer, 29.90; temperature of air, 78° of water, 78°. Winds: N.NE., NE., N. Light winds and baffling airs, with pleasant weather. Passed an oil cask.

April 10. Lat. 5° 14′ N.; long. 24° 06′ W. Barometer, 29.90; temperature of air, 80°; of water, 80°. Winds: N.NE. First part, light winds and pleasant; middle part, baffling winds and heavy rains; at 8 a. m. cleared up; latter part, baffling winds and calms.

April 11. Lat. 3° 54′ N.; long. 24° 06′ W. Barometer, 29.95; temperature of air, 81°; of water, 82°. Winds: NE., NW. Calms, light airs and calms, with a swell from the NE. Saw a great number of fish, (bonitos and skip jacks.)

April 12. Lat. 3° 28′ N.; long. 24° 10′ W. Barometer, 29.95; temperature of air, 83°; of water, 82°. Winds: NW.N. Calms, light baffling airs and calms.

April 13. Lat. 2° 49′ N.; long. 24° 26′ W. Barometer, 29.90; temperature of air, 85°; of water, 82°. Winds: Light variable airs and calms. A little wind would be very acceptable at this present time. Current setting to the westward 10 miles a day this 24 hours.

April 14. Lat. 2° 26′ N.; long. 24° 38′ W. Barometer, 29.90; temperature of air, 84°; of water, 82°. Winds: N. and W. Light breezes and showery.

April 15. Lat. 1° 35′ N.; long. 24° 30′ W. Barometer, 29.85; temperature of air, 82°; of water, 82°. Winds: SW. Variable light breezes, with rain. Saw large numbers of fish. A schooner in company with us, bound south.

April 16. Lat. 0° 56′ N.; long. 24° 30′ W. Barometer, 29.90; temperature of air, 83°; of water, 82°. Winds: SE., S.SW. Light baffling winds from SE. to SW., with occasional showers of rain squalls. Two sails in company, bound south.

April 17. Lat. 0° 23′ N.; long. 24° 40′ W. Barometer, 30.00; temperature of air, 79°; of water, 81°. Winds: variable, light and rainy; the barometer rose to 30. for once again.

April 18. Lat. 1° 00′ S.; long. 24° 44′ W. Barometer, 30.00; temperature of air, 80°; of water, 82°. Winds: N.NW., N.NE. Light breezes and cloudy, damp weather.

April 19. Lat. 1° 53′ S.; long. 24° 46′ W. Barometer, 29.95; temperature of air, 84°; of water, 82°. Winds: NE. Calms. Where can the SE. trades be? I am discouraged, having been here 12 days with scarcely any wind. Latter part, a breeze springing up.

April 20. Lat. 2° 38′ S.; long. 24° 53′ W: Barometer, 29.95; temperature of air, 84°; of water, 82°. Winds: SE. Moderate breeze and fine weather. I wish I had crossed by your directions; it would have made my distance greater to run, but I think I would have made it up in time.

April 21. Lat. 3° 12′ S.; long. 25° 08′ W. Barometer, 29.95; temperature of air, 82°; of water, 82°. Winds: SE., E.SE. Moderate breezes and fine weather, with light showers of rain.

April 22. Lat. 5° 42′ S.; long. 26° 58′ W. Barometer, 29.95; temperature of air, 81°; of water, 82°. Winds: S.SE., SE. Moderate breezes and cloudy, with flaws of wind and light showers of rain.

April 23. Lat. 7° 58′ S.; long. 28° 19′ W. Barometer, 29.85; temperature of air, 82°; of water, 82°. Winds: S.SE., SE. by S. Fresh breezes and pleasant weather."

Time and Crossings from the Lizard to the Line—April.

Name of vessel.	From—	Date of sailing.	LONGITUDE OF CROSSING PARALLELS OF LATITUDE.																					Total days to—	
			Days.	45° N.	Days.	35° N.	Days.	30° N.	Days.	25° N.	Days.	20° N.	Days.	15° N.	Days.	10° N.	Days.	5° N.	Days.	Line.	Days.	30° S.		Equator.	St. Roque.
St. Germain	Bordeaux	April 23, 1855	1⅛	10¾	4	17⅛	2	19	3	21⅛	2	23¾	2	24¼	1⅛	24¾	5½	24¼	3	27⅛	1	30½		24½	26¼
Mean of 23 Dutch vessels, east Cape Verd			3	10⅛	5 4	15¾	2.5	17¼	2.8	19⅛	2.2	20¾	1.7	21¼	2.4	20¾	4.9	19½	6.9	23¼	.....	.....		31.8	.....
Starling	London	April 1, 1838	2½	10½	3⅛	17	2½	19¼	2½	22¾	4	26¼	1⅛	25⅛	2½	22¼	3	18¼	5½	17	2	21		27⅛	31
Earl of Clare	....do	4, 1842	4	12	6	16½	3	18½	3	21¼	3	29⅛	2	25⅛	2	25¾	3	21½	6	21¼	2⅛	23		32	36
J. B. Lancaster	Cadiz	4, 1855	.....	.....	1	10¼	3	18½	2	21¾	1⅛	25¾	2⅛	27⅛	2⅛	28	2⅛	28	5	29⅛	1⅛	30		20	22⅛
Jas. Baines	Liverpool	8, 1856	4	9	6⅛	16	2½	21½	2⅛	24	2⅛	25½	1½	27¾	1¼	28¼	1¾	27¾	2¾	30¼	1	32		25¼	27¼
Gloriana	London	14, 1855	3	11⅛	3	16¾	2	19¼	2½	21½	1⅛	24¼	2	26½	2	26½	1⅛	26⅛	4½	29	1	31¼		22	24⅛
Eagle Wing	....do	18, 1855	2	10¼	4	17⅛	2⅛	21½	1⅛	23½	2	27¼	2	27¼	1⅛	27	1⅛	27¼	4	29¼	2	31¾		21	24¼
Gulickauf	Hamburg	24, 1856	9	10¼	4½	14½	2¾	18¾	2	21¼	3	22⅛	2½	25¾	2	22¾	4	22¼	3	25¾	1⅛	27		32¾	35⅛
Aetos	Liverpool	25, 1856	5⅛	12¼	6	14½	2	20	1⅛	23	1⅛	24	3	25¼	2	25¼	2	24¾	5	25¾	1	26½		29	31
Means W			3.7	9⅛	4.3	15¼	2.5	19½	2.2	22½	2.4	25	2.1	26¼	2	25¾	2.4	24⅛	4.5	26	1.6	27¾		26.1	2.9
Means of 39 Dutch vessels, west Cape Verd			3.8	11⅛	4.9	17¼	2.6	19	2.4	21½	2.3	24⅛	1.9	25¾	1.9	23¾	3	21¼	5.8	23¾	.....	.....		28.6	.....

Ship Earl of Clare, (Scott,) London to Bombay; twelve days out.

"April 16, 1842. Lat. 30° 48′ N.; long. 18° 12′ W. Winds: NW. Variable, light breezes.

April 17. Lat. 29° 40′ N.; long. 18° 24′ W. Winds: NE. Variable, light and variable.

April 18. Lat. 27° 14′ N.; long. 19° 05′ W. Winds: NE. Moderate breezes and pleasant.

April 19. Lat. 26° 20′ N.; long. 20° 20′ W. Winds: NE. Moderate breezes and pleasant.

April 20. Lat. 24° 12′ N.; long. 21° 10′ W. Winds: NE. Light breezes and cloudy.

April 21. Lat. 23° 16′ N.; long. 21° 04′ W. Winds: NE., NW. by W. Light and pleasant.

April 22. Lat. 21° 18′ N.; long. 23° 38′ W. Winds: NW.N. Fine breezes and pleasant.

April 23. Lat. 19° 40′ N.; long. 25° 29′ W. Winds: NE.

April 24. Lat. 16° 55′ N.; long. 26° 13′ W. Winds: E. Moderate breezes.

April 25. Lat. 14° 05′ N.; long. 25° 38′ W. Winds: E., throughout.

April 26. Lat. 12° 24′ N.; long. 24° 28′ W. Winds: E.NE.

April 27. Lat. 9° 54′ N.; long. 25° 26′ W. Winds: E.NE.

April 28. Lat. 8° 03′ N.; long. 22° 56′ W. Winds: NE.

April 29. Lat. 6° 05′ N.; long. 22° 00′ W. Winds: N.

April 30. Lat. 3° 37′ N.; long. 21° 39′ W. Winds: N., and variable and light.

May 1. Lat. 3° 27′ N.; long. 21° 55′ W. Winds: variable.

May 2. Lat. 2° 53′ N.; long. 21° 48′ W. Winds: N.NW., and variable; squally, with heavy rain.

May 3. Lat. 2° 40′ N.; long. 21° 53 W. Winds: NW., W.

May 4. Lat. 2° 10′ N.; long., no observation. Winds: W.NW.

May 5. Lat. 1° 22′ N.; long. 21° 02′ W. Winds: W.NW., NW.

May 6. Lat. 0° 09′ N.; long. 21° 17′ W. Winds: variable, SE.

May 7. Lat. 0° 29′ S.; long. 22° 08′ W. Winds: SE. and variable.

May 8. Lat. 2° 02′ S.; long. 22° 30′ W. Winds: variable and SE.

May 9. Lat. 3° 52′ S.; long. 23° 20′ W. Winds: SE. to E.SE.

May 10. Lat. 5° 27′ S.; long. 24° 10′ W. Winds: SE., and variable.

May 11. Lat. 7° 33′ S.; long. 25° 26′ W. Winds: SE. Moderate breezes and pleasant weather.

Barque J. B. Lancaster, (Wm. Somers,) Cadiz to Rio de Janeiro; 4 days out.

"April 7, 1855. Lat. 29° 28′ N.; long. 19° 24′ W. Barometer, 29.94; temperature of air, 64°; of water, 64°. Winds: E.NE., NE. by E. First and second parts, light breezes; latter part, fresh breezes, with rain.

April 8. Lat. 26° 57′ N.; long. 21° 45′ W. Barometer, 29.92; temperature of air, 66°; of water, 67°. Winds: NE. by E., E.NE. Fresh breezes and passing clouds, with rain.

April 9. Lat. 24° 08′ N.; long. 23° 38′ W. Barometer, 29.88; temperature of air, 68°; of water, 69°. Winds: E.NE. Fresh breezes throughout these 24 hours.

April 10. Lat. 21° 10′ N.; long. 25° 23′ W. Barometer, 29.76; temperature of air, 72°; of water, 72°. Winds: NE. by E. Steady breezes throughout, and passing clouds.

April 11. Lat. 18° 53′ N.; long. 26° 14′ W. Barometer, 29.72. Winds: NE. by E., E.NE., E. Moderate breezes; a red fog over the water.

April 12. Lat. 17° 49′ N.; long. 27° 00′ W. Barometer, 29.77; temperature of air, 78°; of water, 75°. Winds: NE. by E., NE., NE. by N. Light breezes throughout these 24 hours and fine weather.

April 13. Lat. 15° 49′ N.; long. 27° 43′ W. Barometer, 29.80; temperature of air, 78°; of water, 76. Winds: NE. by N., N.NE. Light breezes and fine weather throughout.

April 14. Lat. 13° 34′ N.; long. 27° 35′ W. Barometer, 29.85; temperature of air, 82°; of water, 78°. Winds: NE. by N., NE., N.NE. Light breezes throughout and fine weather; large schools of flying fish.

April 15. Lat. 11° 20′ N.; long. 27° 54′ W. Barometer, 29.75; temperature of air, 82°; of water, 79. Winds: NE., E. by N. Light breezes throughout, with passing clouds from the NE.

April 16. Lat. 9° 41′ N.; long. 28° 10′ W. Barometer, 29.73; temperature of air, 84°; of water, 79°. Winds: NE., E. Light breezes throughout; at 8 a. m. saw a barque heading NW.

April 17. Lat. 7° 06′ N.; long. 28° 08′ W. Barometer, 29.75; temperature of air, 83°; of water, 81°. Winds: E. by N., E.SE. Light breezes and cloudy.

April 18. Lat. 5° 17′ N.; long. 28° 12′ W. Barometer, 29.78; temperature of air, 86°; of water, 82°. Winds: E. by N., E.NE. Light breezes, with rain showers.

April 19. Lat. 4° 04′ N.; long. 28° 25′ W. Barometer, 29.72; temperature of air, 87°; of water, 83°. Winds: SE. by S., and calms. Light breezes and calms, with heavy showers of rain from SE.; think I shall get SE. trades.

April 20. Lat. 3° 15′ N.; long. 28° 13′ W. Current, 12 miles, E. by N. Barometer, 29.72; temperature of air, 88°; of water, 83°. Winds: NE. Short calms and light breezes, with showers of rain.

April 21. Lat. 1° 54′ N.; long. 28° 31′ W. Barometer, 29.70; temperature of air, 86°; of water, 83°. Winds: calms and E. First and middle parts, calm; latter part, light, baffling winds from E., with rain.

April 22. Lat. 0° 39′ N.; long. 28° 35′ W. Barometer, 29.68; temperature of air, 84°; of water, 83°. Winds: E.NE., S.SW. Light airs and calms, at spells, with heavy showers of rain from all points of the compass.

April 23. Lat. 0° 42′ S.; long. 29° 39′ W. Barometer, 29.65; temperature of air, 87°; of water, 84°. Winds: S.SE., SE. by S. First part, light breezes, with rain; latter part, fresh breezes and a heavy sea from the S.SE.; crossed the Equator in 29° 13′ W.

April 24. Lat. 3° 07′ S.; long. 30° 00′ W. Barometer, 29.62; temperature of air, 84°; of water, 83°. Winds: SE. by S., SE. Fresh breezes throughout, with heavy rain; showers and a high sea from the SE.

April 25. Lat. 5° 56′ S.; long. 30° 55′ W. Barometer, 29.65; temperature of air, 86°; of water, 83°. Winds: SE. Strong breezes throughout these 24 hours, with a heavy sea from the S.; exchanged signals with an American clipper ship standing S.SW."

Ship Gloriana, (Henry Toynbee,) London to Sydney; ten days out.

"April 22, 1855. Lat. 30° 18′ N.; long. 19° 20′ W. Current, 12½ miles, S. 5° W. Barometer, 30.702; temperature of air, 63°.6; of water, 64°.3. Variation observed by azimuth, 18° 05′ W. Winds: N.NE. Moderate, smooth, swelling sea.

April 23. Lat. 28° 13′ N.; long. 20° 24′ W. Barometer, 30.22; temperature of air, 64°; of water, 65°.4. Clouds: cum. & cum. str. Winds: NE. Moderate; smooth sea. Finding that a boy had struck his elbow against the Board of Trade barometer, and deranged it so that it would not act, I took out some screws and tried to examine into the cause; but finding I could do no good I packed it in its case, and now give my ship's barometer. Specific gravity of the sea-water, 1026.9.

April 24. Lat. 26° 03′ N.; long. 21° 32′ W. Current, 8½ miles, N. 25° E. Barometer, 30.28; temperature of air, 67°; of water, 67°. Clouds: cir. and cum. str. Winds: NE. Moderate, fresh breezes, and smooth sea; slight NE. swell. A ring around the moon 44° 8′ in diameter; it resembled a lunar rainbow. Specific gravity of sea-water, 1026.9.

April 25. Lat. 23° 38′ N.; long. 22° 50′ W. Current, 4½ miles, N. 12° W. Barometer, 30.25; temperature of air, 70°; of water, 68°. 4. Clouds: cir. cum. & cum. str. Winds: NE. Moderate, confused sea; slight N. swell.

April 26. Lat. 20° 37′ N.; long. 24° 22′ W. Current, 6½ miles, N. 15° E. Barometer, 30.22; temperature of air, 70°. 3; of water, 69°. 7. Winds: E.NE. Moderately fresh; a moderate swell from the E.; pleasant weather.

April 27. Lat. 17° 22′ N.; long. 26° 04′ W. Current, 9½ miles, S. 57° W. Barometer, 30.16; temperature of air, 71°. 5; of water, 73°. Clouds: cum. str. Moderate breezes from the eastward and pleasant weather; a swell from the NE.

April 28. Lat. 14° 05′ N.; long. 26° 33′ W. Current, 16 miles, S. 60° W. Barometer, 30.09; temperature of air, 73°; of water, 74°. Winds: NE. Moderate and pleasant; the swell of the sea somewhat confused.

April 29. Lat. 11° 12′ N.; long. 26° 36′ W. Current, 30 miles, S. 9′ W. Barometer, 30.03; temperature of air, 76°; of water, 77°. Clouds: cir., cir.-stratus, cum.-stratus. Winds: NE.E. Fresh breezes and pleasant; a confused sea from the S. and W.

April 30. Lat. 8° 48′ N.; long. 26° 33′ W. Current, 22 miles, S. 16° W. Barometer, 30.06; temperature of air, 78°. 2; of water, 79°. 8. Winds: E.NE. Moderately light; several Mother Carey's chickens in sight. Specific gravity of sea-water, 1024.

May 1. Lat. 6° 10′ N.; long. 26° 28′ W. Current, 7 miles, S. 65° W. Barometer, 30.04; temperature of air, 81°; of water, 81°. Winds: E.NE. Var., light, with rain; confused sea, ship pitching much. Specific gravity of sea-water, 1023.9.

May 2. Lat. 4° 06′ N.; long. 26° 31′ W. Current, 12½ miles, S. 14° W. Barometer, 30.05; temperature of air, 82°; of water, 82°. Clouds: cum., nim.; sea slightly confused. Winds: S. and W.; light, with rain. Specific gravity of sea-water, 1023.5.

May 3. Lat. 2° 43′ N.; long. 26° 59′ W. Current, 20½ miles, N. 74° W. Barometer, 29.94; temperature of air, 81°. 3; of water, 82°. 02. Winds: variable, SW. Squally, with heavy rain.

May 4. Lat. 1° 27′ N.; long. 27° 51′ W. Current, 26 miles, N. 82° W. Barometer, 29.99; temperature of air, 78°; of water, 80°. Winds: SW.; moderately light and squally, with rain, long swelling sea from the south. Specific gravity of sea-water, 1024.

May 5. Lat. 0° 13′ N.; long. 28° 24′ W. Current, 24½ miles, S. 70° W. Barometer, 30.05; temperature of air, 80°; of water, 80°. 6. Winds: moderate, SE., SE. by E. Moderate and pleasant. A meteor fell from the southern cross to the horizon. Specific gravity of sea-water, 1024.

May 6. Lat. 1° 43′ S.; long. 29° 54′ W. Current, 40 miles, S. 54° W. Barometer, 29.99; temperature of air, 81°; of water, 81°. 5. Clouds: cum. and cum.-str.; a swell from the SE. Winds: SE. by E.SE. Moderate trades; pleasant weather.

May 7. Lat. 4° 08′ S.; long. 31° 50′ W. Current, 41 miles, S. 60° W. Barometer, 30.04; temperature of air, 81°; of water, 81°. Winds: SE., E.SE. Moderate; some rain.

May 8. Lat. 5° 46′ S.; long. 33° 43′ W. Current, 23 miles, N. 78° W. Barometer, 30.01; temperature of air, 80°; of water, 80°. 8. Winds: SE. by S., S.SE., S. Squally. Mother Carey's chickens very numerous. Specific gavity of sea-water, 1024.1."

Time and Crossings from the Lizard to the Line—May.

Name of vessel.	From—	Date of sailing.	LONGITUDE OF CROSSING THE PARALLELS OF—																				Total days to—	
			Days.	45° N.	Days.	35° N.	Days.	30° N.	Days.	25° N.	Days.	20° N.	Days.	15° N.	Days.	10° N.	Days.	5° N.	Days.	Line.	Days.	3° S.	Equator.	St. Roque.
Seringa Patam	Liverpool	May 2, 1851	4	13¼	3½	16½	2½	19	2	19¼	2	19¾	2	20	3	20	6	20¼	4½	21	3½	24	29½	34½
Thomas Campbell	London	3, 1852	7	10	5½	17	2½	19¼	1½	20	1½	19¾	2	19¾	2	19¾	5	20	5	24¼	1½	25½	32	34½
Gustav Adolph	Hamburg	14, 1854	8	9¾	5½	12¼	3½	16¼	3	20¾	2	22½	2	23¾	2½	25	3	26¼	4	28¼	1	29¼	33½	35½
Bridgewater	Portsmouth	19, 1856	3	9½	5	17¾	2½	21½	3	23	2	23½	3	24¾	3	22½	7	22½	8	26¾	2	27¼	36½	40
Stately	Sunderland	26, 1851	2	12	4	21¾	2	24½	2	24½	2	23½	2	21½	3	23	8	17¾	4	21¼	1½	23	29	31
Means, East of Cape de Verds			4.8	11	4.6	17	2.6	20	2.3	21½	1.9	21¾	2.2	22	2.7	22	5.8	21¼	5.1	24¼	1.9	25¾	32.1	35.1
Means of 9 Dutch ships, East			4.3	11	5.4	16¼	3.1	17¾	2.8	19¾	1.9	21	2.2	21¼	2.9	21	5.8	19¾	4.8	23	.....	.....	33.2	.....
Red Jacket	Liverpool	May 2, 1854	2½	8¼	4	16½	3½	19¼	2½	21½	1½	25½	1½	26	1½	25¼	3	23¼	3	23¾	1	24½	23	24½
Henry Ware	do.	2, 1854	2	13¼	5	21	2½	21¾	1½	23	2	25	2	26½	3	28¼	2	28	2½	28¼	1	29¼	22½	24¾
Olive Branch	Waterford	4, 1853	4	12¼	4	17	2	19	2	21½	2	24¼	2	26¼	2	24	8	21¾	7	25¾	1½	28	33	35½
Red Packet	London	6, 1854	2	8¼	3½	15¼	3½	19	2½	22½	1¾	25¾	1¼	26	1½	25¼	3	23¼	4	23¾	1	24½	23	24½
Antilla	Bremen	10, 1857	8	11	12½	20	2	22¼	2½	24¾	2	26¾	2½	28	2½	29½	3	30½	4¼	33	8¾	32¼	39¼	51
Persia	London	10, 1847	5	12¼	4	15	2	18¼	2	21	3	24	3	25	2½	23	7½	19¼	4½	25¾	1½	28¼	33½	36
John Bull	Liverpool	18, 1852	4	14¼	6	18	3	18½	2½	21	2	24	2½	25¾	2	24	10	16½	4	21¾	2	23½	36	39
Sterling	London	19, 1837	2½	10½	8½	19¾	2	22	2	23¼	2½	25½	1½	25½	3	22¾	7	19¼	4	26	1½	26¾	33	35½
Norris	Liverpool	22, 1855	5½	12¼	4	17½	3	20	4	22	2½	25½	1½	27½	2½	28¼	3½	28¼	4	31	2½	32¼	30½	34
Albert Edward	do.	24, 1847	10	16	4	21¼	3	23	3	24¾	2½	26	2½	25¾	3	23½	4	22¾	2	24¾	1½	25¼	34	36½
St. Trident	Hamburg	27, 1856	4½	12¼	5	21	3	24¾	3	28¼	2½	28½	1¾	28¾	2¼	28½	5	28¾	6	30	2	31¼	33	36
H. R. Patel	Bremen	29, 1845	5½	12	8	17	4½	20	2	22¼	2½	24¾	2	25½	2	23½	8	18¼	7	23¼	1½	24½	41½	44
Means, West of Cape de Verds			3.9	12	5.7	18¼	2.8	20½	2.5	23	2.2	25½	2	26¼	2.3	27½	5.3	23¼	4.4	26½	2.1	27½	31.8	35.1
Mean of 34 Dutch vessels, West			4.1	11¾	5.6	16½	2.8	18¾	2.5	21½	2.2	24¼	1.9	25¼	2.3	23¼	6.4	19¾	4.2	23¾	.....	.....	32	.....

Ship Aetos, (D. McLaughlin,) Liverpool to Bombay; 14½ days out.

"May 8, 1856. Lat. 30° 12′ N.; long. 20° 00′ W. Barometer, 30.24; temperature of air, 66°; of water, 65°. Winds: E.NE., NE.; fine brisk breeze.

May 9. Lat. 26° 25′ N.; long. 21° 49′ W. Barometer, 30.10; temperature of air, 68°; of water, 68°. Clouds: cir. from NE. Winds: NE.; throughout a fine brisk breeze.

May 10. Lat. 23° 18′ N.; long. 23° 04′ W. Barometer, 30.04; temperature of air, 68°; of water, 69°. Clouds: cir., NE. Winds: NE. by N.; fine breeze. Tide rips, but no current.

May 11. Lat. 20° 27′ N.; long. 24° 07′ W. Barometer, 30.06; temperature of air, 70°; of water, 69°. Winds: NE. by N. First and middle parts, fine breeze and pleasant; ends quite light.

May 12. Lat. No observations. Barometer, 30.02; temperature of air, 71°; of water, 70°. Clouds: cir. E. Winds: N.NE. to E. Light winds and fine weather throughout; clouds move quick; latter part calm.

May 13. Lat. 17° 28′ N.; long. 25° 24′ W. Barometer, 29.94; temperature of air, 74°; of water, 72°. Calms and light winds from W.NW. and W.; light cat's paws all around; fine weather.

May 14. Lat. 15° 31′ N.; long. 25° 20′ W. Barometer, 30.02; temperature of air, 74°; of water, 72°. Winds: W.NW., NW., N.NW. Winds quite light and faint; St. Vincent in sight. This is very trying for one who is anxious to make a quick passage. At 5 p.m. set a bottle afloat with a letter in it containing ship's name, the latitude, longitude, &c.

May 15. Lat. 14° 03′ N.; long. 25° 10′ W. Barometer, 30.08; temperature of air, —°; of water, —°. Winds: N., N. by E., NE. by N. Light airs and fine weather; smooth sea. There seems to be some prospect of a better breeze. Foyo in sight at 7 p. m., distant 102 miles; if daylight I think it might be seen 10 or 15 further.

May 16. No observations. Barometer, 30.13; temperature of air, 75°; of water, 75°. Winds: NE. by N., E.NE. All this 24 hours fine breezes and pleasant weather; tide rips, but no current observed.

May 17. Lat. 8° 46′ N.; long. 25° 22′ W. Current, W.NW. ½ mile per hour. Barometer, 30.11; temperature of air, 78°; of water, 76°. Winds: E. by N., E. Fine breezes, and pleasant.

May 18. Lat. 5° 43′ N.; long. 24° 44′ W. Current, 24 miles, E. by N. Barometer, 30.08; temperature of air, 80°; of water, 79°. Winds: E. by N., E. Fine breeze all day; water considerably agitated. There is a few rain squalls in the SE., and it looks to me as though the SE. trade winds might be near. I am in hopes to be let off with little doldrums.

May 19. Lat. 3° 39′ N.; long. 24° 10′ W. Current, 14 miles, E.NE. Barometer, 30.02; temperature of air, 79°; of water, 79°. Winds: E. and dol. A few rain squalls in the SE., a great way off. At 1 a. m. I was taken aback for the first time, wind going around the compass, with some rain; latter part more pleasant, but distant squalls on all sides, with calms and rain showers.

May 20. Lat. 2° 56′ N.; long. 24° 00′ W. Current, 15 miles, E.NE. Barometer, 30.06; temperature of air, 78°; of water, 79°. Winds: W., W.N.W., variable; light airs, mostly from the northward and westward, and calms, with rain showers from I don't know where.

May 21. Lat. 2° 15′ N.; long. 23° 34′ W. 15 miles, E.NE., current. Barometer, 30.04; temperature of air, 79°; of water, 79°. Winds: SW., S., S.SE. Commences with light

showers and distant rain squalls; middle and latter parts, a moderate breeze. Everything looks right for the trades. Saw several vessels with booms out.

May 22. Lat. 1° 20′ N.; long. 25° 15′ W. Current, 10 miles, NE. Barometer, 30.05; temperature of air, 79°; of water, 79°. Winds: S. by W., S. by E., S.SE. Commences moderate, with prospects of a better breeze, and a little head swell. Clouds act very singular.

May 23. Lat. 0° 39′ S.; long. 26° 15′ W. Barometer, 30.10; temperature of air, 79°; of water, 78°. Winds: S.SE., SE., SE. by E., moderate. If I was further west I think I would have a better breeze. There is some light rain, and a head swell from the SW.

May 24. Lat. 4° 02′ S.; long. 26° 50′ W. Barometer, 30.08; temperature of air, 78°; of water, 78°. Winds: SE. by S., SE. A good breeze, with a head swell.

May 25. Lat. 7° 35′ S.; long. 28° 20′ W. Barometer, 30.11; temperature of air, 78°; of water, 78°. Winds: SE, SE. by E. A brisk breeze, with a bad sea and occasional squalls."

Ship Olive Branch, (F. Wilson, captain,) from Waterford to Pitra; nine days out.

"May, 14, 1853. Lat. 29° 39′ N.; long. 19° 05′ W. Barometer, 30.15; temperature of air, 64°; of water, 68°. Winds: N.NW., NW., N. Fresh breezes, with squalls, and showers throughout; a heavy swell from the N.NW.

May 15. Lat. 27° 48′ N.; long. 20° 14′ W. Barometer, 30.20; temperature of air, 69°; of water, 69°. Winds: N., N.NE., N Fresh breezes, and squally throughout.

May 16. Lat. 25° 36′ N.; long. 21° 22′ W. Barometer, 30.30; temperature of air, 69°; of water, 69½°. Winds: N., NE. by E., E.NE. Gentle, steady trade winds.

May 17. Lat. 23° 05′ N.; long. 22° 40′ W. Barometer, 30 30; temperature of air, 70°; of water, 72°. Winds: NE. by E., E.NE. Steady trade winds.

May 18. Lat. 20° 39′ N.; long. 24° 15′ W. Barometer, 30.30; temperature of air, 72°; of water, 72°. Winds; E.NE., E., E.NE. Brisk trade wind, and cloudy.

May 19. Lat. 18° 01′ N.; long. 25° 57′. Barometer, 30.25; temperature of air, 74°; of water, 73°. Winds: E. NE., NE. Brisk trade wind, and dull, gloomy weather.

May 20. Lat. 15° 08′ N.; long. 26° 14′ W. Barometer, 30.20; temperature of air, 76°; of water, 76°. Winds: NE., variable, E.NE. First part, stiff breezes; middle part, light, inclining to calm; latter part, stiff breeze, and dull, cloudy weather.

May 21. Lat. 12° 25′ N.; long. 25° 21′ W. Barometer, 30.15; temperature of air, 79°; of water, 77°. Winds: NE., NE. by N. Brisk trade winds throughout, with a hazy atmosphere.

May 22. Lat. 10° 01′ N.; long. 24° 02′ W. Barometer, 30.10; temperature of air, 78°; of water, 78°. Winds: E.NE., NE. First and middle parts, brisk breeze; latter part, light.

May 23. Lat. 8° 42′ N.; long. 23° 12′ W. Barometer, 30.00; temperature of air, 80°; of water, 80°. Winds: E., NE., N.NE. Light winds and squally, with rain. Passed through several current ripples.

May 24. Lat. 7° 45′ N.; long. 22° 52′ W. Barometer, 30.10; temperature of air, 86°; of water, 82°. Winds: N.NE., variable. Light, variable winds. Passed through frequent squalls, showers, and ripples.

May 25. Lat. 7° 18′ N.; long. 22° 25′ W. Barometer, 30.10; temperature of air, 86°; of water, 82°. Winds: NW. Variable, light airs, throughout, and fine, clear weather.

May 26. Lat. 6° 15′ N.; long. 22° 10′ W. Current, S. 45° E., 21 miles. Barometer, 30.10; temperature of air, 87°; of water, 82°. Winds: N.NW. Calms, light airs, and calms throughout, with fine weather.

May 27. Lat. 5° 58′ N.; long. 21° 56′ W. Current, 6 miles, S. by E. Barometer, 30.10; temperature of air, 86°; of water, 82°. Winds: variable, and calms; faint airs and calms throughout.

May 28. Lat. 5° 37′ N.; long. 22° 10′ W. Current, 7 miles, N. by E. Barometer, 30.10; temperature of air, 85°; of water, 82°. Winds: variable, and calms; light, and calms throughout.

May 29. Lat. 5° 18′ N.; long. 21° 48′ W. Current, 21 miles, NE. Barometer, 30.10; temperature of air, 90°; of water, 88°. Winds: variable, and calms, with heavy rain.

May 30. Lat. 4° 48′ N.; long. 21° 45′ W. Barometer, 30.10; temperature of air, 85°; of water, 82°. Winds: Variable, and calms, with frequent showers.

May 31. Lat. 4° 10′ N.; long. 21° 18′ W. Barometer, 30.10; temperature of air, 74°; of water 82°. Winds: calms and variable, with a great deal of rain.

June 1. Lat. 3° 48′ N; long. 21° 33′ W. Barometer, 30.10; temperature of air, 81°; of water, 84°. Winds: variable, and calms, with rain. This is the most tedious time I ever experienced in the variables. The last ten days, a succession of calms and light winds, tacking ship and working the yards constantly; it is with the greatest difficulty we get the few miles daily, and what makes it worse is a constant swell from the south. I am sorry I did not keep to the westward and cross the equator in about 32°.

June 2. Lat. 3° 53′ N.; long. 19° 29′ W. Barometer, 30.20; temperature of air, 84°; of water, 84°. Winds: variable, and calms, with rain throughout.

June 3. Lat. 3° 07′ N.; long. 20° 03′ W. Barometer, 30.20; temperature of air, 85°; of water, 83°. Winds: SE., calms, S. by E. First part, light airs; middle, calms; latter part, brisk breezes. I now think I have got the trade winds.

June 4. Lat. 2° 14′ N.; long. 22° 18′ W. Current, 15 miles, N., 72° W. Barometer, 30.20; temperature of air, 83°; of water, 82°. Wind: S., moderate breezes and pleasant weather.

June 5. Lat. 0° 57′ N.; long. 24° 25′ W. Current, 24 miles, N. 78° W. Barometer, 30.20; temperature of air, 82°; of water, 79°. Winds: S. by E. Gentle breezes throughout.

June 6. Lat. 0° 17′ S.; long. 25° 49′ W. Current, 16 miles, N. 64° W. Barometer, 30.10; temperature of air, 80°; of water, 79°. Winds: S. by E., S.SE. Light breeze throughout, atmosphere hazy.

June 7. Lat. 1° 42′ S.; long. 27° 07′ W. Barometer, 30.10; temperature of air, 80°; of water, 80°. Winds: S.SE. First and middle parts, light breezes and pleasant weather; latter parts, fresh breezes and cloudy, with light showers and squalls. The wind hangs so far south that I have to make westing very fast.

June 8. Lat. 3° 47′ S.; long. 28° 39′ W. Barometer, 30.10; temperature of air, 82°; of water, 80°. Wind: S.SE. A brisk breeze throughout, with fine weather; a long swelling sea from the S. and E.

June 9. Lat. 6° 25′ S.; long. 30° 15′ W. Current, 29 miles, S. 49° W. Barometer, 30.15; temperature of air, 82°; of water, 82°. Winds: SE. by S., SE., SE. by E. Moderate breezes and fine clear weather. Two ships in company."

Ship Seringapatam, (Henry Morris,) Liverpool to Hong Kong; nine days out.

"May 12, 1851. Lat. 30° 06′; long. 18° 58′ W. Winds: N., E.NE. Moderate.

May 13. Lat. 27° 16′ N.; long. 19° 08′ W. Wind: E.NE. Moderately fresh.

May 14. Lat. 24° 58′ N.; long. 19° 20′ W. Winds: E.NE., N.NE. Moderate throughout.

May 15. Lat. 22° 26′ N.; long. 19° 50′ W. Wind: NE. Fresh breezes and pleasant weather.

May 16. Lat. 19° 20′ N.; long. 19° 40′ W. Winds: NE., E.NE. Fresh breezes throughout.

May 17. Lat. 16° 51′ N.; long. 20° 01′ W. Winds: NE., N.NE. Moderate breezes.

May 18. Lat. 14° 40′ N.; long. 20° 06′ W. Winds: N.NE., N. by E. Moderate breezes.

May 19. Lat. 12° 33′ N.; long. 20° 09′ W. Wind: N. by E. Light winds.

May 20. Lat. 11° 04′ N.; long. 20° 09′ W. Winds: N.NE., NW. Moderately light.

May 21. Lat. 10° 12′ N.; long. 20° 02′ W. Winds: NW., N.NE.

May 22. Lat. 9° 05′ N.; long. 19° 56′ W. Winds: W., NW. Light and variable.

May 23. Lat. 7° 43′ N.; long. 20° 02′ W. Winds: N.NE., E. Moderately light.

May 24. Lat. 6° 56′ N.; long. 19° 58′ W. Winds: very light.

May 25. Lat. 6° 20′ N.; long. 19° 52′ W. Winds: N., variable, E., Nd. and Ed. Light and baffling.

May 26. Lat. 5° 26′ N.; long. 20° 04′ W. Winds: NW., calm, N.NE., light.

May 27. Lat. 4° 54′ N.; long., no observation. Winds: variable, W.SW. Very light.

May 28. Lat. 4° 04′ N.; long., no observation. Winds: Sd. and Wd., and variable light airs.

May 29. Lat. 3° 17′ N.; long., no observation. Winds: W.SW., S.SW. Moderately light.

May 30. Lat. 1° 55′ N.; long. 19° 09′ W. Winds: N.NW., S. Moderate breezes.

May 31. Lat. 0° 32′ N.; long. 20° 33′ W. Winds: S., S. by W. Moderate and light.

June 1. Lat. 0° 39′ S.; long. 22° 23′ W. Winds: S.SE., SE. by S. Moderately light.

June 2. Lat. 1° 20′ S.; long., no observation. Winds: S.SE. to E. Light breezes.

June 3. Lat. 2° 23′ S.; long. 23° 46′ W. Winds: S.SE., SE. by S. First part, light airs; latter part, moderate breezes.

June 4. Lat. 3° 26′ S.; long., no observation. Winds: S.SE., E.SE. Light breezes.

June 5. Lat. 4° 12′ S.; long., not observed. Winds: E., SE., E. Moderate.

June 6. Lat. 6° 36′ S.; long. 25° 41′ W. Wind: E. Throughout, moderate breeze."

Ship Red Jacket, (Samuel Reed, captain,) Liverpool to Melbourne; ten days out.

"May 15, 1854. Lat. 30° 06′ N.; long., no observation. Winds: variable, calms and light weather.

May 16. Lat. 22° 44′ N.; long. 19° 53′ W. Winds: variable; NE. First part, light airs and calms; latter part, steady trade winds.

May 17. Lat. 26° 33′ N.; long. 21° 24′ W. Wind: NE. First part, light and steady trades; latter, stiff.

May 18. Lat. 23° 36′ N.; long. 23° 30′ W. Wind: NE. Light throughout and somewhat variable.

May 19. Lat. 20° 51′ N.; long. 25° 33′ W. Wind: NE. Weather like that of yesterday.

May 20. Lat. 17° 32′ N.; long., no observation. Winds: NE.; variable. Light and variable throughout, with cloudy and sultry weather.

May 21. Lat. 13° 22′ N.; long. 26° 06′ W. Wind: NE. First part, stiff breezes; latter, light, with sultry weather.

May 22. Lat. 10° 21′ N.; long. 25° 17′ W. Wind: Eastward. Light and variable throughout.

May 23. Lat. 8° 21′ N.; long. 24° 14′ W. Wind: E.SE. Light and variable, with sultry weather.

May 24. Lat. 6° 37′ N.; long. 23° 14′ W. Wind: E. Light winds and sultry weather.

May 25. Lat. 5° 14′ N.; long. 23° 14′ W. Winds: variable, prevailing from NE. Light winds; sultry weather.

May 26. Lat. 3° 53′ N.; long. 23° 22′ W. Winds: variable; prevailing from W.NW. Light, sultry weather.

May 27. Lat. 2° 33′ N.; long. 21° 23′ W. Winds: variable, prevailing from SW. Light, with sultry weather.

May 28. Lat. 1° 44′ N.; long. 21° 40′ W. Winds: variable, prevailing from the SW. Light breezes.

May 29. Lat. 0° 03′ S.; long. 23° 45′ W. Winds: S.SE. Light trade winds and sultry weather.

May 30. Lat. 3° 15′ S.; long. 24° 35′ W. Winds: S.SE. Moderate trades and cloudy weather.

May 31. Lat. 7° 12′ S.; long. 27° 38′ W. Winds: S.SE. Stiff and fair weather."

Time and Crossings from the Lizard to the Line—June.

Name of vessel.	From—	Date of sailing	Longitude of crossing the parallels of—																				Total days to—	
			Days.	45° N.	Days.	35° N.	Days.	30° N.	Days.	25° N.	Days.	20° N.	Days.	15° N.	Days.	10° N.	Days.	5° N.	Days.	Equator.	Days.	3° S.	Equator.	St. Roque.
Northumberland	New Castle	June 20, 1851	8	10¾	7	15	3½	19½	2	24	2	20	2½	23½	5½	22½	6½	19¾	5	22¼	1½	22½	42	45
Caribbean	Sunderland	22, 1855	2	11	5	14¼	2½	17½	1½	19¾	2½	21¾	2½	21¼	5	21¾	7	21	3½	24½	1½	28¼	31½	34
Means east of Cape de Verds			5	11	6	14½	3	18½	1.7	22	2.2	21	2.5	22¼	5.3	22¼	6.7	20¼	4.3	23¼	1.5	25¼	36.7	39.5
Means of 4 Dutch vessels *east*			4.6	10¼	4.8	16¼	2.8	18¼	2.4	19¾	1.6	20¾	1.9	22	3.1	21½	7.3	18	4	23½	.....	.....	32.5	.....
Panther	London	June 1, 1855	5½	11¾	3½	17¾	2½	20	2	23½	1½	25½	1½	26½	2½	25½	5	23½	4	29¼	1½	30¾	28	30½
Juniata	Liverpool	2, 1854	2½	13¼	4	19	3	21¼	2	23½	2	24½	2	26	2½	24¾	8	22¼	3	27¼	1¾	29	29	31½
Edwin Flye	Cardiff	4, 1856	5	13¼	6	17	3	24¼	2	26	1¾	26½	1½	26¾	2¼	26¼	3	26¼	5	28¼	1	29¾	29½	31½
Charles	Liverpool	5, 1852	5½	11¾	5	16¾	2	19½	2	22	1½	24¾	2	26	3	25¼	5	20¼	3	24½	1	25	29	31
Resolute	London	6, 1854	3½	11¼	3½	14	3	19¼	3	24	2½	25¾	1½	27¾	1½	28¼	4	27¼	3	30¼	1½	31½	25½	28
Chanticleer	Lisbon	6, 1855	.....	.....	3½	12¼	3½	18	3	22¾	2	25¼	2	26	2	25½	6½	23¾	4½	28¼	1½	29½	27	29½
Hippogriffe	London	8, 1855	4	11	4	18¾	2	21	1½	24	2	24¾	2	26	2½	24¾	5	22	4	28	2	31¼	27	29½
Plantagenet	Liverpool	10, 1853	4	11¼	6	16¾	3½	19	2½	22	3	25	3	27¼	5	27¼	8	21	4½	27¾	1½	29½	39½	42
Golden Rule	London	10, 1856	4	12¼	5	17¼	2½	18½	2	20¼	2	23¼	2½	25½	2	27	4	27½	3½	29¼	1½	31¼	27½	29¾
Calcutta	Portsmouth	11, 1848	3½	11¼	4½	18¼	2½	20½	3	23¼	2	24½	2	25¾	2½	24¾	6½	23¼	6	29	2	29¾	32½	35½
Aliposc	London	14, 1851	4	10¼	4½	18¼	2½	20¾	4½	23¼	2½	26	2	26¾	3	26½	5	25	2	27¼	3	28¼	30	34½
Albert Edward	Liverpool	15, 1848	8	14¼	7	18½	2	20¾	2	22¾	2	25¼	2½	25½	5½	21½	7	21¾	3	27¼	1½	30	39	42
Chas. A. Farewell	Havre	15, 1856	3	10¼	5	19½	4	25½	2	27¼	1¼	27¾	2	28	4	28¾	2½	26¼	3	31¾	2	32¾	27	30½
Starling	London	16, 1835	2½	10	4½	17	2	19	2½	22¼	2½	25¾	2	26	4	22¾	7	18¾	3	24¼	2	25	30	33
Orion	Liverpool	24, 1856	3½	11½	4	19¾	2½	22¼	1½	24¾	1½	26¼	2	27¾	2½	28	3½	25¾	5	29	1½	30	26	28½
Walkyinun	Copenhagen	28, 1851	3½	10½	5½	17	3	19	2	22½	2	25¼	1½	25¼	2½	24	6	20¾	3	22½	1½	24¼	27	29
Juniatta	Liverpool	28, 1856	5	14¾	5½	19½	2	21¾	2	23¾	2	25¾	3	27¾	3	27½	5½	22¼	3½	27½	1	29½	31½	33
Means west			3.9	11	4.6	17½	2.7	20¼	2.3	23½	2	25½	2.1	26½	2.9	25¾	5.4	23½	3.7	27¾	1.6	29¼	29.7	32.9
Means of 37 Dutch vessels *west* Cape de Verds			4.7	11	5.2	16¾	2.6	19	2.2	22	2	24¼	2.2	26	3.4	24¼	7.1	19	3.7	24¼	.....	.....	33.1	....

Ship Challenge, (J. Kenny, captain,) London to Hong Kong; twelve days out.

"June 4, 1856. Lat. 30° 05′ N.; long. 25° 57′ W. Barometer, 30.15; temperature of air, 72°; water, 71°. Winds: From S.SE. to E.NE.; generally light; gradually increasing, like the beginning of the trades. Light clouds passing.

June 5. Lat. 27° 06′ N.; long. 36° 33′ W. Barometer, 30.20; temperature of air, 74°; water, 71°. Winds: SE. to SE. by S. Moderate, with a smooth sea; weather generally pleasant; a few spits of rain.

June 6. Lat. 23° 05′ N.; long. 27° 15′ W. Barometer, 30.10; temperature of air, 75°; water, 72°. Winds: E. to E.NE. A fine breeze and pleasant weather most of the day; light clouds passing, with a little rain in the morning.

June 7. Lat. 18° 49′ N.; long. 27° 21′ W. Barometer, 30.05; temperature of air, 75°; water, 74°. Winds: E.NE. Fine breezes throughout the day, with light trade clouds passing with the wind.

June 8. Lat. 14° 45′ N.; long. 27° 08′ W. Barometer, 30.02; temperature of air, 80°; water, 79°. Winds: E. by N. to NE. Fine breezes throughout the day; thin hazy clouds nearly covering the sky at times; saw flying fish for the first time.

June 9. Lat. 11° 39′ N.; long. 27° 13′ W. Barometer, 29.95; temperature of air, 80°; water, 79°. Winds: NE. to E. by N. Moderate breezes and pleasant throughout the day; the wind frequently varied from NE. to E. by N.; a small easterly current to-day.

June 10. Lat. 8° 15′ N.; long. 27° 32′ W. Barometer, 29.93; temperature of air, 81°; water, 80°. Winds: E.NE. to SE. by S. Moderate and occasionally baffling; thin clouds moving slowly from the southward, with a light shower of rain.

June 11. Lat. 6° 26′ N.; long. 28° 18 W. Barometer, 29.92; temperature of air, 82°; water, 82°. Winds: SE. to S.SE.

June 12. Lat. 4° 35′ N.; long. 29° 20′ W. Barometer, 29.94; temperature of air, 84°; water, 83°. Winds: SE. to S. by E. Light and unsteady; a moderate swell from the southward; clouds coming from the eastward; occasional showers of rain. Magnetic variation, 15° 36′ W.

June 13. Lat. 2° 39′ N.; long. 30° 03′ W. Barometer, 29.95; temperature of air, 85°; water, 82°. Winds: variable and occasional calms; squalls of wind and rain, with some heavy showers. Magnetic variation, 14° 48′ W.

June 14. Lat. 2° 06′ N.; long. 30° 14′ W. Barometer, 29.88; temperature of air, 82°; water, 81°. Winds: first part, S. by E., squally, with heavy showers of rain; middle part, a light breeze sprung up from the SW.; latter part, wind varied to S. by E., moderate and pleasant weather. Passed the ship Berkshire, of Boston, bound south.

June 15. Lat. 0° 58′ N.; long. 31° 24′ W. Barometer, 29.92; temperature of air, 82°; water, 81°. Wind: S.SE. generally, frequent showers. A drift to the westward discovered by the reckoning, but uncertain, owing to the difficulty of keeping the ship's run accurately in these changeable regions.

June 16. Lat. 1° 26′ S.; long. 32° 38′ W. Barometer, 29.96; temperature of air, 80°; water, 81°. Winds: S.SE. to SE. Moderate breezes and pleasant, with trade clouds passing. Passed the barque Eliza, of Jersey, bound southward.

June 17. Lat. 4° 47′ S.; long. 33° 47′ W. Barometer, 29.97; temperature of air, 81°; water, 81°. Winds: SE. to S.SE. Strong breezes throughout the day and frequent squalls, with light rain; experienced a current of about 30 miles west during the day.

June 18. Lat. 5° 00′ S.; long. 34° 13′ W. Barometer, 29.92; temperature of air, 81°; of

water, 82°. Winds: SE., S.SE. First part, fresh breezes and frequent squalls, with rain; middle and latter parts, more pleasant and moderate."

Ship Resolute, (Daniel McKenzie,) London to Hong Kong; ten days out.

"June 17, 1854. Lat. 29° 54′ N.; long. 21° 12′ W. Barometer, 30.26; temperature of air, 71°; of water, 70°. Current setting S. 60° E., at the rate of ½ mile per hour. Clear and beautiful weather, with a smooth sea. Winds: N. and N.NW.; rather light.

June 18. Lat. 27° 56′ N.; long. 22° 51′ W. Barometer, 30.24; temperature of air, 74°; of water, 71°. Winds: N., NE. Light, smooth sea; dark clouds on the horizon.

June 19. Lat. 26° 01′ N.; long. 24° 02′ W. Barometer, 30.24; temperature of air, 74°; of water, 72°. Winds: NE., E.NE., SE. Occasional showers and rain squalls. A current of ½ mile per hour, setting S. 13° E.

June 20. Lat. 24° 18′ N.; long. 24° 58′ W. Barometer, 30.30; temperature of air, 72°; of water, 73°. Winds: E.SE., E.NE. Moderate, pleasant weather, with a smooth sea.

June 21. Lat. 21° 44′ N.; long. 26° 22′ W. Current setting about ½ a mile per hour, W.SW. Barometer, 30.19; temperature of air, 73°; of water, 73°. Winds: E.NE., East. Moderate, with passing clouds.

June 22. Lat. 18° 36′ N.; long. 27° 51′ W. Barometer, 30.13; temperature of air, 75°; of water, 75°. Winds: E.NE. Moderate, pleasant weather, and passing clouds.

June 23. Lat. 14° 36′ N.; long. 27° 46′ W. Barometer, 30.13; temperature of air, 76°; of water, 75°. Winds: E., E.NE. Fine winds and pleasant weather, with a swell from the NE.

June 24. Lat. 11° 28′ N.; long. 27° 44′ W. Barometer, 30.07; temperature of air, 76°; of water, 77°. Wind: East. Light; clouds heavy; the upper strata passing quickly N.NW.; weather damp.

June 25. Lat. 9° 49′ N.; long. 28° 16′ W. Barometer, 30.05; temperature of air, 80°; of water, 79½°. Winds: E., N.NE., N. Moderate and pleasant weather, with much phosphorescence in the water. A current of about 1 mile per hour setting west.

June 26. Lat. 7° 56′ N.; long. 27° 56′ W. Barometer, 29.98; temperature of air, 81°; of water, 81°. Winds: N., E.NE., and calm. The weather generally clear and pleasant; a passing shower now and then, with a long swell from the SE.

June 27. Lat. 6° 32′ N.; long. 27° 28′ W. Barometer, 29.95; temperature of air, 80°; of water, 81°. Winds: SW., S.SW., S. Light; much fine rain and squalls of wind, and rain, with sharp lightning to the SE.

June 28. Lat. 6° 00′ N.; long. 26° 29′ W. Barometer, 30.01; temperature of air, 81°; of water, 81°. Winds: S., S.SE. Light winds generally, and occasional squalls, with a long SE. swell.

June 29. Lat. 5° 02′ N.; long. 26° 28′ W. Barometer, 30.01; temperature of air, 82°; of water, 83°. Winds: calms, S.SE. Baffling and calms; made very little progress.

June 30. Lat. 4° 15′ N.; long. 26° 45′ W. Barometer, 30.03; temperature of air, 80°; of water, 82°. Winds: calm, SE., S. Frequent showers and baffling airs.

July 1. Lat. 3° 12′ N.; long. 27° 36′ W. Barometer, 29.97; temperature of air, 80°; of water, 82°. Winds: variable, S., S.SE. Moderate, with passing showers.

July 2. Lat. 0° 25′ N.; long. 30° 11′ W. Barometer, 30.03; temperature of air, 79°; of water, 80°. Winds: S.SE., SE. A current, setting W.NW., of about 1 mile an hour. Moderate breezes.

July 3. Lat. 2° 09′ S.; long. 31° 14′ W. Barometer, 30.01; temperature of air, 80°; of

water, 80°. Winds: SE. Moderate breezes and pleasant weather throughout, with a long southerly swell.

July 4. Lat. 4° 26′ S.; long. 32° 16′ W. Barometer, 30.04; temperature of air, 80°; o water, 81°. Winds: SE., E.SE. Fine trade winds and pleasant weather.

July 5. Lat. 7° 12′ S.; long. 31° 51′ W. Barometer, 30.04; temperature of air, 79°; of water, 80°. Winds: E., SE., S.SE. Moderate trades, with pleasant weather and a little rain."

Ship Edwin Flye, (Wm. Flye,) Cardiff, Wales, to Acapulco; fourteen days out.

"June 17, 1856. Lat. 29° 51′ N.; long. 24° 22′ W. Barometer, 30.30; temperature of air, 71°; of water, 67°. Winds: E.NE. Moderate trade winds and pleasant weather.

June 18. Lat. 26° 54′ N.; long. 25° 35′ W. Barometer, 30.26; temperature of air, 73°; of water, 70°. Winds: E.NE., E. by S. Moderate trade winds and pleasant weather.

June 19. Lat. 24° 03′ N.; long. 26° 01′ W. Barometer, 30.12; temperature of air, 74°; of water, 72°. Winds: E. by S., E. Moderate trade winds and pleasant weather.

June 20. Lat. 20° 43′ N.; long. 26° 35′ W. Barometer, 30.13; temperature of air, 75°; of water, 72°. Winds: E., E.SE. Moderate trade winds and pleasant.

June 21. Lat. 17° 15′ N.; long. 26° 41′ W. Barometer, 30.07; temperature of air, 77°; of water, 73°. Winds: E.SE., E. by S. Light trade winds and fine weather. A ship and barque in company, both steering more to the eastward than we are.

June 22. Lat. 13° 52′ N.; long. 26° 34′ W. Barometer, 30.00; temperature of air, 79°; of water, 75°. Winds: SE. by E., variable, N. by E., E. First part, light and baffling winds from SE. to NE.; middle and latter parts, steady breezes and pleasant.

June 23. Lat. 11° 39′ N.; long. 26° 36′ W. Barometer, 30.07; temperature of air, 81°; of water, 78°. Winds: E., variable. Moderate and pleasant.

June 24. Lat. 9° 05′ N.; long. 26° 21′ W. Barometer, 30.00; temperature of air, 82°; of water, 79°. Winds: variable. Light and variable winds, principally from the eastward, with occasional lightning during the middle part.

June 25. Lat. 7° 04′ N.; long. 26° 12′ W. Barometer, 30.00; temperature of air, 81°; of water, 79°. Winds: E., E.SE. Light and variable winds from the eastward, with occasional showers and drizzling rain.

June 26. Lat. 5° 50′ N.; long. 26° 56′ W. Barometer, 29.96; temperature of air, 81°; of water, 81°. Winds: E.SE., S., S.SW. Commences with light winds from the E'd, varying to S., with light showers of rain. At 7 p. m. the wind hauled to the S'd, with threatening appearances from 9 p. m. to midnight. Light baffling airs and calms, with drenching rain and sharp lightning.

June 27. Lat. 5° 38′ N.; long. 26° 17′ W. Barometer, 30.00. Current, N. 8° E., rate 1.2 miles per hour; temperature of air, 81°; of water, 81°. Winds: S.SW. Moderate breezes, occasionally varying a point or two, with clear weather; during these 24 hours we have experienced a current of 29 miles N. 8° E. I have not heretofore made any mention of currents, because, when the log is cast only every two hours, and the speed of the ship may vary so much during that time, I have not considered that the difference between the reckoning and observations could be fairly attributed to currents, but in the present instance I believe the ship has been accurately logged.

June 28. Lat. 4° 45′ N.; long. 27° 29′ W. Current, N. 18° E., one mile per hour. Barometer, 29.97; temperature of air, 81°; of water, 81°. Winds: S., S. by W. Light breezes,

with occasional showers of rain. At 1 p. m. tacked to W.SW.; at 10 a. m. to E.SE.; strong current N.NE.

June 29. Lat. 4° 52′ N.; long. 25° 12′ W. Current, N. 22° E., rate 1.3 mile. Barometer, 29.97; temperature of air, 81°; of water, 81°. Winds: S. by W., S.SW. Light, variable, and pleasant.

June 30. Lat. 3° 52′ N.; long. 24° 01′ W. Barometer, 29.97; temperature of air, 80°; of water, 80°. Winds: S.SW. Light and variable from S'd and W'd, with occasional showers; rather a poor chance to get to the S'd and W'd; a ship, barque, and brig in sight, all standing to the S. and E.

July 1. Lat. 2° 51′ N.; long. 24° 57′ W. Barometer, 29.93; temperature of air, 79°; of water, 78°. Winds: S.SW., S. Light and variable winds, with frequent rain squalls; tacked at 2 and 6 p. m., ship heading off W. much of the time. You will perceive that I have been compelled to go much further to the E'd than your routes recommend; it was my wish to cross the Equator in 29° or 30° W., and so, after getting the NE. trades, I shaped my course so as to run down on something like a great circle to 28° W. and 5° N. On the 28th of June our position at noon was 4° 45′ N. and 27° 29′ W.; since when we have had the winds so constantly from S. to S.SW., sometimes SW. by S., that I have been obliged to go to the E'd if I would make any southing at all. We have regularly tacked to the W'd when the ship would head up W.SW., and have gone to the E'd whenever she fell off to W; really I don't know what better we could have done under the circumstances.

July 2. Lat. 1° 31′ N.; long. 27° 44′ W. Current, W.NW., rate 1.5 mile. Barometer, 30.00; temperature of air, 79°; of water, 78°. Winds: S., S.SE. Light trades and pleasant weather; all sail set by the wind.

July 3. Lat. 1° 17′ S.; long. 29° 42′ W. Barometer, 30.02; temperature of air, 81°; of water, 78°. Winds: S.SE., SE. by S. Moderate and fine weather; at 2 a. m. crossed the Equator about 28° 50′ W., 28½ days from the Scilly islands. This is a few days shorter than the average passage from Europe to the Equator in the month of June, though it is not so short a passage as I had hoped to make; we had calms for 3 days in 46° N. and 12° W., then the NE. trades were very light, so we could not often make over 8 knots per hour, and not even that average for the 24 hours; have not taken in top-gallant sails nor reefed topsails since leaving the Bristol channel.

July 4. Lat. 5° 04′ S.; long. 31° 04′ W. Barometer, 30.00; temperature of air, 80°; of water, 78°. Winds: SE. by S., S.SE. Moderate trades and pleasant weather. This has been our best day's run, having made 240 miles by observation.

July 5. Lat. 7° 56′ S.; long. 33° 06′ W. Barometer, 30.08; temperature of air, 80°; of water, 79°. Winds: S.SE., SE. Light trades and pleasant weather."

Time and Crossings from the Lizard to the Line—July.

Name of vessel.	From—	Date sailing.	Longitude of crossing parallels of—																				Total days to—	
			Days.	45° N.	Days.	35° N.	Days.	30° N.	Days.	25° N.	Days.	20° N.	Days.	15° N.	Days.	10° N.	Days.	5° N.	Days.	Line.	Days.	3° S.	Line.	St. Roque.
Miltiades	Liverpool	July 9, 1852	7	14	5½	14¾	2	17	2	19	3	21	2½	22½	3	21	6½	18¼	7	21	2	23¼	38½	41½
Roland	Bremen	11, 1855	3½	10	5	18	2	21	2	23½	2	25½	2	24¾	4	23¾	5	17¾	4½	21½	1½	23½	30	32½
Isabella	Liverpool	16, 1849	4	11	5	17	5	19½	2	20	2	20¾	3½	21½	3½	21¼	7	20¼	3	24¾	1½	26	35	37½
Means east of Cape de Verds			4.8	11¾	5.2	16½	3	19¼	2	20¾	2.3	22¾	2.7	23	3.5	22	6.2	18¾	4.8	22½	1.7	24¼	34.5	37.2
Mean of 4 Dutch vessels east of Cape de Verds			4.4	10	6.1	16½	2.3	18½	1.9	19½	2	20½	2 4	20¾	4.7	21½	7.6	16¼	4.1	21¾	.....	.....	35.5	.....
Hippogriffe	Cardiff	July 3, 1856	4	11¾	5	23½	2	25	2½	27	1½	28	2	28	2	28	6	24	4	29¾	1¼	30½	29	31¼
Escort	Liverpool	5, 1856	3	13¾	3½	19¼	1½	21½	2	23¾	2	26	1½	26¾	3	26¼	5	17¾	4	26	1½	28¼	25½	27½
Mary	Cadiz	12, 1851	.....	.....	2	12	4	21	4	24	2½	26½	2½	28	5	27	11	26¼	6	32¼	2	33½	37	41
Paulista	Havre	14, 1853	3	10¾	4	20¾	2	23½	2	25½	2	28½	2	28¾	2	29¼	3	21¾	4	28	1	29¾	24	26
Zephyr	Liverpool	16, 1856	5½	10¾	4½	15¾	3	18½	2	21½	3	23¾	3½	26¼	2½	26¼	7	25	5½	30	1½	31¾	36½	39
Borneo	Gibraltar	25, 1850	.....	.....	3	12¾	3½	19½	2	22¼	3½	25¾	2	27½	3	25½	9	5¾	6	19	2	22	32	35
Owen Glendower	London	27, 1852	3½	12	4½	15¾	3	18¾	3	24½	2½	27	2	28	3	25	5½	18½	5	22½	1½	24	32	34
Panther	Liverpool	30, 1854	4	12	4	16¾	2	20½	2	24¼	2½	27½	1½	29¼	2½	28¼	3½	20½	3	22¼	1	23¾	25	27
Starling	Plymouth	30, 1836	4½	7¾	5	17	2	18½	3	22½	2	25½	2	25½	6	21½	4	14¾	6	19¾	2	21¾	34½	39
Means west of Cape de Verds			3.9	11¼	3.9	17	2.5	20¾	2.5	24	2.4	26½	2.1	27½	3.2	25½	6	20.5	4.8	25½	1.5	27¼	30.6	33.3
Mean of 53 Dutch vessels west of Cape de Verds			4.4	11¼	5.5	17	2.4	19¼	2.1	21¾	2.2	24½	2.4	26	4	23½	6.3	17¼	4.6	21¾	.....	.....	33.9	.....

Ship Orion, (Henry Libbey,) Liverpool to Calcutta; 10 days out.

"July 3, 1856. Lat. 29° 05′ N.; long. 23° 30′ W. Barometer, 30.15; temperature of air, 74°; of water, 71°. Winds: E., E.NE., E. Light trades first and latter parts; middle part squally. Current setting S. ½ knot per hour.

July 4. Lat. 26° 16′ N.; long. 24° 45′ W. Barometer, 30.11; temperature of air, 76°; of water, 72°. Winds: E. and E.NE. Throughout moderate trades and pleasant weather.

July 5. Lat. 23° 37′ N.; long. 25° 30′ W. Barometer, 30.08; temperature of air, 74°; of water, 72°. Wind: NE. by E., NE. Throughout moderate trades and cloudy weather; clouds cum. and nim.

July 6. Lat. 20° 44′ N.; long. 26° 18′ W. Barometer, 30.00; temperature of air, 74°; of water, 73°. Winds: NE. Throughout moderate trades; wind too much aft; wish I was further W. so as to steer due S.

July 7. Lat. 17° 43′ N.; long. 27° 12′ W. Barometer, 30.00; temperature of air, 80°; of water, 77°. Winds: E.NE., E. Throughout light trades and cloudy, but pleasant weather.

July 8. Lat. 15° 05′ N.; long. 27° 50′ W. Barometer, 30.02; temperature of air, 82°; of water, 79°. Winds: E. by S., E.SE. Light breezes and pleasant weather.

July 9. Lat. 13° 15′ N.; long. 28° 00′ W. Barometer, 30.02. Winds: N.NE., NE. by N. Moderate breezes and pleasant first part; middle and latter parts very cloudy and unfavorable looking weather. Temperature of air, 83°; of water, 79°.

July 10. Lat. 11° 04′ N.; long. 28° 05′ W. Barometer, 29.99; temperature of air, 82°; of water, 80°. Winds: NE. by E., E.SE., W.SW. First part pleasant; middle and latter parts squally, with rain; a heavy swell from the SW.

July 11. Lat. 9° 49′ N.; long. 27° 50′ W. Barometer, 29.98; temperature of air, 80°; of water, 80°. Winds: W.SW., W. Frequent squalls from the SW., with rain; towards noon, breeze more steady.

July 12. Lat. 8° 59′ N. long. 27° 00′ W. Barometer, 29.98; temperature of air, 80°; of water, 80°. Winds: W., W.NW., N. Weather more pleasant, with some rain and considerable swell from the SW.

July 13. Lat. 7° 39′ N.; long. 26° 36′ W. Barometer, 29.99. Winds: W.NW. Temperature of air, 82°; of water, 82°. Clouds moving slowly to E.SE.; upper strata still; middle and latter parts light breezes, with a few squalls, but no rain; a small current setting easterly.

July 14. Lat. 5° 25′ N.; long. 25° 45′ W. Barometer, 29.79; temperature of air, 78°; of water, 80°. Winds: W.SW., W., SW. First part light breezes and pleasant; middle part squally, with heavy rain; bracing the yards about constantly; wind hanging to S.SW.; trying hard to get S.

July 15. Lat. 4° 56′ N.; long. 25° 38′ W. Barometer, 29.76; temperature of air, 79°; of water, 80°. Winds: S'd and W'd. Throughout light winds, with a heavy lurch and rain; tacked ship 6 times; I am further E. than is desirable.

July 16. Lat. 4° 00′ N.; long. 26° 00′ W. Barometer, 29.98; temperature of air, 81°; of water, 81°. Current, E.NE., ½ knot per hour. Winds: S.SW., S. by W. Throughout, fresh breezes first and middle parts, with heavy squalls of wind and rain; latter part pleasant, with a few rain squalls; stood thirteen hours to westward and eleven hours to eastward.

July 17. Lat. 3° 01 N.; long. 26° 33′ W. Barometer, 29.99; temperature of air, 79°; of water, 81°. No perceptible current. Winds: S. by W. Throughout, moderate breezes and pleasant; beating to the southward.

July 18. Lat. 0° 53′ N.; long. 28° 40′ W. Barometer, 29.98; temperature of air, 79°; water, 78°. Winds: S. by W., S.SE., SE. by S. Moderate breezes and fine weather; stood all day to the westward.

July 19. Lat. 2° 01 S.; long. 29° 55′ W. Barometer, 29.97; temperature of air, 82°; water, 78°. Winds: S.SE. Throughout moderate trades and pleasant weather. Crossed the line in long. 29° 05′ W.; twenty-four days four hours from Scilly.

July 20. Lat. 4° 44′ S.; long. 31° 40′ W. Barometer, 30.05. Current, setting NW., ½ knot per hour. Temperature of air, 82°; water, 79°. Winds, S.SE., SE. by S. Moderate breezes and pleasant weather.

July 21. Lat. 7° 14′ S.; long. 32° 40′ W. Barometer, 30.05; a small current setting NW. Temperature of air, 80°; water, 79. Winds: SE. Throughout moderate breezes and pleasant weather, first part; middle, somewhat squally; latter part, pleasant."

Ship Hippogriffe, (David S. Sears,) Cardiff, Wales, to San Francisco, eleven days out.

"July 13, 1856. Lat. 30° 47′ N.; long. 25° 06′ W. Barometer, 30.50; temperature of air, 68°; water, 72°. Winds: NE. Throughout moderate; tide rips noticed.

July 14. Lat. 28° 40′ N.; long. 26° 30′ W. Barometer, 30.50; temperature of air, 74; water, 72°. Winds: NE. Moderate throughout, with fine weather.

July 15. Lat. 26° 07′ N.; long. 27° 00′ W. Barometer, 30.50; temperature of air, 73°; water, 72. Winds: NE. Fine breezes throughout, with fine weather.

July 16. Lat. 23° 16′ N.; long. 27° 30′ W. Barometer, 30.48; temperature of air, 74°; water, 74. Winds: NE. Fresh breezes throughout, and fine weather.

July 17. Lat. 20° 47′ N.; long. 28° 03′ W. Barometer, 30.45; temperature of air, 74°; water, 75°. Winds: NE. Throughout gentle breezes and fine weather.

July 18. Lat. 18° 33′ N.; long. 27° 45′ W. Barometer, 30.47; temperature of air, 76°; water, 74°. Winds: NE. by N. First part, moderate; middle part, moderately fresh; latter part, fresh breezes and fine weather.

July 19. Lat. 15° 24′ N.; long. 27° 54′ W. Barometer, 30.49; temperature of air, 76°; water, 75°. Winds: NE. by N., NE. Fresh breezes and cloudy. Saw two barks, one steering south and the other northwest.

July 20. Lat. 13° 27′ N.; long. 27° 55′ W. Barometer, 30.49; temperature of air, 84°; water, 81°. Winds: NE., N.NE., E.NE. First part, moderate with a swell from the south; middle part, the same; latter part, very light; sun very hot; think we have entered the doldrums.

July 21. Lat. 12° 05′ N.; long. 28° 00′ W. Barometer, 30.49; temperature of air, 83°; water, 79°. Winds: E., calm. First part, light breeze; middle part, squally, with rain; latter part, rain and calms.

July 22. Lat. 10° 30′ N.; long. 28° 00′ W. Barometer, 30.38; temperature of air, 78°; water, 78°. Winds: calm, W.SW. First part, calm; middle and latter parts, light breeze from W.SW., and squally; a swell from the south.

July 23. Lat. 8° 57′ N.; long. 27° 40′ W. Barometer, 30.38; temperature of air, 77°; water, 78°. Winds: W.SW., SW. Squally, with rain; throughout the day a confused sea; ship making little progress for the wind.

July 24. Lat. 8° 04′ N.; long. 25° 10′ W. Barometer, 30.40; temperature of air, 77°; water 79°. Winds: S.SW., SW. Fresh breezes and squally, with much rain.

July 25. Lat. 7° 28′ N.; long. 24° 44′ W. Barometer, 30.40; temperature of air, 78°; water, 80°. Winds: SW. First part, brisk breezes and passing clouds; a heavy sea from the south, and very irregular; middle and latter parts, a light breeze.

July 26. Lat. 6° 50′ N.; long. 25° 24′ W. Barometer, 30.38; temperature of air, 77°; water, 80°. Winds: SW., SW. by S. First part, moderate and clear; middle part, moderate and cloudy. I have stood on the western tack when I could lay west by compass, but have got further to the eastward than I meant to go; ends moderate, with drizzly rain.

July 27. Lat. 6° 00′ N.; long. 25° 00′ W. Barometer, 30.38; temperature of air, 78°; water, 89°. Winds: variable, SW., W. Light and baffling; middle part, fresh from SW.; commenced raining at 4 a. m., and continued until 11 a. m.; wind west when it rained; ends with appearances of clearing off.

July 28. Lat. 5° 44′ N.; long. 24° 00′ W. Barometer, 30.38; temperature of air, 80°; water, 81°. Winds: SW., S.SW., S. by W. First and middle parts, squally with rain; latter part, fine breezes and beautiful weather. Exchanged signals with an English bark steering N.

July 29. Lat. 4° 44′ N.; long. 25° 54′ W. Barometer, 30.40; temperature of air, 80°; water, 81°. Winds: S. by W., S.SW. Gentle breezes and pleasant weather.

July 30. Lat. 4° 01′ N.; long. 26° 54′ W. Barometer, 30.40; temperature of air, 80°; water 81°. Winds: S.SW., S., S. by W. Light breezes and beautiful weather.

July 31. Lat. 2° 30′ N.; long. 28° 47′ W. Barometer, 30.42; temperature of air, 80°; water, 80°. Winds: S. by W., S. by E., SE. Fresh breezes and beautiful weather throughout.

August 1. Lat. 0° 26′ N.; long. 29° 43′ W. Barometer, 30.45; temperature of air, 80°; water, 80°. Winds: SE., E.SE. Fresh breezes and fine weather. Crossed the equator at 4 p. m., in longitude 29° 50′ W. A head sea from S.SE.

August 2. Lat. 2° 24′ S.; long. 30° 30′ W. Barometer, 30.45; temperature of air, 79°; water, 80°. Winds: SE., E.SE. Fresh trades and irregular sea.

August 3. Lat. 5° 07′ S.; long. 31° 50′ W. Barometer, 30.40; temperature of air, 80°; water, 80°. Winds: SE., SE. by S. Light squalls passing.

August 4. Lat. 6° 56′ S.; long. 31° 50′ W. Barometer, 30.40; temperature of air, 80°; water, 79°. Winds: SE. by S., SE. Moderate breezes and pleasant weather. Swell from S.SE. At 4 p. m. saw a sperm whale spout several times."

Ship Escort, (D. Lynch,) Liverpool to Calcutta, 10 days out.

"July 13, 1856. Lat. 30° 54′ N.; long. 21° 33′ W. Barometer, 30.10; temperature of air, 75°; water 74°. Winds: NE. Moderate breezes and cloudy weather; latter part, light rain squalls; water very blue; distance run per log, 203½ miles.

July 14. Lat. 28° 07′ N.; long. 22° 41′ W. Barometer, 30.00; temperature of air, 76°; water, 74°. Winds: NE. Begins with a fresh breeze and light rain squalls; middle and latter parts, wind freshening, with fine weather; water indigo blue; distance run, 178 miles.

July 15. Lat. 25° 39′ N.; long. 23° 49′ W. Barometer, 30.00; temperature of air, 77°; water, 75°. Winds: NE. Begins with a moderate breeze and fine clear weather; middle and latter parts, freshening and clear; nights cool and damp.

July 16. Lat. 22° 57′ N.; long. 24° 59′ W. Barometer, 30.00; temperature of air, 76°; water, 76°. Winds: NE. to E. by N. First and middle parts, fresh breezes and cloudy; latter part, light breezes and clear; flying fish and birds about; distance run per log, 187 mile.

July 17. Lat. 20° 37′ N.; long. 26° 00′ W. Barometer, 30.10; temperature of air, 79°;

water, 76°. Winds: NE. to E. by N. First and middle parts, light breezes and cloudy; latter part, breeze freshening, with clear, pleasant weather; water very blue; flying fish around; a swallow flying about the rigging; distance run per log, 154 miles.

July 18. Lat. 18° 04′ N.; long. 27° 00′ W. Barometer, 30.00; temperature of air, 78°; water, 76°. Winds: NE., E. Begins with fresh breezes and cloudy; middle and latter parts, breeze freshening a little; water very blue; schools of flying fish around; the swallow still with us; saw a bird resembling a crow to leeward; distance logged, 168 miles.

July 19. Lat. 14° 55′ N.; long. 26° 43′ W. Barometer, 30.00; temperature of air, 81°; water, 78°. Winds: E., E. by S. First and middle parts, moderate breezes and passing clouds; latter part, light breezes; the water indigo blue; the swallow left us; distance run per log, 197½ miles.

July 20. Lat. 12° 44′ N.; long. 26° 49′ W. Barometer, 30.00; temperature of air, 84°; water, 80°. Winds: E., E. by S. Light breezes and cloudy weather; water rich blue color; distance run per log, 137 miles.

July 21. Lat 11° 43′ N.; long. 26° 47′ W. Barometer, 30.00; temperature of air, 81°; water, 81°. Winds: E.SE., calms, W.SW. Begins with light breezes and rain squalls; through the night, calms with rain; numerous shooting stars from NW. to SE.; flying fish around; distance run per log, 84 miles.

July 22. Lat. 10° 33′ N.; long. 26° 10′ W. Barometer, 30.00; temperature of air, 81°; water, 81°. Winds: SW. Begins with light variable breezes and cloudy, with rain; middle and latter parts, fresh breeze and cloudy; distance run, 90 miles.

July 23. Lat. 8° 16′ N.; long. 24° 26′ W. Barometer, 30.00; temperature of air, 81°; of water, 80°. Winds: SW., SW. by S., S.SW. First and latter parts strong breezes and heavy rain squalls; middle part, light breezes. Sky overcast; through the night sheet lightning in the NE. Water very blue. Distance run, per log, 171 miles.

July 24. Lat. 8° 04′ N.; long. 22° 33′ W. Barometer, 30.00; temperature of air, 83°; of water, 81°. Winds: S.SW. Begins with strong breeze and squalls, with heavy rain; middle and latter parts the same. Tacked ship to the westward at 4 a. m., at 5.30 a. m. tacked to southward and eastward, at 8.30 a. m. tacked to the westward; distance run, per log, 183½ miles.

July 25. Lat. 7° 39′ N.; long. 22° 19′ W. Barometer, 30.05; temperature of air, 84°; of water, 81°. Winds: S.SW., SW. by S. Moderate breezes and fine weather throughout; tacked ship as occasion required. Through the night shooting stars from E. by W.; the water more luminous than I have seen it since leaving Liverpool. Distance run, per log, 133 miles.

July 26. Lat. 6° 17′ N.; long. 19° 41′ W. Barometer, 30.05; temperature of air, 82°; of water, 81°. Winds: SW. by S., S.SW. Begins with light breezes and fine weather; through the night and latter part fresh breezes, with rain; flying fish seen. Distance run, per log, 155 miles.

July 27. Lat. 5° 20′ N.; long. 17° 46′ W. Barometer, 30.05; temperature of air, 83°; of water, 82°. Winds: SW., S.SW., S. Strong breezes and cloudy, with passing squalls during the night. Flying fish and petrels about; the water beautifully blue. Distance run, per log, 177 miles.

July 28. Lat. 3° 38′ N.; long. 20° 09′ W. Barometer, 30.01; temperature of air, 83°; of water, 81°. Winds: S., S.SW. During these 24 hours strong breezes and cloudy, with light rain squalls during the night. Flying fish and porpoises about. Water very blue. Distance run, per log, 186½ miles.

July 29. Lat. 3° 11′ N.; long. 21° 45′ W. Barometer, 30.04; temperature of air, 79°; of water, 80°. Winds: S. Begins with moderate breezes and cloudy; middle and latter parts, light breezes and clear; water, dark blue color. Numerous porpoises and flying fish about. Distance run, per log, 121 miles.

July 30. Lat. 2° 33′ N.; long. 23° 47′ W. Barometer, 30.10; temperature of air, 80°; of water, 79°. Winds: S. Light breezes and clear pleasant weather throughout. A large shark around. Water, light blue. Distance run, per log, 106 miles.

July 31. Lat. 0° 44′ N.; long. 26° 02′ W. Barometer, 30.10; temperature of air, 82°; of water, 80°. Winds: S., S. by E., S.SE. Begins with light breeze and clear; through the night shooting stars from NE. to SW., and large passing clouds, the wind hauling to southward and eastward; latter part, fresh breezes and fine weather. Distance run, per log, 172 miles.

August 1. Lat. 2° 38′ S.; long. 28° 00′ W. Barometer, 30.02; temperature of air, 83°; of water, 80°. Winds: S.SE., SE. by S., SE. by E. Begins with a strong breeze and clear weather. Crossed the equator at 5.30 p. m., in 26° 26′ W. Latter part, cloudy. At 11 a. m. took a heavy rain squall. Water, dark blue; in the night very luminous. Distance run, per log, 230 miles.

August 2. Lat. 6° 08′ S.; long. 29° 40′ W. Barometer, 30.00; temperature of air, 82°; of water, 79°. Winds: SE. by E. to S.SE. First and middle parts strong breezes and clear weather; latter part cloudy, with squalls. Petrels and flying fish about. Distance run, per log, 235 miles.

Time of Crossing from the Lizard, England, to the Equator—August.

Name of vessel.	From—	Date of sailing.	Longitude of crossing the parallels of—																				Total days to—	
			Days.	45° N.	Days.	35° N.	Days.	30° N.	Days.	25° N.	Days.	20° N.	Days.	15° N.	Days.	10° N.	Days.	5° N.	Days.	Equator.	Days.	3° S.	Equator.	St. Roque.
Aquetud	Liverpool	Aug. 1,1847	5	9⅛	6	18½	2	19¾	2	21¼	2	23¾	2	24⅛	7	22¼	7	16⅛	5	24	2	25	38	41
Hurricane	London	13,1855	2	11¾	4	15⅛	3	18	1¼	19⅛	2	19¾	2	19¾	2¼	20	2⅛	18¼	3	18¾	1	20	22½	24
Means east of Cape de Verdes			3.5	10⅛	5	17	2.5	18¾	1.7	20⅛	2	21¾	2	22¼	4.7	21	4.7	17¼	4	21¼	1.5	22⅛	30.2	32.5
Means of 4 Dutch vessels east of Cape de Verdes			6.2	11¼	4.6	15¾	2.4	17¼	2.1	19¼	1.9	20¾	2.8	21	4.4	20¾	5	14⅛	6	16	.....	.....	35.4	.....
Tremountain	Liverpool	Aug. 1,1856	6	13½	12	14¾	2⅛	18¾	3	21¾	2	25	3⅛	26½	3	26¾	4	22¾	3	27	3	31⅛	39	43
Gulf Stream	Cardiff	1,1856	5	21¼	10	15¾	4	21¼	2⅛	21¼	2	26¾	1⅛	27¼	3	27	4	22⅛	4	27¾	2	32	36	40
Edward	Liverpool	2,1854	4	15¾	7½	19	2	21½	2⅛	22⅛	2	25½	2	27	2⅛	24¼	3¼	17¾	7	26¼	1½	28¼	33	35
Inca	London	4,1849	4	14½	5	13	3	17½	2	21½	2	26½	3	26	3	23½	3	19¾	5	25	1	28½	30	32
Hamden	South Wales	9,1855	5	12	5	18⅛	3⅛	19	1½	21¾	2	24	2	26¼	4	24¼	4	22⅛	8	23¾	2	27	35	38
Rapid	London	14,1855	3	10⅛	5	17	3	20⅛	2	24	1⅛	26¾	1⅛	27¼	2	26	2	23⅛	6	29	2	32⅛	26	29
Prussian Eagle	Altona	16,1856	5	12¼	4	17¾	3	18¼	3½	21¾	2½	25	2	26¾	3	25½	5	21¼	5⅛	26¼	1⅛	28¾	33⅛	35½
Elizabeth	London	17,1851	9	9	6	16½	3	19¼	3	22¼	1¼	24	2⅛	25½	3	23⅛	8	18	7	21	1⅛	23	43	46
Augusta Kaufman	Cadiz	17,1854	.....	.....	1⅛	10½	3⅛	18½	2	21½	2	23½	4	25¾	3	24¼	5	19¼	4	26¾	1⅛	28½	25	27½
Josiah Bradlee	Liverpool	18,1854	6	10¼	6	19¾	3	22	3	24¾	2	26½	1½	27	3	26½	5½	25¼	4½	28¼	1¾	29¾	34½	37
Marion	do.	31,1854	3⅛	12¾	12½	14	3	19¼	3	23⅛	3	26¼	2½	29	2⅛	30½	8	29⅛	7	25¾	1	29⅛	45	47
Means west of Cape de Verdes			5	13¼	6.8	16	3	19½	2.5	22⅛	2	25½	2.4	26¾	2.9	25¾	4.7	22	5.5	26	1.8	29	34.5	37.3
Means of 38 Dutch vessels west of Cape de Verdes			4.4	11½	5.7	16¾	2.7	19¼	2.1	22	2.1	24¾	2.4	26	3.7	23¾	5.4	17¼	5.3	20⅛	.....	.....	33.8	.....

Ship Panther, (N. G. Weeks,) Liverpool to Calcutta; ten days out.

August 9, 1854. Lat. 30° 10′ N.; long. 20° 25′ W. Barometer, 30.05; temperature of air, 76°; of water, 76. Winds: N., NE., NE. by E. Steady moderate breezes, with smooth sea, and occasional light rains.

August 10. Lat. 28° 09′ N.; long. 22° 30′ W. Current, half mile per hour, W.SW. Barometer, 30.05; temperature of air, 78°; of water, 75°. Winds: NE. by E. Steady trades throughout and charming weather, with a smooth sea; all sail set.

August 11. Lat. 25° 49′ N.; long. 24° 10′ W. Barometer, 30.06; temperature of air, 78°; of water, 75°. Winds: E.NE. Moderates trades throughout, inclining to the eastward; smooth sea; all sail set.

August 12. Lat. 23° 32′ N.; long. 25° 38′ W. Current, 15 miles W.SW., during the day. Barometer, 30.05; temperature of air, 78°; of water, 78°. Winds: E.NE., NE. Moderate and steady trades, with fine weather and a smooth sea.

August 13. Lat. 21° 17′ N.; long. 28° 23′ W. Barometer, 30.04; temperature of air, 77°; of water, 75°. Winds: NE., NE. by E. Moderate steady trades throughout and fine weather. Noticed a slight current setting W.SW.; sea smooth.

August 14. Lat. 18° 27′ N.; long. 28° 23′ W. Barometer, 29.98; temperature of air, 78°; of water, 76°. Winds: NE. by E., NE. Strong trade winds and fine weather. No perceptible current to-day. Weather, damp at night.

August 15. Lat. 15° 06′ N.; long. 29° 19′ W. Current, ½ knot per hour, SW. Barometer, 29.94; temperature of air, 79°; of water, 80°. Winds: NE. by N. Throughout strong steady trade winds and fine weather.

August 16. Lat. 11° 53′ N.; long. 29° 21′ W. Barometer, 29.94; temperature of air, 82°; of water, 82°. Winds: NE. by N., NE. Winds not so steady; clouds making up from the SW.; from 2 to 2.30 p. m. calm, after which the breeze commenced fresh and steady from the same quarter.

August 17. Lat. 11° 16′ N.; long. 29° 00′ W. Barometer, 29.94; temperature of air, 83° of water, 83°. Winds: NE., W., SW. Commences with light breezes, with appearances of rain to the SW.; at midnight, being in lat. 11° 26′ N., long. 29° 15′ W., the splendid old wind, which has wafted us about 3,000 miles in 17 days, ceased to breathe.

August 18. Lat. 9° 56′ N.; long. 28° 15′ W. Barometer, 29.90; temperature of air, 80°; of water, 82°. Winds: W., SW., S.SW. First and middle parts squally, with rain, evidently a war between the NE. trades and SW. monsoon; latter part experienced the last squall, and came out into good weather and the steady SW. monsoon.

August 19. Lat. 7° 57′ N.; long. 25° 54′ W. Experienced a current setting E. by S. one mile per hour. Barometer, 29.92; temperature of air, 81°; of water, 83°. Winds: SW. by S. Throughout strong and steady monsoon and fine weather.

August 20. Lat. 6° 55′ N.; long. 23° 28′ W. Current, NE. ¾ E., two knots per hour. Barometer, 29.90; temperature of air, 79°; of water, 72°. Winds: SW., S.SW. Strong, steady monsoon; good weather.

August 21. Lat. 5° 41′ N.; long. 20° 30′ W. Current, two miles per hour, NE. by E. ¾ E. Barometer, 29.92; temperature of air, 79°; of water, 81°. Winds: S.SW. Throughout strong monsoon breezes and dark passing clouds.

August 22. Lat. 4° 56′ N.; long. 18° 07′ W. Current, E. by N., 1.2 miles per hour. Barometer, 29.92; temperature of air, 79°; of water, 81°. Winds: S. by E., S.SE. Mod-

erate and pleasant; ship heading up SW. ½ W, which is an unexpected favor; latter part, fresh trades and pleasant.

August 23. Lat. 2° 41′ N.; long. 20° 04′ W. Current, one mile per hour, SE. by S. Barometer. 29.91; temperature of air, 79°; of water, 80°. Winds: steady trades, and strong from S.SE. Observed a change in the color and temperature of the water first part of the day, the water being then 78°. At 9 a. m. crossed the equator in long. 22° 12′, W., being 25 days and 21 hours out from Liverpool, which, for this month, may be considered a remarkable passage.

August 24. Lat. 00° 23′ S.; long. 22° 14′ W. Current, W.SW. Barometer, 29.96; temperature of air, 78°; of water, 75°. Winds: SE. by S. Throughout fresh trades and steady, with fine weather. I have, doubtless, been the gainer by steering well to the westward of Cape Verde Islands, so as to lose the trades in 29° 20′ W., which I should not have done had I not had the benefit of Lieut. Maury's "Sailing Directions."

August 25. Lat. 3° 39′ S.; long. 23° 52′ W. Barometer, 29.99; temperature of air, 78°; of water, 76°. Winds: SE. by S. Through these 24 hours strong steady trade winds and fine weather.

August 26. Lat. 6° 36′ S.; long. 25° 39′ W. Current, one mile per hour, SW. ¾ W. Barometer, 30.00; temperature of air, 77°; of water, 77°. Winds: SE. by S.

Ship Hurricane, (St. Very,) London to Calcutta; ten days out.

"August 22, 1855. Lat. 30° 31′ N.; long. 18° 00′ W. Current, 12 miles, SW. Barometer, 30.08; temperature of air, 75°; of water, 75°. Winds: NE., calms. A strong breeze until 5 p. m., this dying away to a dead calm, leaving a high sea, making the vessel roll badly; remains calm, with baffling airs until 2 a. m., when we took a breeze from the NE., which increased gradually until noon, and ends with a brisk breeze from the NE. (apparently the trades) and very fine weather, everything set to best effect.

August 23. Lat. 27° 11′ N.; long. 19° 15′ W. Current, 8 miles, S. ½ W. Barometer, 29.98; temperature of air, 74°; of water, 74°. Wind: NE. We have had a very regular trade-wind blowing fresh, and the usual trade-wind clouds, which prevented our seeing the islands of Palma and Feno, which we passed in the night. All sails set throughout the day, and nothing unusual seen.

August 24. Lat. 23° 50′ N.; long. 19° 25′ W. Current, 11 miles, S. by W. Barometer, 29.98; temperature of air, 74°; of water, 74°. Winds: NE., E.NE., N.NE. We have kept quite a brisk trade-wind all this day, yet a little more variable; very pleasant weather; all sail set; we have seen no birds or fish yet, something unusual, but I notice the paint rust as usual in these latitudes.

August 25. Lat. 21° 00′ N.; long. 19° 30′ W. Current, 6 miles, S. ½ W. Barometer, 30.00; temperature of air, 75°; of water, 72°. Wind: N.NE. The wind has held very steady from N.NE. all this day, but has been rather light most of the time; quite cloudy; the water has a greenish hue; there is a difference of 2° in temperature at noon; plenty of skip-jacks around, caught one with a hook and line; there are no signs of the red sand yet, but the atmosphere seems unusually moist for a northerly wind.

August 26. Lat. 18° 04′ N.; long. 19° 45′ W. Current, 7 miles, S. ½ W. Barometer, 30.00; temperature of air, 78°; of water, 76°. Wind: N.NE. Another 24 hours light trade-

winds from N.NE., and quite steady; very fine pleasant weather, temperature altered from noon to noon; all sail set; after daylight we saw a great number of sea-gulls and flying fish; I also noticed a number of pieces of drift-wood, (carpenters' chips, &c.,) as if some ship had been along quite lately, but have seen no sail to day.

August 27. Lat. 15° 57′ N.; long. 19 40′ W. Barometer, 29.96; temperature of air, 82°; of water, 80°. Wind: N.NE. All throughout this day the wind has been very light, but very steady from the N.NE. dead aft; the ship has been going along very quietly with studding sails set both sides; plenty of flying fish, seen some few gulls.

August 28. Lat. 14° 30′ N.; long. 20° 00′ W. Barometer, 29.96; temperature of air, 82°; of water, 80°. Winds: N.NE., calms, S. The wind was light from the N.NE. all the first part, it then died away calm, and remained so until 8 a. m., then came on squally weather, with rain; about noon a stiff breeze from the south; took in all studding sails, sky sails, and royals; ends raining.

August 29. Lat. 12° 42′ N.; long. 20° 00′ W. Current, 10 miles, S. by E. Barometer, 29.90; temperature of air, 80°; of water, 80°. Winds: S., SW., W. The wind hauled very gradually around to the SW., and by 6 p. m. had got to W.; we tacked ship at 1 p. m., and set the square sails; middle part, very pleasant; ends with a fine breeze from the westward, and considerable sea on; nothing unusual throughout the day.

August 30. Lat. 9° 26′ N.; long. 20° 00′ W. Barometer, 29.94; temperature of air, 80°; of water, 80°. Winds: W., variable, N., W.SW. Steady breeze until 5 p. m., when it hauled to the northward and became squally, with rain; slacked up during the night; nothing unusual seen throughout the day; ends with a fine breeze from the W. to W.SW, and just clouds enough for comfort.

August 31. Lat. 7° 10′ N.; long. 19° 00′ W. Barometer, 30.00; temperature of air, 81°; of water, 80°. Winds: variable. First part, gentle breezes and pleasant; at 8 p. m. it died away to a dead calm, and commenced to rain in squalls; all night the same, wind hauling from N. to SW. in the squalls, blowing very stiff at times, then again nearly calm, in fact, the regular equatorial doldrums; made sail accordingly; had topmast studding sails set most of the night; ends rain.

Sept. 1. Lat. 5° 26′ N.; long. 18° 15′ W. Barometer, 30.00; temperature of air, 79°; of water, 79°. Winds: variable, SW. Continued rain in squalls, with the same kind of variable wind and doldrums all the afternoon and evening; at mid-day it held up some; latter part of the day less rain and wind; ends with light breeze from SW. and cloudy; all drawing sail set by the wind; some appearance of the SE. trades.

Sept. 2. Lat. 4° 00′ N., D. R.; long. 16° 45′ W., D. R. Barometer, 30.00; temperature of air, 79°; of water, 79°. Winds: SW., S.SW. At times, breeze quite fresh, then calms, and heavy rain squalls throughout; after 7 a. m. the wind hauled more to the southward, with drizzling rainy weather at noon; carried away the fore topsail-yard in the slings just at noon.

Sept. 3. Lat. 3° 02′ N.; long. 15° 40′ W. Barometer, 30.00; temperature of air, 79°; of water, 79°. Winds: S.SW., S. First part, a few light rain squalls and strong breezes; got the other topsail-yard aloft; at 8 p. m. the wind hauled south; at 2 a. m. tacked ship to W.SW.; ends with brisk gales and cloudy weather.

Sept. 4. Lat. 0° 39′ 43″ N.; long. 18° 40′ W. Current, 11 miles, S.SW. Barometer, 30.04; temperature of air, 78°; of water, 78°. Winds: southward. The wind has held quite steadily from the southward, with a little easting in it after daylight, blowing brisk gales, with

considerable sea on; we have made rather a better course than we expected; the weather not yet settled; we have very few light rain squalls; I presume we shall soon get the regular SE. trade-winds and weather; plenty of flying fish.

Sep. 5. Lat. 2° 29′ S.; long. 19° 44′ W. Barometer, 30.04; temperature of air, 77°; of water, 78°. Winds: S., S.SE., SE. Brisk breezes from the S.SE. all the first part, but after midnight from SE., and cloudy; the weather still squally during the night; during the day growing more settled; ends with very pleasant weather, and plenty of wind for royals only; temperature quite mild; I notice a great many flying fish still.

Sep. 6. Lat. 5° 47′ S.; long. 20° 58′ W. Barometer, 30.06; temperature of air, 77°; of water, 78°. Winds: SE., variable. We held the wind steady from SE. all the first and middle parts in brisk gales until 5 a. m., when it became variable in squalls, with light spits of rain, hauling the wind for short periods to the south, and continued so for the remainder of the sea day, and so ends; we passed about 6 miles to windward of a large English ship, bound S.SW. on the wind.

Sep. 7. Lat. 8° 40′ S.; long. 22° 41′ W. Current, 11 miles, SW. Barometer, 30.08; temperature of air, 77°; of water, 77°. Wind: S.SE. The wind holds still well to the southward, blowing a fresh breeze most of the time, not allowing us to have better than SW.; nothing unusual seen to day; ends with weather becoming more settled."

Barque Mea, (B. Buxton,) London to China; eleven days out.

"August 15, 1849. Lat. 31° 03′ N.; long. 17° 15′ W. No perceptible current. Barometer, 30.07; temperature of air, 78°; of water, 75°. Wind: NE. by E., throughout. Moderate trade winds and hazy. At 6 p. m. saw Madeira bearing W.

August 16. Lat. 28° 42′ N.; long. 19° 18′ W. Barometer, 30.05; temperature of air, 78°; of water, 74°. Winds: NE. ½ E., NE. Light trade winds and clear weather. At 6 a. m. saw Palma bearing E.SE.

August 17. Lat. 25° 41′ N.; long. 21° 14′ W. Current, 12 miles, S. Barometer, 29.95; temperature of air, 79°; of water, 75°. Wind: NE. Fresh trades, with light fleecy clouds and fine weather. Flying fish about.

August 18. Lat. 23° 16′ N.; long. 22° 54′ W. Current, 8 miles, S. Barometer, 29.90; temperature of air, 79°; of water, 74°.5. Wind: NE. ½ E. First part, fresh trades and cloudy; middle and latter parts, light winds and cloudy, with spits of rain.

August 19. Lat. 21° 07′ N.; long. 24° 26′ W. No perceptible current. Barometer, 29.90; temperature of air, 80°; of water, 76°. Winds: NE. by E., NE. by E. ½ E. Light winds and cloudy throughout; sea smooth; ends with wind decreasing.

August 20. Lat. 19° 28′ N.; long. 25° 25′ W. Barometer, 29.92; temperature of air, 82°; of water, 76°. Winds: NE. by E. ½ E., E.NE. Very light airs, and cloudy hazy weather throughout. Two ships in company.

August 21. Lat. 17° 16′ N.; long. 26° 12′ W. Barometer, 29.90; temperature of air, 84°; of water, 79°. Winds: N.NE., NE., E. by N. First part, very light winds and flying clouds; middle and latter parts, moderate and hazy.

August 22. Lat. 15° 17′ N.; long. 26° 00′ W. Barometer, 29.92; temperature of air, 83°; of water, 80°. Winds: N.NE., variable. Winds light and variable, with cloudy and hazy weather throughout.

August 23. Lat. 14° 00′ N.; long. 25° 36′ W. Barometer, 29.90; temperature of air,

82°; of water 80°. Wind: variable. Winds very light, with light showers during the night; latter parts, very cloudy.

August 24. Lat. 11° 54′ N.; long. 24° 27′ W. Barometer, 29.91; temperature of air, 82°; of water, 80°. Wind: Sd. and Wd. First part, light airs and pleasant; middle and latter parts, moderate breezes and flying clouds.

August 25. Lat. 9° 25′ N.; long. 23° 20′ W. Barometer, 29.95; temperature of air, 82°; of water, 80°. Winds: SW. by W., SW., S. First part, moderate winds and hazy; middle part, the same; latter part, heavy rain and blowing hard.

August 26. Lat. 7° 12′ N.; long. 22° 20′ W. Barometer, 29.77. Winds: S., SW. Commences with heavy rain; at 3 p. m. cleared up, and continued fair throughout the day.

August 27. Lat. 5° 57′ N.; long. 19° 32′ W. Current, ½ mile per hour, NE. Barometer, 29.92. Winds: SW., S.SW. Fresh breezes and flying clouds throughout.

August 28. Lat. 4° 12′ N.; long. 17° 33′ W. Current, NE., ½ mile per hour. Barometer, 29.94. Winds: S.SW., SW. Fresh breezes and cloudy weather throughout. At noon tacked ship to the Wd.

August 29. Lat. 4° 00′ N.; long. 19° 47′ W. Current, 6 miles, E.NE., during the day. Barometer, 30.00. Winds: S.SW., SW. by S. Moderate breezes and hazy and partially cloudy weather, with a nasty chop of a sea from the S.

August 30. Lat. 2° 40′ N.; long. 22° 26′ W. Barometer, 30.00. Winds: S., S. ½ E. Some clear weather and fresh breezes throughout. Saw great numbers of tunny fish.

August 31. Lat. 1° 01′ N.; long. 25° 00′ W. Barometer, 30.00; temperature of air, 84°; of water, 83°. Winds: S. by E., S.SE. Moderate steady winds throughout, clear overhead.

Sept. 1. Lat. 1° 12′ S.; long. 27° 01′ W. Current, W., ½ mile per hour. Temperature of air, 84°; of water, 84°. Wind: S. by E. Fresh and cloudy first part; middle and latter parts, clear.

Sept. 2. Lat. 4° 06′ S.; long. 28° 22′ W. Current, W., ½ mile per hour. Temperature of air, 82°; of water, 81°. Wind: SE. by S. First part, fresh breezes and light showers; middle and latter parts, moderate and clear.

Sept. 3. Lat. 6° 12′ S.; long. 31° 32′ W. Current, W., 1½ miles per hour. Temperature of air, 80°; of water, 80°. Winds: S.SE., S. by E. ½ E. Fresh trade-winds and hazy weather. Found a strong westerly current.''

Time and Crossings from the Lizard to the Line—September.

Name of vessel.	From—	Date of sailing.	LONGITUDE OF CROSSING THE PARALLELS OF—																					Total days to—	
			Days.	45° N.	Days.	35° N.	Days.	30° N.	Days.	25° N.	Days.	20° N.	Days.	15° N.	Days.	10° N.	Days.	5° N.	Days.	Equator.	Days.	3° S.		Equator.	St. Roque.
Columbia	South Shields	Sept. 2, 1851	4	10½	10	17¾	6	21	4	23	4	25	1	24	5	22		15	7½	18	1¾	22		49½	52
Thomas Strickland	London	28, 1850	3	10¼	4½	15½	2	17¾	4½	18	4	19	3	19½	3	20½	3	18¾	9	16½	2	19½		36	39
Means east of Cape de Verds			3.5	10½	7.2	16½	4	19½	4.2	20½	4	22	2	21½	4	21¼	5.5	16.8	8.2	17¼	2	20¾		42.7	45.5
Means of 9 Dutch vessels east			4.3	12	6.1	16	3.2	18½	2.5	20	2.2	21	2.1	21¼	3.5	21	6.2	18	6.2	20½	.....	.....		36.3	.....
Dolphin	Hamburg	Sept. 1, 1853	3	11	6	18¾	3	21¼	2	23¾	2	26	3	26¼	5	24	5	22¼	7¾	30½	2	32¾		36¾	39½
Vision	Liverpool	1, 1855	2½	13¼	3½	18½	2	20¼	2½	22½	1½	25½	1½	26	3	25½	5½	20	4½	26¼	1½	28		26½	28½
Alan Ker	Troon	5, 1851	11	18½	4	19½	3	22	2½	22¾	2	24	2½	25¾	2	23¼	9	15	9	15½	2½	19		45	48½
Scorgo	Cardiff	5, 1856	5	12	5	16¼	4	19½	2½	22¼	2	23¾	2	25¾	4½	25¾	6	21	5	24½	2	28		36	39
Gauntlet	London	6, 1853	3	10¼	4½	14¼	2	19¼	2	22½	1½	24	3	27	4	23	5	20¾	6	20¼	1½	25½		31	33½
Anna	Lisbon	6, 1855	.....	.....	1½	11¾	2	17¾	2½	19½	2	22½	3	26¾	2	28½	6	27¾	5	31¾	1¼	33¼		24	26¼
Titania	Hamburg	6, 1855	3	10¾	3½	17¼	3	19¾	3	22	2	24¾	2	25½	4	24¼	7½	24	2½	27¼	2	30¾		30½	33½
Adler	....do.	8, 1851	2½	12	8½	20	3	23¼	2	25½	2	26¼	2	27½	3½	25¼	6½	20¼	6	26	1½	27¾		36	38
Restitution	Havre	9, 1827	5	12	4½	16¼	3½	18¾	2½	21½	2	24½	2	26½	3½	24¼	4½	21¼	5	22½	1¼	24½		32½	34½
Nabob	Liverpool	10, 1854	5	12¼	7	18½	2	20½	4	20¾	2	22½	3	26¼	2	27¼	6	28¾	3½	32½	1½	33½		34½	37
Starling	London	13, 1883	4	7	6	16¼	2½	19	1½	21¼	2	24½	2	25	3	22¾	7½	19½	4½	24	1	25¾		33	35
Robertina	Glasgow	16, 1853	9	15¼	5	16¼	3	19	2	21	2	24	3	26	3	25	5	19	10	20½	3	24¼		42	46
Caroline Reed	Liverpool	18, 1853	4½	10¼	5	18½	1½	20¼	2	23¼	2	25	2½	26	2	25¼	4½	24¼	5½	22½	1	25¾		29½	31¼
G. H. Montague	Gibraltar	22, 1852	.....	.....	1	8¼	5	16½	4	21½	3	25½	2	26¼	2	26	6	24¼	5½	25½	1¼	29¾		28½	31
Means west of Cape de Verds			4.8	12	4.7	16½	2.8	19¾	2.5	22¼	2	24½	2.4	26¼	3.1	25	6	22¼	5.7	25	1.7	27¾		33.3	35.8
Means of 31 Dutch vessels west			4	11¾	6.0	16¼	2.8	18½	2.4	21¾	2.3	24½	2.1	26	3.4	24	6.7	20	6.5	21¾	.....	.....		36.2	.....

Ship Scargo, (N. Crowell,) Cardiff to San Francisco; fourteen days out.

"Sept. 19, 1856. Lat. 30° 30′ N.; long. 19° 29′ W. Barometer, 29.45; thermometer attached, 77°; temperature of air, 78; water, 72°. Winds: S., SW. to E.SE., N.NE. Fine breezes ranging all around the compass.

Sept. 20. Lat. 28° 55′ N.; long. 20° 39′ W. Barometer, 29.50; thermometer attached, 78°; temperature of air, 78°; water, 74°. Winds: S., N.NW. to N.NW., E. Singular weather, heavy squalls, calms, variable winds.

Sept. 21. Lat. 26° 08′ N.; long. 21° 44′ W. Barometer, 29.55; thermometer attached, 80°; temperature of air, 80°; water, 76°. Winds: E., E. by N., E.NE. Strong steady breezes and hazy.

Sept. 22. Lat. 23° 32′ N.; long. 22° 40′ W. Barometer, 29.50; thermometer attached, 81°; temperature of air, 81°; water, 78°. Winds: E.NE., E.NE., SE. First and middle parts, strong breezes and hazy; latter part, cloudy and thick weather.

Sept. 23. Lat. 21° 43′ N.; long. 23° 30′ W. Barometer, 29.50; thermometer attached, 82°; temperature of air, 82°; water, 79°. Winds: SE., E.NE., SE. to E.NE. First part, strong breezes and hard squalls; middle, fresh; latter, strong.

Sept. 24. Lat. 19° 14′ N.; long. 24° 57′ W. Barometer, 29.50; thermometer attached, 83°; temperature of air, 84°; water, 80°. Winds: E.NE., NE., E.NE. Fine steady breezes and hazy.

Sept. 25. Lat. 16° 50′ N.; long. 25° 48′ W. Barometer, 29.45; thermometer attached, 82°; temperature of air, 84°; water, 80°. Winds: E. by N., E. by S., E.SE. Strong breezes and hazy.

Sept. 26. Lat. 14° 51′ N.; long. 25° 48′ W. Barometer, 29.40; thermometer attached, 82°; temperature of air, 84°; water, 80°. Winds: E.SE., E.SE., E. by N. Light breezes and clear.

Sept. 27. Lat. 13° 31′ N.; long. 25° 48′ W. Barometer, 29.25; thermometer attached, 82°; temperature of air, 82°; water, 81°. Winds: E. by S., S.SE., S.SE. First part, fine breezes and thickening from the Sd.; middle, calms and heavy squalls of wind, rain, thunder and lightning; latter, same.

Sept. 28. Lat. 12° 49′ N.; long. 26° 40′ W. Barometer, 29.45; thermometer attached, 82°; temperature of air, 82°; water, 82°. Winds: S., S., S. Light winds and rain showers.

Sept. 29. Lat. 11° 17′ N.; long. 26° 36′ W. Barometer, 29.45; thermometer attached, 84°; temperature of air, 86°; water. 82°. Current, 12 knots, S.SE. Winds: calm, N., N. First part, calm and hot; middle, light breezes; latter, fine breezes and clear.

Sept. 30. Lat. 10° 09′ N.; long. 25° 49′ W. Barometer, 29.45. Current, 12 knots, S.SE. Thermometer attached, 83°; temperature of air, 84°; water, 82°. Winds: NE., calm, W.

Oct. 1. Lat. 9° 25′ N.; long. 25° 17′ W. Current, 12 knots, E. Barometer, 29.45; thermometer attached, 83°; temperature of air, 83°; water, 83. Winds: calm and SW., SW., SW. and calm. First part, calm and moderate; middle, moderate; latter, moderate and calm.

Oct. 2. Lat. 9° 18′ N.; long. 25° 07′ W. Current, 18 knots, E.NE. Barometer, 29.50; thermometer attached, 83°; temperature of air, 84°; water, 83°. Winds: calm and N., E. by N., E.SE. and calm. First part, calm and light airs; middle, moderate; latter part, light breezes and calm.

Oct. 3. Lat. 8° 00′ N.; long. 25° 07′ W. Current, 18 knots, E. Barometer, 29.48;

thermometer attached, 82°; temperature of air, 84°; water, 83°. Winds: E.SE., S.SE., S.SE. Light breezes and pleasant.

Oct. 4. Lat. 6° 53′ N.; long. 25° 13′ W. Current, 24 knots, E. Barometer, 29.48; thermometer attached, 82°; temperature of air, 83°; water, 83°. Winds: S.SE, SE., E. Light winds, and clear.

Oct. 5. Lat. 6° 25′ N.; long. 24° 42′ W. Current, 18 knots, E. by S. Barometer, 29.45; thermometer attached, 82°; temperature of air, 83°; water, 83°. Winds: calm, and W., S.SW., SW. and calm. First part, calm, and light airs; middle, light airs; latter, light airs, and calm.

Oct. 6. Lat. 5° 36′ N.; long. 23° 59′ W. Current, 18 knots, E. by S. Barometer, 29.42; thermometer attached, 81°; temperature of air, 81°; water, 82°. Winds: calm, SW. by S., SW. by S. First part, calm; middle and latter, light, variable winds.

Oct. 7. Lat. 4° 48′ N.; long. 23° 29′ W. Current, 18 knots, E. by S. Barometer, 29.45; thermometer attached, 80°; temperature of air, 80°; water, 81°. Winds: SW. by S., SW., SW. Moderate breezes, with frequent squalls of rain.

Oct. 8. Lat., none; long., none. Barometer, 29.45; thermometer attached, 78°; temperature of air, 77°; water, 81°. Winds: S., W.SW., W.SW. First part, light, variable winds; middle and latter, fine breezes, with heavy rain. Current, 12 knots, E.

Oct. 9. Lat. 3° 40′ N.; long. 23° 02′ W. Current, 12 knots, E. Barometer, 29.40; thermometer attached, 78°; temperature of air, 78°; water, 81°. Winds: SW., SW., SW. by S. Moderate breezes, with squalls of rain.

Oct. 10. Lat. 2° 53′ N.; long. 21° 41′ W. Barometer, 29.42; thermometer attached, 78°; temperature of air, 78°; water, 80°. Winds: S.SW., S.SW., S.SW. Fine breezes, and hazy, with occasional showers of rain.

Oct. 11. Lat. 1° 54′ N.; long. 23° 01′ W. Barometer, 29.40; thermometer attached, 78°; temperature of air, 78°; water, 79°. Winds: S. by W., S., S. Moderate breezes, and pleasant.

Oct. 12. Lat. 0° 24′ N.; long. 24° 33′ W. Barometer, 29.45; thermometer attached, 78°; temperature of air, 78°; water, 79°. Winds: S., S., S. Moderate breezes, and pleasant.

Oct. 13. Lat. 1° 34′ S.; long. 26° 34′ W. Barometer, 29.45; thermometer attached, 79°; temperature of air, 79°; water, 78°. Winds: S., S. by E., S.SE. Fine breezes, and pleasant.

Oct. 14. Lat. 3° 38′ S.; long. 28° 02′ W. Barometer, 29.48; thermometer attached, 78½°; temperature of air, 79°; water, 77°. Winds: S.SE., S.SE., SE. Strong breezes and pleasant.

Oct. 15. Lat. 5° 47′ S.; long. 29° 47′ W. Barometer, 29.48; thermometer attached, 78°; temperature of air, 78°; water, 77°. Winds: SE., SE., SE. Fine breezes, and pleasant."

Barque Anna, (Robt. W. Wheeler,) Lisbon to Rio de Janeiro; three days out.

"Sept. 9. Lat. 29° 38′ N.; long. 18° 07′ W. Barometer, 30.26; temperature of air, 71°; water, 72°. Winds: N.NW., N., N.NE. First part, light breezes, and passing clouds; middle and latter, light breezes, and pleasant.

Sept. 10. Lat. 27° 55′ N.; long. 18° 32′ W. Barometer, 30.20; temperature of air, 74°; water, 72°. Winds: N. by E., N.NE., N.NE. First and middle parts, light breezes, and pleasant; latter part, gentle breezes.

Sept. 11. Lat. 25° 59′ N.; long. 19° 35′ W. Barometer, 30.22; temperature of air, 74°; water, 73°. Winds: N.NE., N.NE., N.NE. Light breezes, and pleasant.

Sept. 12. Lat. 23° 21′ N.; long. 21° 02′ W. Barometer, 30.21; temperature of air, 74°; water, 72°. Winds: NE., NE. by N., NE. by N. First and middle parts, fine breezes; latter, fine trade-winds.

Sept. 13. Lat. 20° 30′ N.; long. 22° 33′ W. Barometer, 30.12; temperature of air, 76°; water, 74°. Winds: NE. by N., NE. by N., NE. by N. Fine trades and pleasant.

Sept. 14. Lat. 18° 23′ N.; long. 24° 24′ W. Barometer, 30.08.; temperature of air, 76°; water, 74°. Winds: NE. by N., NE., NE. Moderate trades, and pleasant.

Sept. 15. Lat. 16° 25′ N.; long. 25° 50′ W. Barometer, 30.07; temperature of air, 77°; water, 76°. Winds: NE. by E., NE. by E., E. First and middle parts, moderate trades; latter part, light breezes and pleasant.

Sept. 16. Lat. 15° 00′ N.; long. 26° 46′ W. Barometer, 30.12; temperature of air, 78°; water, 77°. Winds: E. by N., E.NE., NE. by E. Light trades, clear and pleasant. I intend to cross the line in 27° W.

Sept. 17. Lat. 12° 47′ N.; long. 27° 45′ W. Barometer, 30.04; temperature of air, 78°; water, 78°. Winds: NE. by E., NE. by N., NE. Moderate breezes and cloudy.

Sept. 18. Lat. 10° 53′ N.; long. 28° 38′ W. Barometer, 30.00; temperature of air, 80°; water, 78°. Winds: NE., E. by N., SE. First part, brisk breezes; middle and latter parts, squally, with heavy rain.

Sept. 19. Lat. 10° 11′ N.; long. 29° 14′ W. Barometer, 30.05; temperature of air, 81°; water, 82°. Winds: S.SE., S.SE., S.SE. First and middle parts, light, baffling breezes, with a heavy swell; latter part, light airs.

Sept. 20. Lat. 9° 08′ N.; long. 28° 23′ W. Barometer, 30.03; temperature of air, 82°; water, 80°. Winds: W.SW., W., W. First part, light breezes, with rainy appearances; middle, squally, with rain; latter part, breezes freshening.

Sept. 21. Lat. 7° 50′ N.; long. 27° 30′ W. Barometer, 30.00; temperature of air, 79°; water, 79°. Winds: W., W., SW. by W. First part, light breezes; middle, squally, with heavy rain; latter, fresh breeze.

Sept. 22. Lat. 6° 50′ N.; long. 26° 26′ W. Barometer, 29.97; temperature of air, 79°; water, 78°. Winds: SW., SW. by S., S. by W. First and middle parts, airs and squally appearances; latter part, hard rain squalls.

Sept. 23. Lat. 6° 29′ N.; long. 27° 04′ W. Barometer, 30.02; temperature of air, 80°; water, 79°. Winds: SW. by S., S. by E. Light airs and pleasant weather

Sept. 24. Lat. 5° 43′ N.; long. 27° 43′ W. Barometer, 30.04; temperature of air, 80°; water, 79°. Winds: S. by E., S. by E., S.SE. First and middle parts, light airs; latter part, squalls of wind and rain.

Sept. 25. Lat. 5° 31′ N.; long. 27° 11′ W. Barometer, 30.06; temperature of air, 79°; water, 79°. Winds: S. by E., SE. by S., S. Light airs and squalls.

Sept. 26. Lat. 4° 24′ N.; long. 27° 54′ W. Barometer, 30.03; temperature of air, 78°; water, 78°. Winds: S., S. by W., S. by E. First part, light breezes, squally and rainy; strong breezes and cloudy; latter part, moderate breezes and pleasant.

Sept. 27. Lat. 2° 50′ N.; long. 29° 30′ W. Barometer, 30.08; temperature of air, 79°; water, 79°. Winds: S.SE., S.SE., S.SE. Moderate and steady breezes. I think we have the SE. trades, but well to the southward.

Sept. 28. Lat. 2° 44′ N.; long. 29° 27′ W. Barometer, 30.06; temperature of air, 80°; water, 79°. Winds: S.SE., S.SE., S.SE. Light baffling airs.

Sept. 29. Lat. 1° 33′ N.; long. 30° 28′ W. Barometer, 30.01; temperature of air, 79°; water, 78°. Winds: S.SE., S.SE., S.SE. First part, light and baffling breezes; middle and latter, moderate and steady breezes.

Sept. 30. Lat. 0° 43′ S.; long. 31° 50′ W. Barometer, 30.00; temperature of air, 78°; water, 77°. Winds: SE. by S., SE. by S., SE. First and middle parts, fine trades; latter part, moderate. At 5 a. m. crossed the line in 31° 30′ W.

Oct. 1. Lat. 3° 12′ S.; long. 33° 15′ W. Barometer, 30.01; temperature of air, 77°; water, 76°. Winds: SE. by S., SE., SE. Fine trade winds and pleasant.

Oct. 2. Lat. 4° 00′ S.; long. 33° 17′ W. Barometer, 30.04; temperature of air, 78°; water, 77°. Winds: SE. by S., SE. by S., SE. by S. First part, fresh trades; middle, more moderate; latter part, light breezes.

Oct. 3. Lat. 6° 25′ S.; long. 34° 26′ W. Barometer, 29.98; temperature of air, 77°; water, 77°. Winds: SE., SE., SE. First and middle parts, fine trades and pleasant; latter part, light airs."

Ship Gauntlet, (William Inglis,) London to Melbourne; nine days out.

Sept. 15. Lat. 30° 22′ N.; long. 19° 08′ W.; variation, 19° W. Barometer, 30.20; temperature of air, 75°. Winds: NE., NE., NE. Gentle breezes, with fine weather.

Sept. 16. Lat. 27° 30′ N.. long. 20° 44′ W.; variation, 18° W. Barometer, 30.20; temperature of air, 77°. Winds: NE., NE., NE. Gentle breezes.

Sept. 17. Lat. 24° 06′ N.; long. 22° 34′ W.; variation, 17° W. Barometer, 30.00; temperature of air, 77°. Winds: E.NE., E.NE., E.NE. Moderate breezes, with passing showers.

Sept. 18. Lat. 21° 14′ N.; long. 24° 02′ W.; variation, 17° W. Barometer, 30.05; temperature of air, 79°. Winds: E.NE., E.NE., E.NE. Fine breezes and clear.

Sept. 19. Lat. 18° 37′ N.; long. 25° 38′ W.; variation, 16° W. Barometer, 29.90; temperature of air, 80°. Winds: E.NE., E.NE., E. Light breezes, with passing clouds.

Sept. 20. Lat. 16° 22′ N.; long. 26° 39′ W.; variation, 14° W. Barometer, 29.90; temperature of air, 82°. Winds: E.NE., NE., E.NE. Light airs and calms, sultry weather.

Sept. 21. Lat. 14° 16′ N.; long. 27° 05′ W.; variation, 13° W. Barometer, 29.90; temperature of air, 88°. Winds: E.NE., NE., N. Light variable winds, with showers of rain.

Sept. 22. Lat. 12° 05 N.; long. 25° 36′ W.; variation, 12° 30′ W. Barometer, 29.90; temperature of air, 89°. Winds: NW., W., SW. Fresh breezes, with a heavy SE. swell.

September 23. Lat. 11° 32′ N.; long. 23° 48′ W.; variation, 12° 30′ W. Barometer, 29.80; temperature of air, 89°. Winds: S.SW., S. by W., SW. Light, light, variable, with a SE. swell.

September 24. Lat. 10° 50′ N.; long. 23° 20′ W.; variation, 11° 30′ W. Barometer, 29.90; temperature of air, 89°. Winds: variable, variable, NW. Light airs, with occasional showers.

September 25. Lat. 10° 16′ N.; long. 23° 06′ W.; variation, 11° W. Barometer, 29.90; temperature of air, 89°. Winds: NE., SE., calm. Light, variable winds and calms; a heavy swell from SE.

September 26. Lat. 9° 24′ N.; long. 23° 20′ W.; variation, 11° W. Barometer, 29.90; temperature of air, 89°. Winds: NE., SE., SW. Light, variable airs, with showers of rain.

September 27. Lat. 8° 50′ N.; long. 23° 20′ W.; variation, 11° W. Barometer, 29.90; temperature of air, 89°. Winds: NE., N.NE., N.NE. Light airs, clear and hot weather.

September 28. Lat. 8° 09′ N.; long. 23° 00′ W.; variation, 12° W. Barometer, 29.90; temperature of air, 89°. Winds: NW., NW. by W., W. Light airs.

September 29. Lat. 6° 06′ N.; long. 21° 36′ W.; variation, 13° W. Barometer, 30.00; temperature of air, 90°. Winds: W., W.SW., SW. Gentle breezes and fine weather.

September 30. Lat. 5° 13′ N.; long. 20° 46′ W.; variation, 14° W. Barometer, 30.00; temperature of air, 90°. Winds: SW., SW., SW. Light breezes and fine weather.

October 1. Lat. 4° 08′ N.; long. 18° 47′ W.; variation, 16° W. Barometer, 29.90; temperature of air, 83°. Winds: SW., S.SW., SW. by S. Light breezes, with fine clear weather.

October 2. Lat. 3° 26′ N.; long. 17° 10′ W.; variation, 16° W. Barometer, 30.00; temperature of air, 82°. Winds: S.SW., S.SW., SW. Moderate breezes, and seems to be a SW. monsoon.

October 3. Lat. 2° 50′ N.; long. 18° 00′ W.; variation, 15° 30′ W. Barometer, 30.00; temperature of air, 83°. Winds: SW. by W., SW., SW. by W. Light winds and clear weather.

October 4. Lat. 2° 30′ N.; long. 17° 10′ W.; variation, 15° 30′ W. Barometer, 30.00; temperature of air, 83°. Winds: SW. by W., SW., S.SW. Light winds and clear.

October 5. Lat. 2° 07′ N.; long. 17° 20′ W.; variation, 16° W. Barometer, 30.00; temperature of air, 85°. Winds: SW. by W., S.SW., SW. Light winds and clear weather.

October 6. Lat. 1° 15′ N.; long. 20° 17′ W.; variation, 16° W. Barometer, 30.00; temperature of air, 82°. Winds: S., S.SW., S. Gentle breezes and fine clear weather.

October 7. Lat. 0° 24′ S.; long. 23° 08′ W.; variation, 14° W. Barometer, 29.90; temperature of air, 82°. Winds: S., S. by E., S.SE. Steady breezes, with fine clear weather.

October 8. Lat. 2° 27′ S.; long. 25° 24′ W.; variation, 15° W. Barometer, 29.90; temperature of air, 80°. Winds: S., S.SE., S.SE. Fine clear weather throughout.

October 9. Lat. 5° 15′ S.; long. 27° 40′ W.; variation, 10° W. Barometer, 30.00; temperature of air, 81°. Winds: S.SE., SE., SE. Fine clear weather, with good trade winds."

Time and Crossings from the Lizard to the Line—October.

Ship's name.	From—	Date of sailing.	Longitude of crossing the parallels of—																				Total days to—	
			Days.	45° N.	Days.	35° N.	Days.	30° N.	Days.	25° N.	Days.	20° N.	Days.	15° N.	Days.	10° N.	Days.	5° N.	Days.	Line.	Days.	3° S.	Line.	St. Roque.
Arbuthnot	Plymouth	Oct. 6, 1848	5	7⅛	5	17¼	2	18⅛	1⅛	20⅛	1⅛	20¼	1½	20	4⅛	19¾	6	21	4⅛	24½	1⅛	27	31½	34
Maine Law	Liverpool	8, 1854	3⅛	10¼	5	17¼	3	18	2	19¼	2	21¾	2	22¼	3	23½	3	25	3⅛	27	1¼	28¼	27	29
Restitution	Portsmouth	8, 1818	9	12	6⅛	15	4⅛	17¼	3	20	3	22⅛	2	22¼	2	21⅛	8	21⅛	4	25¾	2	28¼	42	45
Adler	Newcastle	10, 1849	3⅛	11¼	6½	16¼	5	20¾	2	22¼	2	23⅛	2⅛	24¾	2⅛	23¾	4	22¼	4¼	24¼	1¼	25⅛	32¼	34⅛
Means east of Cape de Verds			5.2	10¼	5.7	16⅛	3.6	18⅛	2.1	20¼	2.1	22	2	22¼	3	22	5.2	22⅛	4.1	25¼	1.5	27¼	33.2	35.6
Means of 9 Dutch vessels east of Cape de Verds			4	11¼	6.7	17	3.3	18	3	19	2	20½	2.1	21	2.4	20⅛	4.8	20⅛	4.1	25	.....	.....	32.4	.....
T. A. Ward	Lisbon	Oct. 1, 1855	.....	.....	1⅛	10¼	5	14¾	6⅛	22	2	25¼	2	27⅛	2	28⅛	8	28¼	6	31¾	2	34	33	36
Rosario	Malaga	9, 1850	.....	.....	1	8¼	9	17¼	3	21	2⅛	24	2	25	2⅛	24⅛	8⅛	19⅛	2⅛	24	2	26⅛	31	34
Commodore	London	10, 1853	1⅛	10⅛	5⅛	16¼	3	19⅛	2	21¾	2	23½	2⅛	25⅛	2	24⅛	5⅛	24¼	4	29¼	1	30¾	28	30
Colorado	Liverpool	10, 1855	4	10⅛	4⅛	15¼	2	17¾	2⅛	20¾	2	24⅛	2	25¼	2	24⅛	4⅛	21⅛	6	26⅛	1⅛	29¾	29½	32
Edward	Hamburg	10, 1856	5	13⅛	12	17⅛	3	21¼	3	25¾	3¾	28	3	28	3	27	5	28	3⅛	30	1⅛	32¾	41¼	43¾
Star	Cardiff	19, 1853	9	15⅛	6	17¾	2	21¾	2	22	2⅛	24¾	2½	25	3	25¼	4	25¼	3	28⅛	2	30¼	34	37
Hygeia	Swasia	20, 1856	5	12⅛	4⅛	16	4¼	19¾	3¾	21¼	3⅛	24⅛	2½	25¾	3	26	5⅛	24¼	7	26¾	2	28½	39	42½
Coriolanus	Liverpool	25, 1851	5	13	7	22¾	4	23¾	4⅛	24½	3½	26¼	1½	25⅛	2½	25	3	24⅛	3⅛	26	1⅛	28¾	34½	37
Queen of the East	London	27, 1853	1¼	11⅛	5⅛	13⅛	2⅛	16	2	21⅛	2	25¼	2	26¼	2⅛	23⅛	3	21⅛	4⅛	25¾	1⅛	27¾	25½	27⅛
Edward	Hamburg	29, 1855	3	12¼	5	21¼	2	23	2	23¾	3	25	2⅛	26¼	2	27¾	2½	28¾	3	30¼	1	31¼	25	27
Means west of Cape de Verds			4.2	12⅛	5.2	15⅛	3.5	19¼	3	22¼	2.7	25	2.2	26	2.4	25⅛	5	24½	4.3	27¾	1.6	30	32	34.7
Means of 24 Dutch vessels west			4.2	11¾	6	17¼	2.8	19½	2.7	22	2.2	24½	2.2	25¾	2.3	24	5.5	22¾	5	25¾	.....	.....	32.9	.....

Schooner Thomas A. Ward, (James D. Hoff,) Lisbon to Rio de Janeiro; seven days out.

"October 12, 1855. Lat. 30° 00′ N.; long. 17° 41′ W. Barometer, 29.62; temperature of air, 79°; of water, 79°. Winds: S.SW.; moderate. Palma in sight, bearing about S. by W. I am in hopes, if we get to windward of that, to have an alteration in the weather.

October 13. Lat. 29° 37′ N.; long. 18° 12′ W. Barometer, 29.55; temperature of air, 77°; of water, 77°. Winds: SW., NW.; light. Palma and three vessels in sight. The weather looks a little better; but this is the horse latitudes in earnest, and I am getting a full due, I think.

October 14. Lat. 28° 46′ N.; long. 18° 50′ W. Barometer, 29.55; temperature of air, 80°; of water, 80°. Winds: NW.; calms. The weather has cleared up and looks like settling; we can see the islands of Palma and Ferro; a number of vessels in sight, and a steamer passed us this morning. It is very calm, and a rolling sea from the NW.

October 15. Lat. 28° 09′ N.; long. 19° 15′ W. Barometer, 29.55; temperature of air, 81°; of water, 81°. Winds: S.SE. We have a light air, and I am in hopes it is the trades; it feels so, and if they be, your mark on the chart was on the very spot, although your number of observations for this month is limited.

October 16. Lat. 27° 10′ N.; long. 20° 41′ W. Barometer, 29.55; temperature of air, 84°; of water, 84°. Winds: SE., E.NE. I think we are in the trades, although very light. A heavy dew this morning.

October 17. Lat. 25° 33′ N.; long. 21° 56′ W. Barometer, 29.65; temperature of air, 81°; of water, 81°. Winds: E.NE. We have at last got a pleasant breeze and regular trades, and no mistake.

October 18. Lat. 22° 49′ N.; long. 24° 06′ W. Barometer, 29.70; temperature of air, 83°. Winds: NE. We are running off in fine style, and have made 205 miles the last 24 hours. Heavy dew this morning.

October 19. Lat. 20° 00′ N.; long. 25° 13′ W. Ten miles westerly current. Barometer, 29.60; temperature of air, 82°. Winds: NE. We have a pleasant run of it—200 miles—making up for lost time. Light dew.

October 20. Lat. 17° 07′ N.; long. 27° 04′ W. Current, 20 miles, W. Barometer, 29.50; temperature of air, 78°. Winds: E.NE., E. Made 200 miles to-day. I committed to Neptune to-day a bottle, with a paper in it, naming the latitude and longitude, cargo, name of vessel, and reason for casting it over. No dew.

October 21. Lat. 14° 38′ N.; long. 27° 24′ W. Barometer, 29.40; temperature of air, 83°. Winds: E., NE., E.NE. We have seen great quantities of flying fish yesterday and to-day.

October 22. Lat. 12° 00′ N.; long. 27° 37′ W. Current, 10 miles, E. Barometer, 29.40; temperature of air, 84°. Winds: NE., E. by S. We had quite a change in the color of the water to-day from 11 to 12 o'clock, and I think bottom was not far off; great quantities of fish about, that would weigh six or eight pounds apiece, chasing flying fish.

October 23. Lat. 10° 42′ N.; long. 28° 24′ W. Current, 15 miles, E. Barometer, 29.40; temperature of air, 84°. Winds: E. by S., SE. We had a tremendous squall last night, which came up suddenly and heavy, and blew away our jib-by-jib before we could get it furled. A large ship in sight to leeward, the first we have seen in several days.

October 24. Lat. 9° 55′ N.; long. 28° 37′ W. Barometer, 29.45; temperature of air, 84°. Cum. clouds from SE. Winds: SE.; calm. This is dull work; a heavy roll. We have

seen a number of barn swallows nearly every day since we passed the Madeiras; they would light on deck seemingly exhausted, rest awhile, and leave.

October 25. Lat. 9° 35′ N.; long. 28° 37′ W. Barometer, 29.45; temperature of air, 81°. Nimbus clouds. Winds: calms; northward and westward; it has been principally calm, with a heavy northern roll, this 24 hours.

October 26. Lat. 8° 49′ N.; long. 28° 31′ W. Barometer, 29.40, Winds: variable; calms. These are the doldrums and no mistake; temperature of air, 84°.

October 27. Lat. 8° 18′ N.; long. 28° 03′ W. Barometer, 29.40; temperature of air, 86°. Winds: S., E.SE. We had fine beautiful weather the last 24 hours, and have seen a number of vessels.

October 28. Lat. 6° 44′ N.; long. 28° 09′ W. Barometer, 29.40; temperature of air, 86°. Winds: E.SE., S.E. The last 24 hours acted like the trades, but is too good to last.

October 29. Lat. 6° 33′ N.; long. 28° 09′ W. Barometer, 29.45; temperature of air, 80°. Winds: calm. The last 24 hours it has been calm, and a terrible rolling, thrashing sea from all directions.

October 30. Lat. 6° 05′ N.; long. 27° 40′ W. Current, 35 miles, SE. Barometer, 29.40; temperature of air, 83°. Winds: calm. The last 24 hours have been the most calm that ever I saw; not a breath from any quarter, and a terrible rolling sea. We drifted SE. 35 miles; about this there is no mistake, for we made no headway or leeway, all sail being furled, or we would have thrashed them off the schooner.

October 31. Lat. 5° 28′ N.; long. 28° 11′ W. Barometer, 29.45; temperature of air, 82°. Light airs from the south and calms.

November 1. Lat. 5° 04′ N.; long. 28° 04′ W. Barometer, 29.30; temperature of air, 86°. Calm and light cat's paws. Here we are not the dying on the dead, but the living on the helpless. A ship in sight to the northward.

November 2. Lat. 4° 50′ N.; long. 27° 50′ W. Twenty miles, SE. current. Barometer, 29.40; temperature of air, 84°. Calms. The ship still in sight looks like a clipper, but 14 miles in 24 hours will not lift the laurels from the brows of many. Ten days since we were in the parallel of 10°, and we have thrashed more in that time than I ever did in twice the time before.

November 3. Lat. 3° 57′ N.; long. 28° 54′ W. Barometer, 29.30; temperature of air, 83°. Winds: S.SW. The wind breezed up about 3 p. m. from the south, and we hailed it cheerfully, in hopes it will last us to get into the trades.

November 4. Lat. 3° 36′ N.; long. 29° 24′ W. Barometer, 29.35; temperature of air, 82°. Winds: E.; calms. This day ends with the same ennui, and even my dog partakes of it, for he does not rest, but paces the deck day and night.

November 5. Lat. 3° 21′ N.; long. 29° 43′ W. Barometer, 29.25; temperature of air, 83°. Winds: SE., SE. by S. The past 24 hours were dreary enough, but a breeze sprung up at 9 a. m. from the SE., and blew fresh with a heavy sea. I see quantities of fish jumping; I think they are groupers.

November 6. Lat. 1° 40′ N.; long. 30° 37′ W. Barometer, 29.35; temperature of air, 83°. Winds: SE. by S. A handsome breeze but heavy sea for the wind; fish have been uncommonly plenty since yesterday; the water seems to be alive with them.

November 7. Lat. 0° 01′ N.; long. 31° 45′ W. Barometer, 29.30; temperature of air, 82°. Winds: SE. by S., S.SE. A heavy sea from the SE. for the wind we have had. At 5

p. m. last evening a large fish jumped on board, length 4 feet 4 inches, circumference 2 feet 8 inches, weighs about 60 pounds; he is welcome. Think we have the trades.

November 8. Lat. 1° 38′ S.; long. 32° 52′ W. Barometer, 29.30; temperature of air, 84°. Winds: S.SE. We are in the trades and no mistake, and well to leeward; but shall follow these directions, and, if we cannot do any better, sight the land; the sea has gone down, and it is smooth.

November 9. Lat. 3° 35′ S.; long. 34° 07′. Barometer, 29.30; temperature of air, 80°. Winds: S.SE., SE. by E. This is a steady wind; we have been close hauled all the time for four days, and have made a direct rhomb line SW. by S., no day differing a mile from that. I do not think I have found any current here, but expect to, as it looks like seeing Cape St. Roque, but shall take you for my guide, and then shall not find fault; for your work, like history, makes a man old without wrinkles or gray hairs.

November 10. Lat. 5° 25′ S.; long. 34° 38′ W. Current, 25 miles, W.; temperature of air, 80°. Barometer, 29.40. Winds: SE., SE. by E. We are now abreast of St. Roque and out of sight of land, and think we will go clear; thanks tc Maury.

November 11. Lat. 7° 05′ S.; long. 34° 42′ W. Barometer, 29.35; temperature, 84°. Winds: SE. Fine breeze; a clipper ship passed about two miles to windward of us, standing off shore; smooth sea; the coast looks well; expect we will have to tack this afternoon; the clipper has tacked twice since we have seen her. Another large ship with painted ports also in sight."

Barque Adler, (Edward Thiel,) New Castle to Rio de Janeiro; fifteen days out.

"Oct. 25, 1849. Lat. 30° 43′ N.; long. 21° 36′ W. Barometer, 30.12. Winds: S.SW., E.NE. Light breezes and cloudy; flying-fish in sight.

Oct. 26. Lat. 27° 35′ N.; long. 22° 37′ W. Barometer, 30.12. Winds: variable, SE. by E. Fresh breezes and clear weather.

Oct. 27. Lat. 25° 17′ N.; long. 23° 33′ W. Barometer, 30.05. Winds: E. by S. Moderate and fine weather. Noticed a current, of 27 miles, S. 31° W. for the last two days.

Oct. 28. Lat. 22° 40′ N.; long. 24° 17′ W. Barometer, 29.98. Winds: E. Moderate breezes and pleasant weather.

Oct. 29. Lat. 20° 31′ N.; long. 24° 59′ W. Barometer, 29.98. Winds: E. Moderate breezes and fine weather.

Oct. 30. Lat. 18° 13′ N.; long. 25° 49′ W. Barometer, 29.92. Current, 13 miles, SW. Winds: E., E.NE. Moderate breezes and pleasant.

Oct. 31. Lat. 15° 45′ N.; long. 26° 35′ W. Current, 12 miles, SW. ½ W. Barometer, 29.85. Winds: E.NE. Moderate breezes and pleasant weather.

Nov. 1. Lat. 13° 44′ N.; long. 26° 08′ W. Barometer, 29.88. Winds: E. Light breezes and cloudy.

Nov. 2. Lat. 12° 21′ N.; long. 25° 45′ W. Light winds and cloudy weather.

Nov. 3. Lat. 10° 52′ N.; long. 25° 14′ W. Barometer, 29.89. Winds: E. by S. Light breezes and clear, pleasant weather.

Nov. 4. Lat. 9° 09′ N.; long. 24° 34′ W. Barometer, 29.89. Winds: E. Moderate breezes, with fine weather.

Nov. 5. Lat. 7° 29′ N.; long. 24° 12′ W. Barometer, 29.87. Winds: E., E.SE. Rain, with thunder and lightning; at noon, fine weather.

Nov. 6. Lat. 6° 38′ N.; long. 24° 51′ W. Barometer, 29.85. Winds: E.SE., E. Weather similar to that of yesterday.

Nov. 7. Lat. 5° 33′ N.; long. 24° 04′ W. Barometer, 29.85. Winds: E. by S., E. Squally, with lightning and rain.

Nov. 8. Lat. 4° 27′ N.; long. 23° 56′ W. Barometer, 29.81. Winds: SE., S.SE. Squally, with rain.

Nov. 9. Lat. 3° 20′ N.; long. 24° 11′ W. Barometer, 29.83. Winds: S.SE., SE. Moderate breezes and squally, with rain. Noticed a current of 16 miles, E.SE., during the day.

Nov. 10. Lat. 2° 07′ N.; long. 24° 47′ W. Barometer, 29.83. Winds: SE. by S. Moderate breezes and fine, clear weather.

Nov. 11. Lat. 0° 12′ N.; long. 25° 29′ W. Barometer, 29.77. Winds: SE. Moderate breezes and pleasant weather.

Nov. 12. Lat. 2° 05′ S.; long. 26° 13′ W. Barometer, 29.81. Winds: SE., SE. by E. Moderate breezes and pleasant weather; plenty of fish.

Nov. 13. Lat. 4° 16′ S.; long. 27° 14′ W. Current, 12 miles, S. by W. Barometer, 29.87. Winds: SE. by E. Moderate breezes and cloudy weather.

Nov. 14. Lat. 6° 40′ S.; long. 28° 17′ W. Current, 15 miles, S. Barometer, 29.89. Winds: SE. Moderate breezes and cloudy weather."

Ship Colorado, (Ricker,) Liverpool to Calcutta; ten days out.

"Oct. 19, 1855. Lat. 31° 15′ N.; long. 16° 49′ W. Current, ½ knot per hour, SE. Barometer, 30.00; temperature of air, 67°; of water, 70°. Winds: NE. Fine trades and passing clouds. At 5 p. m. Porto Santo in sight to the SW.; at 6 p. m. it bore W. by S. by compass, 35 miles distant by estimation; at 6 a. m. the Deserters bore N.NE. Ends moderate and showery.

Oct. 20. Lat. 28° 33′ N.; long. 18° 47′ W. Current, 1 knot per hour, S.SE. Barometer, 29.90; temperature of air, 72°; of water, 68°. Winds: NE., NE. by E. Fine trades and pleasant. At 6 a. m. Palma in sight; at 6 p. m. Palma in sight to the eastward. Passed a ship and brig going the same way.

Oct. 21. Lat. 26° 16′ N.; long. 20° 11′ W. Current, ½ knot, SW. Barometer, 29.90; temperature of air, 76°; of water, 74°. Winds: NE. by E., E.NE., E. Moderate winds, hauling to the eastward; rain at times.

Oct. 22. Lat. 24° 22′ N.; long. 21° 15′ W. Current, SW., ¼ mile per hour. Barometer, 29.90; temperature of air, 76°; of water, 74°. Winds: E.NE., E. Fine trade winds and pleasant weather. At 8 p. m. strong tide rips; but we have not had as much current as yesterday. Middle and latter parts, very fine weather, but warm.

Oct. 23. Lat. 21° 55′ N.; long. 22° 39′ W. Barometer, 29.88; temperature of air, 78°; of water, 74°. Winds: E., E.NE. Moderate and pleasant, with a smooth sea. At 4 a. m. cloudy, with slight showers about noon and more breeze. Not a fish or bird seen since leaving the channel.

Oct. 24. Lat. 19° 29′ N.; long. 24° 23′ W. Barometer, 29.79; temperature of air, 79°; of water, 75°. Winds: NE. Moderate, with passing clouds; at 8 p. m. clear. A regular ebb and flow of barometer of one-tenth of an inch; highest, 10 a. m.; lowest at midnight. Several vessels in company; passed ten this morning.

Oct. 25. Lat. 16° 51′ N.; long. 26° 22′ W. Barometer, 29.78; temperature of air, 80°; of water, 73°. Winds: NE., E., E.SE. Dull, gloomy looking weather; heavy banks to the

southward. At 9 p. m. wind came out from S'd and E'd in a squall; at 10 died away and came out in old quarter; at midnight a strong breeze from NE. and cloudy; ends with strong breezes. Flying fish about.

Oct. 26. Lat. 13° 25′ N.; long. 25° 16′ W. Current, E.NE., ¼ knot per hour. Barometer, 29.80; temperature of air, 81°; of water, 81°. Winds: SE. by E., SE., E.SE. Dull cloudy weather. Middle, clear and pleasant; all sail set by the winds; at 9 a. m. had a sharp squall, with rain, from SE. by S.; after, calm until noon.

Oct. 27. Lat. 11° 20′ N.; long. 24° 27′ W. Current, ¾ knot, SE. by S. Barometer, 29.80; temperature of air, 81°; water, 81°. Winds: E., SE., E. Conmences with moderate breezes and passing clouds; had several squalls of rain; no wind; at 9 p. m. wind round the compass in a squall; at — p. m. steady at E.SE. again; many flying fish about; also saw a whale a long way off. At 8 a. m. clear fine weather.

Oct. 28. Lat. 8° 22′ N.; long. 22° 48′ W. Current, 17 miles, SE. by S. Barometer, 29.80; temperature of air, 81°; of water, 81°. Winds: E., E. by S. Fine pleasant weather, a swell from S.SE.; wind steady at E.; middle, the same; strong tide rips about; ends beautiful weather; all sail set by the wind.

Oct. 29. Lat. 7° 10′ N.; long. 22° 44′ W. Barometer, 29.80; temperature of air, 78°; of water, 80. Winds: E. by S., baffling, calms. Fine breezes and pleasant; at 6 p. m. rain squalls and baffling winds; at 9 p. m. a heavy rain squall, after which died away calm; heavy thunder and sharp lightning during the night. Four vessels in company.

Oct. 30. Lat. 7° 06′ N.; long. 22° 22′ W. Barometer, 29.80; temperature of air, 84°; of water, 81°. Winds: baffling, calms. Light baffling airs and calms throughout, with a constant swell from the southward generally; clear fine weather, with several light rain squalls making to the eastward; several vessels in sight.

Oct. 31. Lat. 6° 29′ N.; long. 22° 22′ W. Barometer, 29.80; temperature of air, 81°; of water, 82°. Winds: variable, calms, E.SE. At 10 p. m. a pretty sharp squall of wind and heavy rain, lasting two hours, from E.SE., with heavy thunder and sharp lightning; baffling winds, all around the compass; tacked and wore round several times during the 24 hours; ends with dull squally looking weather and no wind.

Nov. 1. Lat. 5° 51′ N.; long. 21° 54′ W. Current, 20 miles, SE. Barometer, 29.86; temperature of air, 79°; of water, 82°. Winds: variable, baffling, and cloudy, squally looking weather. At 7 a. m. commenced raining and continued until noon; filled up all our water; several vessels in sight.

Nov. 2. Lat. 5° 22′ N.; long. 20° 55′ W. Current, 20 miles, SE. Barometer, 29.86; temperature of air, 79°; of water, 82°. Calm nearly the entire 24 hours; when there is any wind we try to make a south course true. I fear I am too far to the eastward; I regret now steering so far to SE. after passing the Cape de Verds.

Nov. 3. Lat. 5° 21′ N.; long. 20° 53′ W. Barometer, 29.90; temperature of air, 90°; of water, 83°. Winds: calms, SE. by E. Commences calm; now and then light rain squalls and faint airs all around the compass; I think we are in a fix. At 4 p. m. spoke a British ship from Bombay to Cowes; reported losing SE. trades in 4° N. At 3 p. m. sharp squall from SE., with heavy rain.

Nov. 4. Lat. 4° 31′ N.; long. 21° 09′ W. Barometer, 29.88; temperature of air, 80; of water, 82°. Winds: SE. by S., calms, S. by E. Light airs and at times nearly calm; ten vessels in company; strong tide rips this morning and at noon.

Nov. 5. Lat. 3° 50′ N.; long. 22° 06′ W. Barometer, 29.86; temperature of air, 81°; of water, 82°. Winds: S., S. by E. At 2 p. m. a pretty heavy squall of wind and rain from N.NE., after which hauled to the southward and eastward, and settled there as the SE. trades; at midnight dark and squally, not much wind; barometer going up a little; ends pleasant; no current these 24 hours.

Nov. 6. Lat. 1° 56′ N.; long. 24° 08′ W. Barometer, 29.90; temperature of air, 81°; of water, 82°. Winds: S. by E.; fine weather and winds; no current. Numerous flying fish about; two vessels in company.

Nov. 7. Lat. 0° 17′ S.; long. 26° 27′ W. Barometer, 29.90; temperature of air, 81°; of water, 81°. Winds: S. by E., S.SE. Moderately fresh and fine pleasant weather; numerous flying fish about.

Nov. 8. Lat. 2° 29′ S.; long. 29° 09′ W. Current, 1 knot per hour, W.SW. Barometer, 29.90; temperature of air, 81°; of water, 81°. Winds: S.SE. Continues moderate and fine pleasant weather; passed a barque going the same way; numerous flying fish about.

Nov. 9. Lat. 5° 10′ S.; long. 31° 16′ W. Current, 1¼ knot, SW. ½ W. Barometer, 29.90; temperature of air, 80°; of water, 79°. Winds: SE. by S., SE. Pleasant; very squally at night; blowing fresh in some of them, with rain. Numerous birds about, and large shoals of flying fish. A regular ebb and flow of barometer of .800; highest at 10 a. m., lowest at 10 p. m.; generally commences to rise with the sun.

Nov. 10. Lat. 8° 21′ S.; long. 32° 54′ W. Current, ¾ knot per hour, SW. Barometer, 29.90; temperature of air, 81°; of water, 79°. Winds: SE., SE. by E. Moderate and pleasant throughout. Numerous flying fish and flocks of birds about; passed two brigs going N.NE. Ends with fine and pleasant weather."

Time and Crossings from the Lizard to the Line—November.

Name of vessel.	From—	Date of sailing.	Longitude of crossing the parallels of latitude of—																				Total days to—	
			Days.	45° N.	Days.	35° N.	Days.	30° N.	Days.	25° N.	Days.	20° N.	Days.	15° N.	Days.	10° N.	Days.	5° N.	Days.	Line.	Days.	3° S.	Line.	St. Roque.
Gustavus Adolphus	Hamburg	Nov. 2, 1855	3	11	7	13¼	5	17¾	3	20¼	1½	21¾	1½	22¼	2	23¼	4	23¼	5	29¼	1½	30½	32	34½
Gloriana	London	12, 1850	3	9½	6	13½	2	17½	2	20	1½	20¼	1½	19¾	2	19¾	2	19	5	23½	2	26¼	25	28½
Beloochee	Liverpool	13, 1851	5	15	4½	18¼	1½	19¾	2	23½	5	20½	1½	20	1½	19½	4	18¾	7	17¼	1½	18¾	32	34½
Means east of Cape de Verds			3	11¾	5.8	15	2.8	18¼	2.3	21¼	2.6	20¾	1.5	20¾	1.8	20¾	3.3	20	5.6	23¼	1.7	25	29.7	32.5
Means of 10 Dutch vessels east			6.5	11¼	7	16½	2.6	18	2.5	20	2	21	1.9	21½	2.1	20¾	4.9	19½	7.3	25¼	.....	.....	36 8	.....
Clara	Glasgow	Nov. 11, 1854	3	10	5	16¼	3	19½	2½	22½	4	25½	3	26¾	3	27	8	26¼	5½	32¼	1½	33¾	37	39½
Vernon	Liverpool	19, 1854	2½	12	3½	18	2	21	3	25¼	5	25¾	3	26¾	3	26¾	3	26½	6	30½	1¼	32½	31	33
Weymouth	do	25, 1856	4	11	9	14½	2½	20½	1½	22¼	2	24½	2	26	2	25¼	2	25	3	30¾	1¼	32¼	28	30
Means west of Cape de Verds			3.2	11	5.8	16¼	2.5	20¼	2.3	23¼	3.7	25¼	2.7	26½	2.7	26¼	4.3	26	4.8	31	1.3	33	32	34.2
Means of 26 Dutch vessels west			4.6	11½	5.4	16¾	2.9	19¼	2.9	21½	2.7	24	2.5	25¾	2.2	23¾	4.9	21½	5.5	23¾	.....	.....	33.6	.....

Ship Edward, (P. Zybrantz,) Hamburg to Valparaiso; ten days out.

"Nov. 7, 1855. Lat. 30° 00′ N.; long. 22° 57′ W. Barometer, 29.90; temperature of air, 70°; of water, 71°. Winds: NE., N.NE. Moderate; no sea.

Nov. 8. Lat. 27° 55′ N.; long. 23° 44′ W. Barometer, 29.95; temperature of air, 72°; of water, 73°. Winds: NE., NE. by N., N.NE. Moderate.

Nov. 9. Lat. 26° 19′ N.; long. 23° 41′ W. Barometer, 29.97; temperature of air, 73°; of water, 76°. Winds: variable, from N.NE. to S.SE. Light. Some petrels in sight.

Nov. 10. Lat. 25° 30′ N.; long. 23° 59′ W. Current, 6 miles, N. Barometer, 30.02; temperature of air, 72°; of water, 74°. Winds: variable, E.NE. Very light. Some shooting stars, flying in all directions.

Nov. 11. Lat. 23° 43′ N.; long. 24° 37′ W. Barometer, 30.03; temperature of air, 73°; of water, 73°. Winds: E., variable. Light and unsteady; a little northerly swell.

Nov. 12. Lat. 21° 44′ N.; long. 24° 59′ W. Barometer, 29.96; temperature of air, 75°; of water, 76°. Winds: NE. by N., NE. Moderate. Saw the first flying fish.

Nov. 13. Lat. 18° 58′ N.; long. 25° 27′ W. Barometer, 29.97; temperature of air, 77°; of water, 76°. Winds: NE., E.NE. Moderate.

Nov. 14. Lat. 16° 45′ N.; long. 25° 50′ W. Barometer, 29.89; temperature of air, 76°; of water, 77°. Wind: NE. At daylight saw St. Antonio to the S.SE. The bearing taken at noon proves our chronometer to be correct.

Nov. 15. Lat. 14° 40′ N.; long. 26° 28′ W. Barometer, 29.86; temperature of air, 80°; of water, 79°. Winds: E.NE., E., E.SE. Moderate and pleasant. A barque in sight to the N.

Nov. 16. Lat. 11° 39′ N.; long. 27° 27′ W. Current, 20 miles, northerly. Barometer, 29.86; temperature of air, 82°; of water, 80°. Winds: E.NE. A barque to the N.NW. Flying fish more numerous.

Nov. 17. Lat. 8° 52′ N.; long. 28° 44′ W. Current, 14 miles, N. Barometer, 29.78; temperature of air, 82°; of water, 71°. Winds: E., SE. Towards evening, lightning in the SE. quarter; from 10 to 12, a tremendous thunder storm, terrible fork lightning, and heavy north swell.

Nov. 18. Lat. 6° 24′ N.; long. 28° 59′ W. Current, about 17 miles, N. Barometer, 29.81; temperature of air, 81°; of water, 81°. Winds: E., SE. Light; lightning and distant thunder in the western quarter; northerly swell.

Nov. 19. Lat. 5° 32′ N.; long. 28° 48′ W. Barometer, 29.78; temperature of air, 80°; of water, 81°. Winds: E.SE., SE. Squally and rainy; sheet lightning in the NE.; a turbulent sea.

Nov. 20. Lat. 3° 56′ N.; long. 28° 19′ W. Barometer, 29.76; temperature of air, 82°; of water, 81°. Winds: SE. by S., SE. Fresh trades. Some birds from St. Paul's.

Nov. 21. Lat. 1° 37′ N.; long. 29° 44′ W. Barometer, 29.79; temperature of air, 84°; of water, 81°. Wind: SE. Fresh trades. Birds in sight.

Nov. 22. Lat. 00° 39′ S.; long. 30° 42′ W. Current, 8 miles, N. Barometer, 29.80; temperature of air, 82°; of water, 80°. Wind: SE. by E. Fresh trades. One so-called Portuguese man-of-war in sight.

Nov. 23. Lat. 3° 36′ S.; long. 31° 22′ W. No current. Barometer, 29.84; temperature of air, 82°; of water, 80°. Magnetic variation observed, 10° W. Wind: SE. by E. Fresh trades; clear pleasant weather.

Nov. 24. Lat. 6° 31′ S.; long. 32° 40′ W. Barometer, 29.90; temperature of air, 83°; of water, 80°. Winds: SE. by E. Fresh trades. Passed Cape St. Roque."

Barque Clara, (E. Cook, jr.,) from Glasgow to San Francisco; eleven days out.

"Nov. 22, 1854. Lat. 29° 23′ N.; long. 19° 36′ W. Current, ½ knot per hour, N. 3° E. Barometer, 29.85; temperature of air, 64°, of water, 71°. Variation observed, 24° 45′ W. Wind: N.NE. First part, fresh gales and high sea, with occasional rain squalls; middle part, fine breeze and passing clouds; ends pleasant and hazy. I have taken no notice of currents thus far, although I have suspected an easterly set; but the ship has been so badly strained as to render it difficult to get at the true amount.

Nov. 23. Lat. 27° 00′ N.; long. 21° 10′ W. Current, 7 miles, N. 50° W., during the day. Barometer, 30.00; temperature of air, 68°; of water, 74°. Winds: N.NE., N. Fine steady breezes throughout, and pleasant weather.

Nov. 24. Lat. 25° 34′ N.; long. 22° 25′ W. Barometer, 30.05; temperature of air, 70°; of water, 74°. Winds: N., N.NW., N.NE. Gentle breezes and clear throughout. The winds have been very baffling, sometimes as far as NW., but generally as marked in the column. Saw a few black fish.

Nov. 25. Lat. 24° 04′ N.; long. 23° 10′ W. Barometer, 30.10; temperature of air, 70°; of water, 76°. Winds: N.NE., NE. Gentle breezes and beautiful weather throughout. Saw a few birds. At 9 p. m., noticed a lunar rainbow.

Nov. 26. Lat. 22° 55′ N.; long. 23° 52′ W. Barometer, 30.10; temperature of air, 70°; of water, 75°. Wind: NE. light airs throughout these 24 hours, and fine weather. Rather faint trades these; perhaps they would be better further west.

Nov. 27. Lat. 21° 39′ N.; long. 24° 27′ W. Barometer, 30.00; temperature of air, 74°; of water, 76°. Winds: NE., E.NE. Light breezes throughout. Saw the first flying fish for the voyage. At 8 p. m. saw a large meteor passing to the SW.

Nov. 28. Lat. 20° 10′ N.; long. 25° 38′ W. Barometer, 30.00; temperature of air, 75°; of water, 78°. Wind: E.NE., SE., S.SE. Light breezes throughout; a halo around the moon.

Nov. 29. Lat. 18° 34′ N.; long. 26° 25′ W. Barometer, 30.00; temperature of air, 76°; of water, 78°. Variation, 15° 45′ W. Winds: SE., E.SE. Light breezes throughout; a halo again around the moon.

Nov. 30. Lat. 16° 24′ N.; long. 26° 44′ W. Barometer, 30.00; temperature of air, 78°; of water, 79°. Winds: E.SE., E.NE., E.SE. Light breezes throughout; latter part, cloudy, with light showers.

Dec. 1. Lat. 14° 18′ N.; long. 26° 47′ W. Barometer, 29.90; temperature of air, 81°; of water, 82°. Winds: E.SE., N. Light breezes throughout; spoke the British ship Sultan, from Cork to Callao, in ballast; reports 17 days out, but I saw him, and he recollects seeing me, on the 15th.

Dec. 2. Lat. 13° 02′ N.; long. 26° 33′ W. Barometer, 29.97; temperature of air, 81°; of water, 82°. Winds: N., E., E.SE. Light breezes throughout; strong ripplings, like eddy currents.

Dec. 3. Lat. 11° 55′ N.; long. 26° 53′ W. Barometer, 29.95; temperature of air, 82°; of water, 82°. Winds: E., E.SE. Light breezes throughout.

Dec. 4. Lat. 10° 27′ N.; long. 26° 54′ W. No other observation to day. Captain busy fishing.

Dec. 5. Lat. 9° 15′ N.; long. 27° 20′ W. Barometer, 29.85; temperature of air, 82°. Winds: E.SE., S. First part, light breezes and sharp swells from the S.SE.; at 8 p. m. strong squalls from southward and eastward, with much rain, thunder, and lightning; broke second water thermometer, which leaves me without any.

Dec. 6. Lat. 7° 58′ N.; long. 27° 54′ W. Barometer, 29.87; temperature of air, 81°. Winds: variable. Light variable breezes; latter part, rain squalls.

Dec. 7. Lat. 7° 43′ N.; long. 28° 00′ W. Barometer, 29.90; temperature of air, 81°. Winds: variable, calms. Light baffling airs and calms; sharp sea from SE. and cloudy weather.

Dec. 8. Lat. 6° 31′ N.; long. 28° 06′ W. Barometer, 29.90; temperature of air, 81°. Winds: E.SE., S.SW. First part, light breezes and squally; at 7 p. m., sharp lightning; latter part, moderate breezes and considerable swells from southward and eastward.

Dec. 9. Lat. 6° 48′ N.; long. 26° 56′ W. Current, 1.3 knots per hour, N. 35° E. Barometer, 29.87; temperature of air, 84°. Winds: S.SW., S. First part, squally; middle part, moderate, with southerly swell; latter part, moderate and clear. I have been standing eastward for the last 16 hours; shall now go about and stand to the westward as long as I can head W.SW. by compass.

Dec. 10. Lat. 6° 09′ N.; long. 27° 57′ W. Current, 1 knot, N. 62° E. Barometer, 29.90; temperature of air, 84°. Winds: S., S.SE. Light steady breezes throughout; hard chance, but shall continue on the western track as long as I can make southing, in hopes to come up by and by.

Dec. 11. Lat. 6° 10′ N.; long. 26° 46′ W. Current, 0.8 knot, N. 37° E. Barometer, 29.90; temperature of air, 87°. Wind: S. First part, light breezes; at 4 p. m. headed off; bout ship; hard times.

Dec. 12. Lat. 6° 06′ N.; long. 26° 30′ W. Barometer, 29.90; temperature of air, 87°. Winds: S., variable, calms. First part, light airs; middle, squally, with rain; ends calm. This passeth all understanding; I have now a good opportunity to exercise my patience.

Dec. 13. Lat. 5° 15′ N.; long. 26° 12′ W. Barometer, 29.95; temperature of air, 85°. Winds: variable. Light variable airs and squally, with rain.

Dec. 14. Lat. 4° 43′ N.; long. 26° 52′ W. Barometer, 30.00; temperature of air, 85°. Wind: S.SE. Light airs and frequent light squalls throughout.

Dec. 15. Lat. 4° 07′ N.; long. 27° 50′ W. Barometer, 30.00; temperature of air, 86°. Winds: variable, S.SE. First and middle part, light baffling airs; latter part, light breezes and pleasant; a ship in sight to windward.

Dec. 16. Lat. 3° 42′ N.; long. 28° 27′ W. Barometer, 29.98; temperature of air, 86°. Winds: S., S.SE. Light breezes and pleasant; ship seen yesterday still in sight on weather beam.

Dec. 17. Lat. 3° 21′ N.; long. 29° 46′ W. Current, 0.5 knot, N. 37° W. Barometer, 29.95; temperature of air, 84°. Variation observed, 10° W. Winds: S.SE., SE. First part, light breezes and passing squalls; middle part, wind freshens, with light showers; latter part, fine breezes and pleasant.

Dec. 18. Lat. 1° 01′ N.; long. 31° 07′ W. Current, 1 knot, W. Barometer, 29.97; temperature of air, 85°. Winds: SE., S.SE. Light breezes and passing clouds; saw a brig standing N.; ends with gentle breezes and pleasant.

Dec. 19. Lat. 0° 43′ S.; long. 32° 09′ W. Current, 1.3 knots, W. Barometer, 29.93; temperature of air, 83°. Variation, 8° W. Winds: S.SE., SE. First part, light breezes and pleasant; at 6 p. m. tacked to the eastward, and at 8. p. m. tacked to the southward and westward; middle and latter parts, fine breezes and pleasant; now how will it be about weathering; the winds are good enough, but the current, I find, is not altogether a bugbear.

Dec. 20. Lat. 2° 47′ S.; long. 32° 48′ W. Current, 0.8 knot, S. Barometer, 29.90;

temperature of air, 82°. Variation observed, 8° W. Winds: SE., E.SE. First part, light breezes and fine weather; middle part, rather more wind; latter part, moderate breezes and pleasant; noticed a southerly current for the 24 hours; a brig in sight to leeward.

Dec. 21. Lat. 4° 46′ S.; long. 33° 40′ W. Current, 0.7 knot, N. 70° W. Barometer, 29.90; temperature of air, 84° Winds: SE., E.SE. Fine steady breezes throughout and pleasant weather; hope to clear St. Augustine without trouble; a barque in company.

Dec. 22. Lat. 7° 08′ S.; long. 34° 15′ W. Current, 0.7 knot, N. 64° W. Barometer, 29.95; temperature of air, 84°. Wind: E.SE. Fine breezes throughout; I am well satisfied with the chance since crossing the line, shall pass all clear."

Brig Vernon, (D. S. Collins,) Liverpool to Montevideo; eight days out.

"Nov. 27, 1854. Lat. 30° 48′ N.; long. 21° 00′ W.; variation observed, 2 points west. Barometer, 29.90; temperature of air, 68°. Winds: N., NW., S.SE. First and middle parts, moderate breezes; latter part, light and baffling winds.

Nov. 28. Lat. 28° 57′ N.; long. 22° 21° W.; variation, 2 points W. Barometer, 29.87; temperature of air, 70°. Winds: S. by E., S., S. by W. First part, moderate breezes, with squalls of rain; middle and latter parts, fresh breezes and clear weather.

Nov. 29. Lat. 27° 30′ N.; long. 24° 26′ W. Barometer, 29.90; temperature of air, 72°; Winds: S. by W., S.SW. First and middle parts, moderate breezes and clear weather; latter part, moderate, with squalls of rain.

Nov. 30. Lat. 25° 29′ N.; long. 25° 18′ W.; variation, 2 points W. Barometer, 29.90; temperature of air, 74°. Winds: S. by W., S.SE. First part, light breezes and calms, with heavy showers of rain; middle and latter parts, moderate breezes and cloudy.

Dec. 1. Lat. 24° 35′ N.; long. 27° 09′ W. Barometer, 29.85; temperature of air, 74°. Winds: S., SW. First and middle parts, light breezes and calms; latter part, light breezes, with heavy rain.

Dec. 2. Lat. 23° 57′ N.; long. 26° 27′ W. Barometer, 29.85; temperature of air, 74°. Winds: SW., variable. Moderate breezes, with rain squalls throughout.

Dec. 3. Lat. 23° 02′ N.; long. 26° 05′ W. Barometer, 29.85; temperature of air, 76°. Winds: variable, NE. to S.SW. Light and variable winds throughout, with heavy rain; saw a large whale.

Dec. 4. Lat. 21° 15′ N.; long. 25° 54′ W. Barometer, 29.85; temperature of air, 77°. Winds: NE., E.NE. Moderate breezes and cloudy throughout.

Dec. 5. Lat. 19° 35′ N.; long. 25° 40′ W. Barometer, 29.80; temperature of air, 76°. Winds: E.NE., variable. First part, moderate breezes; middle, light and variable; latter, squally, with heavy rain, thunder, and lightning.

Dec. 6. Lat. 17° 44′ N.; long. 25° 51′ W.; variation, 1½ points W. Barometer, 29.80; temperature of air, 78°. Winds: E.NE., SE. Moderate breezes throughout; at 10 a. m. made Cape Verde islands, bearing S. by E., distant about 40 miles.

Dec. 7. Lat. 16° 52′ N.; long. 26° 14′ W. Barometer, 29.80; temperature of air, 78°. Winds: SE., SW. Moderate breezes and cloudy weather throughout.

Dec. 8. Lat. 15° 15′ N.; long. 26° 40′ W. Barometer, 29.85 ; temperature of air, 80°. Winds: S.SE., SE. by S., SE. First part, moderate breezes, with rain; middle and latter parts, moderate breezes and cloudy.

Dec. 9. Lat. 13° 17′ N.; long. 26° 42′ W. Barometer, 29.80; temperature of air, 80°.

Winds: variable. Throughout these 24 hours, moderate and baffling winds and thick atmosphere, with light showers of rain; barometer rises and falls $\frac{1}{20}$; no appearance of a settled trade-wind.

Dec. 10. Lat. 11° 13′ N.; long. 26° 22′ W. Barometer, 29.80; temperature of air, 81°. Winds: SE., SE. by E. Pleasant breezes throughout, with heavy showers of rain; barometer very unsteady.

Dec. 11. Lat. 9° 42′ N.; long. 26° 43′ W. Barometer, 29.80; temperature of air, 81°. Winds: SE., E.SE. Moderate breezes, with squalls and heavy rain showers.

Dec. 12. Lat. 8° 23′ N.; long. 26° 24′ W. Barometer, 29.85; temperature of air, 83°. Winds: E.SE., E.NE., E. First and middle parts, moderate breezes, with light rain, latter part, light breezes and clear weather.

Dec. 13. Lat. 6° 30′ N.; long. 26° 12′ W. Barometer, 29.85; temperature of air, 83°. Winds: E., E.SE. Moderate breezes and clear weather throughout.

Dec. 14. Lat. 5° 54′ N.; long. 26° 25′ W. Barometer, 29.90; temperature of air, 83°. Winds: SE. by E., calms. Light variable winds and calms; cloudy weather.

Dec. 15. Lat. 6° 03′ N.; long. 26° 25′ W. Barometer, 29.95; temperature of air, 83°. Winds: calms. Calm and cloudy throughout, with a heavy swell from the southward.

Dec. 16. Lat. 6° 16′ N.; long. 26° 10′ W. Barometer, 29.85; temperature of air, 83°. Winds; calm, variable. Calm and light airs, at intervals, from every point of the compass; ends clear.

Dec. 17. Lat. 4° 45′ N.; long. 26° 58′ W. Barometer, 29.80; temperature of air, 81°. Winds: SE. by S. First and middle parts, moderate breezes; latter part, fresh breezes and squally; barometer very unsteady.

Dec. 18. Lat. 3° 37′ N.; long. 27° 50′ W. Barometer, 29.80; temperature of air, 81°. Winds: S.SE. Fresh breezes throughout, with heavy rain; at 4 p. m. a large water spout passed about a mile to windward.

Dec. 19. Lat. 1° 48′ N.; long. 29° 14′ W. Barometer, 29.80; temperature of air, 81°. Winds: pleasant breezes and clear weather throughout.

Dec. 20. Lat. 0° 08′ S.; long. 30° 25′ W. Barometer, 29.80; temperature of air, 80½°. Wind: S.SE. Fresh breezes and cloudy throughout; at 10 a. m. crossed the equator.

Dec. 21. Lat. 2° 23′ S.; long. 32° 00′ W. Barometer, 29.75; temperature of air, 81°. Wind: S.SE. Strong breezes and cloudy.

Dec. 22. Lat. 4° 54′ S.; long. 32° 59′ W. Barometer, 29.80; temperature of air, 81°. Wind: SE. by S. Strong breezes and cloudy; at 5.30 a. m. Ferdinand Noronha bore E., distant about 18 miles.

Dec. 23. Lat. 7° 14′ S.; long. 33° 19′ W. Barometer, 29.85; temperature of air, 81°. Winds: SE., SE. by E. First and middle parts, strong breezes and cloudy; latter part, moderate and clear, wind hauls gradually to the eastward.''

BAROMETRIC ANOMALIES OFF CAPE HORN.

The barometric anomalies off Cape Horn well deserve the closest attention of navigators. More observations are required there, for philosophers are at a loss for explanation. Those of the Espy school would explain the low range of the barometer off Cape Horn by the "falling weather," or the falling weather by the low range of the barometer, for they are close dependants. Their explanation would be this: Where there is a low barometer, there is, as in the equatorial doldrums, for instance, an influx, an uprising, an expansion, and a cooling of air. This cooling is followed by a condensation of the invisible vapor of the air, first into clouds, then into rain, hail, mist, or snow.

This is quite philosophical, and the physical conditions of the phenomenon require a high barometer on each side of the place of the low. Hence the barometer stands higher in the trade-winds than it does under the equatorial cloud ring. Espy's theory requires the same; and if it held good off Cape Horn, there ought to be both to the east and the west of its meridian a place of high barometer, clear sky, and light winds, from which air for its storms is supplied.

I have never heard of such a place.

Most of the gales off Cape Horn are from the west; and this theory, beautiful in many respects, but faulty in others, requires on Cape Horn parallels also a high barometer, both to windward and to leeward, the place of the high barometer to leeward being beyond the place of low.

Now, the Storm and Rain Chart (plate XIX., Vol. I.) shows that there is a marked difference between the conditions of the atmosphere most favorable to rain within and without the tropics. Within the tropics, rain is most apt to fall when the winds are hushed; but without, it falls most when they are raging. In one case, calms and rains go together; in the other, rain and gales of wind accompany each other. In uprising columns of air it is calm, as in the centre of cyclones and the equatorial calm belt. It seems therefore that that combination of meteorological conditions, calms and uprising columns, most favorable to intertropical rains, is not the most favorable for rain off Cape Horn, but a condition the very reverse is the most obvious of the rain-producing conditions there.

It appears to me that we may account for the *inter* and *extra* tropical difference in a very natural way. Winds on their way from the tropics to the calms of the equator are going from cooler to warmer latitudes, and cannot therefore precipitate their moisture unless their temperature be lowered, and that is done by rising up in the calm places.

On the other hand, the winds, on their way from the tropics towards the poles, are going from warmer to cooler latitudes; their capacity for moisture is diminishing as they go, and they can precipitate it therefore without rising. The winds off Cape Horn are in this category. The greater the velocity of the wind as it comes from the equatorial quarter and rushes into polar regions, the more rapid the cooling and the greater the amount of precipitation. Hence we see, as plate XIX suggests, reason for the relation there expressed between calms and rains at the equator, gales and rains off Cape Horn.

The whole subject of the barometer, as a nautical instrument off Cape Horn, is one of deep and especial interest to the navigator. Upon a correct interpretation of its indications navigators must mainly rely for any further and material improvement in the western passage around the Horn.

At present there is as great a diversity of opinion among clever practical navigators as to the barometer off Cape Horn as there is of color in the rainbow.

"My object in writing," says Captain Bailey, of the United States ship St. Mary's, "is to call your attention to the barometrical indications south of Staten Land and Terra del Fuego, and to the regularity and certainty with which the mercury falls with a northerly wind and rises with a southerly. At this season—the summer—an easterly wind is rare, and, if it occurs, is of short duration. We found none. The north or northwest winds are usually accompanied by cloudy, rainy, or misty weather; soon after it sets in, the mercury begins to fall, and continues to sink as long as the wind has northing in it, when there is usually an interval of calm, or light variable winds, lasting two or three hours; after which it veers to the southward or southwestward, squally, precipitating the mists in the form of hail and sleet, and exposing (at the SW.) clouds of the cumulus character. At this point the mercury begins to rise, and continues ascending as long as the wind has southing in it. A low barometer (say 28.50) will thus react with a southerly wind, and a high barometer (say 29.90) with a northerly.

"This has been my experience, after three passages around Cape Horn, in which my attention has been directed to this phenomenon. And so fully convinced am I of the truth of my experience, that I would advise ships (after passing the Straits of Le Maire, which is free from all danger, saving thereby at least one degree of westing) having a northerly wind and a falling barometer, to stand on a wind to the southward, confident of the wind's direction, so long as the mercury tends to fall. If it reaches a minimum somewhat below 29 inches, and a calm ensues, equally to be certain of a "southwester," and to be in a position, if possible, to profit by it."

"I have never known the barometer to range so low, and know not what to make of it."—*B. Buxton, ship Union.*

"A most extraordinary fluctuation in the barometer, from 30.03 inches to 29.3 inches, the weather and appearance giving no indication of storm or rain."—*Robert McCerran, ship Defiance.*

"The barometer continues to fall, although the wind is southwest. I have always seen it rise with the wind from that quarter."—*W. B. Daniels, ship Seaman.*

"The barometer ranges the highest with the wind W.SW., and lowest from the northward. It either accompanied or followed the change, never preceded it."—*John Gillan, barque Delegate.*

"I do not see that it (the barometer) is a guide to be depended upon. Certainly my experience this passage would show its fall followed by delightful weather."—*R. F. Coffin, ship Senator.*

"I have Maury's Sailing Directions, and I find that most all the captains who have furnished him with abstracts have had something to say about their barometers when in the vicinity of Cape Horn; and as there is a good deal of disagreement, I thought I would add my opinion to theirs, while every circumstance is fresh in my memory. In the first place, I have two barometers; one belongs to the ship, the other to myself. Mine I have had six years, and used almost constantly for that time, and have become in that time pretty well acquainted with its workings; for that reason I have used my own barometer altogether in this log, though it differs materially from the ship's. In fine weather, when my barometer was at 30.00, the ship's stood at 30.25; in heavy weather, when mine stood 28.50, the ship's stood

28.40, or 28.35; at 29.00 inches they were about alike. Now, as to the use of a barometer off Cape Horn, so far as I can judge, they work as well and are of as much use there as anywhere; though I think it requires considerable study to understand the workings of the mercury in such high latitudes. I think my barometer stood in 58° south latitude three-quarters of an inch lower than it would in the same amount of wind or storm off Cape Hatteras. I notice some of the captains say the barometer always falls in a northerly wind, and it does not blow hard from that quarter. I noticed this myself; but my barometer always stayed down, and most always continued to fall till the wind came to the southwestward and blew heavily, then it would begin to rise. My barometer and also the ship's, I have known to be down to 28.50 inches several times for twenty-four and sometimes for over thirty hours before the blow came on; but it always came, and as soon as it came and got fairly to blowing, the barometer started up. Every hard westerly blow I have had about Cape Horn, I have had a low mercury before it came on. I had a very heavy blow off the mouth of the River Platte; I have had but very little harder off Cape Horn. There the lowest mercury was 29.20; off Cape Horn the lowest was 28.40 my barometer, the ship's varied a little more; it fell off Cape Horn as low as 28.10, and off the River Platte 29.30. So, if my opinion is of any use, I shall give it in favor of the barometer off Cape Horn. Mine has been of as much use to me there as anywhere, with the exception that at first I took in sail a little sooner than was necessary. In my log you will find an average of the wind for every eight hours, and also of the barometer's height. I am now in 40° south latitude; have fine weather. Barometer all this day 30.10 inches; wind light from the southward. My barometer is Megarey's manufacture, and the ship's is one of Negus'."—*William Fales, ship Star.*

"June 11. 9 a. m., barometer falling; land in sight about Cape Pinas; noon, quite thick and dark; barometer, 29.35; lower than I have noticed it before; no change in the weather except the fog. Thus far I have made no remarks upon the barometer. If I should dare to hazard an opinion, would say that, with the wind at NE. and E., north of the equator, it ranges highest; and with southerly winds south of it, and particularly south of Capricorn, lowest; or, at least, that southerly winds may be expected when low, and westerly and northwesterly when quite high; though we have had our highest wind (even a terrific gale for a few hours) after the barometer had fallen to 29.40 some two hours and stopped. I think it was rising at the time; wind from about west, perhaps a little northerly and inclining southward. Running along the land; wind veering north; saw what looked like snow on the mountain tops; at 10 p. m. up with Cape Diego in sight; at the end of the day in the straits; weather getting fair; wind strong at NW."—*O. G. Lane, ship Victory.*

"Sept. 2. Lat. 56° S., long. 65° W. At 9 p. m., light wind from SW., wore ship. At 10 p. m., calm, squall gathering from S.SW.; in royals, and clewed up everything except topsail and foresail; but before we got through, it struck us; and I was glad that I was so well prepared for it. It blew very hard for three hours; close reefed fore and mizzen topsails, and double reefed main topsail and mainsail. Latter part, heavy gales and hail; ship under the same sail. We seem to be pursued by contrary winds. (I see in your book of *Directions* that some of the captains state that they do not consider the barometer as a guide in high southern latitudes; but I differ from them, although I may not have had as much experience as some of them, having been thirteen years at sea, of which time I have been captain six years.) I think if the glass falls three or four tenths in a few hours, it is almost positive that it will be suc-

ceeded by a gale or very heavy gust which will last several hours, although the simple fact that the barometer falls does not, as a natural consequence, predict wind; it only shows that there is a commotion in the atmosphere in your vicinity which may be succeeded by wind or rain, but I think more likely by the former. If you would be so kind as to write me, on my next voyage, a particular track which I should follow, you would oblige me very much; also the mistake which I made on this voyage; and, if you please, I should like to hear your opinions concerning the barometer."—*John Zerega, Queen of Clippers.*

On the other hand, other opinions are adverse; I quote a few more, *pro* and *con:*

"The barometer remains low all the time; it appears to be of no use here."—*D. C. Landis, ship F. W. Brune.*

"Barometer useless."—*W. L. Phinney, ship Kentucky.*

"The mercury here appears to be very lively; will rise and fall from 30.10 to 29.16 rapidly; but it is to be observed that this variation is not attended with the same degree of increase and decrease of wind that we experience elsewhere. Consider the barometer here of very little use."—*T. Dahlgren, barque Byron.*

"Barometer rising; but find it no guide whatever."—*S. M. Hudgins, barque Hugh Birkhead.*

"Barometer unsteady; squalls the same, without any apparent effect on the barometer. I do not trust to it."—*Charles A. Ranlett, ship Surprise.*

"The mercury fell this day 1.42 inches, and no wind to speak of."—*W. E. Putnam, ship Empress of the Seas.*

"I watch the barometer closely; but do not think it is to be depended on here as in the North Atlantic Ocean."—*Samuel Harding, ship Robert Harding.*

"My barometer has been almost useless since I was in the latitude of the Rio de la Plata. The heaviest gales I had, it ranged from 29.15 to 29.40, and it has been as low as 28.35 with a whole sail breeze. It has, however, invariably fallen for a northerly wind, and risen for a southerly one. It has ranged during the last six weeks from 28.35 to 30."—*Oliver H. Saunders, ship B. Howard.*

Capt. Hull says: "My barometer tells the weather here to a charm." Capt. Littlefield says: "Never, in one instance, has my barometer deceived me;" and Capt. Scott remarks: "Thus far, I think the barometer has been an infallible guide as to the weather."

The barometer off Cape Horn was discussed at page 635 of the 7th edition. I refer the navigator to it for what is there said concerning the influence of the Andes, or the mountains of Patagonia, upon the storms of Cape Horn.

In that paper are also contained at length the barometric readings for a total period of 490 days, both off the Cape and in each system of trade winds. Those observations were made with the old fashioned marine barometer. They therefore cannot be relied on with any degree of accuracy for the absolute amount of pressure, though they indicate with considerable accuracy the average difference of pressure off Cape Horn as compared with the mean barometric pressure in the trade-wind regions. According to these observations, the mean height of the barometer off Cape Horn is about 0.8 inch less than it is in the trade winds.

The following summary is derived from the tables of the 7th edition:

Approximate mean monthly height of the barometer.

MONTH.	IN N.E. TRADES OF THE—				OFF CAPE HORN.		IN S.E. TRADES OF THE—			
	ATLANTIC.		PACIFIC.				ATLANTIC.		PACIFIC.	
	Barometer.	Days of observation.	Barometer.	Days of observation.	Barometer.	Days of observation.	Barometer.	Days of observation.	Barometer.	Days of observation.
January	29.90	49	30.00	50	29.37	66	29.96	22	30.04	55
February	30.00	64	29.98	42	29.24	41	29.88	74	30.03	60
March	29 97	81	29.93	53	29.17	53	29.97	65	29.87	41
pril	29.98	53	29.85	34	29.16	66	29.91	76	29.93	49
May	29.90	20	29.93	73	29.24	91	30.00	28	29.97	69
June	30.18	26	30.05	57	29.37	29	29.96	36	30.03	98
July	29.97	14	30.07	91	29.12	17	30.24	5	29.94	40
August	29.95	13	29.84	47	29.26	21	30.03	14	29.88	32
September	30.01	18	29 94	26	29.38	12	30.01	14	30.20	10
October	29.95	38	.....	.....	29.33	19	29.95	46	30.08	19
November	29.92	40	29.99	13	29.02	40	29.99	37	30.50	6
December	29.96	57	30.00	31	29.13	35	29.88	65	30.01	26
Means	29 97	473	29.96	517	29.23	490	29.98	482	30.05	505

Lieut. Van Gough has published, among the valuable contributions made by the Dutch to our knowledge of sea routes, the results of no less than 2,472 barometric observations taken on the polar side of 42° S. along the route to Australia.* Classing those observations according to the winds we have, for means, as follows:

133 observations, with wind	S.SW.	Mean height of barometer,	29.78 in.
250 do	SW	do	29.67
328 do	W.SW	do	29.65
277 do	W.	do	29.56
313 do	W.NW.	do	29.56
279 do	NW.	do	29.54
225 do	N.NW.	do	29.63
151 do	N.	do	29.73
130 do	N.NE	do	29.77
93 do	NE	do	29.80
46 do	E.NE	do	29.82
34 do	E.	do	29.78
26 do	E.SE.	do	29.81
40 do	SE.	do	29.78
58 do	S.SE	do	29.81
89 do	S	do	29.75
Mean			29.66 in.

The Dutch table shows that only one-fifth of the winds on the polar side of 42° have easting in them, and it authorizes the conclusion, says Lieut. Van Gough, that "what experience now shows us respecting this barometric wave-line is required by theory: that where the S.SE. and SE. winds come from the south pole they cause a consequent rising of the barometer,

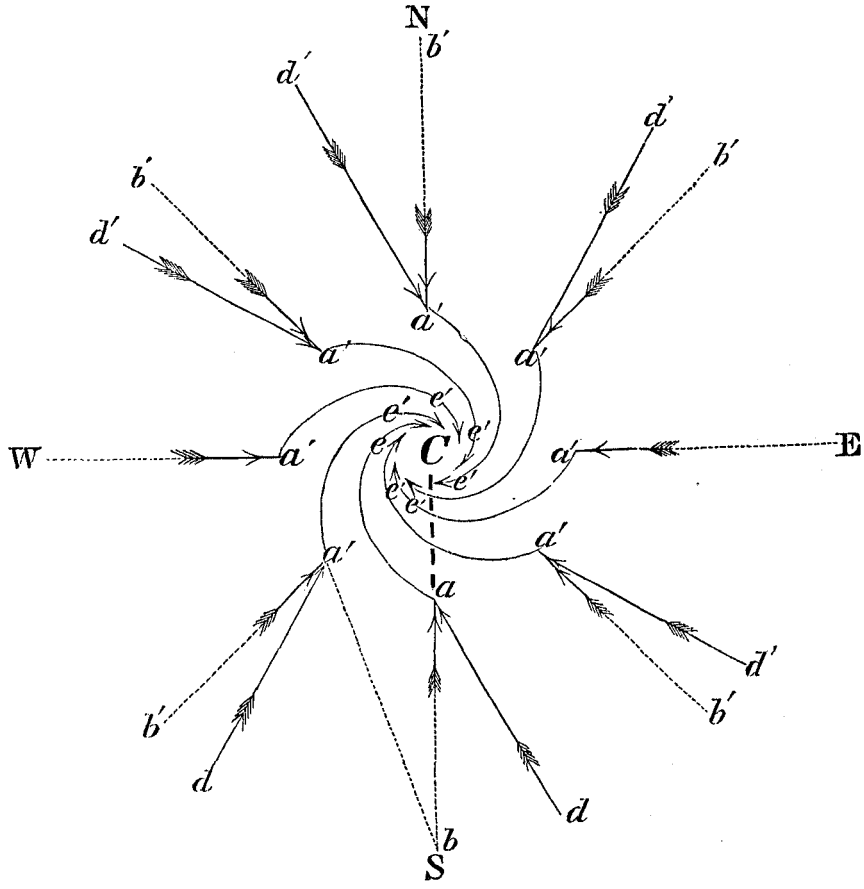
* The mean height of the barometer off Cape Horn appears to be 0.43 in. less than (by the above) it is in the Indian ocean, "south of 42° S."

while the NW. winds commonly bring about a falling, [the polar winds, are the dry winds; the equatorial, the wet—the vapor of wet winds is one of the principal causes of a low barometer.] Should the wind happen to be W.SW., a rising barometer indicates that in the upper air a more southerly wind is already at hand, and that it will come as the rising continues; if however, the barometer falls, then, generally, the wind will turn to the west and northward.

"When the barometer changes, one should take notice of the direction of the wind; should it rise when the wind is blowing from a lower direction, one may then look for a storm.*"

"When in high southern latitudes," says Jansen, "the barometer goes down 29.50, one may expect strong breezes from NW., always accompanied with drizzling rain. When the glass goes lower down, increasing wind; but the very moment the mercury ceases falling and inclines to rise, the sky clears up and the wind shifts with a tremendous squall to SW., with increasing wind and rising barometer, till the mercury is again above 29.50. When the glass goes slowly down with a southerly wind one may expect the wind from SE. I saw the barometer 28.88 when the wind shifted from SW. to S.SE, and from a gale to a moderate breeze.

"The wind is always flying about two and four points. When the wind increases, being NW., it veers to north; being SW., to south."



According to Dove's "Law of Rotation," which is said to hold good in the northern hemisphere, and is supposed to obtain in the southern also, the wind being NW. and veering, it ought to veer by W. to SW., and so on, *against* the sun. This "law" is explained thus:

* P. 67. Uitkomsten van Wetenschap en ervaring Aangaande Winden en Zeestroomingen in sommige Gedeelten van den oceaan. Uitgegeven door het Koninklijk Nederlandsch Meteorologisch Instituut. Utretcht, 1857.

Suppose a ship be in the southern hemisphere at *a*, p. 451, with a low barometer to the north of her, as at *C*, where the air ascends as fast as it comes pouring in from all sides. The ship, let it be supposed, is just on the verge of, but exterior to the vortex, or that place where the wind commences to revolve. The first rush of the air at *a* will be directly for the centre *C*; consequently a ship so placed would report the storm as commencing with the wind at south.

For the sake of illustration we will suppose this place of low barometer to be stationary, and the air, as it rushes in, to ascend at the disk *C*. Thus, the area of in-rushing air will gradually enlarge itself by broad spreading, like a circle on the water, until it be compassed by a circle with a radius, *C S*, of indefinite length. The air then, on the meridian, *S C N*, but to the south of *a*, will not blow along this meridian and pass over the ship ; in consequence of the diurnal rotation of the earth it will take a direction, *S a'*, to the westward; and the arrow *d a* representing a S.SE. wind, will now show the direction of the wind at *a*. Thus the ship will report that the wind commenced at south, and gradually hauled to S.SE., *i. e.*, against the hands of a watch; and so the arrows *b' a'* will represent the direction of the wind at each station, *a' a' a'*, when the storm commenced, and the arrows *d' a'* the direction afterwards; thus showing it to have veered *against* the hands of a watch. And this is the direction in which the forces of diurnal rotation, when not mastered by opposing forces, always require the wind, when not blowing round in spirals and a whirl, to haul in the southern hemispere. Now, paradoxical as it may at first seem, it is also the forces of diurnal rotation that give that same wind, when it is blowing round in spirals, its first impulse to march round in the contrary direction, or *with the hands of a watch;* but this is as it should be—it *hauls* one way, and *marches* the other.

After passing *a*, and each of the other stations *a' a'*, the rush of wind is sufficient, let us suppose, to create a whirl. The wind at *a*, *a'*, *a'*, continuing on with a circular motion, is represented thenceforward in its course by the curved arrows *a e*, *a' e'*.

The wind coming from the east and the west has no direct impulse from diurnal rotation, but the wind on either side of it has; and hence the *prime vertical* wind is carried around with the rest.

If, now, we imagine the disk *C* to be put in motion, and the storm to become a travelling one, we shall have to consider the composition and resolution of other forces also: such as those of traction, aberration, and the like, before we can resolve the whirl-wind.

But the cyclonologists do not locate their storms in such high latitudes as the parallels of Cape Horn. Hence we might safely infer, one would suppose, that in high southern latitudes a north wind has a tendency to incline to the westward and a south wind to the eastward; and the cause of this tendency is in operation, whether the place of low barometer be a disk or an oblong, for it is in obedience to the trade-wind law, as expounded by Hadley, that it so operates; and it will also be the case whether the wind be caused by an influx into the place of low, or the efflux from the place of high barometer; or, as is generally the case, by both together.

If the distance between the place of high and low barometer were always the same, then a given difference of barometric pressure would always be followed by a wind of the same force or velocity.

By expanding Bernouilli's formula for the velocity of gas jets under given pressures, Sir John F. W. Herschel has computed* the velocity and the force with which currents of air or winds would issue under certain differences of barometric pressure. Under the most favorable

* See article Meteorology, Encyclopedia Britannica, 1857.

conditions, *i. e.*, when the places of high and of low barometer are in immediate juxtaposition, as on the inside and outside of an air-pump, an effective difference of 0.006 in. in the barometric pressure would create a breeze with a velocity of seven miles the hour. Such a wind is capable of exerting a horizontal pressure of 0.2 lbs. the square foot, thus :

Diff. barometric pressure.	Velocity of wind.	Horizontal pressure.	Strength of wind.
0.006 inch	7 miles per hour	0.2 pounds per square foot	Gentle air.
0.010	14 " "	0.9 " "	Light breeze.
0.016	21 " "	1.9 " "	Good sailing breeze.
0.06	41 " "	7.5 " "	A gale.
0.14	61 " "	16.7 " "	Great storm.
0.25	82 " "	30.7 " "	Tempest.
0.41	92 " "	37.9 " "	Devastating hurricane.

Changes, however, in the barometer, amounting to five or six, or even more, times these differences, are observed to take place at sea without producing winds exceeding in velocity the rates above. This is because the places of high and low barometer at sea are far apart, and because, also, of the obstructions to the winds afforded by the inequalities of the earth's surface.

But, in this view of the subject, the importance of a daily system of weather reports by telegraph on shore, and across the water between Europe and America when the sub-Atlantic cable is well laid—for laid so as to work it will be—looms up and assumes all the proportions of one of the great practical questions of the age.

We may conjecture, as the probable result of observation, that the greater the distance between the place of high and low barometer, the less the velocity of wind for a given barometric difference would be. Professor Buys Ballot has discovered, practically, the numerical relation between the force of the wind and given barometric differences for certain places in Holland. With the view of ascertaining like relations for the lake country, it has been proposed to establish a cordon of meteorological stations about the great chain of American lakes; each station being required to report daily to the Observatory in Washington, by telegraph, the height of the barometer, force of wind, &c. By such a plan, properly organized for the country generally, we might expect soon to be able to give the ships, not only on the great lakes but in our seaport towns also, timely warning of many a gale, and to send by telegraph to Europe warning of many a one long before it could traverse the Atlantic.

We may suppose that the cradle of the storm in the Mediterranean, the Black Sea, and the Baltic, does not always rest upon those seas. Its nursery, it may be conjectured, is rather upon the land than the water. If so, lines of magnetic telegraph are already stretching themselves across, around, and about those seas, and it may be a question whether a like system of daily weather reports by telegraph would not enable M. Leverrier, who has already made the Paris Observatory the centre of the most extensive and useful system of meteorological observations by telegraph that has yet been set on foot, to detect every storm as soon as it takes up its line of march on the land, and give to the fishermen and all in port who use the sea, warning of its approach before it reaches the water.

And so likewise the contributions which the magnetic telegraph is capable of making for the advancement of meteorology, may enable us to warn the ships in our Gulf ports, as well as those of Cuba, perhaps, of the approach of every hurricane or tornado that visits those regions. Certainly we can send to England warning of many a westwardly gale. But I digress.

The agencies which produce gales of wind in warm latitudes are somewhat modified in cold. The solar heat, the rapid evaporation and quick condensation which take place in inter-tropical climates, lose, to some extent, their activity in high latitudes; but this difference, as Sir John Herschel has observed, is offset, in a manner, by the forces of diurnal rotation—the nearer the poles the greater, for a given difference of latitude, becomes the difference of diurnal rotation; and the difference of diurnal rotation makes itself felt both in the force and direction of winds.

Just in time to enrich this discussion concerning the winds in the southern hemisphere, is the following extract of a very interesting letter from Commodore Wüllerstorf, of the Austrian frigate Novara, now out upon a scientific mission to the three great oceans. It is dated at the "Nicobar," February, 1858, and it arrives just in time to stop the press that room may be made for it here. It more properly belongs to chap. XVIII, vol. I.

The commodore has turned his attention especially to the dynamics of the air, and that he might study the winds on the polar borders of the SE. trades to the best advantage, he cruised along them for a distance of more than 6,000 miles.

"The zones of variable winds," says he, "which limit the trades excited my curiosity a long while ago, for, on the one hand, it seemed to me that the changes of the wind in this region were dependent upon an obvious law; and, on the other hand—asking your pardon—because I was not so fully agreed in the representation of the crossing of the atmosphere from one pole to the other, as you have developed it.

"Previous to my arrival at Rio de Janeiro, and when near the land, where the trades are mostly broken and disturbed, I was observant of the changes of the wind, and, in accordance therewith, determined to hold my course from Rio to the Cape of Good Hope, along the limit of the southeast trades, nearly in a great circle.

"The state of the winds in this region corresponded to my expectations, as it did also on the passage from the Cape to the two volcanic islands, St. Paul and Amsterdam, in the Indian Ocean.

"At certain periods, namely, the SE. trade wind blew, whose polar limit should advance with the approach of the sun towards the south pole. After a short continuance, the wind went around to NE., N., NW., W., SW., for which changes several days were required.

"Lieut. Jansen, whose acquaintance I earnestly desire, remarks, as you mention in your celebrated Sailing Directions, upon the turning of the winds; and if you would attentively consider the wind observations collected by you in the same work, you will find that the same turnings, always in the same direction, have been marked out also by other ships without being conscious of it.

"I noticed that the whirlings take place in the same manner as in the case of hurricanes, and attempted, accordingly, to treat these wind phenomena in the same manner as is done with cyclones, starting from the idea that the hurricanes generally cannot be separately existing phenomena, but that they only exhibit extreme atmospheric motion, subject to laws remaining the same for all currents of air; that in fact the dust-whirl at the corner of the house depends on no other causes than those which produce such destructive effects.

"The result of this investigation was very instructive. I could, in the evening, foretell what wind would blow on the following morning, and what weather we might expect for the following hours.

"The barometer behaves in the same manner as is generally the case in cyclones; it sinks while approaching the centre of the cyclone-disk, and rises as it is removed from this centre.

At the same time the weather grows bad in the closer proximity, and improves with increasing distance of this centre. These phenomena are not so marked as in hurricanes, but are yet so regular and easy to perceive that no doubt can arise concerning them.

"The path which the centre of the wind-disk describes is like that for the hurricane, a parabole or hyperbole, whose vortex is turned to the west, and whose axis remains nearly parallel to the equator.

"The strength of the wind increases in the inverse proportion of the distance from the centre, so that the radius-rector must describe equal areas in equal times, (the force of the wind remains the same, but its velocity increases in the same ratio as the strength.)

"From these observation there results undoubtedly:

"1st. That there are rotating winds which follow the same law as hurricanes without possessing their destructive effects, but rather can at some times attain to the force of a stiff breeze.

"2d. That rotating winds whose disks, like those of cyclones, move in curved lines, must arise from the action of two opposing currents of air meeting, perhaps, at an oblique angle, just as is the case in the meeting of two currents of water.

"3d. That rotating winds or cyclones depend upon the motion of the zone of greatest temperature and greatest atmospheric pressure toward the pole, in connexion with the change of the sun's declination, and that they must be the regulators of the change of the air-particles where they come into conflict.

"For proof of this, I hope to be able to furnish ten or twelve such phenomena, and in future more yet; and, perhaps, I shall be able to spare time enough to send you, by some opportunity, a copy of these wind charts.

"I am moreover convinced that similar phenomena may be noticed at the polar limits of the northeast trades, under the same circumstances, and also in the zone of calms at the equator; but have, unfortunately, hitherto had no time to work out a clear representation thereof from foreign observations. It would easily be possible for you, with the many journals you receive, to turn your attention to this phenomenon, which, as it seems to me, must be of no unimportant value in the theory of the motion of the wind.

"The places where rotating winds may exist, as they are the result from the conflict of nearly opposite air-currents, may be determined, on the earth, generally by seeking those zones in which wind changes must take place.

"An air-current arises originally from a difference of atmospheric pressure in two adjoining regions, and the winds are the resultant of these currents and of the difference in velocity of the various parallels of the earth."

[See diagram, p. 451, and the explanation thereof. M.]

"But in taking into consideration the rotation of the earth, we must not forget that the atmosphere is in connexion, though very lightly, with the earth's surface, and, therefore, that the motion on the points on this surface will be, to a certain extent, communicated to the atmosphere.

"As regards the air-currents, which must regularly have place upon the earth, it is first of all necessary to ascertain those places where minima and maxima of atmospheric pressure must take place.

"By the action of the sun, as is well known, there is produced a zone of higher temperature near the equator, where the air attains its greatest expansion, and, consequently, exerts a pressure on every side and upwards, and blows in the direction of the least resistance. The velocity

attained by the particles of air carries them generally higher than those strata which had the same density with them, thence arises the necessity for these particles to spread out laterally on either side of the zone of highest temperature, and thus an upper current is produced, which is, in the opposite direction from the lower, caused by the influx of polar air.

"By this upper counter current must now the gravity of the air-columns above the earth be increased, and the pressure will, at a certain distance, depending on the greatest declination of the sun, reach a maximum. There are, therefore, two zones of greatest pressure, which, if the capacity of the earth for heat were everywhere the same, would remain parallel to the zones of greatest temperature. For compensating this greatest pressure, the air must also flow up toward the poles, and the current so produced must, by the greater density of the zones of greatest pressure, take place on the surface of the earth, while, in the upper regions, the polar air continually flows toward the zones of greatest temperature.

"That, both in the zones of greatest temperature and in those of greatest pressure, calms and variable winds must prevail, should require no further explanation; and that by these are meant the zones of equatorial calms and those of the horse latitudes, follows from the above description. In fact the barometer rises from the equator to the polar limits of the trades, where it takes its highest stand, and then, though not so regularly, diminishes always towards the poles.

"In the same way, by the flowing off of the air towards the cold pole towards which they converge, at a certain distance from it, will again zones of greatest pressure be found, which, however, are probably subject to greater irregularities than can be the case for the similar zones nearest the equator. If the sun had no change of declination, then both the zones of greatest temperature and of greatest pressure would be immovable upon the surface of the earth; but by the varying position of the sun, the position of these zones also varies, and so much the more irregularly, as the former warms continents which have different powers of reception and radiation.

"From Prof. Dove's charts of the distribution of temperature, we can now see to what changes the position and extent of the zones of greatest temperature are subject, and we can from them also learn how far the trade winds near continents, such as Africa, Australia and India, extend and are subject to changes.

"By these changes of position and magnitude of the above-mentioned zones, which may sometimes take place with considerable rapidity, are caused partial waves of pressure and conflicts of currents of air, which, as I said above, give rise to circular winds whose force may attain to that of the hurricanes.

"It appears, in general, that the advance of the zones of greatest pressure and of greatest temperature produces cyclones in that hemisphere towards which these advances take place; and it is easy, by taking, also, into account the different directions at which the air-currents meet in consequence of the earth's rotation, to show that the turning of the winds in the northern hemisphere must be *against*, and in the southern hemisphere *with*, the direction of the hands of a watch.

"It appears, for instance, that in circumstances such as we find in the Atlantic ocean, the zone of greatest temperature does not, on account of local relations, reach the southern hemisphere. Consequently, cyclones can take place within the region of the southeast trades but seldom, although such phenomena must occur on the polar limits of these trades.

"In the different relations of temperature between land and sea are, finally, to be found

partial zones of greatest temperature and greatest pressure, even in the coast regions; of which the land and sea breezes, and, in another relation, the pamperos, tornados, &c., furnish the proof.

"You see, most honored sir, into what an abyss of zones I have fallen in thought; and I beg you to have patience with a man who, animated by the greatest desire to accomplish something useful, perhaps exceeds the limits prescribed to his understanding. Should you find it worth the trouble to form an opinion respecting the views here brought together in the shortest possible space, it would be very benevolent in you to write to me concerning them, and enable me to avoid the errors which a sailor of your acquaintance has made in relation to the theory of the winds."

It should not be forgotten by the mariner who wishes to study the laws of the storm, that the ærial equilibrium of our planet is continually liable to derangement both by the direct and reflected heat of the sun; and that when the equilibrium is disturbed from this source alone, nature does not seek to bring back equilibrium over large areas by riot or commotion, but rather by steady and gentle efforts, as by the trade-winds and the land and sea breezes. There is another source of disturbance, however, whose action is sometimes spasmodic, often sudden and violent, and that source of disturbance resides in the omnipresent vapor of the air.

When there is a sudden condensation of vapor with rain, heat enough to raise from freezing to boiling, more than five times the quantity of water rained is set free among the clouds. This, as explained by Espy, and as exemplified by nature, causes, under the equatorial cloud ring, and in the centre of the whirlwind, an expansion and an uprising—a boiling over, and flowing off, with a low barometer. And while we should, with the admirable Wüllerstorf, be ready to ascribe important and due influences to the motions of the sun in the ecliptic and to the vibration of the calm belts, we should not forget the power that is wrapt up in the invisible vapor of the air; for Faraday has taught us that a single grain of water is capable of evolving electricity enough to make a thunder-clap.

It is one of the chief excellencies of this system of research, that it draws forth opinions from clever men, as well as facts from patient observers. The Austrian commodore has stated his views philosophically and well. But the question with me in this work is, not who is right or who is wrong, but what is true. I therefore, in my reply to him, referred to Chap. XVIII, p. 262, Volume I, and wrote: "I know you have men of weight with you in your views concerning a place of high barometer about either pole as well as at the tropics. But I cannot make out in fact or in theory a polar place of high barometer. Nor does observation show it—I speak with deference—according to my judgment. * * * * *

"I find some difficulties about the cyclone theory that I cannot overcome. I should be most happy if you, with your excellent opportunities, your superior powers of observation and generalization, would turn your attention to the subject and assist me.

"My difficulties are of this sort: I cannot conceive it possible to have a cyclone with a revolving and travelling disk 1,000, or 500, or even 100 miles in diameter, as the expounders of the theory have it. Is it possible, do you suppose, for a disk of such an attenuated fluid as common air, having 1,000 miles of diameter with its less than wafer-like thickness in comparison, to go travelling over the earth's surface and revolving about a centre with tornado violence?

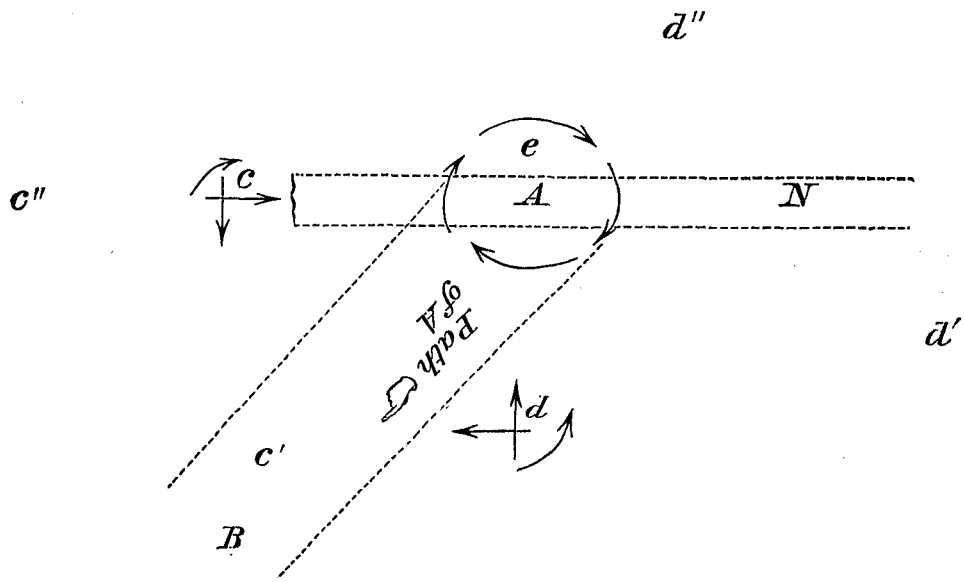
"With the log-books of several vessels before me that are supposed to be in different parts of the same cyclone, I have a number of times attempted to project its path. But I

failed always to bring out such a storm as the theory calls for. One or two vessels may do it; but is their testimony sufficient? I think not. Take as many as six or seven, and their records will seldom or never prove the existence of such a storm as the theory calls for.

"I make a distinction between the hauling of the wind, in consequence of diurnal rotation of the earth; and the rotation of the wind in the cyclone, in consequence of its centripetal force.

"For the sake of illustrating my difficulties a little further, let us suppose a low barometer with a revolving storm to occur at A in the southern hemisphere. Let the storm be travelling towards B. Let an observer be at *c*, *d*, and *e*,—*c* and *d*, being each several hundred miles from *A*.

"Now, then, will not the air at *c* and *d* blow N. and E. as directly for the place of low barometer as it would, were that place an oblong *N*, instead of a disk, as per the arrows?



"The trade-winds answer this question affirmatively. But the cyclonologists, instead of permitting the wind at the distance *c* to blow to the east, and at *d* to blow to the north, merely because there is a low barometer east of *c* and north of *d* require it so to blow, because, by their *theory*, there is a low barometer east of *d* and south of *c*! Thus, to reach its theoretical place of destination, it must blow in a direction at right angles to that destination! It would require a rush of inconceivable rapidity, so to deflect currents of air while they are yet several hundred miles from the centre of gyration. The gyrating disk can never, I apprehend, exceed a few miles in diameter. On shore we never find it exceeding in breadth as many rods, in most cases not of as many fathoms, as its advocates give it miles at sea. I agree with you that the dust whirl in the street is a true type of the tornado (cyclone) at sea.

"Imagine such a case to occur in nature as the one supposed. With the observations of *d* alone before him, the cyclonologist would say the storm was travelling in the direction *d' d''*; but with the log of *c* before him, his direction for it would be *c' c''*. By the rule, ship *d* would be led towards the real track of the storm, and ship *c* away from it.

"Thus you observe there are in the various parts of the storm three forces at work in effecting a change of wind. (1) One is diurnal rotation; it alone can never work a change of direction exceeding 90°; (2) another is the varying position or travelling motion of the place of barometric depression—the change effected by it cannot exceed 180° without the interven-

tion of a calm; (3) and the third is the whirling motion imparted by the rush to a common centre—the whirl of water at the flood gate of the mill, the whirlwind in the street.

"Now, then, let us fancy your places of low barometer about the calm belt of Capricorn to be the trough of barometric waves; the shifting of the wind and its hauling might be the result of forces 1 and 2, depending upon the direction in which the wave travels, and not upon any cyclone principle. Will you not look to it in this aspect?

"The question is, can we not devise a set of rules or tests by which, when the wind shifts with the mariner at sea, he may certainly know whether it be shifting in obedience to cause 1, 2, or 3, or to a combination of them? But because no such rules have been devised, must we, for that reason, condemn the cyclone theory out and out? By no means. For when a vessel is in the gyrations of a cyclone, the rules are good; only when she has the wind blowing direct towards the place of low barometer, the rules are such that they are as apt to lead her into the vortex as away from it.

"I send you a few blanks for the daily barometric range at sea. The explanation accompanies them;* perhaps they may be of service to you in the further prosecution of your inquiry. These blanks were prepared expressly with the hope that through their use we might receive light upon subjects akin to the one under consideration."

I hope every ship master who is co-operating with me will use the blanks. I have appended them to the Abstract. By means of the projections proposed I am sure the difficulties of doubling Cape Horn may be lessened, and time may be saved for that part of the route which lies between 50° S. in the Atlantic and 50° S. in the Pacific.

FROM THE "FAIR WAY" OFF ST. ROQUE TO CAPE HORN.

In the "Fair Way" off St. Roque, Cape Horn bound vessels, both from England and America, fall in with each other, and their track thence is the same; consequently there is required but one set of Sailing Directions for doubling Cape Horn on the outward voyage. The SE. trade-winds on the one hand, and the South American shore on the other, prevent any choice of route from St. Roque to the parallel of 35° or 40° S. For this reason a table of crossings after the Dutch plan is not given.

Since the publication of the last edition, 180 ships that have doubled Cape Horn have returned their logs to this office in time for the present discussion. Following the Sailing Directions there given they have shortened the average length of the passage from the "Fair Way" off St. Roque, round the Horn to the parallel of 50° S. in the Pacific, half a day. The passage around Cape Horn seems, therefore, to be well understood. The sum and substance of the best sailing directions from the "Fair Way" off St. Roque, round Cape Horn to the Pacific, amounts simply to this: From the parallel of St. Roque make the best of your way south, keeping a good offing from the coast; always pass inside of the Falkland Islands; and, when the wind will allow, go through the Straits of Le Maire, and hug close around the Cape, aiming to get to the west as fast and as soon as possible. Occasionally ice is met with east of the Falkland Islands, and that is another reason why outward bound vessels should prefer to go inside of these islands.

The observations contained in the abstract logs, and the information given by navigators

Vide p. 367 and Plate XIX. Vol. 1.

concerning this passage, are ample; the difficulties of the passage are fully and fairly set forth; the way is made plain, and any further gain of time in the passage must of necessity depend upon the navigator himself—upon the manner in which he meets and buffets with these difficulties.

The best chance that the navigator now has for any further shortening of the time off Cape Horn is afforded by the barometer. It must be carefully and patiently studied, with the aid of the blank chart for the daily barometric range at sea.

Ship Argonaut, (Captain Nathaniel Hale,) 72 days out.

"Nov. 17, 1856. Lat. 42° 20′ S.; long. 32° 40′ E. First part, strong gales and cloudy weather; middle part, hard gales and tremendous sea; took in everything, down to whole topsail and foresail; at 5 a. m. double reefed the topsail; latter part, hard gales and tremendous heavy squalls, accompanied with snow; at 11 a. m. shipped a sea over the quarter, which stove in our monkey rail, killed fowls in hen-coop on quarter deck, and filled deck with water; a very heavy sea running; double reefed topsails and whole foresail.

Nov. 18. Lat. 42° 41′ S.; long. 36° 57′ E. First part, heavy gales and heavier squalls, with tremendous sea running, shipping much water; at 12 midnight the barometer started up, when it began to moderate; at 4 a. m. made sail up to single reefs, with top-gallant sails over; also set mainsail and spanker; latter part, fresh gales and cloudy weather; still a heavy sea running.

Nov. 19. Lat. 42° 00′ S.; long. 43° 01′ E. First part, strong gales and cloudy weather, with a light sea; air very cold; at 12 m. passed within 100 yards of an immense iceberg, at least 100 feet in height, and should judge it to be one-fourth of a mile in circumference; the sea was breaking very violently against its SW. side, and it appeared to be fast wasting away; at 7.45 p. m. passed another, but of smaller dimensions; at 1 a. m. wind veered northerly, with squally weather; air much warmer; latter part, strong gales and passing squalls of rain; whole topsails and top-gallant sails.

Nov. 20. Lat. 42° 10′ S.; long. 48° 12′ E. First part, strong gales and very squally; took in top-gallant sails and double reefed the main topsail; at 4 p. m. made all plain sail and set fore-topmast studding sail; middle part, wind dying away gradually, and sea going down; latter part, moderate and pleasant; smooth sea; albatross in great numbers."

Extract from the log of the ship "Reindeer," Captain O. R. Barker, from Boston to San Francisco, 1855.

Feb. 10, 1855. Lat. 58° 46′ S.; long. 78° 50′ W. Barometer, 29.06; temperature of air, 45°. Winds: W.NW., W.NW., W.NW. First part, strong breezes; at 4 p. m. set royals, jib, and spanker; strong gales, with a light sea; at midnight saw a large iceberg to windward; passed within a mile of it. We judged it to be 200 feet above the surface of the water and 500 or 600 in length. Strong gales, in top-gallant sails; at 4 a. m. under close reefed fore and main topsail, and reefed foresail; latter part, strong gales, thick rainy weather; at noon saw another iceberg to leeward.

Feb. 11. Lat. 58° 24′ S.; long. 78° 30′ W. Barometer, 29.28; temperature of air, 43°. Winds: W.NW., W.NW., W. First part, strong breezes; middle part, more moderate; latter part, moderate breezes, with showers of rain; wore ship at 8 p. m., headed N.; saw another iceberg."

I have nothing to alter or to add to the Sailing Directions given in the 7th edition for doubling Cape Horn, except to urge navigators, whenever winds and weather are favorable,

to attempt the Straits of Le Maire. They have been tried and have stood the test remarkably well; and though I can only repeat them with such remarks as they have called forth from practical navigators.

Vessels bound round the cape should first, after leaving Cape St. Roque, aim, if the winds will let them, to cross 25° S. in about 35° W. At any rate, they should run down the coast, keeping as far off from the land as, with a good clean rap-full, they can, without going to the east of 33° 34°.

After crossing the parallel of Tierra del Fuego, the difficulty is to get to the westward. Therefore, aim always to pass *inside* of the Falkland islands, and, if wind and daylight serve, through the Straits of Le Maire; for it is better to make westing on the north side of their parallel of latitude, when it is practicable, and where the weather is mild, than to put it off for the stormy latitudes, south, where it is more difficult.

Captain Smyley, who has been engaged for many years in the seal fishery of the South Seas, has furnished we with some remarks and sailing directions in relation to this part of the ocean; so also have Captain Bryson, of the brig Daniel, and others; navigators may find these remarks useful; I therefore copy and repeat them:

"In compliance with your published request," says Captain Bryson, "I avail myself of the earliest opportunity to forward to you an abstract journal of the brig Daniel, formerly the United States bomb brig Hecla, kept by me on her voyage from New York to California, which is but a poor tribute for the manifest advantage and valuable knowledge imparted by the aid of your truly useful and ingenious system, which I regard as one of the most valuable inventions of the age, and doubtless will yet lead to results far beyond its present apparent purpose to speed the voyage.

"Noticing your intimation to West India traders for further data, to complete your Wind and Current Chart of the West Indies, I have written a friend to send you my private journals, embracing a period of about six years, commencing May, 1838. These journals were kept for the purpose of facilitating a practical knowledge of winds, &c., for which I thirsted, without the means of obtaining any reliable information, except the divers accounts furnished by casual observers, which, like the various sailing directions for Cape Horn, serve rather to distract the mind than to assist the judgment. I was in the constant habit, for several years, of referring to these journals, with the sole view of obtaining the very information that your Charts so plainly and beautifully illustrate. My personal observation, therefore, confirms me in the truth of your system. Having been kept solely for private use, you will find many remarks in those journals quite irrelevant to your purpose; nevertheless, in your hands, I trust they will be acceptable. The temperature of the air and water was only noted in approaching and departing from our coast. At different times I have found a cold place in the centre of the Gulf, bearing about SE. by S. from Montauk.

"In reference to my present passage, I would state that I followed your directions, as near as winds would permit. Although the vessel was deep, and sailed heavy, I have reason to think our passage was thus materially shortened.

"About the parallel of 45° S. a marked change in the weather occurred, followed by a constant succession of gales. The temperature of the sea had also suddenly fallen some 6° below the temperature of the air, as indicated by the thermometer attached to the barometer in the cabin. The difference of temperature between the air and the water continued with little variation until we passed the cape, except a part of the 14th, 15th, and 16th of February,

when we stood far enough eastward to bring Falkland Islands in a line with Cape Horn. At those times, the temperature of the sea rose to about the same range as the air; from that circumstance, in connexion with the NE. current, I was strongly impressed with the idea that a steady cold stream set to the northward and eastward, like the Gulf Stream on our coast, the elements being only reversed, which would account for the continual storms that seem to prevail in that region.

"The current continued more or less strong in proportion to the strength and duration of the gales; but varying more easterly as we drew up with the Horn, until we were fairly past it, and nearly up with the latitude of Cape Pillar, amounting to no less than 650 miles! Considering this great drawback in connexion with the almost constant adverse gales, many of which were so heavy that no ship could bear canvas, it seems highly important to ascertain the most desirable route, if possible, to avoid such serious dangers and delays. It was my intention to have doubled the cape close, and keep near the land all the way round. But, after making Diegos, the violence of the gale seemed to render it a matter of prudence to keep an offing; then there was difficulty in making northing without also making much easting. When we finally succeeded in again attaining the latitude of the Horn, the gales were not so furious but that we could carry close-reefed topsails. The second day after our departure from Diegos, the current had set us so far to the E., I could not believe my chronometer, and supposed I might have inadvertently stopped her 10′, which I deducted, in order to make our position where I wished it to be. I continued to work time every day when an opportunity offered, and seldom missed a day, considering the dreadful weather. Arriving at Juan Fernandez, I found my chronometer perfectly correct, and have since corrected the longitude for the 10, subtracted. I mention the above to show that you may rely upon my observations upon the currents, &c., with more accuracy than is usually bestowed by merchantmen. Adverting to the winds of Cape Horn, I would state that I projected wind circles like yours on the margin of your Chart of Tracks for the cape. The result led me to expect SW. and NW. as the prevailing winds for the months of February and March; but it was our hard fate to find them from W.SW. to W.NW. per compass. I contemplate making the voyage round *via* China. If so, shall continue the abstract, with such remarks on the movement of the elements and natural phenomena as may come within the range of my observation."

"I consider," says Captain Smyley, "your Sailing Directions and Charts the best guides ever given to the navigator, in pointing out the means of shortening the passage to his port, as well as shunning the calms, which have caused so much detention in vessels crossing the line, and also of the advantages taken by standing more to the westward, and passing nearer Cape St. Roque. I have tried both routes to my own satisfaction, and am well satisfied on my own part that the western route is far the best, and have for several years recommended it to be taken, and I am happy to say I have been since told by many that it is the most preferable.

"I sailed from Newport, R. I., July 3, 1836, in the schooner Sailor's Return—myself master—bound to the Falkland Islands and South Shetlands. The schooner Geneva, Captain A. Padack, my consort, sailed the same day, and kept company with me until we arrived in the latitude of 4° N. and 25° W. The winds were light and baffling, from SW. to S.SW., for one or two days. I stood to the westward, but *he* began to worry for fear of falling to the leeward. I left him, giving him instructions to proceed with all possible despatch, and meet me at the Falkland Islands; we were then in 4° 16′ N., and 26° W., wind S.SW. The Geneva stood on

her eastern tack, *I* to the westward, and arrived at the Falkland Islands twenty-one days before her.

"On examining our journal, I found I gained thirteen days of the time between 4° N. and 8° S., by nothing but his being afraid of falling to leeward; whilst I could lay the land along, he was continually tacking about; and as for a current, I tried several times, and found but very little setting NW. There was the schooner Ann Howard, of New London, had the same passage as the Geneva, and took the same route; she had eighty-one days to the coast of Patagonia, and eighty-three to Port Desire, latitude 47° 45′ S.; longitude 65° 54′ W. The A. H. sailed within one day of the Geneva, and arrived within two days of her, giving me twenty days ahead of one, and twenty-three ahead of the other.

"Sailor's Return, a second voyage, sailed August 22, 1838, and in thirty days was cast away at Cape St. Roque, standing along shore on the off-shore tack, having made the land that morning. I was bound in, to Rio Grande, north, to repair my sheathing, which had started off the bottom. I crossed the line in 35° 40′; I found no trouble in getting up the coast, until I struck on the reef at Cape St. Roque.

"I found the tides tolerably regular at the cape during the two days I was on shore, and the pilots say the currents are trifling on the coast from St. Roque to St. Augustine, when you are in more than forty fathoms water; and I believe it is true, for I have tried it since, and found very little, if any.

"Schooner Benjamin De Wolf, W. H. Smyley, master, sailed from Newport, R. I., for the Falkland Islands, April 2, 1839. Having a sharp vessel, and every confidence in my own mind of the western route, I determined to steer my course as if bound to Fernando de Noronha, and to pay no attention either to winds, weather, or currents, no more than if such were not to be found on the route. I found no calms, and but little rain. I passed inside of Fernando de Noronha, distant twelve or fifteen miles, and passed Olinda in twenty-one days and eight hours; and from St. Augustine to Port Egmont I had but twenty days—making but forty-one days and eight hours passage to the Falklands.

"Schooner Benjamin de Wolf, second voyage, W. H. Smyley, master, sailed from Newport, R. I., May 28, 1840, for Patagonia, and arrived at Rio Negro, latitude 41° 4′ S., longitude 62° 49′ W., in forty-one days, passing about fifty-five miles east of Fernando de Noronha, and crossing the line in 36° 15′. I found the wind from NW. to SW., more than from any other quarter, from the line to St. Roque. The current I had no opportunity to try, but am sure it is more governed by the wind than anything else, but far less than people in general suppose.

"Schooner Ohio, W. H. Smyley, master, from Newport, R. I., to Rio Negro, Patagonia, sailed September 29, 1842, in company with the Sarah Ann, Gough master, consort to the Ohio; kept company until in 16° north and 40° west. Captain Gough, as well as Padack, wished to cross the line well to eastward, and, although they were both under my instructions and control, I permitted them to have their choice. After leaving Captain Gough I steered for Fernando de Noronha as before, but kept on until I found myself in sight of Cape St. Roque, passing inside of the Rocas ten miles, and, by making a short tack off Mernanguapa, passed Pernambuco, distant about eight miles, being then out thirty days. I stopped three days at San Francisco, and three at Isapacaray, making my passage to Rio Negro in sixty days, including stoppages.

"The Sarah Ann made no stoppages, and came in ten days after me, making my passage sixteen days shorter than hers, exclusive of being embayed two days. I found, by overhauling

their journal and log, that they kept well to the eastward in that old *beaten turnpike* of former navigators, crossing in from 24° to 25° W., and that most of my gaining was from about 4° N. to 8° S., which convinced me of the advantages of the western route.

"Schooner Ohio, first voyage, W. H. Smyley, master, sailed from Newport, R. I., July 14, 1841, making my passage in fifty days, including two days' stoppage at the Brazils for recruits. I passed so close to the Rocas, and not being able to get good observations, owing to the weather, that I am not sure which side I went on.

"On my arrival in the Brazils, I tried my chronometer, by artificial horizon, and found it correct. It was in the day time, and I kept a good lookout for them until I was sure I was to the south of them. This voyage I had no consort. I found but little current setting W.NW.; this was near the Rocas, perhaps one degree, or a little more, north of them.

"There is another thing still more remarkable; although you have more wind near the land, yet the sea is much smoother than it is further to the eastward. The natives, who fish on the catamarans along the coast, have repeatedly told me that the current was but trifling; you will often see two of these catamarans at anchor, tailing in different directions, but generally with the wind. If the current about Cape St. Roque was as strong as persons in general imagine it to be, the clump-built coasters would not be able to make headway, and beat from Cira up to Pernambuco, at all seasons of the year, as they do.

"Schooner Catharine, of Newport, W. H. Smyley, master, bound to Patagonia. I left Newport, September 10, 1845, and stood to sea, with the intention of taking my old route, that is, to steer for Fernando de Noronha, or nearly that course, so as to pass east of the Bermudas, but the wind prevailing more to the south gave me a chance to keep well to the eastward. I stood boldly on; but had the wind light, with heavy rain squalls, and much thunder and lightning; crossed the line in 23° 32′, making little headway, having light airs and a very irregular sea. Although I found so much rain and light winds, the sea did not seem to fall in the least, causing the vessel to thresh heavily, and be very uneasy. I spoke a brig, which had been eight days longer than myself in these rainy regions, and off Pernambuco I spoke one which had been ten days less, being to the westward of me. I was forty-five days to Olinda, and twenty days from there to Rio Negro, Patagonia; and I fully believe, if I had taken the western route, I should have made a very short passage, as the vessel sailed very fast, was in good trim, and well manned.

"Pilot-boat John E. Davison, W. H. Smyley, master, from New York, towards coast of Patagonia, sailed July 5, 1849.

July 6.	The Hook and Light-house in sight.								
7.	Wind	W.SW.	Latitude	38°	43′ N.	Longitude	none.		True longitude.
8.	"	light SE.	"	38	31	"	none.		
9.	"	S.SE. and SE.	"	38	14	"	none.		
10.	"	S.SE. and calm.	"	38	03	"	none.		
11.	"	calm.	"	38	00	"	none.		
12.	"	N.	"	35	07	"	66°	53′	59° 07′
13.	"	SW. and calm.	"	35	04	"	65	02	
14.	"	S.	"	34	48	"	63	32	
15.	"	S.	"	34	29	"	61	23	47 40
16.	"	variable.	"	33	38	"	60	52*	

* NOTE.—The above is taken from the log-book of the mate; the winds and latitudes are put down correctly, but the

Homeward passages in the above-mentioned vessels.	Days.	Hours.
Sailor's Return, from Rio Grande to Newport	27	4
Benjamin DeWolf, first voyage, arrived from Morea Mernanguapa	26	
Benjamin DeWolf, second voyage, arrived in March from Morea Mernanguapa	30	
Ohio, from Rio Janeiro to New York	34	
John E. Davidson, Rio Negro to New York	39	16

In these five passages, after passing Cape St. Roque, I have kept "good full," and always found, as I neared the West India islands, that the wind hauled favorably and the weather became less squally.

"Mernanguapa is a small port near Parahiba.—(See chart.)

"There are few portions of the continent of America less known than from the Rio de la Plata to Cape Horn, and none of more importance; the whole of that portion of country, except part of Belgranna and Rio Negro, being inhabited only by Indians. It has been the custom of vessels bound to the Pacific, after passing the La Plata, to go to the eastward of the Falkland Islands; some wishing to avoid running by La Agle shoal, others fearing to get *jammed* on the coast of Patagonia. This should no longer be an excuse; for the first does not exist, and of the latter there is no danger. I have cruised for the above-mentioned shoal several times, taking a good departure from the Jasans and from New Island, in the Falklands, and crossed to Cape Virginis and back in the long summer days, seeing no signs of it. In 1842, I left East Harbor, Staten Land, with my consort in company, and steered for the shoal, keeping about eight miles apart. The weather was clear. I kept men at the mastheads, and saw nothing of it. My observations were to be relied upon; for I had on board three chronometers, which had been well proved at Cape St. John. I kept on for Rio Negro, and on my arrival again tried my chronometers, and found them correct. I am well aware that no such shoal exists. I have since then tried to find it with the schooner, but without success. The Beagle and Adventure, and Captain Sullivan, of the navy, have also hunted for this shoal without finding it.

"As for a vessel getting blown on shore on the coast of Patagonia by northeast gales, it is out of the question. I have spent twenty-two years of my life mostly from South Shetlands to the River La Plata, and once I remained six years without coming north of 41° south, and I cannot say that I ever knew, during that time, the wind to blow heavily directly on shore for twelve hours. My voyages being principally made for sealing or whaling caused me to keep close into the coast, whereby I had the best opportunities for observing the weather, currents, tides, &c.; in fact, my voyages depended partly on these, and it stood me in hand to make myself acquainted with them.

longitude is 13° 15′ out of the way. I merely put down this to show you how erroneous some persons will be. I gave him his longitude on the 16th, when I spoke a vessel whose longitude agreed with mine within four miles; but, in crossing the line, he was almost as *far out* again. I crossed the line in 34° 15′ on the 5th of August, and on the 7th passed ten miles west of Fernando de Noronha, the weather clear, the island plainly in sight. On the 9th, passed Pernambuco; I found no trouble in getting to the southward. It was my intention to have stopped at Pernambuco, for the purpose of landing some of my crew, who had mutinied on the passage, nearly killing my mate and shooting me with a pistol. Their attempt to take the vessel left me without a sufficient number of men to work her, which caused my passage to be much longer than it otherwise would have been. I kept but little reckoning afterwards, and that mostly in my head, for fear of another mutiny, for the crew shipped in New York for the purpose of taking the vessel, and nearly succeeded in doing so. The weather being squally off Pernambuco, I kept on for St. Catharine's, and arrived there on the 22d of August; on the 23d or 24th, gave my men up to the U. S. Consul; on the 7th of September, got under way from St. Catharine's, and, on the 16th, anchored on the bar off Rio Negro, Patagonia. Giving me 30 days to the line; 47 days to St. Catharine's; 56 days to Rio Negro.

"I have always found that the sooner I got to the westward, after crossing the line, the better. I always try to make the Peninsula of St. Joseph's, between New Bay and Port Valdez. The land is high, steep clay cliffs, flat on top. Then, I endeavor to keep near enough to see the land until I get well to the south, so as to pass close by Staten Land; by doing this, I have smooth water, winds from NW. to W.NW., and pleasant weather; while another vessel will have the wind from W.NW. and SW. off the Falkland Islands, and on the south side of the islands the wind will be from SW. to S. This I have proved by having left men on the Jasans and the Bushenes, (these being the extremes of the islands, both sealing grounds,) and requiring them to keep a journal of wind and weather. I found the wind to prevail much more from the SW. and S.SW., about one-third or one-half way between Cape Horn and ———, and beyond that distance it drew more to the westward, and even to the northward of west. It was a common thing, while at anchor under Diego Ramirez, or sealing on shore, to see a vessel pass in shore of the island heading up two points higher than another vessel off shore of them; and I have often started to go in to anchor, heading well up for the place I wanted to come to at, and found, as I drew in shore, the wind gradually headed me off. When bound to Shetlands, from the Cape, or from Staten Land, (Shetland is our rendezvous, on account of getting wood there to last until our return,) we always find, after passing the latitude of 60° south, the weather much milder, fewer blows, but more fog. The currents, as well as the winds, are generally the reverse of what they are off Cape Horn. The prevailing wind at Shetland is NE., while in the track generally taken by vessels it is SW. The current is similar, for it seems more like a gulf stream than a common current following the direction of the wind.

"No navigator should be afraid to approach the coast. Soundings are found far out; the water is much discolored, as the land is neared; and we have another sign, which seldom fails in the daytime, *i. e.* the small gulls, which will always be found in forty or fifty miles of the coast, making their presence known by the noise they make as soon as the vessel is perceived. This seldom fails to be the case.

"The navigator should not be backward in tacking as soon as he finds himself getting off shore, for the wind will often lead him along for two or three points, and then favor him for a short distance again, by which means vessels often get so far to the eastward as to lose much time. I would always recommend a ship to tack in shore, even if she could make no better than a W.NW. course, in preference to going to the eastward; for by keeping well in, she will have smooth water, clear weather, and wind more off shore. While, on the other hand, when she nears the Falklands, she would begin to have fogs, rain, and sleet; and south of the islands the rain becomes hail-stones and snow. A short distance in these latitudes makes a great difference in wind, weather, and tides.

"For comparison, take Santa Cruz harbor, on the coast of Patagonia, latitude 50° 8′ S.; longitude 68° 21′ W.; tide in spring, forty-eight feet. The Jasan Islands, belonging to the Falklands, latitude 51° S.; longitude 61° 20′ W.; tide but six feet. Here is a great difference in 7° of longitude, about 260 true miles. This will show the extraordinary difference made in tides by a short distance, and the weather in proportion to the tides; on the one it is seldom known to rain, at the other it rains half the time. At the Straits of Magellan, in a similar way, it seldom rains at the eastern entrance, and at the western it seldom stops; but this is owing more to the mountains leading from Cape Forward along the straits, and from thence to Cape Tres Montes, or Chili."

"I think," says Captain Ebenezer H. Linnell, "the Straits of Le Maire should be passed

near to Terra del Fuego shore, and continue the shore until well to the west; by so doing, I have found an eddy current to the west; this being the fifth time I have found this to be the case. Since 1845, I have been navigating these waters, mostly in the Chili trade, and I am confident that my passages have been shortened by keeping near the land. When to the west of the Straits of Magellan, I think you will eventually find that by keeping from 60 to 100 miles from the coast until you approach the 35° of latitude, then to pass near to Juan Fernandez to the SE. trades, for the six summer months; then, for the winter months, a direct course a little to the west, you will find favorable winds. In July 21, 1851, I passed through the Straits of Le Maire; passed the equator in 115° W., in 26 days, by the western route. In October, 1852, in 27 days from the Straits of Le Maire, and passed the equator in 116° W. per ship Buena Vista, being a full ship.

"I trust the time is not far distant when this part of the ocean (North and South Pacific) will be tested and fully explained, as your Wind and Current Charts fully show the great advantages of this scientific undertaking."

"Allow me, among thousands, to thank you for your kindness in sending me your book and charts. Although I am not able to keep a log either satisfactory to you or myself, still I hope to improve as I advance in your great study.

"You will see that we tacked ship to clear the Texariel Shoals, the look-out crying out breakers ahead. The ship came round very close to very white water, which was very smooth, and no wind upon it; it was in the night. I followed your directions as close as possible, and had good runs to the Line, to Rio, and to 'the Straits of Le Maire, where I endeavored to beat through for two days but could not succeed, as the current ran strongly to the north. We had very bad weather off the Cape, which spoiled the passage. We had a good run from 60° south to the Line, but light head winds afterwards. Bound to Callao, we made a good passage outside. I learn the average passage from Callao to the Chinchas is about six days. Bound home from Callao, we ran through the trades and took the southerly winds; we stood to E.SE. and SE., and had a tedious passage to the Cape. I think I should have done better to have gone on the western tack, as we had strong SW. indications at the time. In coming home round the Horn I will never go inside the Falklands, unless compelled, but get well to eastward when possible. Unfortunately we took a NE. wind in about 30° south, and it drove me in sight of Cape Frio. We had light northeast winds for about twenty-three days beating up to near 8° south, when we took the southeast winds. Being in company with the Rio fleet, I was informed that the great trouble is to preserve the easting. As the ship drew twenty-four feet out and home we have not made very good passages, but thanks to you, without your works before me I should have done much worse.

"I have had a fine opportunity of testing your chart of approach to New York; have been all over it; hove the lead every half hour, and find it all that is required if your instructions are remembered and the lead not neglected, as you have given us all that is required to get anywhere. I hope, soon, you will bring us back again, although such a log as this probably is about equal to none, still by sending me your works last year you have ruined me forever going without them."—*Edgar Wakeman, of the ship Adelaide.*

I find in the abstract logs and letters of co-operators many excellent remarks on the passage through the Straits of Le Maire.

Ship Defiance, (Robert McCerran.) "September 26, 1852. At 4 hours 30 min. a. m. hove to for daylight. At 8 hours 50 min. a. m. entered the Straits of Le Maire; wind at N.NE. At 10 a. m. Cape St. Diego bore west per compass, and Staten Land SE., entirely covered with snow. At 11 hours 30 min. clear of the strait. I am surprised that this strait is not passed by all ships in preference to passing east of Staten Land; Le Maire being free from shoals, and 14 miles wide. An experience of 21 years' command in the Liverpool trade convinces me that the passage between Tuskar and the Smalls are trebly dangerous, and I can see no difficulty in this passage that is not much greater in the navigation of the Irish Channel, either north or south about.

"I should certainly beat through in preference to going within three miles of the land. I have no doubt that an eddy from eastward—I found a current close in shore setting SW., and by keeping the current from the SW.—must prevail under any circumstances. Good Success Bay affords easy access and good anchorage. It may be said that heavy gales ahead, and thick weather, make the passage dangerous. In answer I say, that it cannot blow harder than it does in the Irish Channel, and the fog cannot be so dense as it is on the coast of Ireland, as the water is deeper and the air colder in Le Maire. Besides, the number of vessels on the Irish coast increases the danger by the chance of collision, and there is no other passage to approach."

"Having, as I consider," says Captain Young, of the Venice, "got to the westward far enough to make sure of not being driven back, it may not be out of place to give my humble opinion with regard to the mooted point of making the passage around this bug-aboo, Cape Horn. I most distinctly *disagree* with those who recommend keeping to the eastward of the Falkland Islands; not conceiving the necessity of keeping so far to leeward, rendering the beating against a heavy head sea and strong current necessary. The chances for SE. winds do *not*, in my opinion, make up for the great difference in distance between eastern and western sides of those islands. My opinion is not predicated solely on the beautiful weather I experienced to the westward of those islands, but to the fact, that to the northward and westward of Staten Land you are in a measure free from the heavy SW. swell; which, by reference to *that* part of this *abstract*, it will be observed I had very smooth water, and so continued till I passed Staten Land. In Rio, I had frequent conversations with several whale captains, and their opinions are in conformity with my own. I do not hesitate to say the winter months (May, June, and July,) are the best for doubling the cape, with more certainty of easterly winds; the only drawback being the interminable long nights. After all, I feel sure that masters in the European trade, who have, during the California fever, made the passage around the cape, will agree with me in saying, doubling Cape Horn is nothing in comparison with making the passage from Liverpool to New York, during our winter months."

"I followed your track to the equator for July, and had a passage of 28 days to the equator; crossed in 32° 20′; just cleared Rocas, and then had a very hard chance to Cape Horn. I highly approve of your track from Boston to the equator, and have no doubt but that I gained by following your instructions. I found very little current near St. Roque. I intended to have gone through Straits of Le Maire, but the wind being SW., I could not get far enough to westward, and thought it better to pass eastward of Staten Land. With regard to a passage around Cape Horn, I would say I have seen worse weather between Boston and Liverpool in September than I have seen for this passage north of the equator. I had a long spell of calm

weather, which prolonged my passage, but find, on arrival, that I was in company with four other clipper ships, and all arrived here same day."—*Captain Sears, of the Wild Ranger.*

"June 14, 1852, (San Francisco.) I herewith forward you the abstract log of ship Great Britain, of Boston, under my command from New York to this port. The ship is twenty-five years old, and *not a clipper.* The ship John Jay sailed in company, not yet arrived. The last I heard from her she was at Rio, leaky. I do not know whether she had your charts. The clipper ship Aramingo left New York three days after we did, say 12th January, *without* your charts, went nearly to the Western Islands, crossed the line in about 26° W., went east of Falkland Islands, I believe, and arrived here one day after I did, say 138 days, without stopping. On my chart (Blunt's) I find St. Paul's Island placed in long. 28° 20′ W., and in some editions of Bowditch the same; while in other editions, and in Horsburg's *Directory*, 29° 15′ to 29° 22′ W. As this island is directly in the track of outward bound ships, it is important that *all charts and books* should be correct. I passed close to it, having had a good observation in the *morning.* It was cloudy when I passed it, about 4 or 5 p. m., but there is no doubt that it is in about 29° 20′* and *not* 28° 20′. With regard to your charts, allow me to say I think very highly of them. I crossed the equator in about 30° in 26½ days from New York, after losing my tiller and being thereby detained sixteen hours with a *strong fair gale.* I passed to the windward of Noronha, cleared St. Roque and St. Augustine, and the first time I tacked ship from New York was south of Rio, which I passed in less than thirty-seven days, with a very deep ship. Passed through the Straits of Le Maire in sixty, and Cape Horn in less than sixty-one days. After that I had miserable chances. Having been nearly twenty years a shipmaster, and having, during my passage, given the subject much consideration, I will venture, at the risk of being thought presuming, to state my own views on the passage from Cape Horn to this port. Being up with Cape Horn, I would improve all opportunities of making *westing*, with very little regard to latitude, except to keep clear of the land, till in long. of 80° W.; then, if wind permitted, edge off very gradually to the N. and shape my course so as to be in the long. of 110° W., in about 30° S. lat.; here you may expect to get the SE. trades; and then make a due north course *till I took the NE. trades.* My *reasons* are that you would thus make your westing where the degrees are short, and then cross the entire SE. trades on a course that would let all your canvas draw, instead of running so much before the wind as to becalm your head sails. You would thus take the NE. trades in about 110° W., which is as far east as desirable. You will see by the log that the doldrums did not detain me much on either side."—*Captain Caldwell, of the Great Britain.*

"I had good NE. trades," says Captain Phinney, of the Kentucky, "and lost them in about 5° N., 30° 20′ W.; 19 days from Boston; an old-fashioned ship, and very deep; that I had very little calm or rain, but almost immediately took the SE. trades, light and baffling, crossed the equator in 32° 40′, 24 days out; wind, SE.; made two short tacks to eastward in the vicinity of Rocas; passed seventeen miles west of same, and cleared St. Roque in 27 days, running all one day near the land, in about ten fathoms water; crossed the parallel of Rio in 36 days, and from thence to Cape Horn I had a very poor chance. Entered the Straits of Le Maire in 65 days, and in 70 was west of the cape, with but little bad weather, and no easterly current; neither did I feel that strong westerly set between the line and St. Roque, so much spoken of and feared.

* Its position was accurately determined by the officers of the United States ship Marion, in 1849, to be in long. 29° 18′ W., and it is accurately laid down on the *Wind and Current Charts.*—M. F. M.

"I cannot refrain from expressing my sense of the benefit I feel that your labors have already conferred upon the commercial world; and also, my hope that you may be permitted to follow up these researches and investigations, by which, I believe, navigation will in a few years, become quite a different matter from what it has been in times past."

"On leaving New York," says Captain Homans, of the Winged Race, at San Francisco, "I followed your Directions as near as the wind and weather would allow, and crossed the equator in the Atlantic in long. 31° 16′, and found no difficulty in getting past the Brazil coast. Time to equator 21 days, 21 hours, and passed through the Straits of Le Maire; and off Cape Horn had light fine weather. Off the Horn I tried to follow your Directions in getting west; but the wind prevented me, hanging to NW. after around the Horn; and I passed about three degrees to west of Juan Fernandez. The SE. trades I had far to the eastward, sometimes E.NE., and from that to E.SE.

"Crossed the equator March 7, 1853, eighty-five days out, in long. 106° 24′ W. Took NE. trades in about three or four, wind N.NE. to N., and arrived off this bar Sunday, March 27, in a thick fog, which continued until Wednesday, 30th, when it cleared up, and I ran in.

"I should follow your Directions again if I was coming round the Horn, as near as the wind and weather would permit me. Although I am of opinion that, with the wind I had in the South Atlantic, after passing lat. 38° S., had I gone to east of Falkland Islands, I think I should have gained some five days in the passage, and should have got in in 100 days. I was 105 days to the bar.

"I am going from this to Manilla, and thence to New York; on my arrival at the latter port, I shall send an abstract from this to that port.

"I take this opportunity to acknowledge the great benefit I have derived from your Charts and Directions, and shall most readily contribute what little I can to aid you in the great and good undertaking. We have been sadly in want of what you are now so happily doing in the way of Sailing Directions and Charts for this navigation, say from U.S.A. round the Horn into North Pacific."

"Februry 8, 1852. Lat. 54° 53′ S.; long. 62° 24′ W. Current, north, 22 miles. Barometer, 29.67. Winds: SW., variable, variable. First part, moderate breezes and rainy weather; no prospects of clearing up, so as to get hold of the land; kept off to the eastward, and gave up the idea of going through the straits, which I was very sorry to do. In my opinion, every vessel bound around the cape should endeavor to go through the Straits of Le Maire, [a good opinion,] provided they can get a sure bearing of the land, to know their true position. I have been through three different times and found no difficulty, but gained a great advantage of being so much further to windward; I have also strong reasons to think that there is better weather generally under the land, than off from it. At sundown, the weather clearing up, saw Staten Land, bearing SW. ½ W., 5 leagues. Middle part, variable winds and squally weather, with rain; latter part, pleasant weather; a strong current setting to the north."—*F. Lendholm, ship John Bertram.*

"I did not," says Capt. John S. Farron, of the clipper ship Eagle, "take the SE. trades until in the latitude of 3° 30′ S., and had a fair run of 40 days to the river Plata, and, passing through the Straits of Le Maire, I made Cape Horn on the fifty-fourth day. I had to go as far south as 59° 20′ S.; and had bad weather until I reached the parallel of 30°, and found no

trade until in 22°, and then on the average at E.NE., which made me regret striving so much to get to the westward. However, I crossed the equator on the ninety-first day, in 115° 30′. I would call your attention to the great fall in the temperature of both air and water, immediately on passing the line; which, taken in connexion with the variableness of the wind for some days, the overcast appearance of the weather, and heavy swell coming from the W.NW., inclines me to think that it has been blowing heavily from the NW. at some distance in that direction from us, so as to change the direction and interrupt the regular trade, which I think we ought to have carried further than the parallel of 19° N."

Sea Serpent, (Howland,) March 31. "Lat. 55° 00′ S.; long. 65° 20′ W. Barometer, 29.10; temperature of air, 45°; of water, 46°. Wind: variable from S.SE. to SW. Variable squalls of snow; the tide set through the straits until 5 p. m.; being in mid passage got into a strong rip, and although we had a five-knot breeze, our vessel was unmanageable for an hour, until we cleared it. The current then set us back, but the wind coming off the land light, we kept our ground until the morning's tide. I have my doubts if it is always advisable to attempt this strait; it has detained us full three days; we could have reached the east of Staten Land much sooner with a free sail; at any rate, our detention in rounding the island could not have been more. After passing the strait the wind inclined south, so that we could not make a W.SW. course to have cleared the land on the starboard tack. At noon, Cape Good Success bore NW., 6 miles."

Our magazine of logs enables us now and then to set navigators right in certain matters of opinion, as in this instance. The Golden Racer was on this same voyage at the same time, and she was directly east of the Sea Serpent, March 28. March 29, the Sea Serpent was 68 miles further to the south; on the 30th, she was 86; 31st, she was 74; and April 1, she was 80 miles further south, and 6° further west than her competitor.

The Sea Serpent got clear of the cape, crossing the parallel of 50° in the Pacific two days ahead of the Racer. This I am sure, does not look like a loss of three days in the straits, but more like a gain of two.

March 30, the Simoom, (Smith,) beat through the Straits of Le Maire. On the 31st, she was just 34 miles south of the Sea Serpent. She hugged the land close, and on April 13, was in 49° 32′, and 90° 10′ W., which was nearly a degree ahead in latitude, and in a much better position in longitude.

I quote the abstract log of the Golden Racer, that those who choose may compare the two. It will be perceived that she passed east of the Falklands.

The Sword-Fish, (Collins,) was also along there at the same time. She was forced east of the Falklands, March 29, lat. 51° 53′; long. 57°. April 2, she had only got as far as 55° S., and 63° W. Hence it appears that the Sea Serpent did not lose, but gain by going through Le Maire.

The opinion expressed by these navigators as to the passage to the line, and the Cape Horn route, are fully confirmed by the Pilot Charts; and though sometimes a vessel, by going to the east of the Falkland Islands, may have good luck, fine weather, and a short passage, it should be considered as the exception, but by no means as the rule. The combined experience of all the Cape Horn navigators whose journals have been consulted during the progress of my

investigations, is against the eastern, and in favor of the western, or in-shore passage, as a general rule.

Cape Horn navigators should not forget that the prevailing winds encountered in doubling the cape, are westerly winds; that the Andes, which in fact terminate only with the continent, stand up as a barrier to these winds; and consequently these winds come around the cape in violent sweeps, puffs, and gales, as they do around a bluff point of land in a harbor, or the corner of a building on shore. The strength of these sweeping winds is probably felt with more force near the cape than it is at a considerable distance off, and out of the influence of the land upon the course and velocity of the wind.

Hence the earnest recommendation to navigators to pass through the Straits of Le Maire, if practicable, and if they can, accomplish it by daylight, for the currents are not unfrequently strong and conflicting there; to hug the cape as closely as the winds on one hand and the rocks on the other will allow, and so make westing down there where the degrees are short, as fast as, without fighting adverse winds and weather, they may do, until they cross, if bound to California, the parallel of 50° S., between the meridians of 80° and 90° west.

But if, after getting through the straits, and before doubling the cape, a westerly gale strike them in the teeth, then, instead of stopping there off the pitch of the cape to fight against it, with the intention of holding their own until the gale abates, or the wind slants so as to let them get round, I think the chances would be altogether in their favor by sticking her away south, under the expectation that they would soon get out of the strength of the winds, which, eddy-like, come sweeping around Cape Horn, sometimes at one distance, sometimes at another, according to the direction of the gale. But even in doing this, the navigator who is desirous of making a quick passage, will not fail to take advantage of slants. He will always prefer, until he doubles the cape, the tack upon which he can make the most westing. Vessels intending to touch at Valparaiso, or any of the Intermedios, need not care to get so far west while they are south of the parallel of 50°, even when the winds are fair, as vessels that are bound further north, as to California, for example. Let these last make westing whenever they can, without making southing also. They cannot well cross the parallel of 50° S. too far west, on their way to California, provided they keep to the east of 100° or 110°.

The Pilot Charts of the South Atlantic and Cape Horn, in addition to the Track Charts, leave but little more to be said with regard to the passages west, around Cape Horn, than may be gathered from the injunction : Study the Pilot Charts.

I think that I may now congratulate navigators, especially those who are co-operating with me, and whose labors have enabled me to bring about these results, upon the present state of our knowledge with regard to the route to the "Fair Way," off St. Roque, and thence around Cape Horn.

This route, I think I may be permitted to say, without incurring the imputation of self-praise, is as well understood as it is possible for any route across the ocean to be, that is governed and controlled by the force of winds and currents alone.

The average of vessels under canvas from the parallel of St. Roque to 50° S. on the Cape Horn passage, is only about 100 miles a day. The intelligent seaman needs no other sailing directions here than simply: "Make the best of your way south." Of course he will understand that this "best way" is not to be supposed to lie so close along with the land as to bring him within the influences of the land breezes and the calms of the coast.

Besides this injunction there is but another simple caution to add, and that is, when you arrive at the calms of Capricorn do your best to get south; for, by that course, it is easiest to clear them. As to the parallels between which, at the different seasons of the year, you may expect the calms, see the Trade Wind Chart.

From 50° south, east of Cape Horn, to the same parallel west, lies the rub—so it is supposed. Along this part of the route the prevailing winds, it is true, have westing in them, and are, therefore, in a great measure, head winds. How to overcome them depends on the skill of the navigator. The grand object of this work is to let the navigator know how he may expect to find the winds, which way the currents; taking it for granted that, when he knows this, his own skill and intelligence will best guide him as to the rest.

The Pilot Charts will give this information as to winds, in a general way. With the view of presenting it in a more special way, extracts have been made from various abstract logs, taken at random, showing the wind and weather encountered by each vessel. These are arranged according to the month, and may be regarded as practical illustrations of the Pilot Charts.

With such sources of information before him, the Cape Horn navigator, who studies them closely, can never, in changes of wind, feel at a loss either as to the best course to steer or the best tack to put his ship upon for the best passage.

I have often, in the progress of these labors, had occasion to feel myself indebted to merchants and other citizens of the United States, besides those who follow the sea, for that wholesome assistance which the influences of sympathy, good wishes, and suggestions of good and useful men never fail to spread abroad and around. Among the earliest of these was R. B. Forbes, of Boston; and one of the most noble, steadfast, and true, was my excellent friend and assistant, the late George Manning, of New York. They took a lively and active interest in the undertaking from the first, and were its advocates before it had given any practical results in demonstration of its usefulness.

I well recollect the surprise expressed by the former, and how over sanguine he appeared to consider me when I suggested to him, as among the achievements of the future, the probability of his seeing the run made to the equator, on the new route to Rio, within 18 days. It has been done in 15, and often within 18. Among the valuable suggestions, however, made by him was one in relation to the harbors about Cape Horn. He thought that vessels, when caught or threatened by a gale in the act of doubling Cape Horn, would frequently find both profit and advantage by seeking shelter for the while in some of the many fine harbors or anchorages which the excellent surveys of King and Fitz Roy show to be there. In proof that this was a good and practicable idea, I am at last enabled to adduce the result of actual trial.

Nassau Bay offers a resource to Cape Horn navigators which they should not overlook, and of which they may not unfrequently take advantage in stormy weather. With easterly winds it affords a short cut to vessels passing through the Straits of Le Maire on the way to the Pacific, and in case of westerly gales it affords a lee. My attention was called to it by Mr. George B. Upton, of Boston, in consequence of the use made of it by his ship, the Plymouth Rock. Captain Fitz Roy has given a very good survey of it, and his charts, it is presumed, are to be found on board of every Cape Horn-bound vessel. As to the occasions and circumstances when navigators should avail themselves of the advantages offered by this bay, I am

not able to give any directions, nor to make any suggestions, further than to say: When ships are passing that way, each master must decide for himself, because, knowing the circumstances of his own case, he can consult his own judgment to more advantage, under those circumstances, than he can any sailing directions that I can give.

"My ship, Plymouth Rock, on her voyage from New York to Panama," writes Mr. Geo. B. Upton, of Boston, "passed through Nassau Bay instead of going outside.

"The ship left New York June 10 and arrived at Panama October 8. The great object of my writing you at this time is to draw your attention to this important inlet (Nassau Bay) as a good place for vessels to go in for any temporary repairs, and also to obtain wood and water.

"A young gentleman who went out in my ship, and from whom I derive this information, says they stood up (Sept. 2) with an intention of going outside, but took a strong, heavy southwest gale and sea, stood back, and put into the bay; found the weather there moderate; thermometer 50°; wind light from NW.; the navigation in and through the bay perfect. He landed on one of the small islands next to Wallaston Islands, near Cape Hale; good landing; fresh water, perfectly accessible and very good; apparently good anchorage all around the shores. Saw wood growing which could be obtained with little trouble."

I shall give copious extracts, with regard to the Cape Horn passage, because I desire, by practical illustrations and example, to impress navigators with a correct estimate as to its difficulties.

And still further to illustrate this route, the following monthly tables of Cape Horn crossings have been prepared. They show the crossings according to the month; also the time from the parallel of St. Roque to the parallel of 50° S. in the Atlantic; the longitude in which each vessel crossed the parallel of 50°, 53°, and 56° S., east of the Horn; then, as the course is west, these tables show the parallels upon which the meridians of 67°, 71°, and 73° W. are crossed. Thence the course is to the northward again, and the tables show the meridians upon which the parallels of 55°, 53°, and 50° S., in the Pacific, are crossed.

The last column shows the time from lat. 50° in the Atlantic to the same parallel in the Pacific, which is generally the difficult part, and always the turning point of the passage.

Extracts from logs are given, with illustrations for each month. These and the abstracts that are contained in the 7th edition would seem sufficient to furnish the navigator all the information that experience can give. To gain time he must now look to the barometer and his own judgment.

Cape Horn Crossings—January.

Name of vessel.	From parallel of St. Roque to 50° S.	Longitude of crossing parallels east of Cape Horn.			Latitude of crossing meridians south of Cape Horn.			Longitude of crossing parallels west of Cape Horn.			From 50° S. in the Atlantic to 50° S. in the Pacific.
		50° S.	53° S.	56° S.	67° W.	71° W.	75° W.	55° S.	53° S.	50° S.	
	Days.	*Long. W.*	*Long. W.*	*Long. W.*	*Lat. S.*	*Lat. S.*	*Lat. S.*	*Long. W.*	*Long. W.*	*Long. W.*	*Days.*
Danube	33	63°	64°	69°	56°	56°	57°	77°	80°	80°	23
Contest	23	61	64	67	56	59	57	78	80	81	12
Tinqua	26	64	66	64	57	57	56	80	80	80	14
Alboni	26	64	64	64	57	57	56	76	79	85	16
F. W. Brune	33	64	64	63	60	59	59	84	87	89	21
Cygnet	33	64	65	67	56	57	56	77	80	85	21
Grey Feather	25	61	64	63	57	57	56	76	77	79	19
Golden Gate	20	65	64	67	56	56	55	75	77	79	11
Telegraph	24	60	65	65	57	58	56	76	78	81	15
Trade Wind	22	65	65	67	57	58	59	75	82	81	12
Eagle	21	62	65	66	57	57	57	79	81	82	10
Edwin	29	66	65	66	57	58	58	80	81	80	25
Telegraph*	24	65	65	65	57	57	56	76	78	78	20
Mary	27	62	65	64	57	57	58	80	79	82	24
Moon Light	21	65	65	67	56	57	56	80	79	78	12
United States Ship St. Mary's†	23	65	65	66	57	58	57	80	81	82	15
Antelope	22	62	65	65	58	58	58	78	78	78	10
Tornado	21	65	65	64	58	58	57	83	83	85	17
Tornado	23	65	66	63	57	58	56	80	81	80	14
Octavius	30	65	66	64	57	57	58	78	79	79	27
Great Republic	23	63	66	64	58	58	56	79	83	85	10
Conime	29	66	66	64	57	59	60	80	81	83	25
Ocean Express	28	64	64	65	57	56	55	75	82	80	19
Ocean Pearl	17	62	63	65	57	59	57	81	82	80	14
Phantom	24	64	66	67	56	56	55	75	79	81	12
Rival	27	56	61	66	56	56	57	80	79	79	18
Brewster	24	63	64	65	57	56	56	76	81	80	17
Coquimbo	26	65	65	66	56	57	58	78	80	81	24
Cleopatra	21	64	64	65	57	57	58	83	83	82	12
Southern Cross	28	65	66	65	57	57	56	75	79	83	13
Anglo Saxon	23	62	62	63	57	56	54	75	78	81	15
Electric	18	64	65	68	56	57	58	81	81	81	17
Victory	29	65	64	66	57	57	57	77	79	79	26
Gladiator	36	62	63	64	57	57	55	75	79	81	25
Sancho Panza	28	63	65	67	56	57	57	79	79	78	15
Lotus	27	66	67	69	57	58	57	58	80	82	15
Means	25.4	63.5	64.6	65.1	56.9	57.3	56.8	77.6	80.4	81.1	17.0

* Last in the 7th edition. The twenty-three other passages have been made since the publication of that edition. † Put in at St. Catharine's.

Ship Cleopatra, (E. D. Thayer,) New York to San Francisco; 21 days from St. Roque.

"Jan. 11. Lat. 49° 28′ S.; long. 64° 10′ W. Barometer, 29.83; temperature of air, 61°; of water, 58°. Winds: N., N., N. First part, light airs and calms; middle, very moderate and foggy; latter part, moderate and foggy weather.

Jan. 12. Lat. 52° 38′ S.; long. 64° 10′ W. Barometer, 29.36; temperature of air, 60°; of water, 56°. Winds: N., N., N. by W. Moderate breezes, rainy and foggy weather.

Jan. 13. Lat. 54° 50′ S.; long. 64° 00′ W. Barometer, 29.10; temperature of air, 57°; of water, 52°. Winds: SW., N., SW. First and latter parts, strong breezes and pleasant; middle part, moderate breezes and overcast.

Jan. 14. Lat. 53° 10′ S.; long. 64° 20′ W. Barometer, 29.47; temperature of air, 55°; of water, 52°. Winds: calm, W.SW., W.NW. to W. First part, calm and baffling; middle and latter, strong breezes and rainy at times.

Jan. 15. Lat. 55° 45′ S.; long. 64° 34′ W. Barometer, 29.63; temperature of air, 58°; of water, 50°. Winds: W.NW., calm, calm. First part, gentle breezes; middle and latter parts, calm; have experienced a current since passing Cape St. John's, setting NE. by E., ¾ knot per hour.

Jan. 16. Lat. 56° 30′ S.; long. 65° 10′ W. Barometer, 29.43; temperature of air, 56°; of water, 50°. Winds: calm, N.NE., N.NW. First part calm; middle part, gentle breezes; latter part, fine breezes.

Jan. 17. Lat. 58° 30′ S.; long. 67° 50′ W. Barometer, 29.34; temperature of air, 56°; of water, 50°. Winds: N., W.SW., N.NW. Strong breezes and pleasant, with heavy puffs.

Jan. 18. Lat. 57° 49′ S.; long. 75° 33′ W. Barometer, 29.37; temperature of air, 58°; of water, 49°. Winds: NW. by N., NW. by W., NW. First part strong breezes; middle and latter parts, moderate; the barometer is a sure guide, its indications are very true.

Jan. 19. Lat. 57° 47′ S.; long. 76° 53′ W. Barometer, 29.68; temperature of air, 45°; of water, 42°. Winds: E.SE., S.SW., W.NW. First part, moderate, with fine rain; middle, moderate and cloudy; latter, moderate and clear; current, in two days, ¾ knot, E.SE.; I expected to find it E.NE.

Jan. 20. Lat. 57° 02′ S.; long. 79° 09′ W. Barometer, 29.85; temperature of air 52°; of water, 45°. Winds: W.NW., W.SW., NW. First part, wind unsteady, with rain; middle and latter parts, moderate and cloudy.

Jan. 21. Lat. 56° 50′ S.; long. 83° 20′ W. Barometer, 29.52; temperature of air, 52°; of water, 40°. Winds: NW., W.NW., SW. First part, moderate and rainy; saw a large iceberg, bearing S.SE., distant 8 miles; middle and latter parts, strong breezes and rainy.

Jan. 22. Lat. 53° 53′ S.; long. 83° 26′ W. Barometer, 30.20; temperature of air, 45°; of water, 42°. Winds: SW., SW., SW. by W. First part, moderate, with occasional squalls of hail and sleet; middle and latter parts, fresh breezes, with squalls of hail.

Jan. 23. Lat. 49° 59′ S.; long. 82° 15′ W. Barometer, 30.27; temperature of air, 53°; of water, 48°. Winds: W. by S., W.NW., W.NW. First part, strong breezes and cloudy; middle, smooth sea; barometer indicates a southerly wind; latter part, strong breezes and puffy; barometer too high for this wind."

Ship Brewster, (William Clark,) New York to San Francisco; 24 days from St. Roque; 52 days from port.

"Jan. 12. Lat. 50° 44′ S.; long. 63° 05′ W. Barometer, 29.75; temperature of air, 64°; of water, 54°. Winds: W.SW., W. by N., WSW., and W. by S. First part moderate; middle, fresh breezes; latter, moderate and pleasant; sounded in 90 fathom water; no bottom; water a light green color.

Jan. 13. Lat. 52° 37′ S.; long. 64° 17′ W. Barometer, 29.20; temperature of air, 62°; of water, 48°. Winds: calm, NW. by N., NW., NW. First part, calm and light breeze; middle, light air; latter part, fresh breezes and pleasant.

Jan. 14. Lat. 54° 10′ S.; long. 63° 33′ W. Barometer, 28.90; temperature of air, 47°; of water, 46°. Winds: variable, variable, light W.NW. First part, moderate and variable; spoke the ship Ocean Express from New York, bound to San Francisco, 63 days out; she is one of the largest class of clipper ships; I was quite surprised to catch up with her, but by following your directions I have gained much in my passage thus far.

Jan. 15. Lat. 55° 22′ S.; long. 64° 01′ W. Barometer, 29.10; temperature of air, 50°; of water, 47°. Winds: W.NW. to SW., W.NW., SW. to SW. by S. First part, wind variable and squally; middle and latter parts, light winds; I find a strong current setting to the eastward.

Jan. 16. Lat. 55° 44′ S.; long. 63° 48′ W. Barometer, 29.50; temperature of air, 46°; of water, 43°. Winds: SW. by S. to S.SW., SW. Light wind throughout.

Jan. 17. Lat. 56° 07′ S., long. 65° 05′ W. Barometer, 29.00; temperature of air, 47°; of water, 43°. Winds: SW. by W. to W., W. by N., W.SW. to SW. Throughout, light winds; latter part, rainy.

Jan. 18. Lat. 57° 05′ N.; long. 67° 33′ W. Barometer, 28.90; temperature of air, 46°; of water, 44°. Winds: W. by S., calm, calm., S. by W. to S.SW. First part, light breeze; middle, calm; latter part, squalls of wind and rain. You see I am past Cape Horn in 59 days from New York; saw the Ocean Express 5 miles NW. of us.

Jan. 19. Lat. 56° 31′ S.; long. 70° 09′ W. Barometer, 29.05; temperature of air, 48°; of water, 50°. Winds: S.SW. to W., SW., S.SW. Moderate breezes; saw the island of Diego Raminjo, W.SW., 15 miles distant.

Jan. 20. Lat. 55° 49′ S.; long. 72° 37′ W. Barometer, 29.40; temperature of air, 46°; of water, 47°. Winds: baffling, SW., calm, W., S. and W. Light baffling winds and calms; saw a large number of whales.

Jan. 21. Lat. 55° 43′ S.; long. 73° 35′ W. Barometer, 29.20; temperature of air, 48°; of water, 46°. Winds: W.SW., W.SW., variable and W.NW. Calms, with light baffling winds and squalls; every squall would haul the ship two or three points, and it is almost impossible to gain much in beating her, and it has every appearance of a storm.

Jan. 22. Lat. 56° 05′ S.; long. 76° 30′ W. Barometer, 28.20; temperature of air, 46; of water, 43°. Winds: NW. by W. to W.NW., W.NW., W. First part, strong gales and a high sea; middle and latter parts, the gale increased to a hurricane; a tremendous sea on, running 40 feet high, filling the decks with water; reefed the topsails, furled courses and mizzen topsail.

Jan. 23. Lat. 55° 10′ S.; long. 76° 10′ W. Barometer, 29.05; temperature of air, 47°; of water, 44°. Winds: W. by S. to W.SW., W.SW., W.SW. to W. First part, strong gale; ship lying to under two close-reefed topsails; middle, more moderate; found the main topsail yard sprung; fished it as well as we could; latter part moderating, made sail.

Jan. 24. Lat. 54° 05′ N.; long. 76° 20′ W. Barometer, 29.00; temperature of air, 50°; of water, 46°. Winds: W. to W. by N., W., W.NW. First part, more moderate; the ship Ocean Express about 5 miles to westward of us; middle part, strong gales; latter part, the same.

Jan. 25. Lat. 54° 43′ S.; long. 78° 38′ W. Barometer, 29.80; temperature of air, 49°; of water, 47°. Winds: NW. by W. to W. by N., W.NW., NW. First and middle parts, strong gales, thick rainy weather; latter part, more moderate, but a hard chance of getting to the N. and W.

Jan. 26. Lat. 54° 56′ S.; long. 80° 03′ W. Barometer, 29.00; temperature of air, 50°, of water, 46°. Winds: NW., NW. by W., W. by S. to W.NW. First and middle, strong gales and a high cross sea; latter part, hard squalls, with hail; the ship has been under close reefs for a week. How can we get along under this sail with a high sea?

Jan. 27. Lat. 54° 06′ S.; long. 81° 10′ W. Barometer, 28.20; temperature of air, 51°; of water, 47°. Winds: W.NW., N.NW., N.NW. First and middle parts, strong gales, with a high sea; latter part, wind increasing, with much rain.

Jan. 28. Lat. 52° 45′ S.; long. 81° 10′ W. Barometer, 28.10; temperature of air, 48°; of water, 46°. Winds: NW., NW. by N., NW. by N. Barometer, at noon, to 28.10; but no appearance of a sudden gale. First part, dark and rainy; middle part, blew as hard a gale as

I have had for 5 years; I doubted the barometer being correct before, but shall not after this; latter part, hard gale, with a high sea.

Jan. 29. Lat. 50° 42′ S.; long. 79° 40′ W. Barometer, 29.80; temperature of air, 50°; of water, 47°. Winds: SW. by S., SW., SW. by W. First part, moderate gales; middle and latter parts, strong gales."

Ship Great Republic, (Joseph Limeburner,) New York to San Francisco; 23 days from St. Roque and 40 from port.

"Jan. 17. Lat. 50° 45′ S.; long. 63° 46′ W. Barometer, 29.05; thermometer attached, 55°; temperature of air, 52°; of water, 49°. Winds: W.SW., W. by N., W.SW. First part, fresh winds; middle part, good breezes and fine weather; latter, strong gales.

Jan. 18. Lat. 54° 36′ S.; long. 63° 47′ W. Barometer, 28.95; thermometer attached, 48°; temperature of air, 48°; of water, 45°. Winds: W.SW., W.SW., W.SW. First part, fresh gales and squalls of snow and hail; middle part, strong winds and heavy squalls of snow and hail; latter, more moderate.

Jan. 19. Lat. 57° 00′ S.; long. 64° 00′ W. Barometer, 28.96; thermometer attached, 49°; temperature of air, 45°; of water, 43°. Winds: SW., W.SW., W.NW. First part, light airs, under lee of Staten Land, increasing to strong breezes as we come out into the open sea; middle, good breezes and cloudy weather; latter part, light winds and cloudy.

Jan. 20. Lat. 57° 07′ S.; long. 65° 49′ W. Barometer, 28.76; thermometer attached, 48°; temperature of air, 45°; of water, 42°. Winds: W., S.SW., SW. First and middle parts, light breezes and damp weather; latter part, squally appearances.

Jan. 21. Lat. 59° 07′ S.; long. 69° 05′ W. Barometer, 28.80; thermometer attached, 46°; temperature of air, 42°; of water, 42°. Winds: W., W. to W.NW., W. to W.NW. Throughout these 24 hours experienced fresh westerly gales, and moderate occasional squalls of snow and hail; we passed the longitude of Cape Horn in 45 days and 7 hours from Sandy Hook.

Jan. 22. Lat. 59° 09′ S.; long. 70° 08′ W. Barometer, 28.80; thermometer attached, 45°; temperature of air, 42°; of water, 38°. Winds: W.SW., W.SW., SW. First and middle parts, fresh gales with light snow and hail; latter part, fresh winds and cold, with snow flaws; at 6 a. m. made two large icebergs ahead.

Jan. 23. Lat. 56° 30′ S.; long. 73° 22′ W. Barometer, 29.30; thermometer attached, 49°; temperature of air, 48°; of water, 40°. Winds: W.SW., W., W.NW. First and middle parts, fresh gales and squally with flaws of hail and snow; latter part, stiff breezes and cloudy.

Jan. 24. Lat. 57° 13′ S.; long. 77° 15′ W. Barometer, 29.03; thermometer attached, 50°; temperature of air, 46°; of water, 43°. Winds: W.NW., SW., SW. First and middle parts, fresh gales and cloudy misty weather; latter part, moderate breezes and cloudy.

Jan. 25. Lat. 55° 24′ S.; long. 78° 55′ W. Barometer, 29.23; thermometer attached, 53°; temperature of air, 50°; of water, 46°. Winds: SW. by W., SW. by W., S. First part, good breezes and cloudy, a heavy swell from the Nd.; middle and latter parts, moderate breezes and good weather; passed the latitude of Cape Horn at midnight, 49 days and 9 hours from Sandy Hook.

Jan. 26. Lat. 53° 04′ S.; long. 83° 03′ W. Barometer, 29.55; thermometer attached, 47°; temperature of air, 44°; of water, 45°. Winds: S., S., S.SW. First part, moderate

breezes and cloudy; middle and latter parts, moderate breezes and passing clouds with squalls of light snow, rain and wind.

Jan. 27. Lat. 49° 23′ S.; long. 85° 56′ W Barometer, 30.16; thermometer attached, 51°; temperature of air, 48°; of water, 50°. Winds: SW., SW., W. by S. First part, strong winds, strong winds and squally; middle part, fresh winds and good weather; latter part, brisk winds and fine weather. These 24 hours show a steady and remarkable rise in the barometer without any apparent cause."

Ship Antelope, (F. W. W. Cole,) New York to San Francisco; 22 days from St. Roque.

"Jan. 21. Lat. 49° 14′ S.; long. 61° 56′ W. Barometer, 29.75; thermometer attached, 65°; temperature of air, 49°; of water, 54°. Winds: W. and S., W. and S., SW. and S.SW. The wind has been baffling during the 24 hours with light rain; it appeared no matter how the ship's head was, she was always on the wrong tack by the time every thing was well trimmed.

Jan. 22. Lat. 51° 17′ S.; long. 63° 42′ W. Barometer, 29.45; thermometer attached, 63°; temperature of air, 54°; of water, 51°. Winds: W.SW., W.NW., N. to W.NW. First part, wind more steady; fine clear weather with smooth sea; the wind has canted as far back as North. The moon was full yesterday at 3 a. m., (can this affect these obstinate SW. winds, and how?)

Jan. 23. Lat. 54° 41′ S.; long. 65° 06′ W. Barometer, 29.20; thermometer attached, 63°; temperature of air, 54°; of water, 49°. Winds: W.NW., W.NW., W.NW. Throughout pleasant weather, with light airs; passed through the straits of Le Maire.

Jan. 24. Lat. 56° 17′ S.; long. 64° 51′ W. Barometer, 29.40; thermometer attached, 62°; temperature of air, 44°; of water, 45°. Winds: calm to all around the compass; calm and SW., SW. First and middle parts, calm and variable winds; latter part, moderate breezes, clear and pleasant weather.

Jan. 25. Lat. 57° 45′ S.; long. 64° 53′ W. Barometer, 29.70; thermometer attached, 60°; temperature of air, 66; of water, 44°. Winds: SW., SW., W.NW. and calm. First and middle parts, light breezes; latter, light airs. The barometer rising, should lead me to expect a NW. or northerly wind, it has invariably indicated a very fresh gale by falling, or moderate gale by rising; with the above rule I find the barometer the same use here as in the N. Atlantic; these are facts; the opinion I have not formed as yet.

Jan. 26. Lat. 58° 36′ S.; long. 68° 50′ W. Barometer, 29.20; thermometer attached, 60°; temperature of air, 50°; of water, 46°. Winds: W.NW., NW., N. First part, unsettled looking weather, thick and rainy; middle and latter parts, moderate breezes.

Jan. 27. Lat. 59° 28′ S.; long. 73° 18′ W. Barometer, 28.70; temperature of air, 50°; of water, 44°. Winds: W.NW., W. to NW., NW. and N. First part, moderate breezes and pleasant; middle and latter parts, fine weather and steady. The barometer is falling fast; we will see now what turns up. The mercury being now lower than at any previous time upon this voyage, if it is not blowing a SW. gale in 12 hours then I will be better prepared to say the barometer is no use about Cape Horn.

Jan. 28. Lat. 57° 25′ S.; long. 76° 52′ W. Barometer, 28.90; thermometer attached, 59°; temperature of air, 51°; of water, 42°. Winds: N. and N.NE., E.NE. and calm, S. and W.SW. First part, clouding up; a heavy SW. swell; middle, light airs, with rain; squally looking weather; latter part, fresh W.SW. gale and cloudy.

Jan. 29. Lat. 55° 34′ S.; long. 77° 54′ W. Barometer, 28.97; thermometer attached,

58°; temperature of air, 48°; of water, 46°. Winds: SW., W. and NW., W.NW. First part, fresh gale; middle part, moderating; latter part, strong gale and high sea from W.NW.

Jan. 30. Lat. 53° 30′ S.; long. 78° 10′ W. Barometer, 29.53; thermometer attached, 60°; temperature of air, 46°; of water, 46°. Winds: W.NW., W.SW., SW. First part, fresh gale; middle, strong gale; latter part, ship diving hard into a head sea, and taking large quantities of water over the bows; moderating.

Jan 31. Lat. 50° 15′ S.; long. 78° 12′ W. Barometer, 30.00; thermometer attached, 61°; temperature of air, 50°; of water, 49°. Winds: W. by S., W., W. and NW. First and middle parts, partially clear; latter part, breezing up.

Feb. 1. Lat. 50° 49′ S.; long. 81° 46′ W. Barometer, 29.70; thermometer attached, 60°; temperature of air, 50°; of water, 48°. Winds: W.NW. and NW., NW. First part, cloudy and squally looking weather; middle and latter parts, thick and rainy.

Feb. 2. Lat. 49° 04′ S.; long. 83° 17′ W. Barometer, 29.80; thermometer attached, 61°; temperature of air, 52°; of water, 51°. Winds: NW. by N., calm, W.SW. and W., W.NW. Thick and rainy weather."

Ship Tornado, (O. R. Mumford,) New York to San Francisco ; 23 days from St. Roque.

"January 22. Lat. 49° 40′ S.; long. 65° 00′ W. Barometer, 29.75; thermometer attached, 64°; temperature of air, 62° ; temperature of water, 59°. Winds: SW., W.NW., W. to S.SW. First part, light airs ; at 4 p. m. dry bulb, 58°; wet bulb, 52°; 8 p. m. dry bulb, 57°; wet bulb, 51°. Middle, moderate breezes; 9 a. m. dry bulb, 62°; wet bulb, 57°. Latter part, moderate.

January 23. Lat. 52° 48′ S.; long. 65° 40′ W. Barometer, 29.59; temperature of air, 57°; temperature of water, 54°. Winds: S.SW. to W.SW., SW. by S.SW. First part, moderate breezes; at 4 wet bulb, 53°; dry bulb, 55°; at 8 wet bulb, 48°; dry bulb, 51°. Middle part, light breezes; (strong tide pace;) at 9 wet bulb, 47°; dry bulb, 49°. Latter part, moderate breezes.

January 24. Lat. 55° 03′ S.; long. 63° 23′ W. Barometer. 29.76; thermometer attached. 70°; temperature of air, 51°; temperature of water, 52°. Winds: SW. by S., SW., SW. by W. First part, moderate breezes; dry bulb, 55°; wet bulb, 52°; at 8 dry bulb, 50°; wet bulb, 47°. Middle, light; at 2.30 saw Staten Land; from 8 a. m. till noon, by bearing off Cape St. John, current had set east eight miles. Latter part, light breezes.

January 25. Lat. 56° 43′ S.; long. 63° 16′ W. Barometer, 30.01; thermometer attached, 70°; temperature of air, 50°; temperature of water, 48°. Winds: SW. ½ W., SW., SW. First part, gentle breezes; middle part, light breezes; latter part, light airs. 4 p. m. dry bulb, 48°; wet bulb, 44°; 8 p. m. dry bulb, 48°; wet bulb, 45°; 9 a. m. dry bulb, 47°; wet bulb, 45°.

January 26. Lat. 66° 58′ S.; long. 66° 55′ W. Barometer, 29.51; thermometer attached, 65°; temperature of air, 49°; temperature of water, 48°. Winds: W. by S., W.NW., N. First and middle parts, light breezes; latter part, moderate. Have had little or no easterly current from St. John's. 8 p. m. dry bulb, 49°; wet bulb, 46; 9 a. m. dry bulb, 46°; wet bulb, 45°.

January 27. Lat. 58° 12′ S.; long. 70° 20′ W. Barometer, 28.99; thermometer attached, 70°; temperature of air, 46°; temperature of water, 45°. Winds: W., W., N.NW. Moderate breezes throughout. At 4 p. m. dry bulb, 51°; wet bulb, 49°; 8 p. m. dry bulb, 47°; wet bulb, 44°; 9 a. m. dry bulb, 48°; wet bulb, 49°.

January 28. Lat. 57° 18′ S.; long. 73° 50′ W. Barometer, 29.14; thermometer attached,

70°; temperature of air, 44°; temperature of water, 44°. Winds: N. by W., N. to E., and E. to S.SW., S. by W. First part, gentle breezes; middle and latter parts, light breezes, with moderate rain. At 4 p. m. dry bulb, 47°; wet bulb, 45°; 8 p. m. dry bulb, 46°; wet bulb, 45°; 9 a. m. dry bulb, 45°; wet bulb, 44°.

January 29. Lat. 56° 00′ S.; long. 74° 43′ W. Barometer, 29.28; thermometer attached, 69°; temperature of air, 44°; temperature of water, 44°. Winds: SW. by S., SW., SW. to W., W. to NW. First and middle parts, fresh gales; long westerly sea. Latter part, moderate rain; 4 p. m. dry bulb, 45°; wet bulb, 44°; 8 p. m. dry bulb, 44°; wet bulb, 44°; 9 a. m. dry bulb, 44°; wet bulb, 44°.

January 30. Lat. 55° 51′ S.; long. 77° 30′ W. Barometer, 29.73; thermometer attached, 68°; temperature of air, 45°; temperature of water, 44°. Winds: NW. and NW. by W., W., calm, S.SW., SW. by S. First part, strong breezes and rainy; middle part, moderate and calm; latter part, gentler breezes, with a heavy westerly sea. 9 a. m. dry bulb, 45°; wet bulb, 44°.

January 31. Lat. 54° 44′ S.; long. 78° 48′ W. Barometer, 29.88; thermometer attached, 72°; temperature of air, 48°; temperature of water, 46°. Winds: W., W., W. by N. ½ N. First part, moderate breezes; middle part, fine; latter part, fresh breezes. At 4 p. m. dry bulb, 45°; wet bulb, 43°; 9 a. m. dry bulb, 48°; wet bulb, 46°.

February 1. Lat. 55° 01′ S.; long. 80° 11′ W. Barometer, 29.77; thermometer attached, 72°; temperature of air, 47°; temperature of water, 46°. Winds: W.NW., NW., W.SW., and NW. First part, moderate breezes; middle part, puffy and nearly calm; latter part, light breezes. At 4 p. m. dry bulb, 46°; wet bulb, 44°; 9 a. m. dry bulb 46°; wet bulb, 42°.

February 2. Lat. 53° 42′ S.; long. 81° 57′ W. Barometer, 29.72; thermometer attached, 70°; temperature of air, 46°; temperature of water, 45°. Winds: NW., NW. by N., and W.SW., W. First part, gentle; middle part, moderate; latter part, fresh breezes. At 4 p. m. dry bulb, 46°; wet bulb, 45°; 9 a. m. dry bulb, 46°; wet bulb, 44°.

February 3. Lat. 53° 12′ S.; long. 81° 37′ W. Barometer, 29.35; thermometer attached, 69°; temperature of air, 46°; temperature of water, 45°. Winds: NW. by W., N.NW. to W., NW. by N. First part, strong breezes; middle part, moderate, with a westerly sea; latter part, strong gale. At 4 p. m. dry bulb, 48°; wet bulb, 45°; 8 p. m. dry bulb 45°; wet bulb, 44°; 9 a. m. dry bulb, 47°; wet bulb, 45°.

February 4. Lat. 51° 16′ S.; long. 81° 10′ W. Barometer, 29.83; thermometer attached, 70°; temperature of air, 49°; temperature of water, 48°. Winds: W., W. by S., W. by S. First part, strong gales; middle part, hard squalls; latter part, squalls not quite so hard. Washed the lee cat-head up and broke the rail diving through this N.NW. sea. At 4 p. m. dry bulb, 46°; wet bulb, 42°; at 9 a. m. dry bulb, 48°; wet bulb, 45°.

February 5. Lat. 49° 19′ S.; long. 80° 27′ W. Barometer, 30.16; thermometer attached, 76°; temperature of air, 53°; temperature of water, 52°. Winds: W., W., W.NW. First part, fresh gale; middle part, fine breeze; latter part, moderate. At 4 p. m. dry bulb, 50°; wet bulb, 49°; at 8 p. m. dry bulb, 49°; wet bulb, 47°; at 9 a. m. dry bulb, 54°; wet bulb, 51°."

Ship "Ocean Pearl," (Winthrop Sears,) Boston to Honolulu, Sandwich Islands, *via* Valparaiso; 17 days from St. Roque.

"January 24. Lat. 48° 19′ S.; long. 61° 00′ W. Barometer, 29.62; thermometer attached, 63°; temperature of air, 57°; temperature of water, 54°. Winds: S.SW., W., W.NW. Strong breezes and pleasant weather.

January 25. Lat. 51° 37′ S.; long. 62° 31′ W. Barometer, 29.22; temperature of air, 58°; temperature of water, 56°. Winds: W.NW., SW., SW. Strong breezes and pleasant throughout the day.

January 26. Lat. 54° 09′ S.; long. 63° 34′ W. Barometer, 29.00; thermometer attached, 56°: temperature of air, 50°; temperature of water, 47°. Winds: SW., W. by S., W.NW. First and middle parts, pleasant; latter, cloudy; strong breezes throughout.

January 27. Lat. 55° 02′ S.; long. 63° 13′ W. Barometer, 28.82; thermometer attached, 57°; temperature of air, 50°; temperature of water; 46°. Winds: N.NW. and SW., N., W. by S. First and middle parts, moderate breezes and pleasant; latter, moderate and cloudy.

January 28. Lat. 55° 37′ S.; long. 64° 30′ W. Barometer, 28.93; thermometer attached, 54°; temperature of air, 45°; temperature of water, 45°. Winds: W.NW., SW. by S., SW. by S. Squally throughout this day; clouds from the SW. constantly rising.

January 29. Lat. 57° 15′ S.; long. 66° 30′ W. Barometer, 28.63; thermometer attached, 53°; temperature of air, 43°; temperature of water, 43°. Winds: SW. by S., SW. by W., S. First and middle parts, squally; light rains for the latter part.

January 30. Lat. 57° 08′ S.; long. 68° 13′ W. Barometer, 29.20; thermometer attached, 52°; temperature of air, 46°; temperature of water, 47°. Winds: S., NW. by W., NW. First and middle parts, squally; latter part squally, with rain.

January 31. Lat. 58° 40′ S.; long. 71° 09′ W. Barometer, 28.40; thermometer attached, 53°; temperature of air, 47°; temperature of water, 46°. Winds: NW., NW., NW. Cloudy and stormy throughout the day. Commenced blowing violently about 7 p. m., and continued without intermission. Have never known the barometer to fall so low in any latitude; a heavy snow squall.

February 1. Lat. 57° 25′ S.; long. 73° 45′ W. Barometer, 29.40; thermometer attached, 54°; temperature of air, 44°; temperature of water, 45°. Winds: W.SW., S.SW., SW. by S. First part, violent wind and heavy sea; middle and latter parts, strong breezes. At 8.30 a. m. a snow squall.

February 2. Lat. 57° 47′ S.; long. 76° 20′ W. Barometer, 29.30; thermometer attached, 57°; temperature of air, 47°; temperature of water, 44°. Winds: W., W. by N., W.NW. First and middle parts, cloudy and squally; latter part, cloudy and snowing.

February 3. Lat. 58° 40′ S.; long. 79° 23′ W. Barometer, 29.20; thermometer attached, 55°; temperature of air, 46°; temperature of water, 44°. Winds: NW. by W., W.NW., NW. by W. First part, cloudy, with fresh breezes; middle, moderate breezes and rainy; latter part, moderate breezes and foggy.

February 4. Lat. 58° 06′ S.; long. 80° 49′ W. Barometer, 29.00; thermometer attached, 52°; temperature of air, 44°; temperature of water, 43°. Winds: W.SW., W.SW. First and middle parts, moderate breezes and rainy, squally weather; latter part, fresh winds and pleasant. At 10 a. m. passed an iceberg.

February 5. Lat. 55° 28′ S.; long. 81° 19′ W. Barometer, 29.22; thermometer attached, 51°; temperature of air, 48°; temperature of water, 45°. Winds: W.SW., W.SW., W.SW. First and middle parts, fresh breezes, cloudy and squally; latter part, moderate breezes and pleasant. Saw two large icebergs, bearing east 12 miles.

February 6. Lat. 52° 04′ S.; long. 80° 53′ W. Barometer, 29.30; thermometer attached, 53°; temperature of air, 48°; temperature of water, 48°. Winds: SW., W., W.NW. First part, moderate breezes and pleasant; middle and latter parts, strong breezes and cloudy.

February 7. Lat. 49° 47′ S.; long. 79° 10′ W. Barometer, 29.42; thermometer attached, 60°. First part, rainy; middle and latter parts, cloudy. Strong gales throughout the day."

Cape Horn Crossings—February.

Name of vessel.	From parallel of St. Roque to 50° S.	Longitude of crossing parallels east of Cape Horn.			Latitude of crossing meridians south of Cape Horn.			Longitude of crossing parallels west of Cape Horn.			From 50° S. in the Atlantic to 50° S. in the Pacific.
		50° S.	53° S.	56° S.	67° W.	71° W.	75° W.	55° S.	53° S.	50° S.	
	Days.	*Long. W.*	*Long. W.*	*Long. W.*	*Lat. S.*	*Lat. S.*	*Lat. S.*	*Long. W.*	*Long. W.*	*Long. W.*	*Days.*
John Holland	31	65°	66°	63°	58°	59°	57°	76°	80°	79°	26
Kentucky	33	61	65	71	56	56	56	77	78	82	25
Storm	23	57	61	67	57	58	58	77	78	79	12
A. F. Jenness†	44	66	66	66	57	58	57	76	78	80	20
John Bertram	25	65	65	63	56	56	57	81	81	84	12
Flying Childers	26	65	65	65	58	58	58	79	80	81	12
Golden West	30	65	66	66	57	57	57	77	78	81	14
Bald Eagle	19	64	65	69	56	57	57	77	79	84	10
Phantom	23	65	66	64	57	58	59	80	79	84	15
Winged Racer	26	66	65	69	57	57	56	81	83	82	14
Anna Kimball	30	66	66	66	57	57	58	78	79	79	17
Roman	28	65	65	66	57	58	57	80	83	85	14
E gle Wing	24	65	65	66	56	57	56	76	76	78	10
Flying Cloud	21	66	66	67	56	56	56	78	79	80	12
Game Cock	23	63	64	64	57	58	57	79	78	79	19
Archer	28	65	65	64	56	56	56	79	79	79	14
North Carolina*	30	54	56	61	57	59	56	75	77	79	29
Fair Wind	27	61	65	64	56	58	58	77	79	80	22
Gleaner	20	63	64	65	57	60	60	78	78	78	22
Boston Light	22	64	65	66	57	57	55	58	79	79	11
Telegraph	22	66	66	66	56	57	58	77	78	84	12
Electric Spark	19	63	65	66	56	57	57	83	82	83	16
Hollander	25	64	64	65	57	58	57	81	82	81	25
Channing	22	63	63	69	56	57	55	75	77	79	25
Aurora	20	62	64	65	57	57	57	78	79	80	13
Winfield Scott	26	64	66	66	58	59	57	77	76	78	26
Governor Morton	19	60	65	67	56	55	58	77	80	84	16
E. Kimball	30	62	63	64	56	57	57	75	84	85	35
Western Continent	23	65	65	66	57	59	56	79	78	77	16
Syren	29	66	66	66	58	58	58	82	83	84	19
Reindeer	23	63	63	66	57	59	58	78	79	82	19
Adelaide	22	64	65	65	56	58	59	75	83	83	30
Isaac Jeanes	26	64	64	67	56	58	56	80	79	80	25
Humboldt	26	66	66	65	56	60	57	81	81	82	26
Emilia‡	33	65	65	66	57	57	56	79	80	79	39
Telegraph	24	65	65	68	56	57	56	75	78	77	21
Harriet	31	61	63	64	57	58	56	79	80	82	30
Element	36	65	66	66	57	59	58	78	79	83	19
Romance of the Sea	22	64	64	67	56	58	57	78	78	79	13
Coringa	30	65	65	63	56	57	57	79	81	82	30
John Haven	27	63	65	67	56	57	55	74	77	77	21
Means	26.0	63.8	64.6	65.7	56.8	57.6	56.9	79.9	79.4	80.8	18.8

* She is famous for long passages. (See p. 464, 7th ed.)
† Last in the 7th edition, the 24 other passages have been made since.
‡ Chilian vessel. Not included in means.

Ship "Aurora," (Nat. Brown,) New York to San Francisco, 20 days from St. Roque.

"Jan. 25. Lat. 50° 42′ S.; long. 62° 47′ W. Barometer, 29.00; thermometer attached, 60°; temperature of air, 54°; temperature of water, 50°. Winds: W.NW., SW. by W., SW. by W. First and middle parts, strong increasing breezes; latter parts, strong gales and bad sea.

Jan. 26. Lat. 52° 03′ S.; long. 63° 54′ W. Barometer, 29.45; thermometer attached, 60°; temperature of air, 54°; temperature of water, 47°. Winds: SW. by W., W.SW., NW. First part, strong gales and moderating; middle part, light and unsteady airs; latter part, fresh breezes and hazy.

Jan. 27. Lat. 54° 58′ S.; long. 65° 08′ W. Barometer, 29.20; thermometer attached, 56°. Winds: NW., W. by S., W. Fresh breezes and blowing in heavy squalls off the land; passed through the Straits of Le Maire, strong tide race.

Jan. 28. Lat. 56° 45′ S.; long. 65° 25′ W. Barometer, 29.20; thermometer attached, 54°: Winds: variable, SW., SW. First part, variable airs; middle and latter part, fresh winds and heavy squalls, large hail, thunder and lightning.

Jan. 29. Lat. 57° 54′ S.; long. 68° 31′ W. Winds: W.SW., NW., SW. First part. moderating and cloudy; middle, increasing, with thick weather and hail and rain; latter, almost a gale, very changeable weather.

Jan. 30. Lat. 57° 31′ S.; long. 70° 50′ W. Winds: S.SW., SW., W.NW. First part, hard squalls from the southward; middle, moderate and foggy; latter, hard squalls.

Jan. 31. Lat. 58° 19′ S.; long. 72° 01′ W. Barometer, 28.70; thermometer attached, 52°; temperature of air, 44°; temperature of water, 42°. Winds: NW., NW., NW. First part, hard gales, hard squalls; middle, hard gales, high head sea; latter, heavy gales.

Feb. 1. Lat. 57° 19′ S.; long. 73° 52′ W. Barometer, 29.75; thermometer attached, 48°; temperature of air, 40°; temperature of water, 42°; Winds: W.NW., S.SW., SW. First part, hard gales; middle, strong winds and hard squalls, snow and hail; latter part, moderate.

Feb. 2. Lat. 57° 50′ S.; long. 75° 50′ W. Barometer, 29.00; thermometer attached, 50°; temperature of air, 50°; temperature of water, 44°. Winds: W. by S., NW. by W., W.NW. First part, fresh and cloudy; middle, strong gales; latter, moderating, thick, foggy weather.

Feb. 3. Lat. 57° 27′ S.; long. 77° 19′ W. Barometer, 29.50; thermometer attached, 50°; temperature of air, 45°; temperature of water, 44°. Winds: W.NW., W.NW., W.NW. Strong breezes throughout. First part, thick weather; middle, constant rain; latter, thick fog.

Feb. 4. Lat. 56° 58′ S.; long. 77° 34′ W. Barometer, 29.40; thermometer attached, 47°; temperature of air, 44°; temperature of water, 44°. Winds: W.NW., W.NW., W. by S. Strong gales and high sea.

Feb. 5. Lat. 55° 02′ S.; long. 78° 08′ W. Barometer, 29.50; thermometer attached, 48°; temperature of air, 44°; temperature of water, 44°. Winds: W. by S., W. by S., W.SW. First part, strong and squally; middle, more moderate; latter, light and fine, nearly calm. Lat. 56° 20′ S., long. 74° 35′ W., passed an iceberg 5 or 6 miles to windward of us. No change in temperature of air or water.

Feb. 6. Lat. 52° 56′ S.; long. 79° 26′ W. Barometer, 29.47; thermometer attached, 48°; temperature of air, 44°; temperature of water, 48°. Winds: calm, W.SW., W. First part, calm and cloudy; middle part, moderate breezes, with hard squalls of hail and rain; latter part, fresh winds.

Feb. 7. Lat. 50° 58′ S.; long. 78° 12′ W. Barometer, 29.60; thermometer attached, 48°; temperature of air, 50°; temperature of water, 49°. Winds: W.NW., W.NW., W.NW. First part, strong and squally; middle part, hard gales; latter part, freshening, thick weather.

Feb. 8. Lat. 51° 09′ S.; long. 79° 00′ W. Barometer, 29.60; thermometer attached, 48°; temperature of air, 49°; temperature of water, 49°. Winds: NW., NW., W.NW.

First part, strong gales; middle part, heavy gales and violent squalls; latter part, moderate, with a tremendous swell, thick and foggy.

Feb. 9. Lat. 50° 48′ S.; long. 80° 10′ W. Barometer, 29.41; thermometer attached, 55°; temperature of air, 50°; temperature of water, 48°. Winds: N. by W., N. by W., calm. First part, light winds, thick, foggy, and wet weather; middle part, strong breezes, with rain; latter, light airs and calms and rainy. We certainly have had hard luck".

Ship "Reindeer," (O. R. Bunker,) Boston to San Francisco, 23 days from St. Roque.

"Jan. 28. Lat. 49° 52′ S.; long. 63° 00′ W. Barometer, 29.60; temperature of air, 59°. Winds: SW., W.NW., S.SW. First and middle parts, light airs and pleasant; latter part, good breezes.

Jan. 29. Lat. 51° 03′ S.; long. 63° 35′ W. Barometer, 29.41; temperature of air, 61° Winds: S.SW., W.NW., SW. Light breezes throughout.

Jan. 30. Lat. 52° 41′ S.; long. 62° 55′ W. Barometer, 29.76; temperature of air, 60°. Winds: SW., S.SW., SW. First and latter parts, fresh breezes; middle part, strong gale.

Jan. 31. Lat. 54° 58′ S.; long. 65° 00′ W. Barometer, 29.40; temperature of air, 52°. Winds: W., NW., NW. First and middle parts, moderate breezes; latter part, strong breezes.

Feb. 1. Lat. 56° 38′ S.; long. 66° 18′ W. Barometer, 29.34; temperature of air, 49°. Winds: W.NW., W., SW. First part, strong breezes; middle and latter parts, strong gales.

Feb. 2. Lat. 57° 23′ S.; long. 67° 00′ W. Barometer, 29.93; temperature of air, 48°. Winds: SW., S.SW., W. First and latter parts, strong breezes; middle part, light breezes.

Feb. 3. Lat. 58° 33′ S.; long. 68° 15′ W. Barometer, 29.74; temperature of air, 45°. Winds: W., W.NW., W. by N. First part, strong gales; middle, more moderate; latter part, more moderate.

Feb. 4. Lat. 59° 37′ S.; long. 71° 30′ W. Barometer, 29.22; temperature of air, 42°. Winds: W. by N., NW., W. by N. First and middle parts, strong gales, with rain; latter part, more moderate.

Feb. 5. Lat. 58° 39′ S.; long. 72° 05′ W. Barometer, 29.26; temperature of air, 46°. Winds: W., W.SW., W.SW. Strong gales, with squalls of wind and hail.

Feb. 6. Lat. 56° 25′ S.; long. 72° 45′ W. Barometer, 29.21; temperature of air, 43°. Winds: W.SW., W.SW., W.SW. Strong breezes, with passing squalls of hail and wind.

Feb. 7. Lat. 56° 39′ S.; long. 73° 20′ W. Barometer, 29.28; temperature of air, 42°. Winds: W.SW., NW., W.NW. First part, fresh breezes; middle part, hard gales; latter, more moderate, with passing squalls of hail and wind.

Feb. 8. Lat. 57° 38′ S.; long. 74° 50′ W. Barometer, 28.93; temperature of air, 48°. Winds: W.NW., NW., W. First part, moderate; middle and latter parts, hard gales.

Feb. 9. Lat. 58° 02′ S.; long. 75° 50′ W. Barometer, 29.40; temperature of air, 48°. Winds: W., NW., N.NW. First part, strong gales; middle, more moderate; latter part, light breezes.

Feb. 10. Lat. 58° 46′ S.; long. 78° 50′ W. Barometer, 29.06; temperature of air, 45°. Winds: NW., NW., W.NW. First part, strong breezes; middle and latter parts, strong gales, with thick rainy weather; saw two icebergs.

Feb. 11. Lat. 58° 24′ S.; long. 78° 30′ W. Barometer, 29.28; temperature of air, 43°. Winds: W.NW., W.NW., W. First part, strong gales; middle, more moderate; latter, moderate breezes, with showers of rain.

Feb. 12. Lat. 56° 13′ S.; long. 78° 05′ W. Barometer, 29.48; temperature of air, 42°. Winds: W., W.SW., W.SW. Good breezes, with passing squalls of hail and rain.

Feb. 13. Lat. 53° 42′ S.; long. 79° 30′ W. Barometer, 30.06; temperature of air, 44°. Winds: W.SW., W.SW., SW. First part, moderate breezes; middle and latter parts, strong breezes.

Feb. 14. Lat. 52° 17′ S.; long. 81° 00′ W. Barometer, 29.76; temperature of air, 48°. Winds: W.SW., N., N.NE. Light breezes, fine and clear weather.

Feb. 15. Lat. 51° 39′ S.; long. 83° 30′ W. Barometer, 29.24; temperature of air, 51°. Winds: N., NW., W. First part, light breezes, thick and cloudy; middle and latter parts, moderate breezes, with passing squalls.

Feb. 16. Lat. 49° 50′ S.; long. 82° 30′ W. Barometer, 29.90; temperature of air, 51°. Winds: SW., W.SW., W.NW. First part, fresh breezes and clear; middle and latter parts, moderate breezes, with thick weather and rain squalls."

Ship "Romance of the Sea," (W. W. Henry,) New York to San Francisco; 22 days from St. Roque.

"Jan. 31. Lat. 49° 13′ S.; long. 63° 40′ W. Barometer, 29.30; temperature of air, 53°; of water, 53°. Winds: W.NW., calm, W.NW. Variable, calm, and squally.

Feb. 1. Lat. 51° 43′ S.; long. 64° 20′ W. Barometer, 29.15; temperature of air, 52°; of water, 52°. Winds: SW. ,NW., W.SW. First and middle parts, moderate; latter part, fresh gales; passed through the Straits of Le Maire.

Feb. 2. Lat. 55° 26′ S.; long. 65° 50′ W. Barometer, 29.95; temperature of air, 52°; of water, 52°. Winds: SW., W.SW., W. by N. Strong gales throughout.

Feb. 3. Lat. 56° 04′ S.; long. 67° 31′ W. Barometer, 28.85; temperature of air, 51°; of water, 50°. Winds: SW., W.SW., NW. First and middle parts, strong breezes, and squally; latter part, fresh gales and rainy.

Feb. 4. Lat. 57° 35′ S.; long. 68° 58′ W. Barometer, 29.96; temperature of air, 50°; of water, 51°. Winds: W. by N., W., W. by N. Fresh gales throughout and confused sea.

Feb. 5. Lat. 58° 30′ S.; long. 70° 02′ W. Barometer, 29.10; temperature of air, 43°; of water, 44°. Winds: W., W. by S., W. Fresh breezes and squally.

Feb. 6. Lat. 57° 30′ S.; long. 74° 10′ W. Barometer, 29.40; temperature of air, 43°; of water, 44°. Winds: E.NE., E.SE., E.SE. First and latter parts, squally; middle part, heavy gales.

Feb. 7. Lat. 57° 28′ S.; long. 78° 10′ W. Barometer, 28.65; temperature of air, 50°; of water, 48°. Winds: N.NW., NW., NW. Strong gales during the twenty-four hours.

Feb. 8. Lat. 57° 13′ S.; long. 78° 10′ W. Barometer, 28.67; temperature of air, 44°; of water, 46°. Winds: NW., W., W. by S. Heavy gales and violent squalls.

Feb. 9. Lat. 56° 13′ S.; long. 78° 47′ W. Barometer, 28.90; temperature of air, 46°; of water, 46°. Winds: W.SW., W.NW., NW. by W. Heavy gales and violent squalls.

Feb. 10. Lat. 55° 04′ S.; long. 78° 24′ W. Barometer, 29.22; temperature of air, 46°; of water, 44°. Winds: W., W. by S., SW. by W. Fresh gales and squally.

Feb. 11. Lat. 52° 16′ S.; long. 78° 00′ W. Barometer, 29.43; temperature of air, 46°; of water, 45°. Winds: W. by S., W., W. First and latter parts, fresh gales; middle part, heavy gales and violent hail squalls.

Feb. 12. Lat. 51° 32′ S.; long. 79° 27′ W. Barometer, 28.87; temperature of air, 47°; of water, 43°. Winds: W.NW., NW., N.NW. Moderate gales with hail squalls.

Feb. 13. Lat. 49° 02′ S.; long. 78° 33′ W. Barometer, 29.35; temperature of air, 46°; of water, 45°. Winds: W.SW., W.SW., W.SW. First and middle parts, strong gales; latter part, fresh gales."

Ship "Electric Spark," (Laban Homes,) Boston to San Francisco; 19 days from St. Roque.

"Feb. 4. Lat. 49° 32′ S.; long. 63° 20′ W. Barometer, 26.60; thermometer attached, 58°; temperature of air, 55°; of water, 53°. Winds: N., N. by E., N.NW. to S.SW. First and middle parts, moderate breezes and pleasant; latter part, blowing hard.

Feb. 5. Lat. 52° 16′ S.; long. 64° 45′ W. Barometer, 26.75; thermometer attached, 58°; temperature of air, 54; of water, 49°. Winds: N., W.SW., W.SW. Fresh winds and cloudy throughout; passed some kelp.

Feb. 6. Lat. 55° 02′ S.; long. 65° 01′ W. Barometer, 26.65; thermometer attached, 58°; temperature of air, 51°; of water, 49°. Winds: W.SW., variable, N. First and latter parts, moderate breezes; middle part, fresh; passed through the Straits of Le Maire.

Feb. 7. Lat. 56° 21′ S.; long. 66° 43′ W. Barometer, 26.50; thermometer attached, 60°; temperature of air, 52°; of water, 48°. Winds: W.SW., N., W.SW. First part, nearly calm; middle and latter parts, moderate breezes and pleasant.

Feb. 8. Lat. 56° 26′ S.; long. 69° 30′ W. Barometer, 26.10; thermometer attached, 60°; temperature of air, 52°; of water, 47°. Winds: N., N., NE. Light winds and pleasant weather throughout.

Feb. 9. Lat. 57° 09′ S.; long. 70° 44′ W. Barometer, 26.34; thermometer attached, 58°; temperature of air, 50°; of water, 48°. Winds: W.SW., W., W.SW. Brisk breezes throughout; first part, weather variable; middle, rainy; latter part, pleasant.

Feb. 10. Lat. 57° 40′ S.; long. 72° 21′ W. Barometer, 26.42; thermometer attached, 58°; temperature of air, 47°; of water, 44°. Winds: W.SW., W. by S., W. Throughout, fresh gales, with heavy irregular sea.

Feb. 11. Lat. 56° 09′ S.; long. 73° 30′ W. Barometer, 26.67; thermometer attached, 57°; temperature of air, 48°; of water, 46°. Winds: W. to W.SW., W.SW., W.SW. First and middle parts, fresh breezes, with very heavy sea; latter part moderate.

Feb. 12. Lat. 57° 08′ S.; long. 74° 25′ W. Thermometer attached, 57°; temperature of air, 47°; of water, 46°. Winds: W.SW., W.SW., W.SW. Light winds, thick and foggy throughout.

Feb. 13. Lat. 56° 51′ S.; long. 76° 23′ W. Temperature of air 55°; of water, 46°. Winds: W.SW., W.SW., calm. Light airs and calm; thick fog on the horizon, clear over head.

Feb. 14. Lat. 56° 40′ S.; long. 76° 57′ W. Temperature of air, 61; of water, 46°. Winds: N.NW., N.NE., N.NE. Light airs and pleasant.

Feb. 15. Lat. 56° 23′ S.; long. 79° 55′ W. Temperature of air, 51°; of water, 45°. Winds: calm, NW., NW. First part, calm and foggy; middle and latter parts, blowing hard; barometer of no use, no doubt incorrect, too low altogether.

Feb. 16. Lat. 56° 06′ S.; long. 82° 10′ W. Temperature of air, 48°; of water, 45°. Winds: NW., NW., W.NW. Variable weather, sometimes blowing hard and sometimes nearly calm.

Feb. 17. Lat. 55° 17′ S.; long. 83° 13′ W. Thermometer attached, 58°; temperature of air, 49°; of water, 44°. Winds: calm and W.SW., W., W., First part, calm and fresh winds, squally; middle part, blowing hard; latter part, hard gale.

Feb. 18. Lat. 54° 47′ S.; long. 82° 09′ W. Thermometer attached, 55°; temperature of air, 48°; of water, 44°; Winds: W., W.NW., W. First part, very hard gale; middle part, more moderate; latter part, fresh breezes, with squalls.

Feb. 19. Lat. 54° 05′ S.; long. 82° 24′ W. Thermometer attached, 54°; temperature of air, 46°; of water, 45°. Winds: W., W.NW., baffling and calm. First and middle parts, fresh breezes; latter part, baffling and calm, with rain.

Feb. 20. Lat. 50° 35′ S.; long. 83° 40′ W. Thermometer attached, 54°; temperature of air, 48°; of water, 46°. Winds: W.NW., W.SW., W. First part, moderate breezes; middle and latter parts, good breezes, with dark squally looking weather."

Ship "Western Continent," (Fred. Barnham,) New York to San Francisco; 23 days from St. Roque.

"Feb. 4. Lat. 49° 54′ S.; long. 65° 13′ W. Barometer, 29.70; thermometer attached, 78°; temperature of air, 58°; temperature of water, 53°. Winds: N.NE., N., NW. First and latter, moderate breezes; middle, strong.

Feb. 5. Lat. 52° 34′ S.; long. 65° 13′ W. Barometer, 29.40; thermometer attached, 50°; temperature of air, 50°; temperature of water, 48°. Winds: NW., SW. by W., W.SW. First and middle parts, moderate breezes and cloudy; latter part, strong breezes.

Feb. 6. Lat. 54° 27′ S.; long. 64° 15′ W. Barometer, 29.42; thermometer attached, 52°; temperature of air, 52°; temperature of water, 47°. Winds: N. and NW., E. and E.SE., S. and S.SW. Moderate breezes and variable. My intention was to have gone through the straits, but the wind being from the southward, I gave it up.

Feb. 7. Lat. 55° 44′ S.; long. 64° 23′ W. Barometer, 29.26; thermometer attached, 44°; temperature of air, 44°; temperature of water, 44°. Winds: S.SW., NW., NW. and W. First and middle parts, moderate; latter, strong gales and heavy squalls.

Feb. 8. Lat. 56° 44′ S.; long. 66° 10′ W. Barometer, 29.20; thermometer attached, 46°; temperature of air, 44°; temperature of water, 44°. Winds: W.SW., NW., W. First and middle parts, heavy gales; latter, moderate.

Feb. 9. Lat. 56° 47′ S.; long. 66° 30′ W. Barometer, 29.55; thermometer attached, 49°; temperature of air, 50°; temperature of water, 44°. Winds: W., W.NW., NW. First part, moderate breezes and cloudy; middle, moderate gales; latter part, light breezes and cloudy.

Feb. 10. Lat. 57° 44′ S.; long. 68° 48′ W. Barometer, 29.23; thermometer attached, 46°; temperature of air, 46°; temperature of water, 44°. Winds: N. and N.NW., W.SW., W.SW. First and latter parts, heavy gales; middle part, moderate, with rain.

Feb. 11. Lat. 58° 33′ S.; long. 70° 25′ W. Barometer, 29.05; thermometer attached, 46°; temperature of air, 46°; temperature of water, 45°. Heavy gales and squally weather.

Feb. 12. Lat. 58° 39′ S.; long. 71° 09′ W. Barometer, 29.20; thermometer attached, 44°; temperature of air, 44°; temperature of water, 44°. Winds: W., W., W. First and middle parts, hail squalls, blowing hard in squalls; latter part, strong gales, with hail squalls.

Feb. 13. Lat. 56° 37′ S.; long. 71° 18′ W. Barometer, 29.42; thermometer attached, 44°; temperature of air, 44°; temperature of water, 44°. Winds: W., W., W. Throughout this day strong gales and hail squalls about every 15 minutes; saw an iceberg.

Feb. 14. Lat. 56° 53′ S.; long. 70° 42′ W. Barometer, 29.56; thermometer attached, 46°; temperature of air, 46°; temperature of water, 45°. Winds: SW., SW., N. First, moderate gale, light airs; latter part, fresh breezes.

Feb. 15. Lat. 56° 26′ S.; long. 76° 42′ W. Barometer, 29.00; thermometer attached,

45°; temperature of air, 45°; temperature of water, 44°. Winds: NE., NE., NE. and NW. First and middle parts, strong breezes and squally, with rain; latter part, the same.

Feb. 16. Lat. 55° 17′ S.; long. 79° 10′ W. Barometer, 29.35; thermometer attached, 42°; temperature of air, 42°; temperature of water, 45°. Winds: NW., W.SW., SW. Fresh breezes and squally, with rain.

Feb. 17. Lat. 54° 10′ S.; long. 79° 11′ W. Barometer, 29.40; thermometer attached, 46°; temperature of air, 46°; temperature of water, 46°. Winds: W.SW., W.NW., W. First and middle parts, moderate breezes, with rain; latter part, strong breezes and squally.

Feb. 18. Lat. 52° 35′ S.; long. 78° 26′ W. Barometer, 29.13; thermometer attached, 46°; temperature of air, 46°; temperature of water, 46°. Winds: W., W.NW., NW. First part, strong breezes and squally; middle and latter parts, fresh gales with rain.

Feb. 19. Lat. 51° 32′ S.; long. 78° 34′ W. Barometer, 29.09; thermometer attached, 45°; temperature of air, 48°; temperature of water, 47°. Wind: W.NW., W.NW., W.NW. First part, strong breezes and squally; middle and latter parts, strong gales and squally.

Feb. 20. Lat. 49° 55′ S.; long. 77° 11′ W. Barometer, 29.32; thermometer attached, 50°; temperature of air, 50°; temperature of water, 49°. Winds: W.NW., W.NW., NW. Fresh gales and rain during these twenty-four hours."

Ship "Boston Light," (William Collagan,) Boston to San Francisco; 22 days from St. Roque.

"Feb. 18. Lat. 48° 21′ S.; long. 61° 48′ W. Barometer, 29.83; thermometer attached, 62°; temperature of air, 60°; temperature of water, 56°. Winds: E.NE., NE., N. Moderate breezes and pleasant weather; sea smooth.

Feb. 19. Lat. 51° 16′ S.; long. 65° 00′ W. Barometer, 29.72; thermometer attached, 58°; temperature of air, 56°; temperature of water, 52°. Winds: N., N.NW., N.NW. Fine moderate breezes and pleasant weather. In no part of the world have I seen better quantities of kelp and rock-weed.

Feb. 20. Lat. 54° 13′ S.; long. 65° 09′ W. Barometer, 29.70; thermometer attached, 56°; temperature of air, 53°; temperature of water, 49°. Winds: N.NW., SW., W.SW.

Feb. 21. Lat. 56° 10′ S.; long. 66° 30′ W. Barometer, 29.68; thermometer attached, 57°; temperature of air, 48°; temperature of water, 48°. Winds: W., E. and S., S. and E. First part, moderate breezes and hazy; middle part, strong breezes; latter part, fresh breezes and rain.

Feb. 22. Lat. 57° 06′ S.; long. 66° 40′ W. Barometer, 29.60; thermometer attached, 56°; temperature of air, 43°; temperature of water, 43°. Winds: E.SE. and S., SW., W.SW. First part, moderate breezes, fog and rain; middle, heavy squalls of rain and hail; latter part, moderate.

Feb. 23. Lat. 58° 02′ S.; long. 68° 55′ W. Barometer, 29.70; thermometer attached, 53°; temperature of air, 44°; temperature of water, 44°. Winds: W.NW., SW., W. and W.NW. First part, squally; middle part, moderate; latter part, moderate breezes, thick and rainy.

Feb. 24. Lat. 57° 12′ S.; long. 70° 55′ W. Barometer, 29.78; thermometer attached, 54°; temperature of air, 46°; temperature of water, 45°. Winds: NW., W.SW., SW. by S. First part, strong breezes; middle part, hail squalls; latter part, light breezes.

Feb. 25. Lat. 56° 08′ S.; long. 73° 14′ W. Barometer, 29.82; thermometer attached,

56°; temperature of air, 48°; temperature of water, 46°. Winds: S.SE., E. and E.NE. First part, light airs; middle, moderate breezes, fine and pleasant.

Feb. 26. Lat. 54° 57′ S.; long. 78° 05′ W. Barometer, 29.96; thermometer attached, 56°; temperature of air, 47°; temperature of water, 45°. Winds: E., E.NE., N.NE. Moderate breezes and pleasant weather.

Feb. 27. Lat. 54° 00′ S.; long. 79° 50′ W. Barometer, 29.80; thermometer attached, 56°; temperature of air, 47°; temperature of water, 46°; Winds: N., W.SW., W. First and middle parts, strong breezes, with rain squalls; latter, moderate.

Feb. 28. Lat. 52° 03′ S.; long. 78° 52′ W. Barometer, 29.80; thermometer attached, 57°; temperature of air, 47°; temperature of water, 45°. Winds: W.NW., W.NW., W.SW. First part, strong breezes, mist and rain; middle and latter parts, strong gales; squally, with rain, fog and hail.

March 1. Lat. 49° 24′ S.; long. 78° 48′ W. Barometer, 29.87; thermometer attached, 56°; temperature of air, 50°; temperature of water, 50°. Winds: W.SW., W. by S., W. First part, gales, squally and cloudy; middle and latter parts, strong breezes and squally."

Cape Horn Crossings—March.

Name of vessel.	From parallel of St. Roque to 50° S.	Longitude of crossing parallels east of Cape Horn.			Latitude of crossing meridians south of Cape Horn.			Longitude of crossing parallels west of Cape Horn.			From 50° S. in the Atlantic to 50° S. in the Pacific.
		50° S.	53° S.	56° S.	67° W.	71° W.	75° W.	55° S.	53° S.	50° S.	
	Days.	*Long. W.*	*Long. W.*	*Long. W.*	*Lat. S.*	*Lat. S.*	*Lat. S.*	*Long. W.*	*Long. W.*	*Long. W*	*Days.*
Aldebaran	28	66°	65°	66°	56°	59°	57°	77°	80°	84°	28
Esther May	29	64	62	65	58	60	56	77	80	81	23
Lucknow	26	65	66	63	60	58	56	78	81	86	25
Masconoma	32	65	65	66	57	56	56	78	.....	.....	.....
Tornado	25	65	65	65	56	58	57	77	80	84	13
Eagle	24	64	65	66	57	58	58	78	83	86	13
Celestial	24	63	64	66	56	57	56	77	79	81	18
Amelia	26	63	64	63	59	57	55	78	79	80	26
Phantom	23	65	66	63	57	59	59	80	79	81	14
Stag Hound	22	65	64	65	57	57	55	73	78	78	12
Courser	26	65	65	66	56	57	57	77	78	79	12
Huguenot	28	67	65	67	58	57	58	78	79	81	21
Ludwig	36	63	63	62	58	58	57	78	80	81	31
Herald of the Morning	26	64	64	65	57	56	54	76	77	82	8
Seaman's Bride	26	64	63	63	57	58	57	80	85	88	16
M. Howes*	26	66	65	61	56	57	57	81	84	85	15
Jenny Ford	27	63	68	67	56	59	59	79	81	82	18
Sultan	28	62	65	65	56	57	57	77	79	82	19
Osborn Howes	28	64	65	64	57	58	56	84	85	87	21
E. F. Willets	27	65	64	66	57	57	56	77	79	82	11
Phantom	22	63	65	65	57	57	55	75	78	83	13
Greenfield	25	64	65	67	56	57	56	81	84	85	11
Therese	33	61	63	66	57	57	54	74	76	80	26
James Brown	30	66	66	66	57	59	55	75	78	80	27
Derby	28	66	66	65	57	58	57	83	82	85	17
Means	27.3	64.3	64.7	64.9	57.0	57.6	56.4	77.9	80.0	82.6	18.9

* Last in the 7th edition. The nine others are subsequent.

Ship "James Brown," (Charles W. Kerlin,) Boston to Callao; 27 days from St. Roque.

"February 18. Lat. 50° 08′ S.; long. 65° 57′ W. Barometer, 29.86; thermometer attached, 63°; temperature of air, 57°; temperature of water, 53°. Winds: S., calm, NW. First part, moderate breezes; middle, calm; latter part, light breezes. Sounded in 57 fathoms; pebbles, fine sand, and coral.

February 19. Lat. 51° 56′ S.; long. 65° 50′ W. Barometer, 29.63; thermometer attached, 62°; temperature of air, 61°; temperature of water, 52°. Winds: E., NE., E.NE. First part, light breezes; middle, moderate breezes; latter part, baffling.

February 20. Lat. 53° 16′ S.; long. 66° 13′ W. Barometer, 29.38; thermometer attached, 59°; temperature of air, 50°; temperature of water, 51°. Winds: NE., N.NE., N.&S.SW. First and middle parts, light airs; latter part, stiff breezes.

February 21. Lat. 54° 30′ S.; long. 65° 10′ W. Barometer, 29.64; thermometer attached, 55°; temperature of air, 50°; temperature of water, 50°. Winds: SW., S.SW., W.SW. First part, strong breezes; middle, light airs; latter, strong gales.

February 22. Lat. 55° 10′ S.; long. 65° 20′ W. Barometer, 29.55; thermometer attached, 58°; temperature of air, 46°; temperature of water, 48°. Winds: NW. to SW.; baffling, from S.SW. to NW., S.SW. First part, strong breezes; middle, light; latter, strong breezes and light rain. Strong current to the eastward.

February 23. Lat. 55° 45′ S.; long. 66° 20′ W. Barometer, 29.45; thermometer attached, 54°; temperature of air, 46°; temperature of water, 46°. Winds: W.NW., W.NW., W.SW. First part, light breezes; middle, fresh; latter, fresh gales in puffs.

February 24. Lat. 56° 10′ S.; long. 66° 00′ W. Barometer, 29.15; thermometer attached, 51°; temperature of air, 47°; temperature of water, 46°. Wind: W.SW., W.SW., W.SW. First part, fresh gale; middle, hard squalls; latter, very hard gale and hard squalls.

February 25. Lat. 56° 31′ S.; long. 66° 27′ W. Barometer, 28.85; thermometer attached, 52°; temperature of air, 50°; temperature of water, 45°. Winds: SW. by W., NW., W.NW. First and middle parts, hard squalls and hard gale; latter, more moderate.

February 26. Lat. 56° 38′ S.; long. 66° 56′ W. Barometer, 28.83; thermometer attached, 53°; temperature of air, 48°; temperature of water, 46°. Winds: N.&SW., calm, S.SW. and W. First part, moderate breezes; middle, calm; latter, wind changeable.

February 27. Lat. 56° 39′ S.; long. 67° 00′ W. Barometer, 29.10; thermometer attached, 52°; temperature of air, 42°; temperature of water, 45°. Winds: W.SW., W.NW., W.SW. First part, fresh breezes and clear; middle and latter parts, hard squalls of hail and rain.

February 28. Lat. 56° 30′ S.; long. 65° 50′ W. Barometer, 29.12; thermometer attached, 50°; temperature of air, 48°; temperature of water, 45°. Winds: W.SW., W.SW., NW. Hard gales and very hard squalls, with bad sea.

February 29. Lat. 56° 59′ S.; long. 67° 54′ W. Barometer, 28.75; thermometer attached, 52°; temperature of air, 49°; temperature of water, 46°. Winds: W.NW., NW., W.NW. First part, fresh breezes; middle part, moderate breezes, passing squalls; latter part, clear heavy gale, the sea one sheet of foam.

March 1. Lat. 57° 29′ S.; long. 66° 45′ W. Barometer, 29.12; thermometer attached, 50°; temperature of air, 41°; temperature of water, 44°. Winds: W.NW., W.NW., W.SW. First part, hard gale; middle, moderate gale; latter, strong squalls, hail and rain. Current, E.NE., 40 miles.

March 2. Lat. 56° 59′ S.; long. 66° 31′ W. Barometer, 29.45; thermometer attached,

48°; temperature of air, 46°; temperature of water, 45°. Winds: W.SW., W.NW., W.SW. These 24 hours great variety of weather from a royal breeze to heavy gales.

March 3. Lat. 57° 34′ S.; long. 66° 01′ W. Barometer, 29.68; thermometer attached, 49°; temperature of air, 45°; temperature of water, 44°. Winds: W.NW., W.NW., W.SW. First, middle, and latter parts, moderate gales.

March 4. Lat. 58° 10′ S.; long. 66° 03′ W. Barometer, 29.60; thermometer attached, 50°; temperature of air, 45°; temperature of water, 44°. Winds: W.SW., NW., W.NW. First and middle, fresh gales and squalls of hail and rain; latter, hard gale.

March 5. Lat. 58° 32′ S.; long. 65° 20′ W. Barometer, 29.71; thermometer attached, 49°; temperature of air, 44°; temperature of water, 42°. Winds: W.NW., NW., W.NW. First, strong gales; middle, moderate gale; latter, more moderate.

March 6. Lat. 59° 33′ S.; long. 67° 13′ W. Barometer, 29.67; thermometer attached, 49°; temperature of air, 43°; temperature of water, 40°. Winds: W.NW., NW., W.NW. Moderate breezes, with frequent flaws of wind.

March 7. Lat. 59° 51′ S.; long. 69° 00′ W. Barometer, 29.46; thermometer attached, 49°; temperature of air, 42°; temperature of water, 40°. Winds: NW., NW. by W., NW. by W. Light airs; latter part, foggy weather.

March 8. Lat. 59° 31′ S.; long. 72° 59′ W. Barometer, 28.78; thermometer attached, 50°; temperature of air, 42°; temperature of water, 40°. Winds: NW., N., N.NE. First part, moderate breeze and clear weather; middle and latter parts, moderate breezes with thick fog.

March 9. Lat. 58° 49′ S.; long. 73° 20′ W. Barometer, 29.22; thermometer attached, 42°; temperature of air, 39°; temperature of water, 41°. Winds: SW., SW., W.SW. First part, light breezes and clear; middle and latter parts, gale with terrific squalls of snow and hail. My aneroid acts to a charm. I might have lost some of my spars or sails, but I prepared in time for it, as indicated by barometer.

March 10. Lat. 58° 00′ S.; long. 72° 52′ W. Barometer, 29.21; thermometer attached, 43°; temperature of air, 37°; temperature of water, 43°. Winds: W.SW., SW., SW. by S. First part, fresh gales; middle, hard gales; latter, heavy squalls of snow and hail in great violence.

March 11. Lat. 56° 49′ S.; long. 73° 31′ W. Barometer, 29.23; thermometer attached, 43°; temperature of air, 39°; temperature of water, 43°. Winds: S.SW., W.SW., SW. Fresh breezes, with squalls of hail and sleet.

March 12. Lat. 55° 04′ S.; long. 75° 31′ W. Barometer, 29.64; thermometer attached, 46°; temperature of air, 44°; temperature of water, 46°. Winds: S.SW., S., SW. First and middle, moderate gale; latter part, moderating.

March 13. Lat. 54° 16′ S.; long. 75° 37′ W. Barometer, 29.79; thermometer attached, 48°; temperature of air, 46°; temperature of water, 48°. Winds: W.SW., baffling, SW. by W. First and latter parts, fine breezes; latter part, baffling.

March 14. Lat. 52° 50′ S.; long. 78° 03′ W. Barometer, 30.09; thermometer attached, 48°; temperature of air, 46°; temperature of water, 47°. Winds: SW., S.SW., S. by E. Throughout, moderate breezes; strong tide rips setting S.SE.

March 15. Lat. 51° 50′ S.; long. 80° 26′ W. Barometer, 30.02; thermometer attached, 48°; temperature of air, 45°; temperature of water, 48°. Winds: S.SE., SE. to E., NE. These 24 hours light and baffling breezes.

March 16. Lat. 49° 58′ S.; long. 80° 30′ W. Barometer, 29.94; thermometer attached, 50°; temperature of air, 47°; temperature of water, 48°. Winds: NE. to NE. by N., N.NE., E.NE. to E. First part, moderate breezes, overcast; middle, singular weather; latter part, moderate breezes and gloomy-looking weather."

Ship "Osborn Howes," (D. Kelly,) New York to San Francisco; 28 days from St. Roque.

"Feb. 19. Lat. 49° 23′ S.; long. 64° 30′ W. Barometer, 29.70; thermometer attached, 61°; temperature of air, 61°; temperature of water, 55°. Winds: calm and NE., N., N.NW. First part, calm and light airs; middle part, moderate; latter part, strong breezes. At 4. p. m. sounded: bottom with 80 fathoms; fine yellow and black sand.

Feb. 20. Lat. 51° 49′ S.; long. 65° 45′ W. Barometer, 29.50; thermometer attached, 55°; temperature of air, 55°; temperature of water, 52°. Winds: N.NW. to N., N.NE., W. to SW. First part, strong breezes; middle part, light breezes; latter part, fresh.

Feb. 21. Lat. 54° 16′ S.; long. 64° 25′ W. Barometer, 29.60; thermometer attached, 52°; temperature of air, 52°; temperature of water, 50°. Winds: W.SW., W.SW., W. First part, strong breezes; middle part, light; latter part, moderate.

Feb. 22. Lat. 55° 13′ S.; long. 64° 20′ W. Barometer, 29.50; thermometer attached, 46°; temperature of air, 47°; temperature of water, 44°. Winds: W.NW., calm, calm. First part, moderate breezes; middle and latter parts, calm.

Feb. 23. Lat. 56° 14′ S.; long. 64° 20′ W. Barometer, 29.50; thermometer attached, 44°; temperature of air, 44°; temperature of water, 43°. Winds: W.SW., W.SW., W. First and middle parts, light breezes; latter part, fresh breezes and squally weather.

Feb. 24. Lat. 57° 30′ S.; long. 65° 00′ W. Barometer, 29.10; thermometer attached, 44°; temperature of air, 44°; temperature of water, 43°. Winds: W.SW., W.SW., W.NW. Strong gales and squally weather.

Feb. 25. Lat. 57° 10′ S.; long. 66° 30′ W. Barometer, 28.70; thermometer attached, 44°; temperature of air, 44°; temperature of water, 43°. Winds: W.SW., W.SW., W.NW. First part, strong gales; middle part, more moderate; latter part, strong breezes and rainy weather.

Feb. 26. Lat. 58° 44′ S.; long. 70° 16′ W. Barometer, 28.80; thermometer attached, 45°; temperature of air, 45°; temperature of water, 42°. Winds: W.NW., W., W.SW. First part, thick, rainy, and dark looking weather; middle part, squally; latter part, strong breezes and clear.

Feb. 27. Lat. 58° 41′ S.; long. 70° 16′ W. Barometer, 28.90; thermometer attached, 45°; temperature of air, 44°; temperature of water, 41°. Winds: W., W., W. by N. Fresh gales and squally.

Feb. 28. Lat. 58° 45′ S.; long. 71° 30′ W. Barometer, 28.70; thermometer attached, 45°; temperature of air, 44°; temperature of water, 41°. Winds: W., W.NW., W.NW. First part, strong gales; middle part, light breezes; latter part, fresh breezes and steady rain.

Feb. 29. Lat. 59° 08′ S.; long. 73° 40′ W. Barometer, 28.50; thermometer attached, 43°; temperature of air, 42°; temperature of water, 43°. Winds: NW., NW., W.NW. Strong gales and squally.

March 1. Lat. 57° 52′ S.; long. 74° 00′ W. Barometer, 28.90; thermometer attached, 43°; temperature of air, 42°; temperature of water, 43°. Winds: W.SW., W., W. First and latter parts, heavy gales, with snow squalls and rain; middle part, more moderate.

March 2. Lat. 56° 30′ S.; long. 75° 00′ W. Barometer, 29.30; thermometer attached, 43°; temperature of air, 42°; temperature of water, 42°. Winds: W.NW., W., W. by N. Strong gales and cloudy, with rain.

March 3. Lat. 56° 35′ S.; long. 75° 54′ W. Barometer, 29.30; thermometer attached, 42°; temperature of air, 42°; temperature of water, 42°. Winds: SW., W.NW., W.NW. Strong gales.

March 4. Lat. 57° 38′ S.; long. 75° 44′ W. Barometer, 29.20; thermometer attached, 42°; temperature of air, 42°; temperature of water, 43°. Winds: W.NW., baffling, W. First and middle parts, strong gales; latter part, more moderate.

March 5. Lat. 58° 40′ S.; long. 77° 05′ W. Barometer, 29.00; thermometer attached, 41°; temperature of air, 42°; temperature of water, 41°. Winds: W. by N., W.NW., W.NW. Strong breezes and thick, smoky weather.

March 6. Lat. 59° 27′ S.; long. 78° 08′ W. Barometer, 29.01; thermometer attached, 41°; temperature of air, 42°; temperature of water, 41°. Winds: NW. by W., W.NW., W.NW. Strong gales, thick and squally weather.

March 7. Lat. 58° 37′ S.; long. 79° 43′ W. Barometer 29.20; thermometer attached, 41°; temperature of air, 42°; temperature of water, 42°. Winds: NW. by W., W.NW., W.NW. First part, strong gales; middle part, light; latter part, strong breezes.

March 8. Lat. 56° 34′ S.; long. 83° 00′ W. Barometer, 29.40; thermometer attached, 42°; temperature of air, 42°; temperature of water, 42°. Winds: NW. by W., N. by W., N.NW. Strong breezes, thick, rainy weather.

March 9. Lat. 54° 36′ S.; long. 84° 30′ W. Barometer, 29.60; thermometer attached, 43°; temperature of air, 42°; temperature of water, 42°. Winds: calm, W.SW., W.SW. First part, calm; latter and middle parts, light breezes and pleasant.

March 10. Lat. 51° 30′ S.; long. 86° 06′ W. Barometer, 29.70; thermometer attached, 43°; temperature of air, 43°; temperature of water, 42°. Winds: W.SW., W.SW., W. Moderate breezes, fine, clear, and pleasant weather.

March 11. Lat. 50° 00′ S.; long. 87° 00′ W. Barometer, 29.70; thermometer attached, 50°; temperature of air, 48°; temperature of water, 46°. Winds: W.NW., E.NE., NE. Light breezes, with foggy weather."

Ship "E. F. Willets," (Chas. C. Lisson,) New York to San Francisco; 27 days from St. Roque.

"March 9. Lat. 50° 56′ S.; long. 65° 45′ W. Barometer, 29.45; thermometer attached, 59°; temperature of air, 56°; temperature of water, 50°. Winds: N.NE., N., SW. First and middle parts, brisk gale; latter part, heavy gales and terrific squalls.

March 10. Lat. 53° 10′ S.; long. 64° 41′ W. Barometer, 29.40; thermometer attached, 59°; temperature of air, 57°; temperature of water, 50°. Winds: S., E.NE., N.NE. First part, fresh gales and squally; middle part, light breezes; latter part, fresh breezes and overcast, thick, hazy weather.

March 11. Lat. 54° 32′ S.; long. 65° 06′ W. Barometer, 29.12; thermometer attached, 57°; temperature of air, 54°; temperature of water, 49°. Winds: N.NE., SW., W.NW. First part, moderate; middle and latter parts, light breezes and cloudy, hazy weather.

March 12. Lat. 56° 16′ S.; long. 66° 02′ W. Barometer, 29.00; thermometer attached, 50°; temperature of air, 46°; temperature of water, 47°. Winds: N.NW., W., SW. by S. First part, light breezes; middle and latter parts, fresh breezes and cloudy.

March 13. Lat. 57° 00′ S.; long. 64° 35′ W. Barometer, 29.21; thermometer attached, 49°; temperature of air, 46°; temperature of water, 48°. Winds: SW., SW. by W., NE. First part, light breezes and cloudy; middle part, more moderate; latter part, light breezes.

March 14. Lat. 56° 42′ S.; long. 67° 00′ W. Barometer, 29.45; thermometer attached, 50°; temperature of air, 47°; temperature of water, 42°. Winds: E.NE., E.NE., E.NE. First part, light breezes and cloudy; middle and latter parts, light breezes, with snow and rain; a horrible sea on.

March 15. Lat. 57° 18′ S.; long. 73° 10′ W. Barometer, 29.90; thermometer attached, 51°; temperature of air, 46°; temperature of water, 45°. Winds: E.NE., E.NE., E. First part, light breezes; middle and latter parts, moderate breezes, with light squalls of rain.

March 16. Lat. 55° 34′ S.; long. 76° 12′ W. Barometer, 30.18; thermometer attached, 46°; temperature of air, 46°; temperature of water, 43°. Winds: E.NE., NE., NE. First part, fine breezes; middle and latter parts, wind baffling, with light squalls of rain.

March 17. Lat. 53° 36′ S.; long. 79° 19′ W. Barometer, 29.68; thermometer attached, 47°; temperature of air, 45°; temperature of water, 42°. Winds: NE., N.NE., N.NW. First part, moderate breezes; middle part, baffling; latter part, heavy gales with constant rain.

March 18. Lat. 52° 59′ S.; long. 80° 23′ W. Barometer, 29.38; thermometer attached, 48°; temperature of air, 48°; temperature of water, 43°. Winds: N.NW., W.NW., NW. First part, heavy gales, with constant rain; middle part, light and baffling; latter part, fresh breezes.

March 19. Lat. 52° 43′ S.; long. 83° 11′ W. Barometer, 29.29; thermometer attached, 53°; temperature of air, 50°; temperature of water, 44°. Wind: NW., NW., NW. First part, brisk gale; middle part, light breezes with thick fogs; latter part, light breezes, foggy and damp weather.

March 20. Lat. 49° 55′ S.; long. 81° 29′ W. Barometer, 29.57; thermometer attached, 50°; temperature of air, 48°; temperature of water, 44°. Winds: NW., W.NW., W.NW. Fresh breezes, with heavy squalls and ugly sea; latter part, heavy gale, the sea making a complete breach over the ship, fore and aft."

Ship Greenfield, (B. A. Follansbee,) New York to San Francisco; 25 days from St. Roque.

"March 9. Lat,. 49° 25′ S.; long. 64° 12′ W. Barometer, 29.52; thermometer attached, 62°. Winds: N. by E., N.NE., SW. First and middle parts, fine breezes; latter part, fresh.

March 10. Lat. 51° 17′ S.; long. 64° 18′ W. Barometer, 29.35; thermometer attached, 65°. Winds: SW., W.SW., N. Fresh gales and clear weather.

March 11. Lat. 53° 18′ S.; long. 64° 53′ W. Barometer, 29.25; thermometer attached, 65°. Winds: N., N., W.NW. Fine breezes and pleasant.

March 12. Lat. 54° 30′ S.; long. 64° 40′ W. Barometer, 29.20. Winds: N.NW., W., W.SW. First part, light breezes and pleasant; middle and latter parts, fresh gales with heavy squalls.

March 13. Lat. 55° 51′ S.; long. 64° 20′ W. Barometer, 29.45. Winds: SW., SW., E.SE. First part, strong gales with squalls of hail and sleet; middle, more moderate; latter, light breezes and pleasant weather.

March 14. Lat. 55° 55′ S.; long. 66° 40′ W. Barometer, 29.50. Winds: S., S., SE. First part, light breezes; middle and latter parts, wind baffling.

March 15. Lat. 56° 45′ S.; long. 70° 00′ W. Barometer, 30.05. Winds: SE., E.NE., E.NE. First part, light breezes and cloudy weather; middle and latter parts, fine breezes and cloudy.

March 16. Lat. 56° 30′ S.; long. 75° 16′ W. Barometer, 30.27. Winds: E.NE., E.NE., NE. Fine breezes throughout.

March 17. Lat. 55° 30′ S.; long. 80° 46′ W. Barometer, 29.60. Winds: N.NE., N.NE., N. First and middle parts, fine breezes; latter part, fresh breezes.

March 18. Lat, 54° 45′ S.; long. 84° 50′ W. Barometer, 29.25; thermometer attached, 60°. Winds: N., NW., NW. First part, fresh breezes; middle and latter parts, moderate breezes.

March 19. Lat. 54° 00′ S.; long. 84° 52′ W. Barometer, 29.10. Winds: N.NW., NW., W.NW. First and middle parts, moderate and cloudy; latter part, fresh gales with rain squalls.

March 20. Lat. 50° 10′ S.; long. 84° 40′ W. Barometer, 29.65. Winds: W., W., W.SW. Fresh gales and squally."

Ship "Sultan," (F. A. Wyman,) New York to San Francisco; 28 days from St. Roque.

"March 13. Lat. 49° 37′ S.; long. 63° 20′ W. Barometer, 29.70; temperature of air, 54°; temperature of water, 52°. Winds: SW., SW., W.SW. First part, heavy gale; middle part, moderate; latter, light breezes.

March 14. Lat. 51° 18′ S.; long. 64° 46′ W. Barometer, 29.75; temperature of air, 56°; temperature of water, 50°. Winds: W., SW. by W., S. First part, moderate; middle, strong; latter part, light breezes and fine weather.

March 15. Lat. 51° 43′ S.; long. 66° 00′ W. Barometer, 29.90; temperature of air, 50 °; temperature of water, 49°. Winds: S.SW., S., S.SE. Light breezes and fine weather.

March 16. Lat 52° 30′ S.; long. 65° 40′ W. Barometer, 29.95.; temperature of air, 44°; temperature of water, 49°. Wind: S.SE., S.SE., S.SE. Light breezes and cloudy.

March 17. Lat. 53° 10′ S.; long. 65° 00′ W. Barometer, 29.85; temperature of air, 44°; emperature of water, 48°. Winds: SW., SW., S.SW.; light airs and thick weather.

March 18. Lat. 54° 13′ S.; long. 64° 07′ W. Barometer, 29.50; temperature of air, 50°; temperature of water, 48°. Winds: variable; variable, variable and calm; light variable breezes and calm.

March 19. Lat. 55° 30′ S.; long. 64° 40′ W. Barometer, 29.40; temperature of air, 43°; temperature of water, 45°. Winds: W., calm, N.; light variable breezes and calms. First part, light wind, thick weather; middle, strong breezes and squally; latter part, moderate and cloudy.

March 20. Lat. 56° 40′ S.; long. 65° 20′ W. Barometer, 29.30; temperature of air, 44°; temperature of water, 42°. Winds: W. by S., W., W.NW. High wind, thick weather; middle part, strong breezes and squally; latter part, moderate.

March 21. Lat. 57° 36′ S.; long. 66° 28′ W. Barometer, 28.90. Winds: W.NW., W., S.SW. First part, strong breezes and cloudy; middle, alternate squalls and light airs; latter, wind fickle and inconstant.

March 22. Lat. 56° 55′ S.; long. 67° 56′ W. Barometer, 29.50; temperature of air, 39°; temperature of water, 41°. Winds: S.SW., S.SW., S. First and middle parts, smart wind and squalls; latter part, a gale.

March 23. Lat. 57° 34′ S.; long. 69° 34′ W. Barometer, 29.60; temperature of air, 38°; temperature of water, 42°. Winds: W.SW., W., W. First part, strong gales; middle and latter parts, more moderate, with frequent squalls with hail and snow.

March 24. Lat. 57° 13′ S.; long. 70° 35′ W. Barometer, 29.68; temperature of air, 42°; temperature of water, 44°. Winds: S. by W., W.SW., W. First part, smart wind with occasional squalls; middle and latter parts, more moderate, with an occasional squall of rain, snow and hail.

March 25. Lat. 57° 55′ S.; long. 72° 25′ W. Barometer, 30.00; temperature of air, 42°; temperature of water, 43°. Winds: W., W. by S., W. by N. First and middle parts, moderate breezes; latter part, light breezes with squalls of rain and hail.

March 26. Lat. 56° 40′ S.; long. 74° 15′ W. Barometer, 30.30; temperature of air, 43°; temperature of water, 46°. Winds: W.SW., W.SW., W.SW. Fresh breezes and squally weather.

March 27. Lat. 56° 08′ S.; long. 76° 50′ W. Barometer, 30.20; temperature of air, 43°; temperature of water, 46°. Winds: W., SW. by W., S. Strong breezes, and rain throughout.

March 28. Lat. 53° 48′ S.; long. 79° 15′ W. Barometer, 30.25; temperature of air, 44°; temperature of water, 47°. Winds: S., E.NE., N.NE. Fresh breezes throughout, very bad dark clouds fully charged with rain, frequent squalls.

March 29. Lat. 50° 10′ S.; long. 80° 30′ W. Barometer, 30.15; temperature of air, 48°; temperature of water, 47°. Winds: N.NE., N., N.NW. First and middle parts, strong breezes and gloomy; latter part, fine weather.

March 30. Lat. 50° 50′ S.; long. 81° 45′ W. Barometer, 29.70; temperature of air, 49°; temperature of water, 48°. Winds: NW., W.NW., W.NW. First and middle parts, moderate breezes and cloudy; latter part, fresh winds, and a dense fog with a drizzling rain.

March 31. Lat. 49° 34′ S.; long. 83° 16′ W. Barometer, 29.70; temperature of air, 48°; temperature of water, 48°. Winds: N.NW., N.NW., W. Fresh breezes, and thick fog throughout."

Ship "Derby," (Samuel Hutchinson,) Boston to San Francisco; 28 days from St. Roque.

"March 16. Lat. 50° 13′ S.; long. 65° 28′ W. Barometer, 30.00; thermometer attached, 47°; temperature of air, 48°; temperature of water, 52°. Winds: S.SE., SE. to S.SE., SE. to S.SE. Light breezes, with light squalls of hail and rain.

March 17. Lat. 50° 31′ S.; long. 65° 58′ W. Barometer, 29.95; thermometer attached, 49°; temperature of air, 48°; temperature of water, 52°. Winds: S.SE., S.SE., calm, light breezes, and cloudy; latter part, calm.

March 18. Lat. 53° 07′ S.; long. 65° 43′ W. Barometer, 29.55; thermometer attached, 53°; temperature of air, 49°; temperature of water, 49°. Winds: SW. to NW., NW. to W.NW., W. to W.SW. Moderate breezes and fine weather. Sounded in 62 fathoms. Black and yellow sand.

March 19. Lat. 54° 09′ S.; long. 65° 00′ W. Barometer, 29.46; thermometer attached, 48°; temperature of air, 48°; temperature of water, 48°. Winds: W.SW. to NW., calm,

E.SE. to SE. First part, light breezes; middle, calm; latter part, light breezes and drizzling rain. Sounded in 71 fathoms, shells and yellow earth.

March 20. Lat. 54° 06′ S.; long. 63° 06′ W. Barometer, 29.58; thermometer attached, 46°; temperature of air, 43°; temperature of water, 45°. Winds: S.SE., S.SE., calm and S. to SW. First part, blowing hard; middle part, more moderate, calm, and light breezes, at times hard squalls.

March 21. Lat. 56° 08′ S.; long. 64° 39′ W. Barometer, 29.46; thermometer attached, 47°; temperature of air, 45°; temperature of water, 43°. Winds: W.SW., W. to W.NW., W.NW. to NW. Alternate fresh and light breezes and cloudy.

March 22. Lat. 57° 32′ S.; long. 66° 02′ W. Barometer, 29.06; thermometer attached, 42°; temperature of air, 39°; temperature of water, 42°. Winds: NW. by W. to N., W., SW. First part, light unsteady breezes and cloudy; middle, moderate and rainy; latter part, blowing heavy.

March 23. Lat. 57° 12′ S.; long. 67° 14′ W. Barometer, 29.55; thermometer attached, 42°; temperature of air, 41°; temperature of water, 43°. Winds: SW. to S., S., S. to SW. First part, fresh gales and sleet; middle, more moderate; latter, light airs.

March 24. Lat. 57° 59′ S.; long. 68° 13′ W. Barometer, 29.59; thermometer attached, 49°; temperature of air, 39°; temperature of water, 43°. Winds: SW., W., S. to SW. by S. First part, fresh squalls of hail, snow, and sleet; middle and latter parts, lighter squalls and less frequent.

March 25. Lat. 57° 53′ S.; long. 69° 18′ W. Barometer, 29.76; thermometer attached, 50°; temperature of air, 41°; temperature of water, 43°. Winds: S. by W. to W. by S., S.SW. to W.SW., W.SW. to W. First and latter parts, light airs, with hail squalls; middle part, moderate, with fewer squalls.

March 26. Lat. 58° 04′ S.; long. 70° 33′ W. Barometer, 29.93; thermometer attached, 52°; temperature of air, 42°; temperature of water, 41°. Winds: W.SW. to W., baffling, SW. by W. to W., SW. by W., W. First part, baffling breezes; middle and latter parts, light breezes and cloudy misty weather.

March 27. Lat. 58° 29′ S.; long. 72° 00′ W. Barometer, 30.03; thermometer attached, 54°; temperature of air, 42°; temperature of water, 43°. Winds: SW. to W.SW., W.SW., W.SW. First part, light baffling breezes and cloudy; middle and latter parts, light breezes and cloudy misty weather.

March 28. Lat. 57° 56′ S.; long. 73° 16′ W. Barometer, 29.94; thermometer attached, 54°; temperature of air, 41°; temperature of water, 43°. Winds: W. by S., W. by S., S. by W. to SW. First and middle parts, fresh breezes, thick, squally, and misty; latter part, fresh hail squalls.

March 29. Lat. 56° 15′ S.; long. 76° 45′ W. Barometer, 30.25; thermometer attached, 54°; temperature of air, 42°; temperature of water, 44°. Winds: SW. to S., S. to S.SE., S. First part, hard squalls; middle, a severe gale commenced very suddenly and moderated gradually; latter, light airs.

March 30. Lat. 55° 24′ S.; long. 80° 19′ W. Barometer, 30.02: thermometer attached, 54°; temperature of air, 44°; temperature of water, 44°. Winds: calm, W.NW., NW. by N. First part, calm; middle, moderate breezes; latter, fresh breezes, with mist and thin fogs.

March 31. Lat. 55° 28′ S.; long. 83° 09′ W. Barometer, 29.54; thermometer attached, 56°; temperature of air, 47°; temperature of water, 45°. Winds: NW. by N., NW. to NW.

by N., W. to NW. First part, fresh winds, misty; middle, fresh gales; latter part, squally weather.

April 1. Lat. 54° 46′ S.; long. 82° 51′ W. Barometer, 29.43; thermometer attached, 57°; temperature of air, 42°; temperature of water, 44°. Winds: NW. by W., W., W. to SW. by W., baffling. First part, fresh gales; middle part, a severe gale; latter part, wind light and bafflling, hail squalls.

April 2. Lat. 53° 03′ S.; long. 82° 20′ W. Barometer, 29.25; thermometer attached, 52°; temperature of air, 44°; temperature of water, 46°. Winds: W., W. by N., SW. to S.SW. First part, moderate; middle part, blowing hard; latter, fresh squalls.

April 3. Lat. 50° 21′ S.; long. 85° 15′ W. Barometer, 29.70; thermometer attached, 53°; temperature of air, 47°; temperature of water, 48°. Winds: SW. by S., SW., S.SW., S. First part, hard hail squalls, moderate between; middle part, fresh gales; latter part, fresh gales, squalls lighter."

Cape Horn Crossings—April.

Name of vessel.	From parallel of St. Roque to 50° S.	Longitude of crossing parallels east of Cape Horn.			Latitude of crossing meridians south of Cape Horn.			Longitude of crossing parallels west of Cape Horn.			From 50° S. in the Atlantic to 50° S. in the Pacific.
		50° S.	53° S.	56° S.	67° W.	71° W.	75° W.	55° S.	53° S.	50° S.	
	Days.	*Long. W.*	*Long. W.*	*Long. W.*	*Lat. S.*	*Lat. S.*	*Lat. S.*	*Long. W.*	*Long. W.*	*Long. W.*	*Days.*
Simoon	29	65°	65°	68°	56°	56°	56°	76°	79°	85°	14
Sea Serpent	21	65	66	66	56	57	57	77	79	81	18
Stag Hound	30	65	64	78	55	55	56	79	80	78	12
Golden Racer	21	55	57	64	57	57	55	75	82	86	19
Paragon	36	62	63	67	56	56	57	81	82	79	16
David Baxter	33	61	63	63	57	57	57	80	80	80	12
Herculean	39	65	64	78	.....	.....	.....	.....	.....	.....	15
Sword Fish	19	57	60	64	58	58	58	83	86	87	17
Astrea	38	57	57	59	57	57	57	81	82	83	21
Governor Morton	30	62	63	67	56	56	55	79	81	84	11
Burlington	39	62	65	63	57	58	58	80	80	80	15
Francisco	35	63	65	65	56	56	57	77	80	82	28
Cornelia L. Bevan	36	60	65	66	57	56	56	79	81	78	16
Polynesian	30	64	66	65	57	57	55	78	80	82	15
Cynthia*	35	65	66	68	57	58	56	75	80	84	17
Boston	30	65	65	70	56	56	56	77	79	80	32
Goddess	25	64	64	63	57	57	57	78	81	83	18
Surprise	22	62	64	63	56	57	56	76	80	82	17
Cathedral	27	56	60	66	57	55	57	76	77	80	25
J. W. White	27	64	66	64	57	57	57	81	78	77	25
Sweepstakes	21	64	64	64	57	58	57	78	80	81	15
Tinqua	24	64	65	67	57	58	58	85	90	94	22
White Swallow	26	61	64	65	56	58	56	78	79	81	21
S. S. Bishop	28	64	66	67	56	56	56	76	75	81	14
Samuel Russel	26	63	65	66	56	56	56	79	81	81	13
John Gilpin	28	62	63	70	56	57	56	76	82	85	12
Atalanta	25	65	63	63	56	56	56	80	82	82	10
Lotus	32	65	65	65	57	58	57	80	80	83	20
Means	29.0	62.4	63.7	66.2	56.5	56.8	56.1	78.9	80.6	82.3	17.5

* Last in the 7th edition. The thirteen others added since.

Ship "Cathedral," (Wm. H. Howard,) Boston to Callao; 27 days from St. Roque.

"March 22. Lat. 50° 00′ S.; long. 56° 24′ W. Barometer, 29.60; temperature of air, 47°; water, 47°. Winds: NE., N., NW. Moderate breezes and hazy weather.

March 23. Lat. 51° 35′ S.; long. 57° 20′ W. Barometer, 29.50; temperature of air, 42°; water, 48°. Winds: NW., W., SW. Fresh breezes and hazy, squally, with hail and rain.

March 24. Lat. 52° 02′ S.; long. 57° 20′ W. Barometer, 29.53; thermometer attached, 44°; temperature of air, 42°; water, 48°. Winds: W.SW., NW., NE. Light breezes, clear and pleasant weather throughout.

March 25. Lat. 52° 30′ S.; long. 60° 05′ W. Barometer, 30.00; thermometer attached, 49°; temperature of air, 47°; water, 48°. Winds: NE., E., SE. to S.SW. Moderate breezes and variable throughout.

March 26. Lat. 53° 03′ S.; long. 60° 00′ W. Barometer, 30.00; temperature of air, 43°; water, 48°. Winds: SW., SW., SW. Light airs and smooth sea throughout these 24 hours.

March 27. Lat. 54° 45′ S.; long. 58° 48′ W. Barometer, 30.02; temperature of air, 43°; water, 46°. Winds: SW., S.SW., S.SW. Moderate breezes and fine weather.

March 28. Lat. 55° 20′ S.; long. 59° 30′ W. Barometer, 30.02; temperature of air, 42°; water, 44°. Winds: S.SW., SW. by S., W.SW. First part, moderate: middle and latter, increasing.

March 29. Lat. 55° 10′ S.; long. 59° 25′ W. Barometer, 29.88; temperature of air, 35°; water, 40°. Winds: W., W.SW., SW. Strong breezes and heavy squalls, with snow and hail

March 30. Lat. 55° 17′ S.; long. 61° 45′ W. Barometer, 29.88; temperature of air, 35°; water, 40°. Winds: SW., SW., W.SW. Moderate gales; at times heavy squalls, with snow and hail.

March 31. Lat. 55° 08′ S.; long. 62° 00′ W. Barometer, 30.00; temperature of air, 42°; water, 40°. First part, moderate; middle and latter parts, light breezes; clear and pleasant weather.

April 1. Lat. 56° 30′ S.; long. 66° 40′ W. Barometer, 29.90; temperature of air, 44°; water, 44°. Winds: NW., NW., NW. Fresh breezes; at times heavy squalls, with snow and hail.

April 2. Lat. 58° 26′ S.; long. 68° 09′ W. Barometer, 29.00; temperature of air, 44°; water, 44°. Winds: W.NW., W.NW., W.NW. First and middle parts, fresh breezes and squally; latter part, moderate.

April 3. Lat. 58° 00′ S.; long. 70° 25′ W. Barometer, 29.10; temperature of air, 42°; water, 44°. Winds: W., W.SW., SW. Fresh breezes, with squalls of hail and snow.

April 4. Lat. 56° 05′ S.; long. 72° 00′ W. Barometer, 29.10; temperature of air, 39°; water, 46°. Winds: SW., SW., SW. Moderate breezes and hard squalls, with rain and hail.

April 5. Lat. 55° 50′ S.; long. 71° 00′ W. Barometer, 29.00; temperature of air, 39°; water, 46°. Winds: SW., SW., SW. Hard squalls, with hail and rain.

April 6. Lat. 55° 40′ S.; long. 71° 00′ W. Barometer, 29.00; temperature of air 44°; water, 46°. Winds: S.SW., S.SW., S. Strong gales, with tremendous squalls with hail and snow.

April 7. Lat. 55° 49′ S.; long. 71° 00′ W. Barometer, 29.00; temperature of air, 44°; water, 46°. Winds: SW., SW., SW. Fresh breezes and squally.

April 8. Lat. 56° 17′ S.; long. 71° 25′ W. Barometer, 28.90; temperature of air, 44°; water, 46°. Winds: S.SW., SW., SW. Hard squalls and strong gales; hail, rain, and snow.

April 9. Lat. 56° 43′ S.; long. 70° 09′ W. Barometer, 28.90; temperature of air, 44°; water 46°. Winds: SW., S.SW., S.SW. Hard gales and terrible squalls.

April 10. Lat. 55° 46′ S.; long. 71° 30′ W. Barometer, 29.10; temperature of air, 47°; water, 46°. Winds: S.SW., S.SW., S.SW. Wind moderating; squalls less violent.

April 11. Lat. 55° 40′ S.; long. 71° 10′ W. Barometer, 29.50; temperature of air, 47°; water, 46°. Winds: S.SW., SW., SW. Light airs throughout these 24 hours.

April 12. Lat. 56° 37′ S.; long. 75° 43′ W. Barometer, 29.50; temperature of air, 52°; water, 46°. Winds: SW., N., N. First part, light airs; middle and latter parts, fine breezes.

April 13. Lat. 56° 45′ S.; long. 78° 40′ W. Barometer, 29.41; temperature of air, 40°; water, 40°. Winds: N., N., W. First and middle parts, fresh breezes; latter part, moderate.

April 14. Lat. 35° 07′ S.; long. 76° 35′ W. Barometer, 29.00; temperature of air, 40°; water, 40°. Winds: W., W., W. First and middle parts, fresh breezes and rainy; latter part, fresh gales.

April 15. Lat. 51° 12′ S.; long. 78° 53′ W. Barometer, 29.15; temperature of air, 32°; water, 40°. Winds: SW., S.SW., S. First part, hard gales and heavy squalls; latter part, moderating.

April 16. Lat. 47° 54′ S.; long. 81° 00′ W. Barometer, 29.25; temperature of air, 45°; water, 44°. Winds: S., SW., W.SW. First part, hard gales and heavy squalls, with hail and snow; latter part, wind moderating."

Ship "White Swallow," (Nathaniel Brown, jr.,) New York to San Francisco; 26 days from St. Roque.

"April 10. Lat. 50° 35′ S.; long. 62° 34′ W. Barometer, 29.71. Winds: SW., S.SW., W.SW. First part, strong winds; middle and latter parts, moderate.

April 11. Lat. 50° 54′ S.; long. 62° 50′ W. Barometer, 29.94; thermometer attached, 74°. Winds: SW. and baffling; do., do., light baffling winds and strong squalls.

April 12. Lat. 51° 50′ S.; long. 62° 00′ W. Barometer, 30.10; thermometer attached, 72°; temperature of air, 46°; temperature of water, 45°. Winds: baffling and S.SW., do., calm. First and middle parts, light breezes and baffling; latter, calm.

April 13. Lat. 53° 16′ S.; long. 63° 55′ W. Barometer, 29.86; thermometer attached, 69°; temperature of air, 42°; temperature of water, 42°. Winds: calm, W. by S., N.NW. First part, calm; middle and latter parts, light winds, thick and foggy.

April 14. Lat. 55° 00′ S.; long. 62° 38′ W. Barometer, 29.21; thermometer attached, 71°; temperature of air, 43°. Winds: NW. by N., NW. by W., do. Fresh breezes and foggy throughout; strong tide rips.

April 15. Lat. 55° 58′ S.; long. 67° 00′ W. Barometer, 28.66; thermometer attached, 64°. Winds: N., NW., S. by E. First part, strong breezes and pleasant; middle, moderating; latter, strong gale.

April 16. Lat. 56° 00′ S.; long. 66° 30′ W. Barometer, 29.00; thermometer attached, 58°. Winds: S. by E., S.SW., S. Hard gales, with heavy sea and thick weather.

April 17. Lat. 56° 10′ S.; long. 65° 20′ W. Barometer, 29.03; thermometer attached, 70°; temperature of air, 50°. Winds: S.SW., calm, W.SW. First part, moderate gales, with snow squalls; middle part, calm and hazy; latter, moderate breezes.

April 18. Lat. 57° 35′ S.; long. 65° 52′ W. Barometer, 28.86; thermometer attached, 72°; temperature of air, 40°. Winds: SW. by W., do., W.NW. Moderate breezes; thick, rainy weather.

April 19. Lat. 57° 00′ S.; long. 66° 32′ W. Barometer, 28.90; thermometer attached,

72°; temperature of air, 35°; temperature of water, 40°. First part, strong breezes, rain and sleet; middle, moderate gale; latter part, light winds, with snow.

April 20. Lat. 56° 56′ S.; long. 66° 20′ W. Barometer, 28.91; thermometer attached, 70°; temperature of air, 38°; temperature of water, 41°. Variable and calm; do., do. Throughout almost constant rain, wind, calm, and variable; sometimes a strong gale, then calm and moderate.

April 21. Lat. 56° 20′ S.; long. 67° 58′ W. Barometer, 29.45; thermometer attached, 60°; temperature of air, 33°. Winds: S., SW. by S.; do. First and middle parts, brisk breezes and strong squalls, with hail; latter part, strong gales and hard squalls, with heavy hail and snow.

April 22. Lat. 57° 12′ S.; long. 67° 57′ W. Barometer, 29.25; thermometer attached, 61°. Winds: SW., SW., calm, and NW. by W. First part, strong gales and hard squalls; middle part, light airs; latter part, calms and light breezes, with rain, fog, and mist.

April 23. Lat. 58° 00′ S.; long. 71° 00′ W. Barometer, 28.53; thermometer attached, 59°. Winds: W.NW., do., W. and SW. Moderate breezes; thick, misty, and rainy weather.

April 24. Lat. 57° 40′ S.; long. 72° 05′ W. Barometer, 28.59; thermometer attached, 65°. Winds: S. by W., ditto, calm, and NE. First part, hard gale, with violent squalls and rain; middle, moderating; latter part, baffling airs and calm.

April 25. Lat. 56° 25′ S.; long. 74° 51′ W. Barometer, 29.42; thermometer attached, 64°. Winds: E., S., W.SW. First part, moderate; middle, strong and puffy; latter, squalls, with snow.

April 26. Lat. 56° 23′ S.; long. 77° 21′ W. Barometer, 28.63; thermometer attached, 65°. Winds: W. by S., W.NW., NW. Strong breezes with heavy squalls of wind and rain.

April 27. Lat. 56° 12′ S.; long. 77° 26′ W. Barometer, 29.57; thermometer attached, 58°. Winds: NW. to SW., SW. to S., S. Strong breezes, with heavy gusts; middle and latter parts, a furious gale.

April 28. Lat. 55° 32′ S.; long. 78° 26′ W. Barometer, 29.75; thermometer attached, 70°. Winds: S., SW., NW. by N. First part, hard gales and heavy squalls; middle, moderating, thick weather; latter, moderate.

April 29. Lat. 53° 56′ S.; long. 79° 16′ W. Barometer. 29.91; thermometer attached, 80°. Winds: N., S.SW., SW. by S. First and middle parts, moderate breezes with rain; latter part, light breezes and almost calm. Strong NE. current since last observation.

April 30. Lat. 51° 27′ S.; long. 79° 35′ W. Barometer, 30.29; thermometer attached, 78°. Winds: W.NW., W. by S., S.SW. First part, moderate breezes; middle part, breeze increasing and squally; latter part, fresh breezes.

May 1. Lat. 50° 07′ S.; long. 80° 44′. Barometer, 30.30; thermometer attached, 77°. Winds: W.SW., baffling, and W., NW. by N. First part, moderate breezes and fine weather; middle part, light baffling airs; latter, moderate and increasing breezes, cloudy, foggy weather."

Ship "Goddess," (Z. E. Crowell,) Boston to San Francisco, 24 days from St. Roque.

"April 13. Lat. 47° 31′ S.; long. 64° 34′ W. Barometer, 29.50; thermometer attached, 65°; temperature of air, 52°; temperature of water, 51°. Winds: N.NE., N. by E., N. by E. First part, light breezes; middle, smart breezes; latter, strong breezes, cloudy, with rain.

April 14. Lat. 50° 57′ S.; long. 64° 56′ W. Barometer, 29.10; thermometer attached, 63°; temperature of air, 51°; temperature of water, 48°. Winds: N.NE., NE. by N., N.NW.

First and middle parts, strong breezes, rainy and foggy weather; latter part, light breezes and thick.

April 15. Lat. 52° 16′ S.; long. 63° 33′ W. Barometer, 28.32; thermometer attached, 61°; temperature of air, 46°; temperature of water, 46°. Winds: N.NW., variable, SW. First part, light breezes with thick weather; middle, light winds and variable; latter part, moderate and rainy.

April 16. Lat. 52° 21′ S.; long. 64° 58′ W. Barometer, 28.80; thermometer attached, 61°; temperature of air, 43°; temperature of water, 46°. Winds: S. by E., S. by E., SW. by S. First and middle parts, strong gales and rainy; latter, strong breezes and pleasant.

April 17. Lat. 53° 19′ S.; long. 63° 44′ W. Barometer, 28.80; thermometer attached, 55°; temperature of air, 43°; temperature of water, 45°. Winds: S.SW., calm, variable and calm. First part, strong breezes, with squalls of snow and hail; middle and latter parts, calm and variable airs.

April 18. Lat. 53° 55′ S.; long. 64° 01′ W. Barometer, 28.80; thermometer attached, 59°; temperature of air, 46°; temperature of water, 44°. Winds: SW. by S., S.SW., SW. by W. First part, light breezes; middle, strong breezes with squalls of hail and rain; latter, moderate breezes and cloudy weather.

April 19. Lat. 55° 28′ S.; long. 63° 12′ W. Barometer, 28.67; thermometer attached, 55°; temperature of air, 41°; temperature of water, 42°. Winds: W.SW., W.SW., W.SW. First and latter parts, strong breezes, squally, with rain; middle part, moderate gales, with squalls of rain.

April 20. Lat. 56° 23′ S.; long. 63° 03′ W. Barometer, 28.62; thermometer attached, 60°; temperature of air, 42°; temperature of water, 42°. Winds: W.SW., W. by S., SW. by W. First part, strong breezes and squally, with rain; middle part, more moderate; latter part, light and variable.

April 21. Lat. 55° 47′ S.; long. 65° 33′ W. Barometer, 29.05; thermometer attached, 50°; temperature of air, 39°; temperature of water, 42°. Winds: SE., S.SW., S.SW. First and middle parts, moderate breezes; latter part, strong breezes, with squalls of wind and rain.

April 22. Lat. 55° 54′ S.; long. 65° 50′ W. Barometer, 29.10; thermometer attached, 61°; temperature of air, 41°; temperature of water, 42°. Winds: S.SW., S.SW., S.SW. to W. First and middle parts, moderate gales, heavy squalls of hail and snow; latter part, moderate breezes and cloudy.

April 23. Lat. 57° 15′ S.; long. 67° 56′ W. Barometer, 28.32; thermometer attached, 60°; temperature of air, 43°; temperature of water, 42°. Winds: W.NW., W.NW. to W.SW., W. First part, moderate breezes; middle, strong breezes, with fine rain; latter, heavy breezes and violent squalls, rainy weather.

April 24. Lat. 56° 47′ S.; long. 48° 07′ W. Barometer, 28.40; thermometer attached, 61°; temperature of air, 42°; temperature of water, 44°. Winds: S.SW., S.SW., calm. First part, strong breezes and rainy; middle, heavy gales; latter part, calm, with a large sea.

April 25. Lat. 56° 53′ S.; long. 70° 24′ W. Barometer, 29.02; thermometer attached, 60°; temperature of air, 40°; temperature of water, 41°. Winds: NE., E.NE., calm and S.SW. First part, moderate; middle, moderate, with hail and snow; latter, calm and strong breezes, hail and snow.

April 26. Lat. 57° 12′ S.; long. 72° 51′ W. Barometer, 28.75; thermometer attached,

59°; temperature of air, 41°; temperature of water, 43°. Winds: SW. by W., W., N.NW. Fresh breezes and squally, with hail, snow, and rain.

April 27. Lat. 57° 05′ S.; long. 75° 09′ W. Barometer, 29.15; thermometer attached, 58°; temperature of air, 41°; temperature of water, 42°. Winds: N.NW., W.NW., S.SE. First part, strong gales, with squalls of rain; middle, light; latter, fresh.

April 28. Lat. 55° 52′ S.; long. 78° 33′ W. Barometer, 29.40; thermometer attached, 61°; temperature of air, 41°; temperature of water, 42°. Winds: S. by W., S.SW. to W., NW. First part, fresh and squally; middle and latter parts, moderate breezes.

April 29. Lat. 54° 37′ S.; long. 79° 34′ W. Barometer, 29.55; thermometer attached, 63°; temperature of air, 42°; temperature of water, 43°. Winds: N.NE., SE., NW. First and middle parts, light breezes and rainy; latter part, moderate breezes.

April 30. Lat. 54° 03′ S.; long. 81° 40′ W. Barometer, 29.85; thermometer attached, 61°; temperature of air, 44°; temperature of water, 45°. Winds: W. by N., NW. by W., SW. by W. First and latter parts, smart breezes; middle, fresh breezes and squally.

May 1. Lat. 51° 15′ S.; long. 81° 32′ W. Barometer, 29.95; thermometer attached, 63°; temperature of air, 45°; temperature of water, 45°. Winds: W. by SW., NW. by W. First and middle, fresh breezes; latter, moderate breezes.

May 2. Lat. 50° 55′ S.; long. 83° 32′ W. Barometer, 29.57; thermometer attached, 63°; temperature of air, 46°; temperature of water, 45°. Winds: N.NW., W.NW., W. to S. First and middle parts, fresh breezes, thick, rainy weather; latter part, moderate breezes and foggy.

May 3. Lat. 48° 53′ S.; long. 86° 31′ W. Barometer, 29.70; thermometer attached, 63°; temperature of air, 48°; temperature of water, 48°. Winds: E.SE., E.NE., N. by W. First and latter parts, moderate breezes and foggy weather; middle part, fresh breezes and foggy, with rain."

Ship "Atalanta," (F. M. Montell,) New York to San Francisco; 25 days from St. Roque.

"April 13. Lat. 50° 47′ S.; long. 65° 00′ W. Barometer, 29.60; temperature of air, 48°; temperature of water, 48°. Winds: SW. by S., SW., NW. Strong breezes and cloudy.

April 14. Lat. 54° 06′ S.; long. 63° 21′ W. Barometer, 29.28; temperature of air, 47°; water, 47°. Winds: N., SW., SW. by S. Strong breezes and clear weather.

April 15. Lat. 55° 10′ S.; long. 63° 22′ W. Barometer, 29.40; temperature of air, 44°; water, 45°. Winds: SW., S.SW., S.SW. Strong breezes, with frequent squalls of rain and hail.

April 16. Lat. 56° 04′ S.; long. 63° 30′ W. Barometer, 29.40; temperature of air, 43°; temperature of water, 43°. Winds: SW., S.SW., SW. First part, strong breezes, with rain; middle and latter parts, more moderate.

April 17. Lat. 56° 40′ S.; long. 68° 22′ W. Barometer, 29.48; temperature of air, 38°; temperature of water, 37°. Winds: S., NE., N. Gentle breezes and cloudy.

April 18. Lat. 56° 18′ S.; long. 72° 00′ W. Barometer, 29.34; temperature of air, 46°; temperature of water, 45°. Winds: N.NW., baffling, N. Light breezes, with rain.

April 19. Lat. 56° 30′ S.; long. 74° 50′ W. Barometer, 28.87, temperature of air, 44°; water, 44°. Winds: NW., NW., NW. Moderate breezes and cloudy, with light squalls of wind and rain.

April 20. Lat. 56° 31′ S.; long. 76° 01′ W. Barometer, 28.80; temperature of air, 43°;

temperature of water, 43°. Winds: W.NW., W., W.NW. Moderate breezes, with light rain squalls.

April 21. Lat. 54° 58′ S.; long. 80° 42′ W. Barometer, 28.90; temperature of air, 42°; temperature of water, 44°. Winds: NE., SE., SW. Moderate breezes and cloudy; have not experienced any current as yet.

April 22. Lat. 52° 36′ S.; long. 82° 07′ W. Barometer, 29.40; temperature of air, 40°; temperature of water, 44°. Winds: S., SE., S.SE. Moderate breezes and cloudy.

April 23. Lat. 49° 29′ S.; long. 82° 07′ W. Barometer, 29.55; temperature of air, 42°; temperature of water, 45°. Winds: SW., W.NW., W. by N. Strong breezes and squally weather."

Ship "J. W. White," (R. Snow,) New York to Valparaiso; 26 days from St. Roque.

"April 17. Lat. 49° 11′ S.; long. 63° 20′ W. Barometer, 29.60; thermometer attached, 58°; temperature of air, 49°; temperature of water, 48°. Winds: N., SW., E.SE. Strong breezes, cloudy and rainy, and squally weather.

April 18. Lat. 51° 25′ S.; long. 65° 58′ W. Barometer, 29.20; thermometer attached, 62°; temperature of air, 48°; temperature of water, 49°. Winds: N.NE., N.NE., N. First part, baffling winds, light rain in squalls; middle, stiff breezes; latter part, heavy gale.

April 19. Lat. 52° 59′ S.; long. 66° 30′ W. Barometer, 29.20; thermometer attached, 60°; temperature of air, 48°; temperature of water, 46°. Winds: NW., SW., SW. and calm. First part, heavy gale and foggy; middle, light breezes; latter part, light airs and calms.

April 20. Lat. 54° 39′ S.; long. 65° 00′ W. Barometer, 29.00; thermometer attached, 70°; temperature of air, 44°; temperature of water, 44°. Winds: NW., W.NW., W.NW. Moderate breezes, and thick foggy weather.

April 21. Lat. 55° 39′ S.; long. 65° 00′ W. Barometer, 29.10; thermometer attached, 74°; temperature of air, 44°; temperature of water, 41°. First part, fine breezes, smoky and hazy weather; middle and latter parts, heavy gales.

April 22. Lat. 55° 42′ S.; long. 63° 51′ W. Barometer, 29.40; thermometer attached, 68°; temperature of air, 48°; temperature of water, 48°. Winds: SW., SW., calm. First part, heavy gale with squalls of snow; middle, moderate; latter, calm.

April 23. Lat. 57° 00′ S.; long. 64° 40′ W. Barometer, 29.30; thermometer attached, 66°; temperature of air, 46°; temperature of water, 41°. Winds: W.SW., W. by S., W. First part, light breezes and squally; middle and latter parts, heavy gales, with squalls of hail and snow.

April 24. Lat. 57° 30′ S.; long. 66° 20′ W. Barometer, 29.20; thermometer attached, 68°; temperature of air, 44°; temperature of water, 40°. Winds: W., W., W.NW. First part, squally and dirty weather; middle and latter parts, strong gales, with squalls of hail and snow.

April 25. Lat. 57° 40′ S.; long. 68° 35′ W. Barometer, 28.60; thermometer attached, 66°; temperature of air, 42°; temperature of water, 44°. Winds: W.NW., NW., N. to W.NW. First part, strong breezes; middle and latter parts, heavy gales.

April 26. Lat. 58° 15′ S.; long. 68° 09′ W. Barometer, 28.95; thermometer attached, 68°; temperature of air, 42°; water, 46°. Winds: W., W.SW., W.SW. First part, heavy gales, with heavy squalls; middle and latter parts, light breezes and heavy sea.

April 27. Lat. 58° 54′ S.; long. 67° 12′ W. Barometer, 28.90; thermometer attached, 66°; temperature of air, 42°; water, 44°. Winds: W., W., W. Strong gales, with heavy squalls and sea on.

April 28. Lat. 59° 05′ S.; long. 67° 45′ W. Barometer, 28.90; thermometer attached, 64°; temperature of air, 40°; water, 42°. Winds: W., W., SW. Strong gales, and heavy squalls of snow and hail throughout.

April 29. Lat. 57° 54′ S.; long. 70° 00′ W. Barometer, 29.10; thermometer attached, 66°; temperature of air, 40°; water, 41°. Winds: SW. by S., S.SW., S.SW. Strong gales, with heavy squalls of snow and hail.

April 30. Lat. 56° 57′ S.; long. 71° 30′ W. Barometer, 29.50; thermometer attached, 64°; temperature of air, 40°; water, 40°. Winds: S.SW., S.SW., S.SW. Strong and hard gales, with heavy squalls of wind, rain, hail, and snow.

May 1. Lat. 56° 40′ S.; long. 73° 45′ W. Barometer, 29.20; thermometer attached, 64°; temperature of air, 46°; water, 40°. Winds: SW., W.SW., W.SW. Heavy gales, with heavy squalls blowing furiously.

May 2. Lat. 56° 45′ S.; long. 75° 15′ W. Barometer, 28.70; thermometer attached, 62°; temperature of air, 45°; water, 40°. Winds: N., W.NW., W.NW. Moderate breezes, with light squalls and rain.

May 3. Lat. 56° 33′ S.; long. 76° 17′ W. Barometer, 29.00; thermometer attached, 66°; temperature of air, 40°; water, 36°. Winds: W.NW., W., W.NW. First part, strong breezes and rain; middle part, heavy gale; latter part, stiff breeze.

May 4. Lat. 56° 20′ S.; long. 77° 23′ W. Barometer, 29.40; thermometer attached, 66°; temperature of air, 40°; water, 35°. Winds: W.NW., calm and variable, W.SW. First part, stiff breezes and squally; middle part, light variable breezes and calm; latter part, fresh gale.

May 5. Lat. 55° 30′ S.; long. 78° 12′ W. Barometer, 29.30; thermometer attached, 68°; temperature of air, 40°; water, 37°. Winds: W., N.NE., NW. First part, strong breezes and heavy squalls; middle part, light breezes; latter part, stiff gales and heavy rain squalls, calm and rainy weather.

May 6. Lat. 55° 09′ S.; long. 81° 00′ W. Barometer, 29.10; thermometer attached, 62°; temperature of air, 40°; water, 37°. Winds: NW. by W., NW., N.NW. First and middle parts, stiff breezes and thick foggy, rainy weather; latter part, heavy gale with heavy rain.

May 7. Lat. 54° 44′ S.; long. 81° 10′ W. Barometer, 29.00; thermometer attached, 62°; temperature of air, 40°; water, 38°. Winds: NW., W., NW. Stiff gales, with a great deal of rain throughout.

May 8. Lat. 54° 13′ S.; long. 80° 50′ W. Barometer, 28.90; thermometer attached, 70°; temperature of air, 38°; water, 38°. Winds: N., W.NW., NW. Strong gales and heavy sea; heavy squalls of hail and snow.

May 9. Lat. 53° 48′ S.; long. 79° 30′ W. Barometer, 28.70; thermometer attached, 71°; temperature of air, 46°; water, 40°. Winds: NW., NW., NW. Strong gales and heavy cross sea.

May 10. Lat. 52° 50′ S.; long. 77° 45′ W. Barometer, 28.90; thermometer attached, 68°; temperature of air, 44°; water, 45°. Winds: NW., NW., W.NW. Strong and heavy gales, with a tremendous sea, with heavy squalls of hail.

May 11. Lat. 51° 05′ S.; long. 77° 40′ W. Barometer, 28.80; thermometer attached,

68°; temperature of air, 46°; water, 46°. Winds: W.SW., SW., W.SW. First and middle parts, heavy gales, with heavy squalls of hail and rain; latter part, more moderate.

May 12. Lat. 50° 25′ S.; long. 77° 30′ W. Barometer, 29.50; thermometer attached, 72°; temperature of air, 48°; water, 46°. Winds: NW., NW., NW. First part, moderate breezes and cloudy; middle part, pleasant; latter part, stiff gales."

Ship "S. S. Bishop," (Josiah Sherman,) Baltimore to San Diego; 28 days from St. Roque.

"April 19. Lat. 50° 21′ S.; long. 64° 04′ W. Temperature of air, 43°; water, 47°. Winds: E.NE., E., SE. First part, strong breezes; middle and latter parts, moderate.

April 20. Lat. 51° 09′ S.; long. 67° 38′ W. Temperature of air, 54°; water, 49°. Winds: calm, S., calm. First and latter parts, calm; middle part, light airs and snow squalls.

April 21. Lat. 52° 43′ S.; long. 66° 17′ W. Temperature of air, 48°; water, 47°. Winds: W.NW., NW., N.NE. First and middle parts, moderate breezes and pleasant; latter part, light airs.

April 22. Lat. 53° 25′ S.; long. 66° 12′ W. Temperature of air, 44°; water, 47°. Winds: E.SE. to S., SE. to S., S.SW. Light airs, cloudy and baffling. Sounded in 63 fathoms water; dark gray sand.

April 23. Lat. 54° 26′ S.; long. 63° 04′ W. Temperature of air, 38°; water, 45°. Winds: S.SW., SW., S. First and latter parts, light winds; middle part, fresh and pleasant.

April 24. Lat. 54° 36′ S.; long. 65° 03′ W. Temperature of air, 50°; water, 46°. Winds: S., calm, NW. First part, light winds; middle part, calm; latter part, moderate breezes, with fog clouds.

April 25. Lat. 56° 04′ S.; long. 67° 40′ W. Temperature of air, 44°; water, 46°. Winds: W.NW., calm, E.SE. First part, moderate and pleasant; middle, calm; latter part, light winds, with rain.

April 26. Lat. 55° 44′ S.; long. 72° 38′ W. Temperature of air, 44°; water, 46°. Winds: E. by N., E. by N., NE. by E. First and middle parts, light breezes with rain; latter part, moderate breezes and pleasant.

April 27. Lat. 55° 40′ S.; long. 76° 40′ W. Temperature of air, 46°; water, 46°. Winds: N., NW., NW. Moderate breezes and light rain.

April 28. Lat. 54° 25′ S.; long. 76° 15′ W. Temperature of air, 46°; water, 45°. Winds: W.SW., W.SW., W.SW. First part, moderate; middle and latter parts, heavy gales, fog, and rain.

April 29. Lat. 53° 31′ S.; long. 74° 42′ W. Temperature of air, 46°; water, 46°. Winds: W.SW., W.SW., W.SW. Hard gales throughout, and hard squalls.

April 30. Lat. 54° 30′ S.; long. 75° 40′ W. Temperature of air, 48°; water, 46°, Winds: W.SW., W., W. by N. Throughout strong winds and heavy squalls of hail, rain, and snow.

May 1. Lat. 54° 57′ S.; long. 74° 56′ W. Temperature of air, 44°; water, 46°. Winds: W., W.SW., W.SW. First part, strong breezes; middle and latter parts, strong gales.

May 2. Lat. 54° 22′ S.; long. 75° 28′ W. Temperature of air, 39°; water, 44°. Winds: W.SW., SW. by S., SW. First part, strong gales; middle and latter parts, moderate and puffy.

May 3. Lat. 51° 32′ S.; long. 80° 04′ W. Temperature of air, 40°; water, 46°. Winds: S.SW., S., S.SW. First and middle parts, strong winds and puffy; latter part, moderate, with frequent snow squalls.

May 4. Lat. 49° 06′ S.; long. 82° 39′ W. Temperature of air, 40°; water, 48°. Winds: S.SW., S.SW., S.SW. First and middle parts, strong breezes and heavy squalls of hail, rain, and snow; latter part, wind baffling."

Cape Horn Crossings—May.

Name of vessel.	From parallel of St. Roque to 50° S.	Longitude of crossing parallels east of Cape Horn.			Latitude of crossing meridians south of Cape Horn.			Longitude of crossing parallels west of Cape Horn.			From 50° S. in the Atlantic to 50° S. in the Pacific.
		50° S.	53° S.	56° S.	67° W.	71° W.	75° W.	55° S.	53° S.	50° S.	
	Days.	*Long. W.*	*Long. W.*	*Long. W.*	*Lat. S.*	*Lat. S.*	*Lat. S.*	*Long. W.*	*Long. W.*	*Long. W.*	*Days.*
Surprise	24	63	64	66	58	58	59	79	79	84	22
Competitor	24	64	64	67	56	57	56	79	80	78	15
Empress of the Seas	27	65	65	65	56	57	57	80	80	85	13
Henqua	31	64	63	65	57	58	58	81	82	83	29
Parthian	25	63	64	67	56	58	58	79	80	81	13
Climax	23	61	65	67	56	56	56	76	78	79	12
Sirocco	34	64	66	67	56	57	58	79	82	80	20
Archer	33	64	64	66	57	57	56	82	84	84	23
Robert Harding	33	66	65	65	57	58	55	75	78	78	26
Seaman's Bride	26	64	63	66	57	58	56	81	81	81	15
Lantao	27	67	67	71	56	56	57	79	79	80	11
Hampton	37	65	65	66	57	58	56	78	79	80	21
Hugh Birkhead	34	64	65	67	56	58	58	77	78	79	23
Rosario	28	64	64	65	57	58	56	81	81	81	19
Roscoe	29	65	65	65	57	59	58	81	81	82	22
James H. Shepherd	40	66	68	†	.....	.....	.....	.....	.....	.....	.....
Eliza Thornton	45	64	65	67	57	59	57	78	79	79	23
Benjamin Howard	30	64	64	67	57	57	57	79	82	81	23
Mary Annah	29	63	64	63	57	57	57	77	80	82	36
Storm King	31	64	64	65	57	58	57	78	79	79	16
Catherine	40	64	65	64	57	56	58	77	77	78	21
Santiago	27	65	66	66	57	57	57	79	79	80	16
Matanzas	32	66	66	65	57	57	56	78	77	83	29
R. B. Forbes	28	64	64	65	57	57	57	79	82	86	15
*Surprise	21	62	65	64	57	57	56	77	80	82	18
Messenger	26	65	64	67	56	57	59	78	79	85	13
Golden State	25	62	65	65	56	57	56	77	81	81	17
Sierra Nevada	34	62	63	61	58	57	57	81	80	81	14
Panama	20	65	66	64	56	57	57	81	83	84	16
Viking	22	64	64	67	57	57	56	76	79	81	14
Starlight	23	62	64	67	56	58	55	75	78	81	15
Blondel	49	64	65	64	57	57	58	80	83	84	32
Sword Fish	23	65	65	67	57	56	54	74	77	81	8
Ellen Foster	32	65	65	64	56	57	57	79	79	79	16
Fleet Wing	25	65	64	67	56	57	58	80	82	86	12
Shooting Star	25	55	56	64	57	58	57	80	80	84	20
Sword Fish	25	66	67	67	59	58	58	84	84	84	17
George Raines	33	63	63	66	57	56	55	75	77	80	24
Hope	40	64	65	66	57	57	55	75	78	80	15
Eagle	30	63	64	66	56	58	59	82	82	82	15
Means	29.7	63.9	64.5	65.1	56.7	57.3	56.8	78.3	80.0	81.5	18.7

* Last in the seventh edition, the 15 others being subsequent.

† Through the Straits of Magellan, and had 50 days from the time she entered them till she crossed 50° S. in the Pacific.

Ship "Panama," (Wm. P. Care,) New York to San Francisco; twenty days from St. Roque.

"April 24. Lat. 49° 35′ S.; long. 64° 19′ W. Barometer, 29.94; thermometer attached, 90°; temperature of air, 48°; water, 48°. Winds: N.NE., N., NW. First and middle parts, moderate breezes and cloudy, with haze; latter part, fresh breezes and clear.

April 25. Lat. 53° 34′ S.; long. 66° 21′ W. Barometer, 29.08; thermometer attached, 88°; temperature of air, 98°; water, 49°. Winds: W.NW., W.NW., W.NW. First part, fresh winds; middle, strong breezes; latter part, strong gales.

April 26. Lat. 54° 42′ S.; long. 63° 36′ W. Barometer, 29.24; thermometer attached, 80°; temperature of air, 42°; water, 43°. Winds: W.NW., S.SE., W.SW. and SW. Strong gales, with rain.

April 27. Lat. 56° 30′ S.; long. 64° 37′ W. Barometer, 29.25; thermometer attached, 80°; temperature of air, 38°; water, 40°. Winds: SW., W.NW., W.NW. Moderate breezes, with squalls of snow and hail; middle and latter parts, strong gales, with heavy squalls.

April 28. Lat. 57° 08′ S.; long. 65° 21′ W. Barometer, 29.00; thermometer attached, 78°; temperature of air, 37°; water, 40°. Winds: W.NW., W.NW., SW. First part, a heavy gale, with terrific squalls; middle and latter parts, more moderate, with heavy squalls.

April 29. Lat. 55° 50′ S.; long. 66° 12′ W. Barometer, 29.12; thermometer attached, 70°; temperature of air, 36°; water, 42°. Winds: W.NW., SW., SW. Heavy gales, with terrific squalls; latter part, thick snow; a strong NE. current.

April 30. Lat. 56° 01′ S.; long. 65° 18′ W; barometer, 29.58; thermometer attached, 65°; temperature of air, 35°; water, 42°. Winds: SW., SW., SW. First and middle parts, heavy gales and squalls; latter part, moderating.

May 1. Lat. 56° 10′ S.; long. 64° 42′ W. Barometer, 29.40; thermometer attached, 76°; temperature of air, 40°; water, 42°. Winds: SW., SW., SW. Moderate winds.

May 2. Lat. 56° 47′ S.; long. 67° 35′ W. Barometer, 29.12; thermometer attached, 87°; temperature of air, 43°; water, 44°. Winds: SW., calm, and NW., W.NW. Light winds and, at times, calms.

May 3. Lat. 57° 43′ S.; long. 71° 08′ W. Barometer, 29.31; thermometer attached, 78°; temperature of air, 46°; water, 43°. Winds: NW., W.NW., W.NW. Moderate breezes and rainy.

May 4. Lat. 57° 14′ S.; long. 74° 47′ W. Barometer, 29.57; thermometer attached, 86°; temperature of air, 42°; water, 43°. Winds: NW., N.NW., SW. First and middle parts, moderate breezes and cloudy; latter part, sharp squalls, with hail.

May 5. Lat. 55° 25′ S.; long. 77° 18′ W. Barometer, 29.60; thermometer attached, 85°; temperature of air, 42°; water, 43°. Winds: SW., W.SW., NE. First part, strong gales and heavy squalls; middle, moderate; latter part, fresh breezes and rainy.

May 6. Lat. 55° 10′ S.; long. 81° 30′ W. Barometer, 29.25; thermometer attached, 80°; temperature of air, 40°; water, 44°. Winds: W.NW., W.NW., W.NW. Strong gales, heavy squalls and rainy weather. I am now 60 days out; wind ahead; poor chance for 100 days to San Francisco.

May 7. Lat. 54° 18′ S.; long. 83° 59′ W. Barometer, 29.10; thermometer attached, 78°; temperature of air, 42°; water, 44°. Winds: NW., W.NW., N.NE. First part, strong gales and squalls; middle part, moderate; latter part, fresh, with sharp squalls.

May 8. Lat. 53° 18′ S.; long. 86° 06′ W. Barometer, 28.90; thermometer attached, 77°;

temperature of air, 43°; water, 44°. Winds: N.NE., W., N.NW. Throughout, heavy gales, with terrific squalls.

May 9. Lat. 53° 47′ S.; long. 84° 44′ W. Barometer, 28.55; thermometer attached, 70°; temperature of air, 40°; water, 44°. Winds: N.NW., N.NW., NW. Heavy gales and heavy squalls.

May 10. Lat. 51° 47′ S.; long. 83° 35′ W. Barometer, 29.28; thermometer attached, 44°; temperature of air, 44°. Winds: W.NW., W.SW., W.SW. First and middle parts, strong gales and heavy squalls; latter part, more moderate.

May 11. Lat. 48° 09′ S.; long. 84° 33′ W. Barometer, 29.95; thermometer attached, 68°; temperature of air, 47°; water, 48°. Winds: W.SW., W.SW., W. First and middle parts, moderate; latter part, light airs."

Ship "Viking," (Z. Windsor,) Boston to San Francisco; 23 days from St. Roque.

"May 6. Lat. 48° 00′ S.; long. 62° 10′ W. Barometer, 29.60; temperature of air, 48°; water, 48°. Winds: calm, NE., NE. First part, calm; middle and latter parts, fresh breezes; thick fogs.

May 7. Lat. 51° 34′ S.; long. 65° 00′ W. Barometer, 29.50; temperature of air, 46°; temperature of water, 45°. Winds: NE., NE., NE. Fresh gales; dense fog and rain.

May 8. Lat. 51° 01′ S.; long. 64° 50′ W. Barometer, 29.40; temperature of air 46°; temperature of water, 46°. Winds: S.SE., S., calm. First and middle parts, fresh gales; latter, calm, fog, and rain.

May 9. Lat. 52° 00′ S.; long. 64° 39′ W. Barometer, 29.25; temperature of air, 44°; water, 45°. Winds: S., NW., NW., NW. Moderate breezes; clear and pleasant weather.

May 10. Lat. 54° 18′ S.; long. 63° 53′ W. Barometer, 29.26; temperature of air, 48°; temperature of water, 46°. Winds: N.NE., N., calm. First and middle parts, moderate breezes and pleasant; latter, calm and foggy.

May 11. Lat. 55° 26′ S.; long. 64° 40′ W. Barometer, 29.25; temperature of air, 46°; water, 44°. Winds: calm, calm, N. First and middle parts, calm; latter part, moderate breezes and foggy.

May 12. Lat. 56° 58′ S.; long. 67° 20′ W. Barometer, 29.20; temperature of air, 40°; water, 41°. Winds: NW., W.SW., NW. First and middle parts, moderate breezes; latter part, blowing hard at times.

May 13. Lat. 56° 40′ S.; long. 68° 20′ W. Barometer, 29.20; temperature of air, 42°; water, 41°. Winds: W., W.SW., W. Fresh gales, with snow squalls; latter part, light breezes.

May 14. Lat. 56° 45′ S.; long. 70° 10′ W. Barometer, 29.26; temperature of air, 42°; water, 41°. Winds: SW., SW., W. Fresh gales, with heavy squalls; latter part, thick and rainy.

May 15. Lat. 56° 30′ S.; long. 71° 30′ W. Barometer, 29.00; temperature of air, 40°; water, 41°. Winds: W.NW., W.SW., W. Fresh gales; heavy squalls of snow and hail.

May 16. Lat. 56° 52′ S.; long. 72° 17′ W. Barometer, 29.10; temperature of air, 38°; water, 40°. Winds: W.SW., calm, SW. First and latter parts, moderate breezes with heavy squalls of snow; middle, calm.

May 17. Lat. 55° 12′ S.; long. 73° 34′ W. Barometer, 29.15; temperature of air, 40°; water, 38°. Winds: S.SW., SW., W. First and middle parts, moderate; latter, fresh breezes, with violent hail and snow squalls.

May 18. Lat. 55° 50′ S.; long. 74° 02′ W. Barometer, 29.56; temperature of air, 38°; water, 38°. Winds: SW., SW., SW. First part, fresh gales and heavy squalls; middle and latter parts, light and baffling.

May 19. Lat. 55° 33′ S.; long. 76° 25′ W. Barometer, 29.50; temperature of air, 33°; water 40°. Winds: calm, W.NW., S.SE. First part, calm; middle and latter parts, moderate breezes. Barometer is a good guide; in the tropics its mean is 30.40; off Cape Horn, mean 29.20.

May 20. Lat. 53° 00′ S.; long. 78° 39′ W. Barometer, 29.00; temperature of air, 38°; water, 39°. Winds: calm, S.SE., S.SE. First part, calm; middle and latter parts, took a fresh squall which terminated in a heavy gale; snow.

May 21. Lat. 48° 56′ S.; long. 81° 02′ W. Barometer, 29.10; temperature of air, 39°; water, 39°. Winds: Fresh gales, with heavy squalls of hail and snow."

Ship "Starlight," (P. Chase,) Boston to San Francisco; 23 days from St. Roque.

"May 6. Lat. 47° 56′ S.; long. 57° 46′ W. Barometer, 29.06; temperature of air, 54°; water, 48°. Winds: baffling, calm, E.SE. First part, fog squalls; middle, calm; latter, fresh breezes; thick fogs.

May 7. Lat. 50° 54′ S.; long. 62° 40′ W. Barometer, 29.06; temperature of air, 55°; water, 45°. Winds: E., NE., NE. by N. First part, fresh breezes; middle and latter parts, stormy winds and thick weather.

May 8. Lat. 53° 00′ S.; long. 64° 00′ W. Barometer, 29.04; temperature of air, 48°; water, 42°. Winds: N.NE., N., S. First part, fresh breezes, thick and rainy; middle, light; latter, light, with thick fogs.

May 9. Lat. 54° 17′ S.; long. 64° 30′ W. Barometer, 29.02; temperature of air 49°; water, 42°. Winds: S., SW., W. First and middle, brisk breezes, with rain; latter part, fresh breezes, with thick fog.

May 10. Lat. 54° 51′ S.; long 63° 20′ W. Barometer, 29.03; temperature of air, 49°; water, 42°. Winds: NW., W.NW., N. by W. Fresh breezes, thick and rainy.

May 11. Lat. 56° 05′ S.; long. 67° 05′ W. Barometer, 29.05; temperature of air, 48°; water, 41°. Winds: W.NW., N.NE., N.NE. First and middle parts, light breezes and pleasant; latter part, blowing a gale.

May 12. Lat. 56° 35′ S.; long. 68° 25′ W. Barometer, 29.02; temperature of air, 46°; water, 44°. Winds: W. by S., NW., W. First and middle parts, moderate gales, with tremendous squalls; latter part, hard gale.

May 13. Lat. 57° 23′ S.; long. 69° 30′ W. Barometer, 29.03; temperature of air, 41°; water, 42°. Winds: W., W.NW., W.NW. Hard gales; hard squalls of hail and rain throughout.

May 14. Lat. 58° 00′ S.; long. 70° 00′ W. Barometer, 29.05; temperature of air, 43°; water, 41°. Winds: W.SW., SW., W. First part, hard hail squalls; middle and latter parts, rain.

May 15. Lat. 58° 30′ S.; long. 71° 00′ W. Barometer, 29.01; temperature of air, 36°; water, 39°. Winds: W., W.NW., W.SW. Strong gales and squally, with rain.

May 16. Lat. 57° 00′ S.; long. 73° 00′ W. Barometer, 29.02; temperature of air, 34°; water, 41°. Winds: W.SW., W.SW., SW. Strong breezes, with snow squalls throughout.

May 17. Lat. 55° 00′ S.; long. 74° 50′ W. Barometer, 29.03; temperature of air, 38°; water, 42°. Winds: SW. by W., W.SW., W.SW. Moderate breezes, with sharp snow squalls every hour.

May 18. Lat. 54° 50′ S.; long. 76° 00′ W. Barometer, 29.07; temperature of air, 37°; water, 42°. Winds: W., SW., calm. First and middle parts, strong gales and hard squalls; latter part, calm.

May 19. Lat. 54° 40′ S.; long. 76° 30′ W. Barometer, 29.05; temperature of air, 38°; water, 42°. Winds: calm, calm, baffling. First and middle parts, calm; latter part, light baffling airs.

May 20. Lat. 52° 30′ S.; long. 78° 00′ W. Barometer, 29.02; temperature of air, 37°; water, 43°. Winds: SE., NW., SW. First part, moderate; middle and latter parts, hard gale.

May 21. Lat. 51° 35′ S.; long. 79° 00′ W. Barometer, 29.05; temperature of air, 39°; water, 44°. Winds: SW., S.SW., S.SW. First part, heavy gale; middle and latter parts, moderating.

May 22. Lat. 48° 45′ S.; long. 82° 15′ W. Barometer, 30.00; temperature of air, 40°; water, 46°. Winds: S.SW., S.SW., S.SW. First part, fresh breezes and squally; middle and latter parts, moderate."

Ship "Messenger," (Samuel Kennedy,) Philadelphia to San Francisco; — days from St. Roque.

"May 7. Lat. 50° 14′ S.; long. 65° 08′ W. Barometer, 29.30; thermometer attached, 58°; temperature of air, 50°; of water, 46°. Winds: E.NE., NE., N.NE. First part, strong breezes; middle and latter parts, moderate; foggy all day.

May 8. Lat. 51° 16′ S.; long. 65° 24′ W. Barometer, 29.30; thermometer attached, 58°; temperature of air, 44°; of water, 46°. Winds: N., NW., S. Moderate breezes; first part, foggy; middle and latter parts, clear; sounded in 74 fathoms water, sand, gravel, and shells.

May 9. Lat. 53° 25′ S.; long. 64° 30′ W. Barometer, 29.12; thermometer attached, 57°; temperature of air, 48°; of water, 45°. Winds: S., SW., N. Moderate breezes; latter part, freshening.

May 10. Lat. 55° 57′ S.; long. 65° 37′ W. Barometer, 29.25; thermometer attached, 56°; temperature of air, 42°; of water, 44°. Winds: N., baffling, N. to SE., N. First part, strong breezes and hazy; middle, baffling; latter, moderate.

May 11. Lat. 56° 45′ S.; long. 69° 17′ W. Barometer, 29.02; thermometer attached, 57°; temperature of air, 40°; of water, 42°. Winds: baffling, N. to W., W.NW. First part, moderate and baffling; middle part, wind freshening; latter part, blowing hard.

May 12. Lat. 57° 54′ S.; long. 72° 00′ W. Barometer, 28.78; thermometer, attached, 56°; temperature of air, 38°; of water, 41°. Winds: W.NW., NW., W.NW. Fresh gales, with occasional squalls of snow and hail.

May 13. Lat. 58° 12′ S.; long. 72° 23′ W. Barometer, 29.39; thermometer attached, 56°; temperature of air, 34°; of water, 39°. Winds: W., W., W.SW. Fresh gales, moderating a little at times, continual hail and snow squalls.

May 14. Lat. 58° 23′ S.; long. 73° 03′ W. Barometer, 29.14; thermometer attached, 57°; temperature of air, 41°; of water, 41°. Winds: SW., W.NW., W.NW. Fresh gales, snow and hail squalls; latter, thick weather.

May 15. Lat. 58° 38′ S.; long. 75° 02′ W. Barometer, 28.95; thermometer attached, 57°; temperature of air, 37°; of water, 39°. Winds: W.NW., NW. and W.SW., W.SW. Fresh gales, snow and hail squalls.

May 16. Lat. 56° 59′ S.; long. 76° 43′ W. Barometer, 29.00; thermometer attached, 56°; temperature of air, 33°; of water, 41°. Winds: W.SW., SW., S.SW. Fresh gales, with snow and hail squalls.

May 17. Lat. 54° 43′ S.; long. 78° 18′ W. Barometer, 29.11; thermometer attached, 54°; temperature of air, 38°; of water, 42°. Winds: W.SW., W.SW., W. Fresh gales, hail, snow, and rain squalls.

May 18. Lat. 53° 08′ S.; long. 79° 08′ W. Barometer, 29.62; thermometer attached, 52°; temperature of air, 44°; of water, 46°. Winds: W., W., W. and N. First part, fresh gales; middle and latter parts, fresh breezes.

May 19. Lat. 52° 35′ S.; long. 81° 31′ W. Barometer, 29.42; thermometer attached, 54°; temperature of air, 43°; of water, 48°. Winds: W.NW., N., E. First and latter parts, moderate breezes; middle part, light breezes.

May 20. Lat. 49° 16′ S.; long. 85° 22′ W. Barometer, 29.56; thermometer attached, 55°; temperature of air, 47°; of water, 46°. Winds: SE., S.SW., SW. Moderate breezes throughout."

Ship "Sierra Nevada," (P. W. Penhallow,) New York to San Francisco; 33 days from St. Roque.

"May 8. Lat. 50° 18′ S.; long. 61° 56′ W. Barometer, 29.95; thermometer attached, 48°. Winds: SW., SW., W.SW. Clear, pleasant weather, light airs; appearances of a current.

May 9. Lat. 52° 54′ S.; long. 63° 17′ W. Barometer, 29.63; thermometer, attached, 48°. Winds: W. by N., W., calm. First and middle parts, breezes; latter part, calm.

May 10. Lat. 54° 52′ S.; long. 62° 41′ W. Barometer, 29.37; thermometer attached, 47°. Winds: W.NW., W.NW., SW. First part, moderate; middle, fresh; latter part, moderate gales and squalls of snow.

May 11. Lat. 55° 25′ S.; long. 61° 30′ W. Barometer, 29.90; thermometer attached, 70°. Winds: SW., S.SW., SW. Light breezes with rain, squalls of rain.

May 12. Lat. 56° 52′ S.; long. 60° 57′ W. Barometer, 29.95; thermometer attached, 69°. Winds: SW., W.SW., W.SW. Moderate breezes, with light snow squalls.

May 13. Lat. 58° 00′ S.; long. 62° 02′ W. Barometer, 29.90; thermometer attached, 73°. Winds: W. by S., W.SW., S.SW. Moderate breezes and squally.

May 14. Lat. 58° 00′ S.; long. 64° 26′ W. Barometer, 29.84; thermometer attached, 75°. Winds: SW., W., W.NW. Light, variable breezes, with snow squalls.

May 15. Lat. 58° 26′ S.; long. 67° 09′ W. Barometer, 29.45; thermometer attached, 63°. Winds: W. by N., NW., N.NW. Light breezes and pleasant; five icebergs in sight.

May 16. Lat. 58° 14′ S.; long. 68° 25′ W. Barometer, 29.38; thermometer attached, 85°. Winds: N.NW., NW., N. Moderate breezes and foggy.

May 17. Lat. 57° 40′ S.; long. 71° 16′ W. Barometer, 29.49; thermometer attached, 80°. Winds: N., N.NW., W.SW. Moderate breezes and heavy sea.

May 18. Lat. 58° 02′ S.; long. 73° 47′ W. Barometer, 28.56; thermometer attached, 81°. Winds: W. by N., W.NW., NW. First part, light breezes, with rain; middle and latter parts, moderate breezes.

May 19. Lat. 58° 27′ S.; long. 72° 46′ W. Barometer, 28.72; thermometer attached, 80°. Winds: N.NW., NW., W.NW. First part, strong breezes; middle, blowing a perfect hurricane; latter part, light breezes.

May 20. Lat. 57° 39′ S.; long. 75° 00′ W. Barometer, 28.86; thermometer attached, 82°. Winds: W.NW., S., S. First and middle parts, light breezes; latter part, fresh and squally.

May 21. Lat. 54° 18′ S.; long. 80° 14′ W. Barometer, 29.30. Winds: S., S. to S.SW., S.SW. Strong breezes, with heavy squalls of snow and hail.

May 22. Lat. 49° 49′ S.; long. 81° 55′ W. Barometer, 29.78; thermometer attached, 90°. Winds: SW., SW., S.SW. Strong breezes and fine weather."

Ship "Shooting Star," (W. E. Kingman,) New York to San Francisco; 25 days from St. Roque.

"May 12. Lat. 50° 30′ S.; long. 54° 54′ W. Barometer, 29.40; thermometer attached, 50°. Winds: W. by S., W., SW. by W. First part, moderate and clear; middle, fresh; latter part, strong gales and heavy squalls.

May 13. Lat. 51° 37′ S.; long. 54° 30′ W. Barometer, 29.55; thermometer attached, 48°; temperature of air, 44°; water, 42°. Winds: SW. by W., SW., calm. First part, strong gale and hard squalls; middle, moderate; latter part, calm.

May 14. Lat. 52° 43′ S.; long. 55° 04′ W. Barometer, 29.44; thermometer attached, 48°; temperature of air, 43°; water, 42°. Winds: W., W. by S., W. First and middle parts, light baffling breezes; latter part, steady breezes.

May 15. Lat. 53° 34′ S.; long. 57° 08′ W. Barometer, 29.60; thermometer attached, 47°; temperature of air, 42°; water, 41°. Winds: W. by S., SW., SW. and E.SE. First and middle parts, light winds and light rain squalls; latter part, fresh breezes, with light rain and sleet.

May 16. Lat. 54° 52′ S.; long. 60° 20′ W. Barometer, 29.67; thermometer attached, 46°; temperature of air, 38°; water, 42°. Winds: SE., baffling and calm, W.NW. First part, fresh; middle, baffling and calm; latter part, fresh breezes.

May 17. Lat. 56° 24′ S.; long. 64° 30′ W. Barometer, 29.40; thermometer attached, 46°; temperature of air, 43°; water, 42°. Winds: W.NW., W., W. by N., baffling. First part, moderate and fresh; middle, moderate and light; latter, light and baffling.

May 18. Lat. 57° 14′ S.; long. 69° 35′ W. Barometer, 29.23; thermometer attached, 50°; temperature of air, 47°; water, 44°. Winds: W.NW., NW., W. by N. First part, moderate; middle, fresh; latter, moderate, with rain.

May 19. Lat. 58° 19′ S.; long. 71° 30′ W. Barometer, 29.23; thermometer attached, 48°; temperature of air, 41°; water, 42°. Winds: W.NW., W., W. by N. First part, fresh breezes, with squalls; middle, strong gales and hard squalls; latter, moderate, light, and baffling, and squalls of rain.

May 20. Lat. 57° 33′ S.; long. 73° 50′ W. Barometer, 29.23; thermometer attached, 48°. Winds: W. by N., N.NW. to W.SW., W.SW. First part, moderate and baffling, frequent fresh squalls; middle, moderate, with rain; latter, strong gales.

May 21. Lat. 56° 34′ S.; long. 73° 37′ W. Barometer, 29.25; thermometer attached, 48°. Winds: W., W., W. First and middle parts, strong gales; latter, hard gale and rainy throughout.

May 22. Lat. 56° 45′ S.; long. 73° 30′ W. Barometer, 29.25; thermometer attached, 47°; temperature of air, 45°; water, 43°. Winds: W., W., W. First part, strong gale and cloudy; middle, heavy squalls; latter, heavy squalls.

May 23. Lat. 57° 08′ S.; long. 74° 20′ W. Barometer, 29.50; thermometer attached, 44°. Winds: W., SW. by S., SW. First and middle parts, strong gales and heavy squalls; latter, moderating.

May 24. Lat. 56° 25′ S.; long. 77° 20′ W. Barometer, 29.30; thermometer attached,

46°. Winds: W.SW., N.NW., W. First part, moderating; middle, light airs; latter, fresh breezes.

May 25. Lat. 56° 25′ S.; long. 81° 18′ W. Barometer, 29.15; thermometer attached, 48°. Winds: W.NW., NW., N.NW. First and middle parts, moderate and fresh; latter, strong gales, thick and rainy weather.

May 26. Lat. 56° 34′ S.; long. 80° 38′ W. Barometer, 29.18; thermometer attached, 44°; temperature of air, 45°; water, 42°. Winds: NW., NW., W.NW. First part, strong gales; middle and latter, strong gales, with heavy squalls.

May 27. Lat. 54° 50′ S.; long. 79° 20′ W. Barometer, 29.48; thermometer attached, 46°; temperature of air, 45°; water, 43°. Winds: W., W., W.NW. First and middle parts, heavy squalls of rain, snow, and hail; latter, strong gales.

May 28. Lat. 54° 22′ S.; long. 78° 30′ W. Barometer, 29.30; thermometer attached, 47°. Winds: W.NW., NW. by W., ditto. First part, fresh gales; middle, moderating; latter, fresh breezes.

May 29. Lat. 53° 32′ S.; long. 80° 00′ W. Barometer, 29.25; thermometer attached, 68°; temperature of air, 44°; water, 44°. Winds: NW. ½ W., NW., NW. by N. First part, fresh breezes; middle and latter, moderate.

May 30. Lat. 52° 51′ S.; long. 84° 53′ W. Barometer, 29.15; thermometer attached, 64°; temperature of air, 44°; water, 43°. Winds: NW. by N., ditto, ditto. First part, moderate; middle and latter, moderate and thick weather.

May 31. Lat. 51° 58′ S.; long. 84° 44′ W. Barometer, 29.99; thermometer attached, 70°. Winds: N.NE. to NE., W., W.NW. First part, wind freshening, thick and rainy; middle, heavy gale, with violent squalls of hail and rain; latter, not so heavy. *Notice.*—How well my barometer works; never saw the like hereabouts.

June 1. Lat. 49° 48′ S.; long. 83° 50′ W. Barometer, 29.35; thermometer attached, 56°; temperature of air, 48°; water, 44°. Winds: NW. to W., SW., W.SW. First part, strong gales and squally; middle, moderating, with fewer squalls; latter, moderating, with fresh squalls."

Cape Horn Crossings—June.

Name of vessel.	From parallel of St. Roque to 50° S.	Longitude of crossing parallels east of Cape Horn.			Latitude of crossing meridians south of Cape Horn.			Longitude of crossing parallels west of Cape Horn.			From 50° S. in the Atlantic to 50° S. in the Pacific.
		50° S.	53° S.	56° S.	67° W.	71° W.	75° W.	55° S.	53° S.	50° S.	
	Days.	*Long. W.*	*Long. W.*	*Long. W.*	*Lat. S.*	*Lat. S.*	*Lat. S.*	*Long. W.*	*Long. W.*	*Long. W.*	*Days.*
Staffordshire	25	62	66	66	56	56	53	73	77	79	14
White Squall	24	64	63	65	57	56	56	76	79	78	11
L. P. Foster†	43	67	67	70	56	56	58	83	83	85	20
Finland	41	64	63	64	57	57	56	81	87	90	14
Golden Era	29	65	66	65	59	59	56	78	79	80	28
North America	20	54	58	61	57	58	54	75	78	80	23
Cohota	27	64	64	63	58	58	56	78	81	84	18
Flying Cloud	27	67	65	66	56	55	54	73	76	78	9
John Land	26	64	63	65	57	58	57	80	80	85	15
Uncle Toby	32	65	65	65	58	58	57	78	80	86	13
Hornet	25	63	65	64	58	59	58	79	79	79	14
Channing	38	66	66	65	57	57	57	(‡)	(‡)	(‡)	15
Oxnard	33	65	66	67	57	57	57	78	78	79	11
Amazon	36	63	63	65	57	59	56	79	80	85	15
Linwood	32	65	65	63	56	56	57	80	83	83	19
E. C. Scranton†	42	65	66	64	57	58	57	79	81	81	27
Mayflower	30	65	65	67	57	58	56	77	80	86	14
Cleopatra	27	62	64	66	57	58	58	80	83	86	16
Celestial Empire*	30	64	63	63	56	56	56	78	78	79	18
Union	36	65	66	67	56	57	58	77	79	80	23
Morning Light	33	65	64	61	57	57	57	81	83	86	14
Simoon	23	65	65	67	56	55	54	73	74	77	14
Stag Hound	23	64	65	68	56	56	54	72	78	85	8
Mary L. Sutton	31	64	64	67	56	57	56	78	82	85	9
Cœur de Lion	27	64	64	65	56	58	57	78	79	85	11
Shooting Star	24	61	62	64	57	57	56	75	81	79	20
George Raynes	36	64	64	68	56	56	55	74	79	80	14
Messenger	25	64	64	64	56	59	58	81	81	80	17
Star King	25	64	64	66	56	56	56	76	82	86	22
Game Cock	38	64	65	67	56	56	56	77	81	80	15
War Hawk	31	56	58	63	56	57	57	79	79	81	12
Means	29.1	63.5	64.0	65.1	56.7	57.1	56.1	77.8	79.5	82.2	15.4

* Last in the 7th edition; the twelve other passages have been made since. † Not included in the means. ‡ No observations.

Ship "War Hawk," (J. B. Simmons,) Boston to San Francisco; 30 days from St. Roque.

"May 25. Lat. 49° 18′ S.; long. 54° 46′ W. Barometer, 29.09; thermometer attached, 52°; temperature of air, 52°; water, 42°. Winds: W.SW., NW., NW. First part, moderate; middle, strong breezes; latter, moderate gales.

May 26. Lat. 50° 31′ S.; long. 55° 46′ W. Barometer, 30.00; thermometer attached, 52°; temperature of air, 52°; water, 41°. Winds: SW., calm, calm. First part, strong breezes; middle and latter, calm.

May 27. Lat. 52° 21′ S.; long. 56° 51′ W. Barometer, 29.04; thermometer attached, 60°; temperature of air, 60°; water, 44°. Winds: W., NW., SW. First part, moderate; middle and latter, strong breezes.

May 28. Lat. 53° 47′ S.; long. 58° 44′ W. Barometer, 30.00; thermometer attached, 58°; temperature of air, 57°; water, 42°. Winds: W.NW., ditto, SW. First and middle parts, light breezes; latter, strong.

May 29. Lat. 55° 00′ S.; long. 60° 20′ W. Barometer, 29.06; thermometer attached, 51°; temperature of air, 51°; water, 40°. Winds: SW., NW., W. by N. First part, strong breezes; middle, gales; latter, light breezes.

May 30. Lat. 56° 10′ S.; long. 63° 35′ W. Barometer, 29.05; temperature of air, 45°; water, 42°. Winds: NW., W.SW., E. First part, moderate; middle, strong; latter, moderate.

May 31. Lat. 56° 42′ S.; long. 68° 24′ W. Barometer, 29.05; thermometer attached, 50°; temperature of water, 46°. Winds: calm, N.NW., calm. First and latter parts, calm; middle, strong breezes.

June 1. Lat. 57° 11′ S.; long. 67° 45′ W. Barometer, 29.04; temperature of air, 46°; water, 40°. Winds: NE., ditto, calm. First and middle parts, moderate breezes and pleasant; latter, calm.

June 2. Lat. 57° 17′ S.; long. 69° 00′ W. Barometer, 29.04; temperature of air, 42°; water, 39°. Winds: calm, W., W.SW. First part, calm; middle and latter, moderate.

June 3. Lat. 57° 30′ S.; long. 71° 20′ W. Barometer, 29.06; temperature of air, 43°; water, 42°. Winds: W.NW., NW., W.SW. Moderate breezes and pleasant weather.

June 4. Lat. 57° 29′ S.; long. 79° 05′ W. Barometer, 29.07; temperature of air, 41°; water, 41°. Winds: SW., S.SW., ditto. First and middle parts, strong breezes, with hail; latter, moderate.

June 5. Lat. 54° 52′ S.; long. 79° 00′ W. Barometer, 30.03; temperature of air, 43°; water, 43°. Moderate breezes and pleasant weather.

June 6. Lat. 52° 32′ S.; long. 79° 00′ W. Barometer, 30.06; temperature of air, 45°; water, 45°. Winds: W. by S., ditto, W.SW. Moderate breezes, with light squalls.

June 7. Lat. 50° 00′ S.; long. 81° 00′ W. Barometer, 30.05; temperature of air, 43°; water, 45°. Light airs and misty weather."

Ship "Cœur De Lion," (W. Tucker,) New York to San Francisco; 27 days from St. Roque.

"May 28. Lat. 15° 19′ S.; long. 64° 10′ W. Barometer, 29.09; thermometer attached, 50°; temperature of air, 48°; water, 49°. Winds: S.SE., E., NE. to N. Light breezes and foggy.

May 29. Lat. 52° 20′ S.; long. 64° 00′ W. Barometer, 29.07; thermometer attached, 52°; temperature of air, 46°; water, 48°. Winds: NW., calm, calm. First part, moderate and foggy; middle and latter, calm and foggy. Sounded in 98 fathoms water; white and black sand.

May 30. Lat. 53° 56′ S.; long. 64° 36′ W. Barometer, 29.65; thermometer attached, 53°; temperature of air, 49°; water, 48°. Winds: W., W.SW., NW. to NE. Light winds; on soundings.

May 31. Lat. 56° 06′ S.; long. 64° 55′ W. Barometer, 29.04; thermometer attached, 49°; temperature of air, 45°; water, 46°. Winds: N.NE., N., N.NW. Moderate breeze and pleasant.

June 1. Lat. 56° 10′ S.; long. 67° 16′ W. Barometer, 29.04; thermometer attached, 50°; temperature of air, 48°; water, 49°. Winds: N.NW., S., NE. Light, variable airs and pleasant.

June 2. Lat. 57° 21′ S.; long. 67° 48′ W. Barometer, 29.45; thermometer attached, 49°; temperature of air, 43°; water, 47°. Winds: E.NE. to N., SW., SW. Light airs, and light rain squalls.

June 3. Lat. 58° 05′ S.; long. 70° 36′ W. Barometer, 29.55; thermometer attached, 48°; temperature of air, 46°; water, 44°. Winds: SW., W.NW., ditto. Moderate breezes and fine rain squalls,

June 4. Lat. 58° 43′ S.; long. 73° 01′ W. Barometer, 29.45; thermometer attached, 47°; temperature of air, 41; water, 44°. Winds: NW., NW., calm. First part, moderate breezes and rainy; middle, light airs; latter, calm.

June 5. Lat. 55° 40′ S.; long. 78° 29′ W. Barometer, 30.02; thermometer attached, 47°; temperature of air, 44°; water, 46°. Winds: SW. by S., SW., ditto. First part, light breezes and snow squalls; middle, brisk breezes, with passing squalls of snow; latter, moderate.

June 6. Lat. 53° 00′ S.; long. 78° 35′ W. Barometer, 30.06; thermometer attached, 48°; temperature of air, 44°; water, 48°. Winds: W., ditto, ditto. Moderate breezes, thick, foggy, gloomy weather.

June 7. Lat. 51° 50′ S.; long. 79° 48′ W. Barometer, 30.05; thermometer attached, 48°; temperature of air, 43°; water, 49°. Winds: SW., SE., E. to NE. Light airs, thick gloomy weather.

June 8. Lat. 50° 00′ S.; long. 84° 53′ W. Barometer, 30.00; thermometer attached, 47°; temperature of air, 48°; water, 49°. Winds: N.NE., ditto, ditto. Brisk breezes and cloudy."

Ship "Mary L. Sutton," (P. E. Rowland,) New York to San Francisco; 30 days from St. Roque.

"June 2. Lat. 49° 27′ S.; long. 64° 30′ W. Barometer, 30.20; thermometer attached, 72°; temperature of air, 54°; water, 44°. Winds: S. by W., calm, N.NE. First and latter parts, light winds; middle, calm.

June 3. Lat. 50° 44′ S.; long. 64° 08′ W. Barometer, 30.16; thermometer attached, 67°; temperature of air, 50°; water, 44°. Winds: N., N., E.NE. Light airs and pleasant.

June 4. Lat. 52° 44′ S.; long. 64° 00′ W. Barometer, 30.15; thermometer attached, 68°; temperature of air, 53°; water, 42°. Winds: E., E.NE., NE. Light winds, with Scotch mist.

June 5. Lat. 55° 41′ S.; long. 64° 50′ W. Barometer, 29.81; thermometer attached, 61°; temperature of air, 48°; water, 41°. Winds: NE., do., NW. First and middle parts, light winds, fog, and rain, at times; latter, stiff breezes.

June 6. Lat. 56° 35′ S.; long. 67° 50′ W. Barometer, 29.56; thermometer attached, 50°; temperature of air, 56°; water, 42°. Winds: NW., SW., do. First part, stiff breezes and thick; middle, rainy; latter, winds and fog squalls.

June 7. Lat. 58° 48′ S.; long. 69° 50′ W. Barometer, 29.35; thermometer attached, 69°; temperature of air, 48°; water, 36°. Winds: W.SW., W., W. First part, light breezes and light rain squalls; middle and latter, stiff breezes.

June 8. Lat. 57° 57′ S.; long. 64° 40′ W. Barometer, 29.21; thermometer attached, 58°; temperature of air, 48°; water, 37°. Winds: W.NW., do., do. First part, fresh breezes; middle and latter parts, light breezes, with snow squalls.

June 9. Lat. 57° 01′ S.; long. 72° 45′ W. Barometer, 29.46; thermometer attached, 46°; temperature of air, 40°; water, 39. Winds: calm, NE., SE. First part, calm; middle, moderate breezes, with snow squalls and fine rain; latter, stiff breezes, with passing squalls.

June 10. Lat. 55° 39′ S.; long. 78° 18′ W. Barometer, 29.79; thermometer attached, 65°; temperature of air, 51°; water, 41°. Winds: S.SE., S., SE. First part, stiff breezes, with snow and hail squalls; middle and latter parts, moderate and baffling.

June 11. Lat. 53° 20′ S.; long. 85° 10′ W. Barometer, 29.07; thermometer attached, 64°; temperature of air, 50°; water, 42°. Winds: E.SE., E.NE., do. First part, light winds; middle and latter parts, stiff gales.

June 12. Lat. 50° 30′ S.; long. 85° 10′ W. Barometer, 28.92; thermometer attached, 68°; temperature of air, 50°; water, 44°. Winds: E., S.SE., SW. First part, stiff gales; middle and latter, light winds.

June 13. Lat. 47° 26′ S.; long. 87° 17′ W. Barometer, 29.26; thermometer attached, 65°; temperature of air, 50°; water, 46°. Winds: S.SW., do., S. First and middle parts, fresh breezes and light rain squalls; latter part, light breezes."

Ship "Morning Light," (Benj. L. Johnson,) Philadelphia to San Francisco; 32 days from St. Roque.

"June 3. Lat. 48° 32′ S.; long. 64° 30′ W. Barometer, 30.05; thermometer attached, 59°; temperature of air, 44°; water 47°. Winds: N., NE., N.NE. First and middle parts, light winds; latter, moderate.

June 4. Lat. 51° 08′ S.; long. 65° 35′ W. Barometer, 30.05; thermometer attached, 60°; temperature of air, 40°; water, 45°. Winds: N.NE., N.NE. to N.NW., baffling. First, moderate; middle and latter, moderate breezes, misty, with light showers of rain.

June 5. Lat. 53° 41′ S.; long. 64° 27′ W. Barometer, 29.85; thermometer attached, 62°; temperature of air, 40°; water, 43°. Winds: N.NW., N., N.NW. First part, light winds and thick; middle, fresh breezes; latter, fresh gales.

June 6. Lat. 54° 59′ S.; long. 62° 48′ W. Barometer, 29.51; thermometer attached, 57°; temperature of air, 41°; water, 40°. Winds: N.NW., ditto, ditto. First and middle parts, strong gales and drizzling rain; latter, more moderate. Sounded in 63 fathoms; rock and coral.

June 7. Lat. 55° 20′ S.; long. 62° 10′ W. Barometer, 29.45; thermometer attached, 61°; temperature of air, 37°; water, 40°. Winds: W.NW., W., SW. by S. Light airs, thick misty weather. Sounded in 50 fathoms; small stones.

June 8. Lat. 56° 17′ S.; long. 61° 30′ W. Barometer, 29.32; thermometer attached, 58°; temperature of air, 36; water, 38°. Winds: W., W.NW., NW. First and middle, light breezes; latter, moderate.

June 9. Lat. 56° 43′ S.; long. 64° 06′ W. Barometer, 29.09; thermometer attached, 60°; temperature of air, 37°; water, 37°. Winds: N.NW., NE., E.NE. Light breezes, thick and foggy weather.

June 10. Lat. 56° 45′ S.; long. 64° 50′ W. Barometer, 29.20; thermometer attached, 62°; temperature of air, 36°; water, 36°. Winds: W.NW., NW. by N., E.SE. First and middle, light breezes; latter, strong breezes and increasing.

June 11. Lat. 57° 17′ S.; long. 68° 19′ W. Barometer, 29.38; thermometer attached, 60°; temperature of air, 32°; water, 40°. Winds: SE., SE., SE. First part, strong breezes; middle, strong gales, hard squalls with hail; latter, light winds and puffy.

June 12. Lat. 57° 17′ S.; long. 70° 46′ W. Barometer, 29.29; thermometer attached,

60°; temperature of air, 33°; water, 40°. Winds: SE., NE., N. to N.NE. Light winds and cloudy.

June 13. Lat. 57° 12′ S.; long. 76° 02′ W. Barometer, 29.08; thermometer attached, 62°; temperature of air, 31°; water, 40°. Winds: SE., E.SE., E. First part, light breezes, with snow squalls; middle and latter, strong breezes and cloudy.

June 14. Lat. 55° 50′ S.; long. 80° 25′ W. Barometer, 29.20; thermometer attached, 58°; temperature of air, 32°; water 40°. Winds: E.SE., E., SE. First part, moderate; middle, light winds; latter, fresh breezes, with frequent snow squalls.

June 15. Lat. 54° 01′ S.; long. 82° 50′ W. Barometer, 29.42; thermometer attached, 60°; temperature of air, 35; water, 42°. Winds: S., SW., ditto. First and latter parts, moderate, with snow squalls; middle, frequent hard squalls with snow.

June 16. Lat. 52° 54′ S.; long. 83° 35′ W. Barometer, 29.33; thermometer attached, 57°; temperature of air, 39; water, 43°. Winds: SW. by W., W. by N., W.NW. First and middle, moderate winds, with light snow squalls; middle, light winds.

June 17. Lat. 50° 51′ S.; long. 86° 20′ W. Barometer, 28.82; thermometer attached, 62°; temperature of air, 41°; water, 42°. Winds: N.NW. to N.NE., E. by S., E. by S. First part, light winds and freshened; middle, hard gales and increasing; latter, tremendous gale.

June 18. Lat. 48° 27′ S.; long. 88° 33′ W. Barometer, 29.94; thermometer attached, 64°; temperature of air, 40°; water, 44°. Winds: E. by S., SE., SE. by S. First and middle parts, storm raging with unabated violence; latter, subsiding a little."

Ship "Star King," (George H. Turner,) Boston to San Francisco; 24 days from St. Roque.

"June 11. Lat. 49° 40′ S.; long. 64° 00′ W. Barometer, 29.50; thermometer attached, 54°; temperature of air, 45°; water, 44°. Winds: NE., N.NE., N. First part, moderate breezes; middle and latter parts, fresh gales, squally, with light rain.

June 12. Lat. 52° 45′ S.; long. 64° 30′ W. Barometer, 29.24; thermometer attached, 56°; temperature of air, 49°; water, 43°. Winds: N.NW., do., do. First part, fresh gales, foggy, with light rain; middle, moderate and foggy; latter, pleasant.

June 13. Lat. 54° 00′ S.; long. 64° 50′ W. Barometer, 29.24; thermometer attached, 54°; temperature of air, 45°; water, 42. First and middle parts, light breezes and foggy; latter, moderate.

June 14. Lat. 54° 30′ S.; long. 65° 00′ W. Barometer, 29.40; thermometer attached, 54°; temperature of air, 45°; water, 43°. Winds: S.SE., SE., do. Fresh breezes and cloudy.

June 15. Lat. 54° 50′ S.; long. 65° 30′ W. Barometer, 29.34; thermometer attached, 52°; temperature of air, 43°; water, 42°. Winds: SE., do., calm NW. to NE. First part, light airs, rain, and fog; middle and latter, light variable airs, and calms.

June 16. Lat. 55° 38′ S.; long. 66° 05′ W. Barometer, 29.00; thermometer attached, 52°; temperature of air, 46°; water, 40°. Winds: NW. to NE., N., W.NW. to W. First part, light airs; middle, fresh breezes and rainy; latter, moderate.

June 17. Lat. 56° 10′ S.; long. 66° 31′ W. Barometer, 28.70; thermometer attached, 50°; temperature of air, 42°; water, 40°. Winds: NW., calm, S. to S.SW. First part, moderate; middle, calm and rainy; latter, hard squalls of snow and hail.

June 18. Lat. 56° 36′ S.; long. 65° 44′ W. Barometer, 28.90; thermometer attached,

44°; temperature of air, 35°; water, 36°. Winds: SW., do., do. First and middle parts, hard gales, with violent squalls, snow, and hail; latter, heavy gale, with more violent squalls.

June 19. Lat. 56° 39′ S.; long. 65° 14′ W. Barometer, 29.20; thermometer attached, 43°; temperature of air, 34°; water, 35°. Winds: S.SW. to SW., SW., do. First part, heavy gale, violent squalls of snow and hail; middle and latter parts, more moderate.

June 20. Lat. 56° 10′ S.; long. 65° 15′ W. Barometer, 29.24; thermometer attached, 48°; temperature of air, 42°; water, 38°. Winds: SW. to W.SW., do., do. First part, hard gales, squalls of snow; middle and latter parts, more moderate.

June 21. Lat. 55° 38′ S.; long. 65° 10′ W. Barometer, 29.45; thermometer attached, 46°; temperature of air, 30°; water, 31°. Winds: SW., S.SW., S. First and latter parts, hard gales, with heavy squalls of snow and hail; middle, snow and hail squalls.

June 22. Lat. 56° 05′ S.; long. 64° 40′ W. Barometer, 29.50; thermometer attached, 44°; temperature of air, 30°; water, 31°. Winds: S.SW., do., do. First and middle parts, strong gales, hard squalls of snow and hail; latter, more moderate.

June 23. Lat. 55° 56′ S.; long. 66° 00′ W. Barometer, 29.86; thermometer attached, 44°; temperature of air, 37°; water, 36°. Winds: S., S.SW., do. First part, strong gale; middle and latter, light airs.

June 24. Lat. 55° 45′ S.; long. 66° 30′ W. Barometer, 29.76; thermometer attached, 46°; temperature of air, 42°; water, 43°. Winds: baffling, from SE. to SW., N.NW. to NE., NW. to SE. Light variable airs.

June 25. Lat. 55° 42′ S.; long. 66° 20′ W. Barometer, 29.70; thermometer attached, 48°; temperature of air, 40°; water, 40°. Winds: N. to SE., SE. to S., E. Light and variable airs.

June 26. Lat. 56° 00′ S.; long. 68° 00′ W. Barometer, 29.92: thermometer attached, 46°; temperature of air, 42°; water, 44°. Winds: E. to E., E.NE., N.NW. Light breezes, clear, pleasant weather.

June 27. Lat. 56° 12′ S.; long. 69° 50′ W. Barometer, 29.81; thermometer attached, 46°; temperature of air, 44°; water, 44°. Winds: N., calm, NE. First and latter parts, light breezes; middle part, calm.

June 28. Lat. 55° 34′ S.; long. 75° 35′ W. Barometer, 29.12; thermometer attached, 48°; temperature of air, 44°; water, 42°. Winds: NE., E.NE., do. First and middle parts, light breezes; latter, moderate.

June 29. Lat. 54° 35′ S.; long. 78° 00′ W. Barometer, 29.07; thermometer attached, 45°; temperature of air, 45°; water, 43°. Winds: N., do., N.NW. First part, moderate breezes and rainy; middle and latter, light breezes, drizzling rain.

June 30. Lat. 53° 52′ S.; long. 82° 00′ W. Barometer, 29.03; thermometer attached, 48°; temperature of air, 45°; water, 43°. Winds: N.NW., NW., N.NW. First part, moderate breezes, with light rain squalls; middle and latter parts, light breezes.

July 1. Lat. 53° 20′ S.; long. 83° 00′ W. Barometer, 29.30; thermometer attached, 49°; temperature of air, 43°; water, 43. Winds: N.NW., NW., N. Light breezes, with light showers of rain.

July 2. Lat. 51° 05′ S.; long. 85° 47′ W. Barometer, 29.26; thermometer attached, 48°; temperature of air, 43°; water, 43°. Winds: calm, E.NE. to E., E. First part, calm; middle and latter parts, moderate breezes, with light rain.

July 3. Lat. 48° 35′ S.; long. 89° 00′ W. Barometer, 29.38; thermometer attached, 48°; temperature of air, 44°; water, 43°. First part, fresh gales, with heavy squalls of rain; middle and latter parts, light breezes."

Ship "Stag Hound," (Chas. F. W. Behm,) New York to San Francisco; 23 days from St. Roque.

"June 25. Lat. 49° 38′ S.; long. 64° 15′ W. Barometer, 29.68; thermometer attached, 64°; temperature of air, 42°; water, 42°. Winds: SW., E.SE., ditto, Light breezes and thick foggy weather.

June 26. Lat. 51° 20′ S.; long. 65° 02′ W. Barometer, 30.12; thermometer attached, 68°; temperature of air, 45°; water, 41°. Winds: E.SE., ditto, E.NE. Light breezes and pleasant; sounded at different times in from 75 to 80 fathoms, dark gray sand and gravel.

June 27. Lat. 53° 50′ S.; long. 65° 28′ W. Barometer, 30.07; thermometer attached, 63°; temperature of air, 45°; water, 41°. Winds: W.NW., ditto, ditto. Moderate breezes and pleasant.

June 28. Lat. 56° 03′ S.; long. 68° 20′ W. Barometer, 29.36; thermometer attached, 66°; temperature of air, 45°; water, 43°. Winds: N.NW., N., N. Fresh breezes and squally throughout.

June 29. Lat. 55° 56′ S.; long. 71° 11′ W. Barometer, 29,17; thermometer attached, 66°; temperature of air, 46°; water, 40°. Winds: NW., N. to W., E. to S. Light variable winds.

June 30. Lat. 55° 35′ S.; long. 72° 54′ W. Barometer, 29.01; thermometer attached, 64°; temperature of air, 44°; water, 44°. Winds: SW., ditto, ditto. Light breezes and foggy, very cold and damp.

July 1. Lat. 54° 37′ S.; long. 73° 24′ W. Barometer, 29.43; thermometer attached, 64°; temperature of air, 44°; water, 43°. Winds: SW. by S., ditto, calm. Light airs and foggy; latter, calm.

July 2. Lat. 53° 34′ S.; long. 78° 40′ W. Barometer, 29.69; thermometer attached, 70°; temperature of air, 39°; water, 42°. Winds: E., SE., E. First and middle part, light breezes; latter, strong breezes.

July 3. Lat. 50° 43′ S.; long. 85° 12′ W. Barometer, 29.43; thermometer attached, 68°; temperature of air, 46°; water, 42°. Winds: E., ditto, E.NE. Strong breezes; latter, moderating.

July 4. Lat. 49° 30′ S.; long. 87° 27′ W. Barometer, 29.33; thermometer attached, 46°; temperature of air, 43°; water, 43°. Winds: N.NW., N.NE., ditto. Light breezes and foggy."

Cape Horn Crossings—July.

Name of vessel.	From parallel of St. Roque to 50° S.	Longitude of crossing parallels east of Cape Horn.			Latitude of crossing meridians south of Cape Horn.			Longitude of crossing parallels west of Cape Horn.			From 50° S. in the Atlantic, to 50° S. in the Pacific.
		50° S.	53° S.	56° S.	67° W.	71° W.	75° W.	55° S.	53° S.	50° S.	
	Days.	*Long. W.*	*Long. W.*	*Long. W.*	*Lat. S.*	*Lat. S.*	*Lat. S.*	*Long. W.*	*Long. W.*	*Long. W.*	*Days.*
N. B. Palmer	22	56°	55°	67°	57°	58°	56°	77°	78°	78°	19
Southerner	25	64	63	64	56	57	58	83	81	79	26
A. Buckman	37	66	66	68	56	57	56	76	77	80	14
Senator	19	64	65	65	57	57	56	77	80	81	18
Queen of the East	30	63	63	61	56	56	55	77	78	79	23
White Squall	22	64	64	65	56	58	58	78	79	80	18
Ellen Noyes	28	55	56	64	58	58	57	77	78	79	21
Flying Cloud	23	66	65	68	56	56	55	73	78	80	7
Rome	33	55	55	61	57	56	55	76	79	80	24
Victory	26	57	55	66	57	57	56	76	80	84	17
Levanter	35	64	65	65	56	56	56	77	79	81	16
Atalanta	39	65	65	68	56	56	54	76	77	80	18
Belle of the West	29	66	65	62	58	57	57	79	82	82	19
Anglo Saxon	31	57	59	60	60	59	59	86	88	88	26
White Squall	27	64	63	65	57	58	58	79	80	81	18
West Wind	34	64	64	67	57	56	55	73	76	78	13
Cyane	38	61	64	62	57	57	57	80	82	81	23
Avondale	31	55	56	60	57	56	56	78	81	86	30
Sarah Boyd	47	63	67	66	56	57	56	78	80	79	19
Reindeer	34	59	63	65	58	56	57	79	81	80	22
Golden State*	23	58	63	66	58	59	56	76	78	80	19
Golden Eagle	24	63	64	70	56	56	56	78	81	82	12
Robin Hood	30	55	58	62	56	56	56	84	88	90	14
Endeavor	26	64	64	65	56	56	56	79	81	82	17
Robin Hood	24	61	64	66	56	56	55	75	80	83	7
Flying Dutchman	32	64	65	66	57	56	54	75	77	78	8
Independence	37	64	64	66	56	58	58	82	84	81	19
Falcon	27	64	64	70	56	56	56	77	79	81	11
Hurricane	18	63	64	66	56	57	55	78	79	80	11
Java	41	63	64	65	57	56	56	79	80	82	12
Sword Fish	28	66	67	65	56	56	53	74	75	80	27
Means	29.7	61.7	62.5	65.0	56.7	56.7	56.0	77.8	79.9	81.1	17.1

* Last in the 7th edition. The ten others are more recent crossings.

Ship "Independence," (. Chadwick,) Boston to Valparaiso; 37 days from St. Roque.

"June 21. Lat. 49° 04′ S.; long. 63° 46′ W. Barometer, 29.76; temperature of air, 40; water, 42. Winds: SW., W.SW., W. First part moderate breezes; middle and latter, light winds.

June 22. Lat. 51° 07′ S.; long. 64° 33′ W. Barometer, 29.65; temperature of air, 39°; water, 42°. Winds: W., W.SW., SW. First part, moderate; middle, strong breezes and squally; latter, light breezes.

June 23. Lat. 53° 25′ S.; long. 64° 15′ W. Barometer, 29.64; temperature of air, 38°; water, 42°. Winds: variable, W.SW., SW. Light breezes and cloudy.

June 24. Lat. 53° 54′ S.; long. 64° 14′ W. Barometer, 29.65; temperature of air, 38°; water, 41. Winds: S., calm, N. First and latter parts, light winds; middle, calm.

June 25. Lat. 55° 12′ S.; long. 63° 24′ W. Barometer, 29.48; temperature of air, 37°; water, 40°. Winds: N., ditto, variable. Light breezes and rainy.

June 26. Lat. 55° 20′ S.; long. 64° 20′ W. Barometer, 29.45; temperature of air, 30°; water, 40°. Winds: SE., ditto, S. Light breezes and rainy.

June 27. Lat. 55° 11′ S.; long. 62° 04′ W. Barometer, 29.64; temperature of air, 29°; water, 34°. Winds: S., calm, calm. First part, light airs; middle and latter, calm.

June 28. Lat. 55° 55′ S.; long. 64° 40′ W. Barometer, 30.02; temperature of air, 28°; water, 37°. Winds: E., SE., S. First part, light winds; middle, fresh breezes with squalls of snow and hail; latter, moderate.

June 29. Lat. 56° 11′ S.; long. 66° 00′ W. Barometer, 29.88; temperature of air, 36°; water, 36°. Winds: S., N.NW., W. First and middle, fresh breezes with snow squalls; latter, strong breezes.

June 30. Lat. 57° 29′ S.; long. 69° 39′ W. Barometer, 29.55; temperature of air, 39°; water, 40°. Winds: N.NW., W., ditto. Strong breezes with unsettled weather.

July 1. Lat. 58° 36′ S.; long. 70° 55′ W. Barometer, 29.70; temperature of air, 39°; water, 39°. Winds: W., ditto, ditto. Moderate breezes and squally.

July 2. Lat. 58° 36′ S.; long. 73° 14′ W. Barometer, 29.67; temperature of air, 32°; water, 37°. Winds: W. to NW., SE., S. First part, moderate breezes and foggy; middle and latter, squally with rain and snow.

July 3. Lat. 57° 39′ S.; long. 74° 40′ W. Barometer, 30.00; temperature of air, 38°; water, 39°. Winds: S., W., W.NW. First part, light winds; middle, fresh; latter, fresh gales and squally.

July 4. Lat. 57° 55′ S.; long. 76° 36′ W. Barometer, 29.75; temperature of air, 37°; water, 38°. Winds: W.NW., ditto, W.SW. Fresh breezes and cloudy; latter, moderate.

July 5. Lat. 50° 00′ S.; long. 79° 16′ W. Barometer, 30.00; temperature of air, 41°; water, 39°. Winds: SE., NE., N.NE. First part, light winds; middle, strong breezes; latter, fresh breezes, thick and rainy.

July 6. Lat. 55° 40′ S.; long. 82° 24′ W. Barometer, 29.95; temperature of air, 39°; water, 39°. Winds: N., N.NW., NW. Strong breezes and squally, thick and rainy.

July 7. Lat. 54° 51′ S.; long. 82° 33′ W. Barometer, 29.85; temperature of air, 39°; water, 40°. Winds: NW., N., ditto. Fresh breezes and rainy.

July 8. Lat. 53° 11′ S.; long. 84° 02′ W. Barometer, 29.20; temperature of air, 42°; water, 40°. Winds: N., NE., N. Fresh winds, thick and rainy.

July 9. Lat. 52° 13′ S.; long. 83° 45′ W. Barometer, 29.45; temperature of air, 40°; water, 41°. Winds: N.NE., NE., W. First part, fresh; middle, stormy; latter, heavy squalls.

July 10. Lat. 50° 42′ S.; long. 81° 20′ W. Barometer, 29.30; temperature of air, 43°; water, 43°. Winds: W.NW., NW., ditto. First part, strong breezes; middle and latter, moderate.

July 11. Lat. 49° 41′ S.; long. 79° 01′ W. Barometer, 30.10; temperature of air, 46°; water, 45°. Winds: NW., NW. by N., NW. Light winds throughout."

Ship "Robin Hood," (R. Bearse, jr.,) New York to California; 29 days from St. Roque.

"June 28. Lat. 49° 23′ S.; long. 56° 32′ W. Barometer, 29.10; thermometer attached, 44°; temperature of air, 35°; water, 39°. Winds: W., S., SW. First part, moderate; middle, hard squalls; latter, more moderate, squalls of snow and rain.

June 29. Lat. 50° 30′ S.; long. 55° 48′ W. Barometer, 29.20; thermometer attached,

40°; temperature of air 35°; water, 39°. Winds: SW., ditto, ditto. First and middle parts, fresh breezes, with snow squalls; latter, more moderate, with frequent snow squalls.

June 30. Lat. 51° 10′ S.; long. 57° 12′ W. Barometer, 29.25; thermometer attached, 37°; temperature of air, 37°; water, 41°. Winds: S. to SW., NE. to NW., ditto. First part, fresh breezes, with passing snow squalls; middle, light airs; latter, light winds, with snow squalls.

July 1. Lat. 53° 46′ S.; long. 58° 55′ W. Barometer, 29.16; thermometer attached, 43°; temperature of air, 38°; water, 39°. Winds: NW., NW. to SW., SW. to W.NW. First part, fresh breezes, with snow squalls; middle and latter, moderate breezes, with snow squalls.

July 2. Lat. 54° 38′ S.; long. 61° 48′ W. Barometer, 29.10; thermometer attached, 41°: temperature of air, 38°; water, 40°. Winds: W.NW., N., W.NW. First part, moderate breezes; middle and latter, light breezes and pleasant.

July 3. Lat. 55° 59′ S.; long. 62° 00′ W. Barometer, 29.17; thermometer attached, 43°; temperature of air, 46°; water; 35°. Winds: W.NW.; SW., ditto. First part, light airs; middle and latter, moderate, foggy and misty.

July 4. Lat. 56° 46′ S.; long. 65° 24′ W. Barometer, 29.17; thermometer attached, 41°; temperature of air, 37°; water, 36°. Winds: SW. to S., NW. by W., W.NW. First and middle parts, moderate breezes, foggy and misty; latter, fresh breezes, misty and drizzling rain.

July 5. Lat. 55° 53′ S.; long. 66° 20′ W. Barometer, 29.26; thermometer attached, 39°; temperature of air, 36°; water, 39°. Winds: W. by S. and SW., S., S.SW. First part, strong gales, and squally misty weather; middle, fresh breezes; latter, moderate.

July 6. Lat. 56° 00′ S.; long. 67° 08′ W. Barometer, 29.27; thermometer attached, 41°; temperature of air, 41°; water, 43°. Winds: SW. to NE., N., NW. Light baffling airs and pleasant.

July 7. Lat. none, long. none. Barometer, 29.22; thermometer attached, 42°; temperature of air, 45°; water, 44°. Winds: N., calm, calm. First part, light airs; middle and latter, calm.

July 8. Lat. 55° 56′ S.; long. 71° 35′ W. Barometer, 29.11; thermometer attached, 44°; temperature of air, 45°; water, 45°. Winds: calm and NE., N. by E., N. First part, calm and light airs; middle and latter, moderate breezes and misty.

July 9. Lat. 55° 57′ S.; long. 75° 20′ W. Barometer, 28.24; thermometer attached, 43°; temperature of air, 43°; water, 41°. Winds: N. by W., N., W. First part, moderate breezes and cloudy; middle and latter, fresh gales and squalls, with drizzling rain.

July 10. Lat. 56° 28′ S.; long. 76° 05′ W. Barometer, 29.08; thermometer attached, 41°; temperature of air, 41°; water, 40°. Winds: W., W.NW., W. to N. First part, strong breezes and squally; middle, fresh breezes; latter, moderate.

July 11. Lat. none, long. none. Barometer, 29.14; thermometer attached, 43°; temperature of air, 40°; water, 39°. Winds: N.NW., NW., W.NW. Light baffling airs and rainy.

July 12. Lat. 56° 33′ S.; long. 80° 02′ W. Barometer, 29.20; thermometer attached, 44°; temperature of air, 39°; water, 40°. Winds: W., W.NW., NW. by N. First part, moderate; middle, light airs; latter, moderate, foggy, misty, and drizzling rain.

July 13. Lat. 54° 52′ S.; long. 84° 26′ W. Barometer, 29.15; thermometer attached, 43°; temperature of air, 39°; water, 41°. Winds: N.NW., N. by W., N. First and middle, moderate, fog and rain; latter, fresh breezes.

July 14. Lat. 52° 25′ S.; long. 88° 54′ W. Barometer, 29.14; thermometer attached, 45°; temperature of air, 40°; water, 41°. Winds: N., N., N. by E. First and latter parts, fresh breezes; middle, moderate.

July 15. Lat. 50° 38′ S.; long. 90° 02′ W. Barometer, 29.03; thermometer attached, 43°; temperature of air, 41°; water, 42° Winds: N. by E., N.NE., calm and N. First and middle parts, strong gales and squally, with drizzling rain; latter, calm and light breezes, and rain.

July 16. Lat. 49° 04′ S.; long. 92° 42′ W. Barometer, 29.03; thermometer attached, 40°; temperature of air 41°; water, 43°. Winds: SW. by S., SW., SW. by W. First and middle parts, fresh gales, with hard squalls of hail and rain; latter, fresh breezes and squally."

Ship "Java," (John W. Davis,) New York to San Juan del Sur; 39 days from St. Roque.

"June 30. Lat. 48° 53′ S.; long. 62° 37′ W. Barometer, 28.62; temperature of air, 42°; water, 42°. Winds: N., W. by S., W.SW. First part, light breezes and foggy; middle and latter, light breezes and cloudy.

July 1. Lat. 51° 02′ S.; long. 62° 07′ W. Barometer, 28.55; temperature of air, 41°; water, 41°. Winds: W.SW., SW., SW. by W. First and middle parts, moderate; latter part, fresh, with frequent fog squalls.

July 2. Lat. 50° 19′ S.; long. 63° 00′ W. Barometer, 28.90; temperature of air, 41°; water, 42°. Winds: S.SW., S.SW., SW. by S. First part, strong; middle and latter parts, moderate.

July 3. Lat. 51° 00′ S.; long. 63° 32′ W. Barometer, 29.36; temperature of air, 32°; water, 41°. Winds: S.SW., SE., E. First part, fresh breezes, with fog squalls; middle, strong breezes; latter, light airs.

July 4. Lat. 52° 48′ S.; long. 63° 57′ W. Barometer, 29.30; temperature of air, 36°; water, 40°. Winds: E., E.NE., N.NE. First and middle parts, light breezes; latter, brisk winds.

July 5. Lat. 54° 40′ S.; long. 64° 30′ W. Barometer, 29.10; temperature of air, 37°; water, 40°. Winds: N. by E., N.NE., E.NE. First and middle parts, brisk breezes and rainy; latter, moderate.

July 6. Lat. 56° 07′ S.; long. 65° 30′ W. Barometer, 29.10; temperature of air, 33°; water, 39°. Winds: N. by E., N.NE., E.NE. Fresh breezes and thick weather.

July 7. Lat. 56° 40′ S.; long. 69° 00′ W. Barometer, 28.80; temperature of air, 33°; water, 42°. Winds: E., E.NE., E.NE. Moderate breezes.

July 8. Lat. 56° 25′ S.; long. 71° 03′ W. Barometer, 28.30; temperature of air, 36°; water, 40°. Winds: E.NE., calm, E. First and middle parts, light breezes, thick, and rainy; latter part, thick snow storm.

July 9. Lat. 56° 04′ S.; long. 74° 15′ W. Barometer, 28.46; temperature of air, 31°; water, 39°. Winds: SE., SE., S. First part, strong breezes, with snow storm; middle and latter, light.

July 10. Lat. 54° 50′ S.; long. 78° 41′ W. Barometer, 28.68; temperature of air, 30°; water, 39°. Winds: S., SE., E.SE. First part, light breezes; middle, squally; latter, strong breezes and snow.

July 11. Lat. 52° 30′ S.; long. 80° 16′ W. Barometer, 29.16; temperature of air, 30°; water, 41°. Winds: E.SE., E.SE., SE. by E. Strong breezes, with frequent squalls of snow.

July 12. Lat. 51° 01′ S.; long. 81° 24′ W. Barometer, 29.56; temperature of air, 36°; water, 43°. Winds: SE. by S., SE. by S., calm. First part, brisk breezes and squally; middle, moderate; latter, calm.

July 13. Lat. 51° 15′ S.; long. 82° 20′ W. Barometer, 29.75; temperature of air, 44°; water, 43°. Winds: calm, N. by W., N. by W. First part, calm; middle, moderate breezes; latter, heavy gale, with rain.

July 14. Lat. 50° 50′ S.; long. 82° 36′ W. Barometer, 28.78; temperature of air, 42°; water, 42°. Winds: N.NW., W., N.NW. First part, heavy gale, with rain; middle, moderate; latter, light breezes.

July 15. Lat. 49° 13′ S.; long. 83° 03′ W. Barometer, 29.14; temperature of air, 41°; water, 43°. Winds: W., W. by S., S.SE. First part, light breezes; middle, rain; latter, strong breezes and squally."

Ship "Golden Eagle," (Samuel A. Fabens,) New York to San Francisco; 24 days from St. Roque.

"July 3. Lat. 50° 30′ S.; long. 63° 12′ W. Barometer, 30.02; thermometer attached, 52°; temperature of air, 42°; water, 46°. Winds: W.SW., SW., SW. First part, moderate; middle and latter parts, squally, with occasional light rain and hail squalls.

July 4. Lat. 51° 38′ S.; long. 63° 40′ W. Barometer, 30.20; thermometer attached, 58°; temperature of air, 44°; water, 46°. Winds: SW. to S.SE., calm and W.SW., NW. to W.NW. Light airs and calms.

July 5. Lat. 53° 51′ S.; long. 64° 15′ W. Barometer, 30.21; thermometer attached, 56°; temperature of air, 40°; water, 42°. Winds: NW., S.SE. to S., S. Light breezes.

July 6. Lat. 54° 40′ S.; long. 65° 30′ W. Barometer, 30.25; thermometer attached, 59°; temperature of air, 43°; water, 38°. Winds: S., S. to SW. and calm, W.NW. First part, light airs and calms; middle, light airs; latter, fresh breezes.

July 7. Lat. 55° 47′ S.; long. 66° 27′ W. Barometer, 30.10; thermometer attached, 62°; temperature of air, 45°; water, 43°. Winds: NW., NW. and calm, calm. First part, moderate; middle, light airs and calm; latter, calm.

July 8. Lat. 56° 27′ S.; long. 69° 56′ W. Barometer, 29.80; thermometer attached, 66°; temperature of air, 46°; water, 42°. Winds: E.SE., E.NE., N.NE. Moderate and cloudy.

July 9. Lat. 56° 45′ S.; long. 71° 20′ W. Barometer, 29.24; thermometer attached, 54°; temperature of air, 46°; water, 40°. Winds: N. and calm, N., NW. by W. First part, light airs and calm; middle, brisk breezes and squally; latter, fresh gales and squally, with rain.

July 10. Lat. 56° 59′ S.; long. 72° 28′ W. Barometer, 29.81; thermometer attached, 62°; temperature of air, 42°; water, 43°. Winds: W., W. by N., calm. First part, strong gales; middle, moderate and squally; latter, calm.

July 11. Lat. 56° 30′ S.; long. 73° 40′ W. Barometer, 29.95; thermometer attached, 64°; temperature of air, 43°; water, 42°. Winds: calm and N.NE., calm, NW., calm and W.NW. First part, calm and light airs; middle, calm; latter, calm and light airs.

July 12. Lat. 56° 14′ S.; long. 75° 00′ W. Barometer, 30.08; thermometer attached, 62°; temperature of air, 44°; water, 42°. Winds: W.SW. to W., W. by S., calm and N.NW. First and middle parts, light breezes; latter, light airs and calm.

July 13. Lat. 54° 47′ S.; long. 77° 56′ W. Barometer, 29.95; thermometer attached, 62°; temperature of air, 44°; water, 42°. Winds: N.NW. to W., N.NE., NE. Moderate breezes and pleasant.

July 14. Lat. 51° 44′ S.; long. 80° 35′ W. Barometer, 29.73; thermometer attached, 62°; temperature of air, 47°; water, 45°. Winds: NE., N.NE., N.NW. First part, brisk breezes; middle, moderate; latter, light airs.

July 15. Lat. 50° 10′ S.; long. 82° 05′ W. Barometer, 28.90; thermometer attached, 62°; temperature of air, 46°; water, 46°. Winds: N.NW. to NE. by N., NE. by N., calm and N.NW. First part, moderate breeze; middle, strong; latter, calm and hard gales, fogs and rain."

Ship "Hurricane," (Samuel Vesey, jr.,) New York to San Francisco; 18 days from St. Roque.

"July 8. Lat. 50° 28′ S.; long. 63° 33′ W. Barometer, 29.13; thermometer attached, 48°; temperature of air, 40°; water, 43°. Winds: NE. and calm, SW., ditto. First part, brisk gales; middle, calm, and drizzling rain; latter, light winds and foggy.

July 9. Lat. 52° 20′ S.; long. 63° 30′ W. Barometer, 29.00; thermometer attached, 49°; temperature of air, 41°; water, 43°. Winds: SW. to NW. and N., calm, calm. First part, variable winds; middle and latter, calm.

July 10. Lat. 53° 24′ S.; long. 63° 55′ W. Barometer, 29.08; thermometer attached, 42°; temperature of air, 33°; water, 43°. Winds: calm, calm, SE. First and middle parts, calm; latter, hard gales, with heavy squalls, constant snow and sleet.

July 11. Lat. 54° 10′ S.; long. 64° 50′ W. Barometer, 29.62; thermometer attached, 40°; temperature of air, 31°; water, 40°. Winds: SE., ditto, S.SE. and calm. First and middle parts, hard gales, with snow; latter, moderate and calm.

July 12. Lat. 55° 27′ S.; long. 65° 15′ W. Barometer, 30.00; thermometer attached, 44°; temperature of air, 31°; water, 38°. Winds: calm and SW. to W.SW., S., ditto. First part, calm and fresh breezes; middle and latter, fierce gales and snowing.

July 13. Lat. 56° 40′ S.; long. 67° 25′ W. Barometer, 30.15; thermometer attached, 45°; temperature of air, 31°; water, 39°. Winds: S., W., calm and NW. First part, fresh breezes; middle, moderate; latter, calm and fresh breezes.

July 14. Lat. 56° 50′ S.; long. 71° 00′ W. Barometer, 29.28; thermometer attached, 49°; temperature of air, 38°; water, 43°. Winds: NW., N. and calm, calm and NW. First part, hard gales; middle, fresh and calm; latter, calm and hard gales.

July 15. Lat. 57° 00′ S.; long. 73° 35′ W. Barometer, 29.72; thermometer attached, 50°; temperature of air, 39°; water, 40°. Winds: NW. and calm, calm, S. First part, hard gale and calm; middle, calm and moderate; latter, calm, and brisk gales.

July 16. Lat. 55° 18′ S.; long. 75° 45′ W. Barometer, 29.82; thermometer attached, 49°; temperature of air, 39°; water, 41°. Winds: S., calm, S. First and latter parts, brisk winds; middle, calm.

July 17. Lat. 55° 25′ S.; long. 78° 00′ W. Barometer, 29.29; thermometer attached, 50°; temperature of air, 40°; water, 42°. Winds: NW., W.NW., W. First part, furious gales; middle, moderating; latter, light breezes.

July 18. Lat. 52° 59′ S.; long. 79° 05′ W. Barometer, 29.67; thermometer attached,

50°; temperature of air, 42°; water, 44°. Winds: W., ditto, ditto. Blowing fresh gales throughout.

July 19. Lat. 50° 28′ S.; long. 79° 50′ W. Barometer, 29.70; thermometer attached, 52°; temperature of air, 50°; water, 49°. Winds: W., ditto, ditto. Fresh gales; latter part, rainy."

Ship "Flying Dutchman," (A. Hubbard,) New York to San Francisco, 31 days from St. Roque.

"July 19. Lat. 50° 23′ S.; long. 64° 43′ W. Barometer, 29.10; thermometer attached, 71°; temperature of air, 48°; water, 44°. Winds: W.SW., N., N. Moderate breezes and rainy.

July 20. Lat. 54° 37′ S.; long. 65° 07′ W. Barometer, 29.04; thermometer attached, 73°; temperature of air, 50°; water, 44°. Winds: W.NW., W., N. Moderate breezes.

July 21. Lat. 56° 23′ S.; long. 66° 18′ W. Barometer, 29.08; thermometer attached, 72°; temperature of air, 39°; water, 44°. Winds: NW., W., W. Fresh gales, with heavy squalls of snow and hail.

July 22. Lat. 57° 40′ S.; long. 67° 39′ W. Barometer, 29.09; thermometer attached, 76°; temperature of air, 38°; water, 41°. Winds: W., NW., W.SW. Fresh gales.

July 23. Lat. 58° 42′ S.; long. 69° 42′ W. Barometer, 28.94; thermometer attached, 76°; temperature of air, 38°; water, 41°. Winds: W.NW., NW., W. Fresh gales and squally.

July 24. Lat. 57° 50′ S.; long. 69° 21′ W. Barometer, 28.76; thermometer attached, 62°; temperature of air, 36°; water, 41°. Winds: W., W., W. Strong gales and squally, with snow and hail.

July 25. Lat. 56° 40′ S.; long. 71° 45′ W. Barometer, 29.50; thermometer attached, 77°; temperature of air, 33°; water, 42°. Winds: S., S.SE., S. Strong gales and squally, with snow and hail.

July 26. Lat. 56° 06′ S.; long. 76° 53′ W. Barometer, 30.04; thermometer attached, 72°; temperature of air, 37°; water, 42°. Winds: S., S., S.SW. Strong gales and squally, with hail and snow.

July 27. Lat. 50° 51′ S.; long. 78° 23′ W. Barometer, 30.24; thermometer attached, 76°; temperature of air, 40°; water, 46°. Winds: S.SW., SW., W. Moderate breezes and squally.

July 28. Lat. 48° 38′ S.; long. 78° 43′ W. Barometer, 30.01; thermometer attached, 77°; temperature of air, 47°; water, 49°. Winds: W., W.NW., W.NW. Fresh gales throughout. I notice the barometer continues up as the breeze freshens."

Cape Horn Crossings.—August.

Name of vessel.	From parallel of St. Roque to 50° S.	Longitude of crossing parallels east of Cape Horn.			Latitude of crossing meridians south of Cape Horn.			Longitude of crossing parallels west of Cape Horn.			From 50° S. in the Atlantic to 50° S. in the Pacific.
		50° S.	53° S.	56° S.	67° W.	71° W.	75° W.	55° S.	53° S.	50° S.	
	Days.	*Long. W.*	*Long. W.*	*Long. W.*	*Lat. S.*	*Lat. S.*	*Lat. S.*	*Long. W.*	*Long. W.*	*Long. W.*	*Days.*
E. Mallory	35	63°	65°	67°	57°	57°	56°	78°	79°	88°	13
Pelican State	31	65	66	64	57	57	56	76	82	83	20
White Swallow	30	64	63	63	57	58	57	76	76	79	17
Corinne	38	64	65	63	59	60	59	81	84	85	21
Wild Ranger	27	62	63	64	57	57	55	76	77	80	17
Mermaid	31	65	65	65	57	57	57	78	79	80	13
Samoset	29	62	64	64	57	57	57	78	80	83	12
Fenelon	40	63	67	65	56	57	55	75	76	81	18
Union	28	64	65	63	57	58	58	78	81	84	13
Carioca	31	65	64	64	56	58	56	77	81	84	11
Flying Dutchman	23	64	64	66	57	57	56	79	83	86	8
Greenwich	42	65	65	66	57	57	57	76	77	80	18
Young America	24	64	65	66	57	56	56	77	80	83	
John Bertram	25	66	66	67	57	56	57	79	83	86	14
Rubicon	37	64	65	66	57	57	57	78	80	80	17
Horsburg	31	63	62	63	57	56	55	75	80	81	21
Harrisburg	36	60	67	66	57	57	55	76	78	79	18
Kate Hays	38	63	66	66	58	57	57	76	81	82	19
Winfield Scott	37	58	59	60	57	57	56	72	81	81	25
Windward	28	59	63	61	58	59	57	79	83	84	22
F. P. Sage	37	62	64	66	57	56	55	78	81	83	16
Sandusky	37	65	65	67	57	57	57	78	79	81	26
Sunbeam*	33	66	66	65	57	58	55	76	80	80	22
Challenger	30	60	64	63	57	57	57	80	85	85	17
Golden State	26	65	63	66	58	59	56	77	78	80	18
Golden Rule	26	66	66	68	57	59	53	73	76	77	25
Nor Wester	26	64	65	67	56	57	57	78	81	84	12
Fleet Wing	29	64	64	61	59	58	57	80	80	84	15
Northern Queen	27	63	63	65	58	58	56	76	79	76	13
Alboni	38	65	64	69	56	57	57	80	82	81	17
Snap Dragon	29	65	65	69	56	56	56	81	81	81	10
Live Yankee	37	61	65	65	56	57	58	77	79	80	19
Young America	23	64	64	65	57	57	58	78	78	79	11
Competitor	30	65	65	65	57	56	55	75	82	86	15
Galatea	19	62	64	68	56	58	55	75	75	78	17
Edwin Flye	32	66	65	64	57	57	58	78	79	87	33
Means	31.1	63.4	64.4	65.1	57.0	57.3	56.3	77.2	79.9	81.5	17.

* Last in the 7th edition. The 13 others have been added since.

Ship "Golden State," (Andrew Barstow,) New York to San Francisco; 26 days from St. Roque.

"July 24. Lat. 50° 00′ S.; long. 64° 52′ W. Barometer, 30.00; temperature of air, °; water, 44°. Winds: W., N.NW., W.

July 25. Lat. 53° 07′ S.; long. 63° 27′ W. Barometer, 30.03; temperature of air, 42°; water, 44°. Winds: SW., SW., W.SW. Commences near calm; middle, fresh; latter, moderate. Drift, kelp.

July 26. Lat. 54° 55′ S.; long. 63° 34′ W. Barometer, 30.00; temperature of air, 42°; water, 41°. Winds: W.SW., NW., NW. Commences moderate; middle, fresh breeze; latter, strong. At 9 a. m. close-reefed topsails; land in sight at meridian; land bearing N.NW. to W.NW., true; distance about 15 miles; completely covered with snow.

July 27. Lat. 56° 02′ S.; long. 65° 35′ W. Barometer, 30.05; temperature of air, 34°; water, 31°. Winds: NW., W., W. Middle part, light and calm; latter, moderate, thick, cloudy, with light rain. Single reefs, with topgallant-sails over.

July 28. Lat. 57° 57′ S.; long. 65° 14′ W. Barometer, 29.90; temperature of air, 36°; water, 38°. Winds: W.NW., W.NW., W. Commences light airs; middle, freshening; ends with strong west winds.

July 29. Lat. 58° 08′ S.; long. 67° 14′ W. Barometer, 29.35; temperature of air, 40°; water, 40°. Winds: W., W., N.NW. Commences with strong west winds and high sea. At 8 p. m. tacked north. At 3 a. m. wore ship. Middle, light north airs and moderate, with thick, cloudy weather, and the sea from the west. Aneroid falling.

July 30. Lat. 57° 24′ S.; long. 68° 10′ W. Barometer, 29.10; temperature of air, 42°. Broke water thermometer. Winds: NW., W.NW., W. Commences fresh; middle, strong, wind veered to W.NW.; latter ends with a gale, under a press of sail; some snow squalls.

July 31. Lat. 57° 58′ S.; long. 67° 06′ W. Barometer, 29.48. Winds: W.NW., W., SW. Commences with an increasing gale, hard squalls, with snow; middle, hard squalls; latter, moderating. Split close-reefed foretopsail and reefed foresail.

Aug. 1. Lat. 56° 34′ S.; long. 69° 00′ W. Barometer, 29.30. Winds: S.SW., W.SW., W. Commences gales; middle part, hard snow squalls; latter part, a hard gale of wind from W. to W.NW.; very high sea.

Aug. 2. Lat. 57° 54′ S.; long. 69° 22′ W. Barometer, 29.25. Winds: W., W., W.NW. Commences a furious gale; middle, hard squalls; latter, strong, but somewhat more moderate; under close reefs, and reefed foresail; cloudy, with drizzling rain.

Aug. 3. Lat. 58° 53′ S.; long. 69° 56′ W. Barometer, 29.25. Winds: W., W.NW., W. Snow squalls from W. to W.NW.; strong gales.

Aug. 4. Lat. 59° 28′ S.; long. 71° 27′ W. Barometer, 28.90. Winds: W.NW., W.NW., NW. Commences with a hard gale; middle, ditto; at meridian, died suddenly calm, and shifted to the south, with a thick snow storm; sea very high and unruly.

Aug. 5. Lat. 57° 48′ S.; long. 74° 29′ W. Barometer, 29.75. Winds: SW., S.SW., S. First and middle parts, continued snow squalls; latter part, strong winds and high sea.

Aug. 6. Lat. 55° 58′ S.; long. 75° 30′ W. Barometer, 29.60. Winds: SW., W., NW. First part, strong gales and high sea; latter part, hard gale. Aneroid has been at 30.00; is falling; varies very well, but rather too slow for the wind.

Aug. 7. Lat. 55° 53′ S.; long. 76° 26′ W. Barometer, 29.30. Winds: NW., SW., calm and NW. First part, a heavy gale and very high sea; middle part, wind suddenly shifted to SW., with light wind; latter part, calm and light airs.

Aug. 8. Lat. 54° 08′ S.; long. 77° 00′ W. Barometer, 29.20. Winds: NW., SW., W.SW. First part, snow squalls and calms; second part, wind suddenly changed and blowing a hard gale; ends with a hard wind.

Aug. 9. Lat. 52° 55′ S.; long. 78° 11′ W. Barometer, 30.20. Winds: W., SW., S.SW. First part, a hard gale; middle, wind shifted; latter, moderating, sea going down.

Aug. 10. Lat. 51° 50′ S.; long. 80° 24′ W. Barometer, 30.00. Winds: SW., calm, N.NE., S.SW. Commences moderate and calm; middle part, the wind shifted; latter part, strong gale and very high sea.

Aug. 11. Lat. 49° 30′ S.; long. 79° 42′ W. Barometer, 30.30. Winds: S.SW., W.NW.,

W.NW. Commences fresh and foggy; middle, strong breezes, rainy, and thick, water indicating the approach to the coast; ends strong winds and high west sea."

Ship "Edwin Flye," (Captain William Flye,) from Cardiff to Acapulco.

"Aug. 5. Lat. 50° 12′ S.; long. 66° 21′ W. Barometer, 29.60; temperature of air, 47°; water, 48°. Winds: NE., NW., W.NW. First part, light airs from the NE. and foggy; middle and latter parts, clear and pleasant.

Aug. 6. Lat. 52° 38′ S.; long. 65° 11′ W. Barometer, 28.90; temperature of air, 46°; water, 42°. Winds: SW., NW., NE. Commences with moderate breezes and pleasant weather, barometer going down, winds freshening; ends clear and pleasant; current 26 miles north.

Aug. 7. Lat. 54° 31′ S.; long. 63° 13′ W. Barometer, 29.42; temperature of air, 42°. Winds: SW., SW., NW. Commences with fresh breezes and clear, heavy sea; middle part, strong breezes; ends clear and pleasant; current 48 miles east.

Aug. 8. Lat. 56° 12′ S.; long. 64° 26′ W. Barometer, 29.12; temperature of air, 45°; water, 40°. Winds: SW., W.SW., W.NW. Commences with fresh breezes and clear; middle part, strong gales and thick hazy weather; latter part, moderate breezes, with squalls of wind and rain.

Aug. 9. Lat. 57° 09′ S.; long. D. R. 64° 25′ W. Barometer, 29.14; temperature of air, 40°; water, 38°. Winds: W.SW., W.SW., W.SW. Commences with moderate breezes, with rain, hail, and snow; middle and latter parts, strong gales, with snow and hail; current 36 miles NE.

Aug. 10. Lat. 57° 17′ S.; long. 64° 48′ W. Barometer, 29.47; temperature of air, 34°; water, 38°. Winds: NE., SE., S. Commences with heavy gales and tremendous squalls of wind and hail, heavy sea; middle part, more moderate, with squalls of rain and snow; latter part, very light airs, cloudy, very cold.

Aug. 11. Lat. 56° 50′ S.; long. D. R. 71° 04′ W. Barometer, 29.03; temperature of air, 41°; water, 40°. Winds: NE. Moderate breezes, with snow; ends with light airs from the NE. and foggy.

Aug. 12. Lat. 56° 16′ S.; long. 71° 44′ W. Barometer, 29.35; temperature of air, 37°; water, 41°. Winds: NE., S., S. Commences light airs from NE. and foggy, heavy swell from the westward; middle part, fresh winds sprung up, freshened into a heavy gale from the southward, with snow and sleet; ends heavy gales, with snow and rain; ship laboring and shipping considerable water.

Aug. 13. Lat. 55° 20′ S.; long. 73° 15′ W. Barometer, 29.75; temperature of air, 40°; water, 41°. Winds: S., S., W.SW. Commences with heavy gales, with squalls of snow and rain; middle part, weather moderating, barometer rising; latter part, moderate and squally.

Aug. 14. Lat. 56° 29′ S.; long. 74° 18′ W. Barometer, 29.60; temperature of air, 40°; water, 38°. Winds: W.SW. to W., W.NW. to W., W. by S. First part, light breezes, with occasional squalls of wind and rain; middle part, moderate gales; ends with fresh gales and clear cold weather.

Aug. 15. Lat. 57° 03′ S.; long. 74° 23′ W. Barometer, 29.47; temperature of air, 35°; water, 39°. Winds: W., W. to W.SW., W.SW. Commences with fresh gales and clear weather; middle part, heavy gales, with snow, barometer going down; ends fresh gales and heavy sea, cold and clear.

Aug. 16. Lat. D. R. 57° 40′ S.; long. D. R. 74° 05′ W. Barometer, 29.30; temperature of air, 41°; water, 39°. Winds: SW. to W., W., W. First part, moderate breezes from SW. and passing clouds. At 3 p. m. a thick snow storm; wind hauled to W. and increasing. Middle part, tremendous gales, with snow and sleet, barometer going down; latter part, heavy gales. During the night a sea struck the ship on the starboard side, between the main and mizzen rigging, and stove in a part of the bulwarks; at meridian, a trifle less wind.

Aug. 17. Lat. 58° 01′ S.; long. 74° 39′ W. Barometer, 29.26; temperature of air, 34°; water, 40°. Winds: W. by N., W., SW. Commences with strong gales and cloudy rainy weather, enormous sea on, ship laboring and shipping large quantities of water; middle part, fresh gales, with tremendous squalls of wind; latter part, heavy squalls of wind, with hail and snow.

Aug. 18. Lat. D. R. 57° 57′ S.; long. D. R. 76° 01′ W. Barometer, 29.16; temperature of air, 40°; water, 39°. Winds: SW., SW. by S. to W.SW., W. to NW. Commences with heavy gales and tremendous squalls of wind, hail, and snow; barometer rising rapidly; weather moderating somewhat towards evening, very heavy sea, ship taking on board large quantities of water; middle and latter parts, moderate breezes and passing clouds.

Aug. 19. Lat. D. R. 58° 07′ S. Barometer, 28.70; temperature of air, 33°; water, 39°. Winds: N., W. by S., NW., SW., W.SW. Commences with moderate breezes and thick weather, barometer falling rapidly and wind increasing. At 8 p. m. heavy gales and thick rainy weather; hove to under close-reefed main topsail and main spenser. Latter part, fresh gales, with frequent squalls of snow and rain.

Aug. 20. Lat. 58° 27′ S.; long. 75° 25′ W. Barometer, 28.90; temperature of air, 34°; water, 38°. Winds: W. by S., W. by S. to NW. by N., S.SW. Commences with fresh gales, with frequent squalls of hail and snow; barometer rising; weather moderating slightly; latter part, moderate breezes and passing clouds, the sea still too heavy to permit making sail.

Aug. 21. Lat. D. R. 58° 37′ S.; long. D. R. 75° 57′ W. Barometer, 29.20; temperature of air, 38°; water, 39. Winds: S. by W. and calm, calm, NW. by W. Commences with moderate breezes and passing clouds; barometer rising rapidly; improvement in the appearance of the weather; tremendous sea from the westward; latter part, strong winds and cloudy; barometer going down; hail and snow.

Aug. 22. Lat. D. R. 59° 13′ S.; long. D. R. 76° 42′ W. Barometer, 29.24; temperature of air, 40°; water, 39°. Winds: NW. by W. to W.SW., W.NW., W.NW. Commences with strong gales and cloudy, with squalls of snow and hail; very heavy sea on; ship taking on board large quantities of water; ends with moderate breezes and thick weather; light drizzling rain.

Aug. 23. Lat. 59° 34′ S.; long. 78° 10′ W. Barometer, 28.70; temperature of air, 40°; water, 36°. Winds: W.NW. to N. by W., N. by W. to NW., W.NW. to N. by W. Commences with moderate breezes, thick weather, and light rains; barometer falling; wind increasing to a heavy gale; hove to under close-reefed main topsail and foretopmast staysail; middle part, furious gales, with hail and sleet and dangerous sea; ends with strong gales, fog, and sleet.

Aug. 24. Lat. D. R. 59° 46′ S.; long. D. R. 78° 30′ W. Barometer, 28.78; temperature of air, 36°; water, 34°. Winds: NW., NW. to SW., NW. Commences with strong gales and foggy rainy weather; very heavy and irregular sea; at 8 p. m., furious gales; ends fresh gales and squally, with hail, rain, and snow; barometer falling.

August 25. Lat. 59° 41′ S.; long. 78° 04′ W. Barometer, 28.75; thermometer broken. Winds: N. by W. to W. by S., W. by S. W. by S. to SW. Commences with strong gales, and squalls of hail, snow, and sleet; barometer falling and wind increasing. At 7 p. m. barometer commenced to rise, the wind suddenly died away, and shortly changed from N. by W. to W. by S. Very heavy sea from N. and W.; ship laboring, and decks full of water. Ends with moderate breezes and occasional squalls of snow and hail.

August 26. Lat. 58° 21′ S.; long. 78° 05′ W. Barometer, 29.04. Winds: SW., SW. by W., SW. by W. Commences with fresh breezes, and squalls of hail and snow. Heavy swell from SW., too heavy to allow of making sail. Middle and latter parts, strong gales, with squalls of hail and snow.

August 27. Lat. D. R. 57° 02′ S.; long. D. R. 77° 41′ W. Barometer, 28.70. Winds: SW., SW. to W. NW., W. NW. First part, weather clearing up; barometer rising; wind moderating after midnight; ends heavy gales, cloudy rainy weather, and dangerous irregular sea.

August 28. Lat. 57° 23′ S.; long. D. R. 78° 01′ W. Barometer, 28.26. Winds: W. NW., W. NW., W. NW. to W. by S. Commences with heavy gales and squally weather; enormous sea; middle part, moderate breezes, with occasional patches of clear sky. Ends with moderate breezes.

August 29. Lat. D. R. 56° 37′ S.; long. D. R. 77° 05′ W. Barometer, 28.57. Winds: W. SW., SW., W. SW. Commences with moderate breezes; cloudy, with squalls of rain; middle part, strong winds, with frequent squalls of hail and snow; latter part, heavy gales and squally.

August 30. Lat. D. R. 54° 49′ S.; long. D. R. 78° 21′ W. Barometer, 29.50. Winds: W. SW. to W., S. SW., SW. by S. Commences with heavy gales, and almost constant squalls of hail and snow. At 8 p. m. wind hauled to S. SW. Barometer rising rapidly; weather looking more settled; ends with fresh breezes and thick cloudy weather.

August. 31. Lat. 53° 30′ S.; long. 78° 54′. Barometer, 29.80. Winds: SW., SW., SW. Commences with fresh breezes and cloudy, with squalls of snow and sleet; middle part, more moderate; latter part, moderate breezes and cloudy weather. Ship under whole topsails and topgallant sails, the first time for upwards of three weeks.

September 1. Lat. D. R. 52° 19′ S.; long. D. R. 80° 42′ W. Barometer, 29.82. Winds: SW., SW. to W. NW. First part, moderate breezes and cloudy; middle part, light baffling airs and clear; latter part, fresh breezes and passing clouds.

September 2. Lat. 52° 23′ S.; long. 81 42′ W. Barometer, 29.67. Winds: NW., NW., W. Commences with fresh breezes and passing clouds. Barometer falling rapidly, wind increasing. Middle part, strong gales and squally; ends moderate and clear.

September 3. Lat. D. R. 52° 07′ S.; long. D. R. 34° 01′ W. Barometer, 29.13. Winds: W. to NW. by W., NW., N. to NW. by W. First part, moderate and clear; middle and latter, moderate and foggy.

September 4. Lat. 51° 53′ S.; long. 85° 07′ W. Barometer, 29.07. Winds: NW., SW., NW. Commences with moderate breezes and thick weather; ends, fresh breezes and cloudy weather, with occasional snow and sleet.

September 5. Lat. D. R. 51° 01′ S.; long. D. R. 85° 12′ W. Barometer, 29.62. Winds: NW. to W. SW., W., NW., N. Commences with light breezes and foggy weather, with light rain; ends with fresh breezes and cloudy misty weather; heavy swell from the NW.

September 6. Lat. D. R. 50° 25′ S.; long. D. R. 85° 30′ W. Barometer, 29.40. Winds: NW. by W., NW. by N., N. by W. First part, fresh breezes and cloudy misty weather; heavy

swell from NW.; middle, the same; latter, barometer falling rapidly, and winds increasing; ship under closed-reefed topsail and reefed foresail, laboring considerably, and shipping water.

September 7. Lat. 50° 06′ S.; long. 86° 56′ W. Barometer, 29.24. Winds: SW., SW. by W., S. SW. First part, heavy gales and thick, rainy weather. Barometer falling rapidly. Middle part, dark, dirty, rainy weather; wind moderating, weather looking better; ends, fresh breezes and squally."

Ship "Nor Wester," (F. O. Eldridge,) New York to San Francisco; 26 days from St. Roque.

"August 12. Lat. 50° 59′ S.; long. 64° 46′ W. Barometer, 29.65; thermometer attached, 63°; temperature of air, 44°; temperature of water, 43°. Winds: W.SW., W.SW., W.SW. Throughout light breezes and cloudy. At noon sounded in 55 fathoms; current east 19 miles.

August 13. Lat. 54° 13′ S.; long. 65° 28′ W. Barometer, 29.00; thermometer attached, 62°; temperature of air, 46°; temperature of water, 42°. Winds: W.SW., W.NW., W.SW. to W.NW. First part, light winds, thick and cloudy; middle, fresh and cloudy; latter, fresh gales.

August 14. Lat. 55° 46′ S.; long. 66° 21′ W. Barometer, 28.85; thermometer attached, 60°; temperature of air, 40°; temperature of water, 42°. Winds: W.SW., W.NW., N.NW. First part, fresh and cloudy; entered Straits of Le Mare. Middle, wind light and baffling; at 5 p. m. clear of the straits. Latter, light breezes and thick weather.

August 15. Lat. 56° 13′ S.; long. 67° 46′ W. Barometer, 29.26; thermometer attached, 60°; temperature of air, 36°; temperature of water, 42°. Winds: W. by S., W. to W.NW., SW. First part, light and cloudy; middle, heavy squalls, with hail; latter, fresh gales.

August 16. Lat. 57° 34′ S.; long. 68° 28′ W. Barometer, 29.50; thermometer attached, 60°; temperature of air, 36°; temperature of water, 39°. Winds: SW., W.SW., S. First part, fresh gales, with snow squalls; middle and latter parts, light winds and snow squalls.

August 17. Lat. 57° 18′ S.; long. 71° 27′ W. Barometer, 29.90; thermometer attached, 55°; temperature of air, 33°; temperature of water, 38°. Winds: S.SW., SE. by S., S. to S.SW. First and middle parts, light winds, with frequent snow squalls; latter, fresh and clear.

August 18. Lat. 56° 53′ S.; long. 74° 43′ W. Barometer, 29.80; thermometer attached, 56°; temperature of air, 38°; temperature of water, 40°. Winds: S. by W., E., E. by N. Throughout light breezes, smooth water, and cloudy; current for 48 hours, NE. by E., 30 miles.

August 19. Lat. 55° 42′ S.; long. 77° 58′ W. Barometer, 29.82; thermometer attached, 56°; temperature of air, 48°; temperature of water, 40°. Winds: E. by N., N.NE., N. by W. Light winds and pleasant; current, SE. ½ E., 17 miles.

August 20. Lat. 54° 42′ S.; long. 80° 46′ W. Barometer, 29.74; thermometer attached, 56°; temperature of air, 43°; temperature of water, 41°. Winds: N. by W., N.NW., W.NW. First and latter parts, light winds and pleasant; middle, squally, with rain.

August 21. Lat. 52° 21′ S.; long. 81° 01′ W. Barometer, 30.20; thermometer attached, 60°; temperature of air, 44°; temperature of water, 42°. Winds: NW. by W., W.NW., W.SW. Light winds, passing clouds, and pleasant.

August 22. Lat. 52° 27′ S.; long. 83° 28′ W. Barometer, 29.84; thermometer attached, 56°; temperature of air, 44°; temperature of water, 42°. Winds: W.SW., NW. to W.NW., NW. by W. First part, light and pleasant; middle, squally; latter, fresh and cloudy.

August 23. Lat. 51° 54′ S.; long. 85° 10′ W. Barometer, 30.00; thermometer attached,

56°; temperature of air, 42°; temperature of water, 42°. Winds: NW. to NW. by N., NW. by N. Strong winds and squally; middle and latter parts, fresh gales, heavy head sea.

August 24. Lat. 50° 31′ S.; long. 84° 08′ W. Barometer, 30.06; thermometer attached, 55°; temperature of air, 42°; temperature of water, 43°. Winds: NW. to W., W. by N., W.NW. First part, light winds and thick; middle and latter parts, strong breezes and squally."

Ship "Fleetwing," (C. Homes,) New York to San Francisco; 29 days from St. Roque.

"August 9. Lat. 50° 57′ S.; long. 64° 36′ W. Barometer, 29.75; temperature of air, 51°; temperature of water, 43°. Winds: N.NW., N., N. Moderate and fair weather.

August 10. Lat. 54° 13′ S.; long. 63° 33′ W. Barometer, 29.75; temperature of air, 50°; temperature of water, 42°. Winds: N. by W., N. by W., N. by W. First part, fresh breezes and cloudy; middle, strong breezes and overcast; latter, thick, dark weather.

August 11. Lat. 55° 43′ S.; long. 62° 20′ W. Barometer, 29.60; temperature of air, 50°; temperature of water, 38°. Winds: N.NW., N.NW., N.NW. First part, fresh gales and thick; second, thick and dark; latter, thick and misty.

August 12. Lat. 56° 33′ S.; long. 61° 10′ W. Barometer, 29.75; temperature of air, 49°; temperature of water, 37°. Winds: NW., W., calm. First part, moderate, with fog; second, light airs, and clear, calm, and pleasant; fog bank on the horizon.

August 13. Lat. 56° 10′ S.; long. 63° 27′ W. Barometer, 29.42; temperature of air, 48°; temperature of water, 39°. Winds: calm, NE., N. by E. First part, foggy, with thick mist; second, fresh breezes and clear; latter, strong breezes, thick and dark, with rain.

August 14. Lat. 55° 27′ W.; long. 64° 00′ W. Barometer, 29.70; temperature of air, 48°; temperature of water, 42°. Winds: NW., calm, NE., calm, E. Light airs, calms, and foggy.

August 15. Lat. 58° 05′ S.; long. 65° 21′ W. Barometer, 28.90; temperature of air, 46°; temperature of water, 40°. Winds: NE., N. by E., NW. First part, light breezes and fog clouds; middle, moderate and fair; latter, strong gales, with clear weather.

August 16. Lat. 59° 01′ S.; long. 66° 02′ W. Barometer, 29.03; temperature of air, 44°; temperature of water, 37°. Winds: W.NW., W.NW., NW. by W. First part, strong gales; middle part, squally, with snow; latter, squally, strong gales.

August 17. Lat. 59° 06′ S.; long. 67° 55′ W. Barometer, 28.92; temperature of air, 45°; temperature of water, 39°. Winds: NW., NW., W. Fresh gales and heavy squalls of wind, with hail and snow.

August 18. Lat. 58° 14′ S.; long. 68° 26′ W. Barometer, 29.29; temperature of air, 45°; temperature of water, 40°. Winds: W., W. by S., W. Fresh gales, with snow and rain squalls; high sea.

August 19. Lat. 57° 31′ S.; long. 72° 22′ W. Barometer, 29.42; temperature of air, 44°; temperature of water, 40°. Winds: W. by S., W.SW., calm, E.SE. First part, strong winds, with squalls of rain; middle and latter, calms, with light airs.

August 20. Lat. 57° 01′ S.; long. 74° 28′ W. Barometer, 29.53; temperature of air, 46°; temperature of water, 41°. Winds: E.SE., E. by S., E. by N. First and middle parts, moderate and pleasant; latter part, strong breezes, thick, cloudy weather, with fine rain.

August 21. Lat. 55° 00′ S.; long. 79° 58′ W. Barometer, 29.24; temperature of air, 47°; temperature of water, 41°. Winds: E. by N., E. by N., NE. Strong breezes, with thick, cloudy weather and rain.

August 22. Lat. 53° 54′ S.; long. 80° 15′ W. Barometer, 29.39; temperature of air, 46°; temperature of water, 42°. Winds: NE. calm, calm W., W. by N. Thick and foggy, with showers of fine rain.

August 23. Lat. 51° 32′ S.; long. 81° 22′ W. Barometer, 29.62; temperature of air, 45°; temperature of water, 41°. Winds: W.SW., W. by S., SW. to W. Fresh breezes and squally, with light rain.

August 24. Lat. 50° 25′ S.; long. 84° 19′ W. Barometer, 29.62; temperature of air, 47°; temperature of water, 43°. Winds: N., N., NW. to SW. Squalls of wind and rain; latter part, foggy."

Ship "Young America," (D. S. Babcock,) New York to San Francisco; 23 days from St. Roque.

"August 11. Lat. 49° 48′ S.; long. 64° 18′ W. Barometer, 29.6; temperature of air, 52°; temperature of water, 42°. Winds: NW., W., W.SW. to N.NW. First and middle, moderate breezes; latter, light and baffling.

August 12. Lat. 51° 30′ S.; long. 64° 20′ W. Barometer, 29.65; temperature of air, 46°: temperature of water, 41°. Winds: N.NW., W.NW. to SW., W.SW. to N.NW. Winds light and baffling, thick and foggy weather.

August 13. Lat. 54° 15′ S.; long. 64° 40′ W. Barometer, 30.00; temperature of air, 43°; temperature of water, 40°. Winds: E.NE., NE., N.NE. Light breezes and thick fog.

August 14. No observation. In Straits of Le Maire. Winds: NE., N.NE., E.NE. Barometer, 29.45.

August 15. Lat. 56° 08′ S.; long. 65° 00′ W. Barometer, 28.80. Winds: N., W., calm. First part, light variable winds and rainy; latter part, calm.

August 16. Lat. 56° 28′ S.; long. none. Cape Horn bore NW. Barometer, none. Winds: calm, calm, calm. Throughout calm; a long swell from the eastward.

August 17. Lat. 56° 17′ S.; long. 72° 19′ W. Barometer, 29.02; temperature of air, 38°; temperature of water, 41°. Winds: S., S., S. to S.SE. Fresh breezes, with hard squalls of hail and snow; passed Diego Ramirez; latter, moderate.

August 18. Lat. 56° 02′ S.; long. 78° 26′ W. Barometer, 29.9; temperature of air, 41°; temperature of water, 39°. Winds: E., NE., NW. First part, light airs; middle, strong breezes and squally; latter, moderate.

August 19. Lat. 53° 50′ S.; long. 81° 22′ W. Barometer, 29.1; temperature of air, 39°; temperature of water, 40°. Winds: N., NE., E. to S.SW. First part, light baffling winds and rainy; middle and latter, strong winds; large sea.

August 20. Lat. 49° 32′ S.; long. 84° 47′ W. Barometer, 29.8; temperature of air, 40°; temperature of water, 41°. Winds: SW., SW., S.SW. First and middle parts, strong breeze; latter part, light and baffling."

Ship "Northern Queen," (Allen Hodgdon,) Boston to Valparaiso; twenty-seven days from St. Roque.

"August 14. Lat. 51° 10′ S.; long. 63° 23′ W. Barometer, 29.01.; thermometer attached, 47°; temperature of air, 48°; water, 46°. Winds: NW., N.NW., N.NE. First part, fresh breezes, fog, and rain, a heavy NE. swell; middle, foggy, with rain; latter, pleasant; plenty of birds, large quantities of kelp, discolored water.

August 15. Lat. 53° 50′ S.; long. 63° 40′ W. Barometer, 29.04; thermometer attached, 54°; temperature of air, 44°; water, 45°. Winds: N.NE., SW., SW. First part, fresh breezes, heavy sea from NE. My intention was to pass through the Straits of Le Maire, but shall be obliged to pass outside on account of winds. Middle and latter, pleasant; made the land bearing S.SE.

August 16. Lat. 55° 51′ S.; long. 63° 47′ W. Barometer, 29.06; thermometer attached, 51°; temperature of air, 44°; water, 42°. Winds: SW., SW., SW. First part, fresh winds; middle moderate; latter, light winds, with snow squalls, with a heavy sea from west.

August 17. Lat. 56° 29′ S.; long. 66° 03′ W. Barometer, 29.04; thermometer attached, 54°; temperature of air, 44°; water, 44°. Winds: SW., N.NE., NE. First part, light breezes and smooth sea; middle, fresh, with rain; latter, changeable, with squalls of rain, snow, and hail.

August 18. Lat. 57° 25′ S.; long. 66° 21′ W. Barometer, 29.07; thermometer attached, 53°; temperature of air, 44°; water, 44°. Winds: SW., SW., SW. First part, fresh gales, with squalls of snow and hail; middle, the same; latter, gale.

August 19. Lat. 58° 11′ S.; long. 66° 45′ W. Barometer, 29.06; thermometer attached, 50°; temperature of air, 45°; water, 44° Winds: SW., SW., SE. First part, fresh breezes, with heavy squalls of snow and rain; middle, the same; latter, the wind variable, settled with a light SE. breeze, a heavy SW. swell. If this is a specimen of Cape Horn weather there is everything flattering to be said of it.

August 20. Lat. 58° 00′ S.; long. 68° 39′ W. Barometer, 29.09; thermometer attached, 55°; temperature of air, 45°; water, 44°. Winds: N. S. E. W., N., NE. First part, wind all around the compass, showers of rain, and a heavy SW. swell; middle and latter part, moderate breezes, with snow and rain; current small. I have been deceived in Cape Horn weather; it is much better than our coast in winter.

August 21. Lat. 57° 40′ S.; long. 79° 32′ W. Barometer, 29.07; thermometer attached, 56°; temperature of air, 45° water, 43°. Winds: NE., NE., N.NW. Light breezes and pleasant; throughout the twenty-four hours passed kelp.

August 22. Lat. 55° 41′ S.; long. 76° 08′ W. Barometer, 29.06; thermometer attached, 57°; temperature of air, 48°; water, 44°. Winds: N.NW., NE., N. Pleasant throughout; passed around the cape. I think if I was to come around one hundred times I should choose the same track. I am confident it is better weather bound from the cape.

August 23. Lat. 53° 54′ S.; long. 79° 14′ W. Barometer, 29.09; thermometer attached, 55°; temperature of air, 44°; water, 44°. Winds: SW., W.SW., SW. First part, fresh breezes and a heavy swell from S.; middle, thick and squally; latter part, pleasant weather, sea smooth.

August 24. Lat. 53° 27′ S.; long. 78° 27′ W. Barometer, 29.08; thermometer attached, 57°; temperature of air, 46°; water, 44°. Winds: SW., NW., NW. First part, light breezes and thick, a heavy swell from the SW.; middle part, mild and pleasant, with light winds; latter part, fresh breezes, clear and pleasant.

August 25. Lat. 50° 47′ S.; long. 76° 40′ W. Barometer, 30°; thermometer attached, 49°; temperature of air, 48°; water, 47°. Winds: NW., W. by S., W. by S. First part, light breezes and pleasant, sea smooth; middle, fresh breezes and appearances of stronger winds; current small."

Cape Horn Crossings—September.

Name of vessel.	From parallel of St. Roque to 50° S.	Longitude of crossing parallels east of Cape Horn.			Latitude of crossing meridians south of Cape Horn.			Longitude of crossing parallels west of Cape Horn.			From 50° S. in the Atlantic to 50° S. in the Pacific.
		50° S.	53° S.	56° S.	67° W.	71° W.	75° W.	55° S.	53° S.	50° S.	
	Days.	*Long. W.*	*Long. W.*	*Long. W.*	*Lat. S.*	*Lat. S.*	*Lat. S.*	*Long. W.*	*Long. W.*	*Long. W.*	*Days.*
Albany	32	63	.....	66	56	56	55	75	77	79	16
Z. D	37	67	67	.....	57	56	57	71	80	81	18
Sarah Snow	38	65	65	65	57	59	60	79	81	82	17
Carrington	28	65	65	66	57	58	56	82	83	83	21
Defiance	32	65	67	70	.....	56	56	85	84	83	22
Eagle	23	51	54	59	57	59	61	83	84	85	18
Queen of Clippers	26	65	65	65	56	56	55	76	80	82	12
John Bertram	25	65	66	67	57	56	57	79	85	86	14
Sovereign of the Sea	19	64	66	67	56	56	56	78	78	79	9
Jamestown	21	64	65	66	56	57	57	79	82	83	17
Comet	18	65	65	66	57	58	57	83	84	84	29
Trade Wind	20	65	65	65	57	58	59	82	84	85	24
Whistler	24	63	64	65	56	56	56	78	79	81	10
Hurricane	21	65	65	64	58	56	57	78	78	83	25
North Wind	21	65	66	66	57	57	58	79	79	78	29
Raven	19	64	63	64	57	58	57	81	82	83	26
Wild Duck	23	65	66	65	57	57	56	79	82	84	23
Arab	36	65	64	65	59	58	59	78	81	84	39
Wisconsin	33	64	66	66	58	59	59	84	84	84	40
Hero	29	63	64	67	57	56	55	77	83	83	20
*Kremlin	29	65	65	66	57	56	55	73	81	81	11
Midnight	25	63	64	66	57	57	54	74	77	80	11
Rapid	29	63	63	65	57	58	57	79	80	83	17
Hornet	17	61	62	64	58	58	58	77	77	80	20
West Wind	23	64	65	63	56	57	57	81	81	80	24
Gauntlet	32	65	63	62	59	58	56	76	78	79	18
Jamestown	31	65	64	64	59	58	56	75	79	80	15
Arcole	30	65	66	67	56	56	54	74	77	79	9
Plymouth Rock	38	62	64	69	55	57	54	66	75	79	11
Lucy L. Hale	33	64	65	65	56	56	54	75	76	78	18
Sirocco	21	57	63	65	57	58	57	84	83	85	24
William Sturgis	31	64	64	67	56	56	56	76	79	80	15
Grace Darling	34	64	64	67	56	59	58	78	80	80	13
Romance of the Sea	22	65	65	56	56	58	55	79	81	80	14
†Theodor	37	66	65	66	58	57	58	77	79	80	20
Ocean Telegraph	27	65	65	64	58	58	56	75	80	88	17
Almena	25	64	63	64	57	57	58	77	77	82	33
Intrepid	31	65	65	65	56	55	58	83	83	85	24
Means	27.4	63.8	64.4	65.1	56.9	57.1	56.7	78.0	80.3	81.3	19.3

*Last in 7th edition. The seventeen others now published for the first time. † Hamburg brig.

Ship "Plymouth Rock," (M. F. Patterson,) New York to Panama; thirty-five days from St. Roque.

"August 29. Lat. 49° 56′ S.; long. 60° 48′ W. Barometer, 29.24; thermometer attached, 56°; temperature of air, 42°; water, 41°. Winds: SW., SW., SW. Heavy gales; large quantities of drift kelp.

August 30. Lat. 50° 19′ S.; long. 62° 17′ W. Barometer, 30.00; thermometer attached, 57°; temperature of air, 44°; water, 40. Winds: SW., S., S.SE. First part, strong gales; middle, moderating, with several hail squalls; latter, light breezes.

August 31. Lat. 52° 26′ S.; long. 64° 13′ W. Barometer, 29.95; thermometer attached, 63°; temperature of air, 42°; water, 40°. Winds: S.SE. to NW., NW., NW. First part, light winds; middle and latter parts, fresh breezes.

September 1. Lat. 54° 48′ S.; long. 65° 08′ W. Barometer, 29.65; thermometer attached, 60°; temperature of air, 42°; water, 41°. Winds: NW., W.NW., W. Fresh breezes and foggy.

September 2. Lat. 55° 28′ S.; long. 66° 29′ W. Barometer, 29.40; thermometer attached, 55°; temperature of air, 43°; water, 41°. Winds: baffling, NW., W. by S. First part, light and baffling; middle, moderate; latter, heavy hail squalls.

September 3. Lat. 55° 30′ S.; long. 67° 44′ W. Barometer, 29.48; thermometer attached, 62°; temperature of air, 42°; water, 42°. Winds: W. by S., and calm; calm, and N.; N.NE. Light airs and calms.

September 4. Lat. 55° 50′ S.; long. 68° 05′ W. Barometer, 29.55; thermometer attached, 60°; temperature of air, 40°; water, 41°. Winds: calm; calm; calm, and W. by S. First and middle, calm; latter, calm and fine breezes.

September 5. Lat. 56° 55′ S.; long. 71° 29′ W. Barometer, 29.07; thermometer attached, 58°; temperature of air, 44°; water, 39°. Winds: W.NW., NW., N.NW. First part, fresh breezes; middle and latter parts, fresh gales.

September 6. Lat. 58° 51′ S.; long. 71° 29′ W. Barometer, 29.07; thermometer attached, 58°; temperature of air, 44°; water, 39°. Winds: N.NW., NW., W. First part, strong gales, heavy squalls, with rain; middle and latter parts moderating; squalls of hail and snow.

September 7. Lat. 57° 49′ S.; long. 72° 43′ W. Barometer, 29.32; thermometer attached, 52°; temperature of air, 30°; water, 37°. Winds: W.NW., SW., SW. Strong breezes, with frequent squalls of snow and hail.

September 8. Lat. 54° 51′ S.; long. 74° 54′ W. Barometer, 29.90; thermometer attached, 57°; temperature of air, 39°; water, 40°. Winds: SW., W.SW., W.SW. Strong gales, with smart squalls, rain, hail, sleet, and snow.

September 9. Lat. 53° 23′ S.; long. 75° 57′ W. Barometer, 29.38; thermometer attached, 60°; temperature of air, 40°; water, 40°. Winds: W., NE., SE. and S.SW. Light squalls of rain and sleet. Middle and latter, light airs.

September 10. Lat. 51° S.; long. 79° 04′ W. Barometer, 29.57; thermometer attached, 57°; temperature of air, 39°; water, 41°. Winds: S.SW., S.SW., S. Fresh breezes, with frequent squalls of snow, hail, and rain. Passed through Nassau bay, ½ knot current against us. I would like to know if any of *our* ships have tried the channel lately. Can Lieutenant Maury inform me?

September 11. Lat. 47° 41′ S.; long. 80° 37′ W. Barometer, 30.24; thermometer attached, 55°; temperature of air, 44°; water, 44°. Winds: S., S., S. First part, smart snow squalls; middle and latter, fresh breezes."

Ship "Midnight," (James B. Hatch,) Boston to San Francisco; 26 days from St. Roque.

"August 30. Lat. 49° 45′ S.; long. 60° 37′ W. Barometer 30.05; thermometer attached, 52°; temperature of air, 39°; water, 39°. Winds: W.SW., S.SE., S.SE. First part, strong gales; middle, strong breezes; latter, moderate.

August 31. Lat. 50° 58′ S.; long. 63° 07′ W. Barometer 29.97; thermometer attached,

51°; temperature of air, 44°; water, 40°. Winds: S.SE., NW., W.NW. First and middle parts, light winds; latter part, fresh.

September 1. Lat. 53° 57′ S.; long. 64° 08′ W. Barometer, 29.70; thermometer attached, 52°; temperature of air, 42°; water, 41°. Winds: NW., N.NW., NW. by N. First part, fresh winds and foggy; middle and latter, moderate and foggy.

September 2. Lat. 55° 06′ S.; long. 64° 35′ W. Barometer, 29.64; thermometer attached, 51°; temperature of air, 43°; water, 42°. Winds: W.NW., W.SW., W.SW. First and latter parts, moderate and foggy; middle, fresh breezes.

September 3. Lat. 55° 32′ S.; long. 66° 10′ W. Barometer, 29.50; thermometer attached, 52°; temperature of air, 47°; water, 47°. Winds: N.NE., N.NE., N. to N.NW. First part, light; middle, moderate; latter, fresh breezes with snow squalls.

September 4. Lat. 56° 42′ S.; long. 66° 32′ W. Barometer, 29.54; thermometer attached, 52°; temperature of air, 42°; water, 39°. Winds: N.NW. to SW. and S.SE., SW., SW. by S., W.SW. First part, moderate; middle, light; latter, fresh breezes, squally, with showers of rain.

September 5. Lat. 57° 58′ S.; long. 69° 20′ W. Barometer, 29.14; thermometer attached, 51°; temperature of air, 44°; water, 39°. Winds, W.NW., NW. by W., NW. First part, strong breezes and squally; middle and latter parts, strong gales and squally.

September 6. Lat. 58° 08′ S.; long. 69° 58′ W. Barometer, 29.20; thermometer attached, 49°; temperature of air, 35°; water, 38°. Winds: NW. by N. to NW., W.SW., SW. First part, strong gale; middle, moderating, heavy snow squalls; latter, light breezes.

September 7. Lat. 57° 05′ S; long. 70° 59′ W. Barometer, 29.41; thermometer attached, 48°; temperature of air, 34°; water, 38°. Winds: NW., W., SW. First part, light breezes; middle, strong breezes and snow squalls; latter, moderate.

September 8. Lat. 55° 39′ S.; long. 72° 59′ W. Barometer, 29.91; thermometer attached, 47°; temperature of air, 41°; water, 41°. Winds: SW., W.SW., W. to W.SW. Strong breezes, with passing snow squalls.

September 9. Lat. 55° 13′ S.; long. 73° 44′ W. Barometer, 29.40; thermometer attached, 48°; temperature of air, 40°; water, 39°. Winds: SW. by W., W., E.NE. to N.NE. First part, fresh breezes; middle, light; latter, moderate.

September 10. Lat. 52° 56′ S.; long. 77° 41′ W. Barometer, 29.30; thermometer attached, 48°; temperature of air, 38°; water, 40°. Winds: NW. to SW., SW., S.SW. to S.SE. First part, moderate; middle, fresh and snow squalls; latter, strong and heavy squalls.

September 11. Lat. 50° 50′ S.; long. 79° 36′ W. Barometer, 30.20; thermometer attached, 49°; temperature of air, 42°; water, 42°. Winds: S.SW., S.SW., S.SW. First part, strong breezes, with heavy snow squalls; middle, strong breezes and squally; latter, moderate.

September 12. Lat. 48° 33′ S.; long. 82° 10′ W. Barometer 30.50; thermometer attached, 50°; temperature of air, 42°; water 43°. Winds: S.SW., SW. by S., SSW. to SE. First and middle parts, moderate; latter part, light winds."

Ship "Grace Darling," (L. N. Doane,) Boston to San Francisco; 34 days from St. Roque.

"August 31. Lat. 49° 23′ S.; long. 64° 24′ W. Barometer, 29.20; temperature of air, 46°; temperature of water, 38°. Winds, N., N., N. Moderate breezes, passing clouds.

September 1. Lat. 53° 00′ S.; long. 64° 34′ W. Barometer, 29.20; temperature of air,

46°; temperature of water, 38°. Winds, N.NW., N.NW., N.NW. Moderate breezes and foggy.

September 2. Lat. 54° 20′ S.; long. 63° W. Barometer, 29.40; temperature of air, 46°; water, 32°. Winds: W., W., W.; light winds and pleasant.

September 3. Lat. 55° 19′ S.; long. 63° 30′ W. Barometer, 29.10; temperature of air, 43°; temperature of water, 32°. Winds: N.NE., N.NE., N.NE. Light winds and foggy.

September 4. Lat. 55° 38′ S.; long. 64° 10′ W, Barometer, 29.15; temperature of air, 42°; water, 31°. Winds: NW., NW., NE. Light winds and foggy.

September 5. Lat. 56° 20′ S.; long. 67° 00′ W. Barometer, 28.50; temperature of air, 40°; temperature of water, 31°. Winds: N., N., N. Moderate breezes and foggy.

September 6. Lat. none; long. none. Barometer, 28.85; temperature of air, 40°; water, 31°. Winds: W.NW., W.NW., W.NW. Fine winds and foggy.

September 7. Lat. none; long. none. Barometer, 29.00; temperature of air, 41°; temperature of water, 31°. Winds: baffling, baffling, light and baffling.

September 8. Lat. 58° 00′ S.; long. 70° 20′ W. Barometer, 29.00; temperature of air, 40°; temperature of water, 31°. Winds: S., S., S. Light winds and cloudy.

September 9. Lat. 58° 40′ S.; long. 70° 20′ W. Barometer, 29.00; temperature of air, 40°; temperature of water, 31°. Winds: NW., NW., NW. Light winds and squally.

September 10. Lat. 58° 20′ S.; long. 72° 20′ W. Barometer, 28.90; temperature of air, 40°; temperature of water, 31°. Winds: N., N., N. Light winds and cloudy.

September 11. Lat. 55° 30′ S.; long. 77° 58′ W. Barometer, 29.30; temperature of air, 44°; temperature of water, 31°. Winds: S.SW., S.SW., S.SW. Strong winds and squally.

September 12. Lat. 52° 00′ S.; long. 79° 45′ W. Barometer, 29.80.; temperature of air, 40°; water, 44°. Winds: SW., SW., SW. Fresh winds and cloudy.

September 13. Lat. 50° 19′ S.; long. 80° 06′ W. Barometer, 29.80; temperature of air, 41°; temperature of water, 46.° Winds: S.SW., S.SW. S.SW. Fresh breezes and cloudy."

Ship "Gauntlet," (Sam'l Borland,) from New York to Callao and Chincha Islands; thirty-two days from St. Roque.

"September 15. Lat. 48° 48′ S.; long. 64° 58′ W. Barometer, 30.05; temperature of air, 46°; water, 40°. Winds: N., N., baffling. First and middle parts, strong breezes; latter, baffling and light.

September 16. Lat. 51° 30′ S.; long. 65° 20′ W. Barometer, 29.80; temperature of air, 45°; water, 40.° Winds: calm, S.SW., S.SW. First part, calm; middle, moderate; latter, strong winds.

September 17. Lat. 53° 00′ S.; long. 63° 30′ W. Barometer, 29.90; temperature of air, 45°; water 38°. Winds: S.SW., SW. by S., SW. Strong gales.

September 18. Lat. 54° 38′ S.; long. 62° 30′ W. Barometer, 29.70; temperature of air, 40°; water, 38°. Winds: SW., SW., SW. by W. First and latter, strong gales; middle, more moderate.

September 19. Lat. 55° 34′ S.; long. 62° 58′ W. Barometer, 29.30; thermometer attached, 55°; temperature of air, 39°; water, 38°. Winds: SW. by W., SW., SW. Strong gales.

September 20. Lat. 55° 24′ S.; long. 62° 51′ W. Barometer, 29.20; thermometer attached, 56°; temperature of air, 38°; water, 38°. Winds: SW., SW., SW. by S. Strong gales, with heavy squalls of wind and hail.

September 21. Lat. 56° 10′ S.; long. 62° 30′ W. Barometer, 28.74; thermometer attached, 58°; temperature of air, 40°; water, 37°. Winds: W.SW., W.SW., W.NW. First and latter parts, strong gales; middle, more moderate.

September 22. Lat. 57° 06′ S.; long. 62° 00′ W. Barometer, 28.50; thermometer attached, 60°; temperature of air, 42°; water, 37°. Winds: W.SW., W. by S., W. First and middle, strong gales; latter, more moderate.

September 23. Lat. 57° 35′ S.; long. 62° 50′ W. Barometer, 28.55; thermometer attached, 56°; temperature of air, 40°; water, 37°. Winds: first part, moderate; middle and latter parts, strong gales.

September 24. Lat. none; long. 65° 30′ W. Barometer, 28.95; thermometer attached, 60°; temperature of air, 40°; temperature of water, 37°. Winds: W., W., N.NW. First part, strong gales; middle and latter parts, moderating.

September 25. Lat. 58° 50′ S.; long. 66° 40′ W. Barometer, 28.50; thermometer attached, 56°; temperature of air, 42°; temperature of water, 37°. Winds: N.NW., NW. by N., NW. by W. First part, moderate; middle, moderating; latter part, came on suddenly a gale.

September 26. Lat. 59° 17′ S.; long. 68° 33′ W. Barometer, 28.12; thermometer attached, 55°; temperature of air, 44°; temperature of water, 37°. Winds: NW., NW., variable. First part, strong breezes; middle, moderate; latter part, baffling and squally.

September 27. Lat. 58° 09′ S.; long. 68° 00′ W. Barometer, 28.60; thermometer attached, 58°; temperature of air, 28°; temperature of water, 37°. Winds: SW., SW. by W., W.SW. and calm. First part, strong gales; middle, more moderate; latter, light variable winds, and calms.

September 28. Lat. 57° 39′ S.; long. 68° 38′ W. Barometer, 28.90; thermometer attached, 57°; temperature of air, 29°; temperature of water, 36°. Winds: calm, NW., W. First part, calm; middle, fresh breezes; latter, strong gales and squalls.

September 29. Lat. 57° 51′ S.; long. 68° 18′ W. Barometer, 28.90; thermometer attached, 50°; temperature of air, 34°; temperature of water, 37°. Winds: W., calm, E. First part, strong gales; middle, calm; latter, moderate, and rainy.

September 30. Lat. 57° 04′ S.; long. 73° 40′ W. Barometer, 28.70; thermometer attached, 50°; temperature of air, 40°; temperature of water, 37°. Winds: E., E., NW. Light airs and cloudy.

October 1. Lat. 55° 43′ S.; long. 76° 20′ W. Barometer, 29.05; thermometer attached, 50°; temperature of air, 40°; temperature of water, 38°. Winds: W.NW., calm, SW. First part, moderate; middle, calm and rainy; latter part, strong breezes.

October 2. Lat. 51° 46′ S.; long. 79° 00′ W. Barometer, 30.12; thermometer attached, 50°; temperature of air, 39°; temperature of water, 40°. Winds: SW. by S., S.SW., S. First part, strong gales; middle and latter parts, moderating.

October 3. Lat. 50° 00′ S.; long. 79° 42′ W. Barometer, 30.20; thermometer attached, 56°; temperature of air, 45°; temperature of water, 45°. Light breezes and cloudy."

Ship "Rapid," (Richard S. Corning,) New York to San Francisco; twenty-nine days from St. Roque.

"September 18. Lat. 49° 52′ S.; long. 62° 40′ W. Barometer, 30.15; thermometer attached, 69°; temperature of air, 52°; water, 44°. Winds: S., SW. by W., SW. Moderate breezes.

September 19. Lat. 52° 50′ S.; long. 63° 10′ W. Barometer, 29.53; thermometer

attached, 66°; temperature of air, 45°; water, 42°. Winds: SW., W.SW., SW. Moderate breezes and showers of rain.

September 20. Lat. 54° 03′ S.; long. 64° 12′ W. Barometer, 29.52; thermometer attached, 67°; temperature of air, 39°; water, 43°. Winds: S., SW. by W., W.SW. First part, moderate; middle, fresh; latter, strong gales, with squalls of hail, sleet, and snow.

September 21. Lat. 55° 27′ S.; long. 64° 08′ W. Barometer, 29.07; thermometer attached, 67°; temperature of air, 39°; water, 43°. Winds: SW., W.SW., W. by N. First and latter parts, hard gales, with squalls of sleet and snow; middle, moderate and squally.

September 22. Lat. 56° 15′ S.; long. 64° 45′ W. Barometer, 28.83; thermometer attached, 70°; temperature of air, 40°; water, 38°. Winds: W., W.NW., W. by N. Strong gales, hard squalls, with hail, snow, and sleet.

September 23. Lat. 56° 52′ S.; long. 64° 54′ W. Barometer, 29.05; thermometer attached, 67°; temperature of air, 39°; water, 39°. Winds: W.SW., ditto, ditto. Hard gales, with furious squalls, with snow, hail, and sleet.

September 24. Lat. 57° 24′ S.; long. 66° 30′ W. Barometer, 29.00; thermometer attached, 71°; temperature of air, 43°; water, 43°. Winds: W., W.NW., NW. Hard gales, with squalls of rain and snow.

September 25. Lat. 57° 57′ S.; long. 68° 26′ W. Barometer, 28.65; thermometer attached, 70°; temperature of air, 39°; water, 38°. Winds: NW., NW. by W., W.NW. First part, moderate breezes; middle part, with snow and hail squalls; latter, heavy gales, snow and hail squalls.

September 26. Lat. 58° 32′ S.; long. 69° 15′ W. Barometer 28.40; thermometer attached, 71°; temperature of air, 33°; temperature of water, 36°. Winds: W.NW., NW. by W., W. by N. to W.SW. Hard gales, with squalls of snow, sleet, hail, and rain.

September 27. Lat. 57° 33′ S.; long. 67° 38′ W. Barometer, 28.78; thermometer attached, 54°; temperature of air, 30°; temperature of water, 36°. Winds: SW. by W., ditto, W.SW., W. Hard gales, with squalls of hail, sleet, and snow.

September 28. Lat. 57° 44′ S.; long. 68° 45′ W. Barometer, 29.10; thermometer attached, 72°; temperature of air, 43°; temperature of water, 43°. Winds: W.SW., SW. by S., W. First part, light breezes, and squally; middle part, with hail and snow; latter, strong breezes, with squalls of rain.

September 29. Lat. 58° 31′ S.; long. 69° 51′ W. Barometer, 28.97; thermometer attached, 68°; temperature of air, 41°; temperature of water, 40°. Winds: W., W.NW., NW., and calm. First part, strong breezes and squally, with snow; middle, moderate; latter, light winds and calms, with squalls of snow and rain.

September 30. Lat. 57° 30′ S.; long. 74° 54′ W. Barometer, 28.76; thermometer attached, 72°; temperature of air, 42°; temperature of water, 43°. Winds: W., W.NW., NW. by N. First part, light breezes; middle and latter parts, moderate breezes, with rain and snow.

October 1. Lat. 56° 15′ S.; long. 77° 05′ W. Barometer, 29,13; thermometer attached, 37°; temperature of air, 37°; temperature of water, 42°. Winds: NW., calm, SW. by S. First part, light breezes, and rainy; middle, calm; latter, moderate gale.

October 2. Lat. 52° 46′ S.; long. 80° 54′ W. Barometer, 30.26; thermometer attached, 70°; temperature of air, 40°; temperature of water, 43°. Winds: SW. by W. to SW. by S., S.SW., SW. to SW. by S. First part, fresh breezes; middle, stormy; latter, moderating.

October 3. Lat. 51° 56′ S.; long. 81° 44′ W. Barometer, 30.47; thermometer attached, 69°; temperature of air, 45°; temperature of water, 43°. Winds: calm, calm and E.SE., E.SE. First part, calm; middle calm, and light airs; later part, light breezes.

October 4. Lat. 50° 56′ S.; long. 84° 46′ W. Barometer, 30.29; thermometer attached, 62°; temperature of air, 47°; temperature of water, 43°. Winds: E.SE., E., NE. to E.SE. Light variable winds, and pleasant.

October 5. Lat. 50° 07′ S.; long. 83° 20′ W. Barometer, 30.13; thermometer attached, 59°; temperature of air, 42°; temperature of water, 45°. Winds: E.SE. to E., calm, calm, and N.NW. First part, light breezes; middle, calm; latter part, light airs, and calm."

Ship "Ocean Telegraph," (George W. Willis,) New York to San Francisco; 27 days from St. Roque.

"September 19. Lat. 49° 03′ S.; long. 64° 48′ W. Barometer, 29.80; temperature of air, 44°; water, 42°. Winds NW., W.NW, W.SW. Light breezes and fine weather.

September 20. Lat. 51° 18′ S.; long. 66° 01′ W. Barometer, 29.54; thermometer attached, 68°; temperature of air, 44°; water, 42°. Winds: S.SW., W.SW., SW. by W. First part, fine breezes; middle, moderate; latter, strong breezes.

September 21. Lat. 54° 41′ S.; long. 62° 50′ W. Barometer, 29.91; thermometer attached, 68°; temperature of air, 44°; water, 42°; Winds: S.SW., W.SW., W.NW. First part, strong gales; middle, moderate; latter, fresh breezes.

September 22. Lat. 55° 29′ S.; long. 61° 57′ W. Barometer, 29.20; thermometer attached, 68°; temperature of air, 41°; water, 36°. Winds: NW., W.NW., ditto. Strong gales, thick rainy weather, heavy squalls swept the deck of everything movable, and broke several ring-bolts.

September 23. Lat. 56° 24′ S.; long. 63° 52′ W. Barometer, 29.12; thermometer attached, 64°; temperature of air, 40°; water, 37°: Winds, W.SW., SW.W. First part, hard gales; middle, blowing hard in squalls; latter, more moderate.

September 24. Lat. 56° 38′ S.; long. 66° 00′ W. Barometer, 28.83; thermometer attached, 64°; temperature of air, 37°; water, 39°. Winds: W. by N., W.NW., N.NW. Strong gales and rainy.

September 25. Lat. 57° 16′ S.; long. 66° 53′ W. Barometer, 28.56; thermometer attached, 66°; temperature of air, 37°; water, 39°. Winds: N.NW., W.SW., N.NW. Strong gales and rainy; hail and snow.

September 26. Lat. 57° 38′ S.; long. 65° 57′ W. Barometer, 28.85; thermometer attached, 63°; temperature of air, 39°; water, 39°. Winds: NW., ditto, W. First part, strong gales; middle, light breezes; latter, blowing very hard in squalls, with snow.

September 27. Lat. 57° 35′ S.; long. 66° 40′ W. Barometer, 29.11; thermometer attached, 65°; temperature of air, 36°; water, 38°. Winds: W., ditto, ditto. First part, heavy gale; middle, more moderate; latter, moderate, with severe squalls of snow and wind.

September 28. Lat. 57° 48′ S.; long. 67° 00′ W. Barometer, 29.00; thermometer attached, 64°; temperature of air, 42°; water, 40°. Winds: Calm, S.SW., W.NW. First part, calm; middle and latter parts, strong breezes and heavy snow squalls; a great quantity of snow fell during the calm.

September 29. Lat. 57° 46′ S.; long. 70° 43′ W. Barometer, 28.95; thermometer attached,

70°; temperature of air, 39°; water, 39°. Winds: W.NW., ditto, calm. First and middle parts, strong gales; latter part, calm.

September 30. Lat. 57° 45′ S.; long. 72° 11′ W. Barometer, 28.93; thermometer attached, 74°; temperature of air, 39°; temperature of water, 39°. Winds: E., ditto, N. Light airs and foggy weather.

October 1. Lat. 55° 48′ S.; long. 77° 27′ W. Barometer 30.00; thermometer attached, 62°; temperature of air, 38°; temperature of water, 39°. Winds: NW., ditto, calm. First and middle parts, light airs, and thick with rain; latter part, calm.

October 2. Lat. 54° 26′ S.; long. 77° 56′ W. Barometer, 30.29; thermometer attached, 70°; temperature of air, 38°; temperature of water, 39°. Winds: S., ditto, ditto. First part, moderate breezes; middle and latter parts, strong gale, with hard squalls of snow and hail.

October 3. Lat. 53° 32′ S.; long. 79° 43′ W. Barometer, 30.23; thermometer attached, 73°; temperature of air, 39°; temperature of water, 39°. Winds: W.SW., calm, calm. First part, strong gales; middle and latter parts, calm.

October 4. Lat. 52° 55′ S.; long. 81° 51′ W. Barometer, 29.97; thermometer attached, 75°; temperature of air, 47°; temperature of water, 41°. Winds: E.SE., ditto, SE. First and middle parts, light airs; latter part, fresh breezes.

October 5. Lat. 53° 16′ S.; long. 84° 43′ W. Barometer, 29.40; thermometer attached, 73°; temperature of air, 45°; temperature of water, 42°. Winds: E., NE., N.NW. Light airs; fine, clear, pleasant weather.

October 6. Lat. 50° 25′ S.; long. 88° 17′ W. Barometer, 29.67; thermometer attached, 69°; temperature of air, 39°; temperatnre of water, 41°. Winds: NW. by N., N.NW., calm. First part, fresh breezes, thick and foggy; middle, more moderate; latter, calm, thick, and foggy.

October 7. Lat. 48° 15′ S.; long. 87° 43′ W. Barometer, 29.58; thermometer attached, 68°; temperature of air, 39°; temperature of water, 43°. Winds: SW., ditto, ditto. First part, light airs; middle and latter parts, fresh breezes and cloudy."

Cape Horn Crossings—October.

Name of vessel.	From parallel of St. Roque to 50° S.	Longitude of crossing parallels east of Cape Horn.			Latitude of crossing meridians south of Cape Horn.			Longitude of crossing parallels west of Cape Horn.			From 50° S. in the Atlantic to 50° S. in the Pacific.
		50° S.	53° S.	56° S.	67° W.	71° W.	75° W.	55° S.	51° S.	50° S.	
	Days.	*Long. W.*	*Long. W.*	*Long. W.*	*Lat. S.*	*Lat. S.*	*Lat. S.*	*Long. W.*	*Long. W.*	*Long. W.*	*Days.*
Seaman	20	65°	65°	69°	55°	57°	58°	77°	76°	77°	24
Louis Philippe	30	63	64	65	56	56	58	76	78	80	22
Sea Witch	20	64	64	67	56	56	55	77	79	80	14
Typhoon	21	64	65	66	56	57	56	76	79	77	10
Raven	18	64	66	66	56	56	56	76	82	80	19
Schooner Clifton	49	64	64	66	57	57	57	81	82	82	16
S. D. Horton	27	66	66	66	57	59	57	80	76	80	33
Matilda	41	65	64	67	56	58	58	76	78	79	32
Samuel Russel	26	64	65	68	56	57	57	78	78	79	15
Winged Arrow	21	67	67	67	56	57	58	84	83	83	20
Mandarine	20	64	64	66	57	56	58	83	84	83	22
Witch of the Wave	19	63	65	66	56	59	61	85	87	87	19
John Wade*	21	63	64	66	57	56	57	87	95	97	15
Wizard	14	65	65	66	57	56	56	77	82	86	12
Mary Dunham	31	63	63	62	57	57	58	80	81	80	22
Realm	42	67	66	64	57	57	58	83	85	86	21
Stingray	25	63	64	67	56	56	57	78	80	81	14
Martha Allen	26	64	64	64	58	58	59	82	79	81	26
Bejapore	21	65	65	67	56	56	56	79	80	80	14
Flying Dragon	23	62	64	69	56	57	57	79	79	78	12
Robt. Harding	41	66	66	67	56	57	57	79	80	79	14
Clara Brookman	32	53	55	62	57	58	58	76	78	79	15
Victory	51	54	60	63	57	57	56	79	81	81	25
Ocean Telegraph	22	64	64	67	56	57	58	78	78	80	14
Defiance	21	63	65	66	58	56	55	79	82	84	14
Monterey	24	57	64	65	58	57	56	76	78	79	16
Wm. Sturgis	29	62	65	67	56	57	55	78	79	79	13
Wild Duck	21	64	66	66	58	57	56	82	87	90	14
Winged Arrow	25	65	65	68	56	58	55	74	77	78	18
Means	26.9	63.2	63.2	64.7	56.5	56.9	57.0	79.1	80.8	81.5	18.1

* Last in the 7th edition. The sixteen others have been added since.

Bark "Mary Dunham," (Richard Luce, jr.,) New York to Callao; 31 days from St. Roque.

"September 25. Lat. 49° 12′ S.; long. 63° 30′ W. Barometer, 29.90. Winds: N. by W., ditto, ditto. Fine breezes and pleasant. Sounded in 80 fathoms. Sand.

September 26. Lat. 52° 48′ S.; long. 63° 30′ W. Barometer, 29.50. Winds: N. ditto, W.SW. to N.NW. First part, fresh; middle and latter parts, heavy breezes.

September 27. Lat. 54° 54′ S.; long. 63° 35′ W. Winds: N.NW., NW., W.NW. First part, heavy gale; middle and latter parts, heavy squalls of snow and hail. Barometer, 29.10.

September 28. Lat. 55° 40′ S.; long. 62° 30′ W. Barometer, 29.10. Winds: W.NW., ditto, SW. First and middle parts, hard gales, with tremendous heavy squalls of snow and hail; latter, moderate, with squalls of snow.

September 29. Lat. 56° 11′ S.; long. 61° 37′ W. Barometer, 29.30. Winds: W.NW. to W., SW., W. to W.NW. First part, strong gale; middle, more moderate; latter, moderate and foggy.

September 30. Lat. 57° 01′ S.; long. 63° 17′ W. Barometer, 29.20. Winds: W.NW., NW., NW. to N.NW. Moderate breezes and foggy.

October 1. Lat. 57° 04′ S.; long. 66° 22′ W. Barometer, 29.20. Winds: N.NE. to NE., E.NE., E. First part, fresh breezes and foggy, with rain; middle and latter parts, moderate breezes and foggy.

October 2. Lat. 57° 52′ S.; long. 68° 53′ W. Barometer, 29.00. Winds: E.NE., SW., SW. to W.SW. Strong breezes, and foggy, rainy weather.

October 3. Lat. 57° 40′ S.; long. 68° 30′ W. Barometer, 30.00. Winds: calm, and S.SW., S.SW., S.SW. First part, calm, and light breezes; middle and latter parts, heavy gales, thick and heavy snow storm.

October 4. Lat. 56° 58′ S.; long. 68° 10′ W. Barometer, 30.40. Winds: S.SW, ditto, ditto. First part, hard gale, with hail and snow squalls; middle, more moderate, with hail squall; latter, moderating.

October 5. Lat. 56° 56′ S.; long. 68° 20′ W. Barometer, 30.50. Winds: calm, calm, calm, throughout calm.

October 6. Lat. 57° 05′ S.; long. 69° 10′ W. Barometer, 30.20. Winds: N.NE., NW., calm, and NW. First and middle parts, light breezes; latter part, light airs and calm.

October 7. Lat. 58° 20′ S.; long. 72° 00′ W. Barometer, 29.60. Winds: calm, and NW., NW., ditto. First part, calm, and moderate breezes; middle part, breezes, with rain; latter part, moderate breezes, with snow squalls.

October 8. Lat. 58° 50′ S.; long. 74° 20′ W. Barometer, 29.40. Winds: NW., ditto, ditto. Strong gales, and hard squalls of snow, rain, and hail.

October 9. Lat. 57° 00′ S.; long. 76° 50′ W. Barometer, 29.50. Winds: S. to S.SE., S., W. Hard gales, and heavy squalls of snow, rain, and hail.

October 10. Lat. 57° 18′ S.; long. 77° 40′ W. Barometer, 29.00. Winds: W. to N.NW., N.NW., N.NW. Fresh gales, with snow squalls.

October 11. Lat. 56° 50 S.; long. 76° 56′ W. Barometer, 28.90. Winds: N.NW., ditto, calm, and SW. First and middle parts, hard gales; latter part, calm, hard gales, and heavy fall of snow.

October 12. Lat. 55° 08′ S.; long. 80° 18′ W. Barometer, 28.80. Winds: SW., ditto, ditto. Fresh gales, with heavy squalls of snow, hail, and rain.

October 13. Lat. 54° 10′ S.; long. 81° 18′ W, Barometer, 29.20. Winds: SW., ditto, ditto. First part, fresh gales; middle, moderating; latter, moderate.

October 14. Lat. 52° 30′ S.; long. 81° 04′ W. Barometer, 29.70. Winds: SW., W., calm, N. by E. First and middle parts, moderate breezes, with rain squalls; latter, calm and light breezes, and foggy.

October 15. Lat. 51° 42′ S.; long. 81° 30′ W. Barometer, 29.00. Winds: E.NE., N.NW., ditto. First part, strong breezes; middle, moderate breezes; latter, fresh.

October 16. Lat. 50° 58′ S.; long. 80° 12′ W. Barometer, 29.10. Winds: NW., N., NW. to N. First part, fresh gales, with heavy squalls; middle, strong gales and squally; latter, squally.

October 17. Lat. 50° 00′ S.; long. 79° 20′ W. Barometer, 29.60. Winds: W.NW., ditto, NW. First part, strong winds; middle and latter parts, heavy gales."

Ship "Clara Brookman," (A. G. Higgins,) Boston to Callao, 32 days from St. Roque.

"September 26. Lat. 49° 06′ S.; long. 52° 34′ W. Barometer 29.36. Thermometer: air, 49°; water, 49°. Winds: NW., NW. by W. W.NW. Moderate breezes.

September 27. Lat. 51° 24′ S.; long. 54° 30′ W. Barometer, 29.10. Temperature: air, 46°; water, 46°. Winds: NW. by W., NW. by W., SW. by W. First part moderate. Middle, heavy gale, snow and hail squalls. Latter, same.

September 28. Lat. 51° 57′ S.; long. 54° 10′ W. Barometer, 29.40. Temperature: air, 46°; water, 46°. Winds: calm, SW. to W.SW., W.NW. to SW. First part, calm. Middle part squally and puffy. Latter, severe snow squalls, blowing terrific.

September 29. Lat. 53° 44′ S.; long. 56° 06′ W. Barometer, 29.30. Temperature: air, 50°; water, 46°. Winds: W.SW., NW. by W., NW. Fresh breezes and squally.

September 30. Lat. 55° 07′ S.; long. 62° 13′ W. Barometer, 28.95. Temperature: air, 49°; water, 45°. Winds: NW. by W., N.NW., N. Strong gales and squally.

October 1. Lat. 56° 48′ S.; long. 62° 01′ W. Barometer 28.75. Temperature: air, 48°; water, 46°. Winds: N. and calm, calm and SW., SW. First part, light airs and calm. Middle, light airs and calm. Latter, light breezes and foggy.

October 2. Lat. 57° 36′ S.; long. 63° 03′ W. Barometer 29.31. Temperature: air, 50°; water, 46°. Winds: SW. by W., W.NW., calm and light airs from N. to E.NE. First part and middle part, light breezes. Latter, calm and light airs, light showers of rain and snow.

October 3. Lat. 57° 08′ S.; long. 66° 31′ W. Barometer 30.00. Temperature: air, 42°; water, 44°. Winds: calm and light airs, S., S. First part, calm and light airs. Middle and latter parts, fresh gales and squally.

October 4. Lat. 56° 30′ S.; long. 68° 12′ W. Barometer 30.14. Temperature: air, 47°; water, 48°. Winds: SW., S. by W. and calm, calm. First part, light breezes. Middle, light airs and calm. Latter, calm.

October 5. Lat. 56° 44′ S.; long. 68° 33′ W. Barometer 29.80. Temperature: air, 46°; water, 46°. Winds: calm, calm, calm. Light snow and rain squalls.

October 6. Lat. 58° 25′ S.; long. 71° 50′ W. Barometer, 29.50. Temperature: air, 46°; water, 46°. Winds: W.NW., W.NW., W.NW. Moderate breezes, snow and rain squalls.

October 7. Lat. 58° 22′ S.; long. 74° 21′ W. Barometer 29.20. Temperature: air, 42°; water, 44°. Winds: W. by N., calm and baffling, S. by E. Light breezes, calm and baffling airs, thick fogs.

October 8. Lat. 55° 11′ S.; long. 76° 16′ W. Barometer 29.40. Temperature: air, 49°; water, 47°. Winds: S.SW., W. by S., W.NW. First part fresh breezes, snow squalls. Middle and latter, moderate and squally.

October 9. Lat. 54° 24′ S.; long. 77° 45′ W. Barometer 29.02. Temperature: air, 48°; water, 46°. Winds: NW. by W., NW., NW. Fresh gales and squally.

October 10. Lat. 53° 55′ S.; long. 78° 33′ W. Barometer 28.90. Temperature: air, 46°; water, 46°. Winds: N., N. to SW., SW. and calm. First and middle parts, severe gale. Latter, fresh winds and calm.

October 11. Lat. 50° 48′ S.; long. 79° 07′ W. Barometer 29.52. Temperature: air, 47°; water, 47°. Winds: calm and SW., SW. by W. W.SW. First part, calm and moderate winds. Middle and latter fresh breezes with thick snow squalls.

October 12. Lat. 49° 43′ S.; long. 77° 21′ W. Barometer, 29.48. Temperature: air, 48°; water, 49°. Winds: NW. by N. N.NW. W. ½ N. First and middle part, strong breezes and heavy squalls. Latter part, heavy gale, frequent and heavy squalls."

Ship "Flying Dragon," (Jas. H. Little,) New York to San Francisco, 23 days from St. Roque.

"September 27. Lat. 48° 03′ S.; long. 60° 30′ W. Barometer 30.10. Temperature: air, 45°; water, 42°. Winds: W.SW., W.SW., W. by N. Light breezes.

September 28. Lat. 51° 18′ S.; long. 63° 38′ W. Barometer, 30.09. Temperature: air, 46°; water, 43°. Winds: W.NW., NW. by W., NW. by W. First and middle parts, moderate. Latter strong breezes and clear.

September 29. Lat. 54° 32′ S.; long. 65° 03′ W. Barometer, 29.90. Temperature: air, 45°; water, 43°. Winds: NW., NW., W.NW. First and middle parts, strong breezes. Latter part, light breezes.

September 30. Lat. 55° 19′ S.; long. 65° 28′ W. Barometer, 29.93. Temperature: air, 47°; water, 43°. Winds: NW. by W., E.SE., N. Light baffling airs.

October 1. Lat. 56° 20′ S.; long. 69° 00′ W. Barometer, 29.43. Temperature: air, 45°; water, 44°. Winds: E., N.NW.. N. by W. First part, light baffling airs. Middle and latter, fresh breezes.

October 2. Lat. 56° 57′ S.; long. 72° 25′ W. Barometer, 29.33. Temperature: air, 38°; water, 43°. Winds: W.NW., W., S. First and middle parts, light breezes. Latter part, strong gale with squalls of snow.

October 3. Lat. 57° 05′ S.; long. 75° 02′ W. Barometer 29.33. Temperature: air, 41°; water, 43°. Winds: S., S., NW. First and middle parts, light breezes. Latter, strong gale.

October 4. Lat. 57° 09′ S.; long. 76° 30′ W. Barometer 29.33. Temperature: air, 40°; water, 40°. Winds: S., S.SW., NW. by W. First and middle parts, light variable airs. Latter part, gales and squally.

October 5. Lat. 57° 08′ S.; long. 77° 07′ W. Barometer, 29.20. Temperature: air, 40°; water, 40°. Winds: W. by N., calm, W. by S. First part, strong gales. Middle, calm. Latter, light breezes.

October 6. Lat. 56° 32′ S.; long. 79° 24′ W. Barometer, 28.90. Temperature: air, 40°; water, 40°. Winds: NW., WNW., SW. First and middle parts, light breezes and squally. Latter, moderate breezes and squally with snow.

October 7. Lat. 53° 44′ S.; long. 79° 55′ W. Barometer, 29.15. Temperature: air, 40°; water, 40°. Winds: SW., W., W.NW. First and middle parts, moderate breezes. Latter, heavy gale with light rain.

October 8. Lat. 51° 24′ S.; long. 78° 04′ W. Barometer, 29.50. Temperature: air, 44°; water, 44°. Winds: W. by N., W., W. Fresh gales and foggy.

October 9. Lat. 50° 26′ S.; long. 78° 18′ W. Barometer, 29.71. Temperature: air, 44°; water, 44°. Winds: W., W., W. by S. First part, squally. Middle and latter parts, light breezes and cloudy.

October 10. Lat. 50° 16′ S.; long. 78° 30′ W. Barometer, 30.00, Temperature: air, 45°; water, 46°. Winds: W., calm, calm. Light baffling airs and calms.

October 11. Lat. 50° 03′ S.; long. 83° 34′ W. Barometer, 29.45. Temperature: air, 47°; water, 45°. Winds: NW., N.NW., NW. First and latter parts, moderate breezes. Middle, strong breezes."

Ship "Stingray," (N. Kirby, jr.,) New York to San Francisco; 25 days from St. Roque.

"September 29. Lat. 49° 30′ S.; long. 61° 10′ W. Barometer, 29.03; temperature of air, 48°; temperature of water, 42°. Winds: W.NW., N.NE., N. First part, fresh gales; middle and latter parts, hard gales.

September 30. Lat. 51° 12′ S.; long. 64° 30′ W. Barometer, 28.70; temperature of air, 50°; water, 42°. Winds: N.NW., ditto, NW. Hard gales and hard squalls.

October 1. Lat. 52° 40′ S.; long. 64° 24′ W. Barometer, 29.00; temperature of air, 42°; water, 40°. Winds: W.SW., SW. by W., SW. by W. to W.SW. Hard gales.

October 2. Lat, 54° 04′ S.; long. 64° 24′ W. Barometer, 29.10; temperature of air, 42°; water, 42°. Winds: SW. by W. to SW., SW. by S., ditto. Heavy gales and snow storms.

October 3. Lat. 53° 50′ S.; long. 64° 24′ W. Barometer, 29.70; temperature of air, 42°; water, 41°. Winds: SW. by S., S.SW., S.SW. to S. First part, hard gales; middle, moderating; latter, light breezes.

October 4. Lat. 54° 00′ S.; long. 64° 50′ W. Barometer, 30.09; temperature of air, 44°; water, 41°. Winds: S. to S.SE., S.SE., SE. by S. to SE. Light breezes and pleasant.

October 5. Lat. 54° 55′ S.; long. 63° 40′ W. Barometer, 29.90; temperature of air, 43°; water, 40°. Winds: calm, N.NE. to N.NW., NW. First part, calm; middle, moderate breezes; latter, squally.

October 6. Lat. 56° 36′ S.; long. 67° 03′ W. Barometer, 29.60; temperature of air, 42°; water, 40°. Winds: W.NW., NW. by W., ditto. First part, fine breezes; middle and latter, squally and thick.

October 7. Lat. 56° 55′ S.; long. 69° 45′ W. Barometer, 28.80; temperature of air, 44°; water, 41°. Winds: W., NW. to NE., calm, E.NE. to NE. Moderate and baffling breezes; latter, calm and squally.

October 8. Lat. 56° 12′ S.; long. 72° 40° W. Barometer, 29.00; temperature of air, 42°; water, 39°. Winds: E. by N. to S.SE., S.SW., SW. to W.SW. First part, squally; middle, moderate; latter, hard gales.

October 9. Lat. 56° 58′ S.; long. 75° 15′ W. Barometer, 28.90; thermometer attached, 60°; temperature of air, 41°; water, 39°. Winds: W., NW. by W., NW. Hard gales, with snow and rain.

October 10. Lat. 56° 26′ S.; long. 78° 04′ W. Barometer, 28.55; temperature of air, 40°; water, 40°. Winds: NW., NW. to SW., SW. Hard gales, snow and rain.

October 11. Lat. 53° 37′ S.; long. 79° 30′ W. Barometer, 29.30; temperature of air, 37°; water, 38°. Winds: SW., W.SW., SW. First part, hard gales; middle, moderating; latter, moderate.

October 12. Lat. 53° 14′ S.; long. 80° 15′ W. Barometer, 29.15; temperature of air, 37°; water, 39°. Winds: W.SW., NW. to W.NW., W.SW. to SW. First part, moderate breezes, rainy and squally; middle, hard gales; latter, light baffling airs.

October 13. Lat. 51° 48′ S.; long. 80° 30′ W. Barometer, 29.45; temperature of air, 37°; water, 39°. Winds: W.SW. to W., W., W.NW. to N. Light baffling airs and pleasant.

October 14. Lat. 50° 48′ S.; long. 80° 40′ W. Barometer, 29.10; temperature of air, 45°; water, 42°. Winds: N.NE. to NW., N.NW. to NW., NW. First and middle parts, moderate breezes, with hard squalls; latter, fresh gales.

October 15. Lat. 50° 14′ S.; long. 80° 04′ W. Barometer, 28.85; temperature of air, 45°; water 43°. Winds: N.NW. to NW., NW., NW. by N. to N.NW. Hard gales throughout."

Ship "Bejapore," (John L. McKay,) New York to Callao; 21 days from St. Roque.

"September 30. Lat. 49° 45′ S.; long. 64° 34′ W. Barometer, 29.12; thermometer attached, 50°; temperature of air, 46°; water, 43°. Winds: N., N. by W., W. First and middle parts, brisk gales and rainy; latter, moderate and clear.

October 1. Lat. 52° 00′ S.; long. 65° 06′ W. Barometer, 29.35; thermometer attached, 50°; temperature of air, 42°; water, 42°. Winds: W.SW., W. by S., ditto. Moderate breezes.

October 2. Lat. 54° 07′ S.; long. 64° 28′ W. Barometer, 29.45; thermometer attached, 48°; temperature of air, 39°; water, 42°. Winds: W.NW., W. by S., SW. First part, fresh breezes, with hard squalls; middle, brisk gales, threatening appearance; latter, hard gales, with violent snow squalls.

October 3. Lat. 53° 52′ S.; long. 63° 31′ W. Barometer, 29.97; thermometer attached, 46°; temperature of air, 40°; water, 41°. Winds: SW., ditto, S. by E. First part, hard gales, with heavy snow squalls; middle, hard gales; latter, more moderate.

October 4. Lat. 53° 56′ S.; long. 66° 15′ W. Barometer, 30.38; thermometer attached, 54°; temperature of air, 46°; water, 43°. Winds: S., S. by E., SE. by S. First part, moderate gale and squally, with light snow; middle, moderate breezes; latter, light winds.

October 5. (Lat. entrance of Le Maire; long. —.) Barometer, 30.20; thermometer attached, 50°; temperature of air, 40°; water, 41°. Winds: variable, from W., NW., NW. by W. First part, light airs and variable. Sounded in 55 fathoms; gray and black sand. Middle, light winds; latter, light winds, with passing snow showers.

October 6. Lat. 56° 42′ S.; long. 67° 01′ W. Barometer, 29.84; thermometer attached, 48°; temperature of air, 42°; water, 42°. Winds: W.NW., NW. by N., W. Moderate breezes.

October 7. Lat. 57° 20′ S.; long. 70° 14′ W. Barometer, 29.18; thermometer attached, 50°; temperature of air, 39°; water, 40°. Winds: W.NW., NE., E. First part, moderate breezes and squally; middle, moderate; latter, light, variable airs and drizzling rain.

October 8. Lat. 55° 56′ S.; long. 73° 31′ W. Barometer, 29.44; thermometer attached, 47°; temperature of air, 40°; water, 41. Winds: E., S.SE., SW. by S. First part, light, variable breezes and hazy; middle and latter parts, brisk breezes and squally, with rain.

October 9. Lat. 56° 38′ S.; long. 76° 45′ W. Barometer, 29.03; thermometer attached, 47°; temperature of air, 39°; water, 41°. Winds: W.NW., NW., ditto. First part, brisk breezes; middle, brisk breezes and squally, with snow and sleet; latter, brisk breezes.

October 10. Lat. 55° 54′ S.; long. 79° 06′ W. Barometer, 28.90; thermometer attached, 46°; temperature of air, 37°; water, 41°. Winds: NW. by N., N.NW., S.SW. First part, brisk gale; middle, strong gale; latter, moderate gale.

October 11. Lat. 53° 08′ S.; long. 80° 33′ W. Barometer, 29.70; thermometer attached, 48°; temperature of air, 36°; water, 40°. Winds: S.SW., SW. by S., W.SW. First part, moderate gale; middle, increasing gale, with heavy squalls of hail; latter, moderate and squally.

October 12. Lat. 51° 39′ S.; long. 81° 01′ W. Barometer, 29.50; thermometer attached, 49°; temperature of air, 44°; water, 44°. Winds: N,NW., NW., W.SW. First part, moderate gale; middle, increasing gale; latter, more moderate.

October 13. Lat. 50° 26′ S.; long. 80° 45′ W. Barometer, 29.70; thermometer attached, 52°; temperature of air, 46°; water, 44°. Winds: W. by S., NW., N. to N.NE. First part, moderate breezes; middle and latter parts, light winds and foggy."

Ship "Defiance," (John Hendrick,) New York to Callao; 20 days from St. Roque.

"October 10. Lat. 49° 03′ S.; long. 61° 41′ W. Barometer, 29.30; thermometer attached, 54°; temperature of air, 47°; water, 39°. Winds: NE., W., W. Light breezes.

October 11. Lat. 50° 48′ S.; long. 63° 15′ W. Barometer, 29.20; thermometer attached, 52°; temperature of air, 40°; water, 38°. Winds: W., W.SW., SW. First part, moderate; middle and latter parts, strong breezes; light hail squalls; sounded in 70 fathoms water, fine speckled sand.

October 12. Lat. 50° 36′ S.; long. 63° 29′ W. Barometer, 29.60; thermometer attached, 54°; temperature of air, 44°; water, 40°. Winds: S.SW., S.SW., W.SW. First and middle parts, steady gales, with heavy snow squalls; latter, more moderate.

October 13. Lat. 53° 10′ S.; long. 64° 30′ W. Barometer, 29.50; thermometer attached, 54°; temperature of air, 44°; water, 40°. Winds: W.NW., W., W.SW. First part, light breezes; middle and latter parts, strong gales.

October 14. Lat. 54° 07′ S.; long. 64° 41′ W. Barometer, 29.60; thermometer attached, 52°; temperature of air, 44°; water, 41°. Winds: W., NW., N. to NE. First and middle parts, fresh gales; latter part, wind light.

October 15. Lat. 54° 23′ S.; long. 64° 35′ W. Barometer, 29.40; thermometer attached, 50°; temperature of air, 40°. Winds: E.NE., calm, SW. First part, light breezes; middle, calm; latter, fresh gale; sounded in 53 fathoms, shelly.

October 16. Lat. 56° 41′ S.; long. 66° 28′ W. Barometer, 28.99; thermometer attached, 50°; temperature of air, 44°; water, 40°. Winds: SW. to N.NE., NE., W. Fresh breezes; sounded in mid-channel in 55 fathoms, speckled sand and shells.

October 17. Lat. 57° 33′ S.; long. 66° 27′ W. Barometer, 28.90; thermometer attached, 55°; temperature of air, 46°; water, 39°. Winds: W.SW., W.SW. to W., W.SW. to NW. First part, strong breezes; middle and latter parts, blowing heavy; ship in ballast, not able to carry sail.

October 18. Lat. 58° 19′ S.; long. 67° 27′ W. Barometer, 28.60; thermometer attached, 48°; temperature of air, 37°; water, 39°. Winds: W. to W.SW., SW., W.SW. Heavy gales.

October 19. Lat. 56° 58′ S.; long. 68° 54′ W. Barometer, 29.60; thermometer attached, 48°; temperature of air, 36°; water, 38°. Strong gales and snow squalls.

October 20. Lat. 56° 24′ S.; long. 70° 16′ W. Barometer, 29.60; thermometer attached, 48°; temperature of air, 38°; water, 39°. Winds: SW., SW., SW. Strong breezes, with heavy swell.

October 21. Lat. 55° 57′ S.; long. 72° 58′ W. Barometer, 29.60; thermometer attached, 53°; temperature of air, 35°; water, 41°. Winds: SW., SW., SW. Strong gales.

October 22. Lat. 55° 42′ S.; long. 75° 41′ W. Barometer, 29.90; thermometer attached, 48°; temperature of air, 32°; water, 40°. Winds: SW., S.SW., S. to S.SE. First part, strong breezes, with snow squalls; middle, heavy squalls; latter, strong puff.

October 23. Lat. 55° 37′ S.; long. 79° 29′ W. Barometer, 30.00; thermometer attached, 52°; temperature of air, 32°; water, 40°. Winds: E. to E.NE., NE., NE. First part, strong breezes; middle, wind decreasing; latter, moderate.

October 24. Lat. 52° 14′ S.; long. 81° 49′ W. Barometer, 29.00; thermometer attached, 52°; temperature of air, 42°; water, 40°. Winds: NE., NE., NE. First part, moderate; middle and latter parts, strong breezes.

October 25. Lat. 51° 56′ S.; long. 83° 42′ W. Barometer, 28.50; thermometer attached, 50°: temperature of air, 44°; water, 40°. Winds: NW., W.NW., NW. to N. First and middle parts, strong breezes; latter part, more moderate.

October 26. Lat. 50° 09′ S.; long. 84° 09′ W. Barometer, 28.50; thermometer attached, 54°; temperature of air, 45°; water, 41°. Winds: SW., SW., SW. First part, strong breezes; middle, light and variable; weather misty; latter part, strong gale."

Cape Horn Crossings—November.

Name of vessel.	From parallel of St. Roque to 50° S.	Longitude of crossing parallels east of Cape Horn.			Latitude of crossing parallels south of Cape Horn.			Longitude of crossing meridians west of Cape Horn.			From 50° S. in the Atlantic to 50° S. in the Pacific.
		50° S.	53° S.	56° S.	67° W.	71° W.	75° W.	55° S.	53° S.	50° S.	
	Days.	*Long. W.*	*Long. W.*	*Long. W.*	*Lat. S.*	*Lat. S.*	*Lat. S.*	*Long. W.*	*Long. W.*	*Long. W.*	*Days.*
Thomas W. Sears	26	65°	66°	65°	59°	58°	56°	77°	81°	85°	21
Monsoon	21	63	67	67	56	58	59	78	78	80	17
John Wade	20	64	64	67	56	57	56	76	78	82	17
Senator	20	63	65	63	57	57	56	76	78	81	24
Revere	24	53	56	66	57	57	59	78	80	83	17
Tigris	30	62	64	65	56	58	59	79	81	82	18
Fanchon	31	64	65	64	57	56	55	75	77	79	22
White Squall	28	65	65	66	57	58	54	73	78	81	23
Comet	20	65	65	66	56	58	56	76	81	84	12
Delegate	26	65	66	69	.....	57	57	78	79	81	22
Manchester	23	62	63	62	56	57	57	79	81	81	24
Ann Maria	30	63	64	62	57	58	58	82	82	83	28
Morning Light	21	65	66	66	56	57	57	78	83	83	24
Edwin	31	64	64	65	57	58	58	78	81	81	24
Skylark	20	63	65	64	56	56	56	76	77	78	20
N. B. Palmer	21	65	66	66	57	58	59	79	80	80	18
Onward	26	63	65	64	57	58	58	80	81	80	28
Winged Arrow	23	63	67	66	56	56	56	76	79	78	18
Bald Eagle	18	64	65	64	57	58	57	77	78	81	19
Samuel Russel	16	64	65	65	57	58	58	80	81	81	14
Unknown	22	63	64	64	57	57	56	78	77	79	19
Parthenon	29	63	64	65	58	59	58	78	79	81	24
Kate and Alice*	32	64	64	65	58	58	57	77	78	77	21
Flying Fish	20	63	65	66	57	57	54	76	80	80	14
Challenge	23	66	65	60	58	57	59	79	80	80	20
Kremlin	28	64	64	64	57	57	57	77	79	81	16
Ocean Express	18	63	64	62	57	57	58	80	79	80	29
Susan L. Fitzgerald	24	64	65	64	59	58	55	75	75	80	19
Hornet	26	62	63	67	56	58	58	78	80	80	10
Scargo	33	66	66	65	57	56	55	77	81	80	17
Marianne†	26	62	62	59	60	59	61	88	88	88	26
Jane A. Falkinburg	24	66	66	64	56	59	60	75	75	77	24
Means	24.4	63.4	64.5	64.6	57.0	57.5	57.2	77.4	79.5	80.8	20.3

* Last in the 7th edition. The nine other crossings have been received since. † Bremen ship.

Ship "Ocean Express," (Thomas Cunningham,) Boston to Callao; 18 days from St. Roque.

"October 17. Lat. 49° 02′ S.; long. 62° 30′ W. Barometer, 29.60; temperature of air, 49°. Winds: W.NW., W.SW., W.NW. Moderate and pleasant.

October 18. Lat. 52° 36′ S.; long. 64° 20′ W. Barometer, 29.38; temperature of air, 47°. Winds: W.NW., W.NW., W. Brisk breezes.

October 19. Lat. 55° 17′ S.; long. 62° 54′ W. Barometer, 29.45; temperature of air, 38°. Winds: W.NW., W.NW., SW. First and middle parts, moderate breezes; latter, strong.

October 20. Lat. 55° 17′ S.; long. 63° 31′ W. Barometer, 29.42; temperature of air, 36°. Winds: SW., S., S.SW. First part, strong breezes; middle, light; latter, fresh.

October 21. Lat. 56° 20′ S.; long. 62° 28′ W. Barometer, 29.50; temperature of air, 31°. Winds: S.SW., SW. by S., SW. by S. Strong breezes, with hail and snow squalls.

October 22. Lat. 55° 44′ S.; long. 64° 43′ W. Barometer, 29.45. Winds: S.SW., S.SW., S.SW. Strong breezes and heavy squalls of wind, hail, and snow.

October 23. Lat. 54° 50′ S.; long. 62° 25′ W. Barometer, 29.35. Winds: S., S. by E., S.SW. Heavy gales and heavy squalls.

October 24. Lat. 55° 46′ S.; long. 60° 56′ W. Barometer, 29.40; temperature of air, 31°. Winds: S.SW., SW., SW. Continual squalls of snow and hail.

October 25. Lat. 57° 18′ S.; long. 58° 30′ W. Barometer, 29.45; temperature of air, 27°. Winds: S.SW., variable, variable. First and middle parts, strong breezes; latter, moderate.

October 26. Lat. 57° 13′ S.; long. 58° 18′ W. Barometer, 29.35; temperature of air, 40°. Winds: variable, variable, N.NW. Light variable winds.

October 27. Lat. 57° 26′ S.; long. 62° 30′ W. Barometer, 28.30; temperature of air, 37°. Winds: N.NE., E., E.SE. First and middle parts, light breezes and hazy; latter, moderate breezes and thick fogs.

October 28. Lat. 57° 58′ S.; long. 64° 30′ W. Barometer, 29.00; temperature of air, 30°. Winds: S.SE., S., S.SW. Strong breezes, and thick foggy weather.

October 29. Lat. 57° 22′ S.; long. 66° 55′ W. Barometer 29.25; temperature of air, 37°. Winds: S.SE., S.SE., S.SE. Light breezes and squally.

October 30. Lat. 57° 20′ S.; long. 68° 30′ W. Barometer, 29.30; temperature of air, 37°. Winds: S.SW., SW., SW. by W. Strong gales, with snow squalls.

October 31. Lat. 57° 31′ S.; long. 68° 45′ W. Barometer, 29.50; temperature of air, 37°. Winds: SW., SW. by S., SW. Strong gales, with strong squalls.

November 1. Lat. 57° 50′ S.; long. 68° 20′ W. Barometer, 29.55; temperature of air, 38°. Winds: SW., SW., S.SW. First and middle parts, heavy gales, with hard squalls; latter part, moderating.

November 2. Lat. 59° 04′ S.; long. 69° 15′ W. Barometer, 29.20; temperature of air, 48°. Winds: SW., W., W.SW. Strong breezes, with drizzling rain; latter part, foggy.

November 3. Lat. 57° 22′ S.; long. 71° 17′ W. Barometer, 29.20; temperature of air, 36°. Winds: S.SW., SW., SW. by S. First and middle parts, fresh breezes, with rain and snow squalls; latter part, moderate.

November 4. Lat. 58° 15′ S.; long. 71° 45′ W. Barometer, 29.22; temperature of air, 38°. Winds: SW., W.SW., ditto. Fresh gales, squally, with drizzling rain.

November 5. Lat. 59° 31′ S.; long. 72° 51′ W. Barometer, 29.10; temperature of air, 38°. Winds: SW. by W., W.NW., W.SW. Strong breezes and rainy.

November 6. Lat. 58° 45′ S.; long. 73° 20′ W. Barometer, 29.25; temperature of air, 38°. Winds: W.SW., W.SW., W.SW. to SW. Heavy gales and hard squalls.

November 7. Lat. 57° 51′ S.; long. 75° 00′ W. Barometer, 29.20; temperature of air, 41°. Winds: SW., SW., NW. First part, strong gales; middle, moderate; latter part, light airs.

November 8. Lat. 57° 55′ S.; long. 77° 15′ W. Barometer, 29.10; temperature of air, 37°. Winds: W.NW., SW., NW. by W. First part, moderate; middle, fresh; latter part, fresh gale.

November 9. Lat. 58° 47′ S.; long. 79° 00′ W. Barometer, 29.00; temperature of air, 41°. Winds: NW., NW., NW. First and middle parts, strong gales; latter part, moderating.

November 10. Lat. 57° 39′ S.; long. 78° 28′ W. Barometer, 29.08; temperature of air, 42°. Winds: NW., W.NW., NW. by N. Strong gales, with snow squalls.

November 11. Lat. 58° 03′ S.; long. 80° 00′ W. Barometer, 28.07; temperature of air, 41°. Winds: NW. by N., N.NW., W. Heavy gales.

November 12. Lat. 56° 55′ S.; long. 78° 55′ W. Barometer, 28.50; temperature of air, 37°. Winds: W., W. by S., N.NW. Hard gales, with heavy squalls of snow and sleet.

November 13. Lat. 56° 03′ S.; long. 80° 15′ W. Barometer, 28.50; temperature of air, 37°. Winds: W., calm, W.SW. First part, strong gales; middle, calm; latter, strong gales, with squalls of snow and rain.

November 14. Lat. 53° 13′ S.; long. 79° 07′ W. Barometer, 29.00; temperature of air, 42°. Winds: W.SW., W., W. by N. Fresh gales, with heavy squalls.

November 15. Lat. 50° 36′ S.; long. 80° 17′ W. Barometer, 29.50; temperature of air, 41°. Winds: W.NW., W., W.SW. First and middle, strong breezes, with heavy squalls of snow and rain; latter part, moderating."

Bark "Jane A. Falkinburg," (Chas. A. Falkinburg,) Boston to San Francisco; 23 days from San Francisco.

"October 26. Lat. 50° 30′ S.; long. 66° 28′ W. Barometer, 28.60. Winds: NE., W., W. First part, moderate breezes; middle, hard gale; latter, fresh breezes.

October 27. Lat. 52° 36′ S.; long. 66° 00′ W. Barometer, 28.55. Winds: W., ditto, S.SW. First and middle parts, moderate breezes and puffy; latter part, fresh breezes, with snow squalls.

October 28. Lat. 54° 32′ S.; long. 65° 30′ W. Barometer, 29.75. Winds: S.SW., N., S. First and latter parts, hard gales, with snow squalls; middle part, light airs.

October 29. Lat. none; long. none. Barometer, 29.00. Winds: S., SW. by S., SW. First part, fresh breezes, with squalls of hail, rain, and snow; middle and latter parts, strong gales, with snow squalls.

October 30. Lat. 55° 50′ S.; long. 64° 27′ W. Barometer, 29.55. Winds: SW., ditto, ditto. First part, fresh breezes, with squalls of rain, hail, and snow; middle and latter parts, hard gales, with squalls.

October 31. Lat. 55° 50′ S.; long. 64° 35′ W. Barometer, 29.55. Winds: SW., ditto, ditto. Fresh gales.

November 1. Lat. 55° 35′ S.; long. 63° 15′ W. Barometer, 29.55. Winds: SW., ditto, W.SW. Hard gales, with rain, snow, and hail squalls.

November 2. Lat. 55° 45′ S.; long. 63° 00′ W. Barometer, 29.20. Winds: W.SW., ditto, SW. First and middle parts, moderate breezes and squally; latter part, hard gales.

November 3. Lat. 56° 30′ S.; long. 64° 19′ W. Barometer, 29.20. Winds: SW. by W., ditto, ditto. First and middle parts, hard gales, with light rain; middle part, more moderate.

November 4. Lat. 55° 27′ S.; long. 66° 37′ W. Barometer, 29.30. Winds: SW. by W., ditto, NW. First part, fresh gales; middle and latter parts, variable and puffy.

November 5. Lat. 56° 20′ S.; long. 67° 20′ W. Barometer, 29.15. Winds: W.SW., ditto, ditto. First and middle parts, variable and puffy, with rain and hail; latter, moderate and squally.

November 6. Lat. 57° 20′ S.; long. 66° 20′ W. Barometer, 29.20. Winds: SW. by W., ditto, ditto. Strong gales.

November 7. Lat. 56° 47′ S.; long. 67° 20′ W. Barometer, 29.50. Winds: SW. by W., ditto, ditto. Fresh gales; latter, rainy.

November 8. Lat. 58° 08′ S.; long. 69° 00′ W. Barometer, 29.75. Winds: N.NW., ditto, ditto. First part, fresh breezes; middle and latter, fresh gales and rainy.

November 9. Lat. 58° 56′ S.; long. 71° 00′ W. Barometer, 29.20. Winds: W.NW., ditto, ditto. First part, moderate; middle and latter parts, strong gales.

November 10. Lat. 59° 56′ S.; long. 73° 15′ W. Barometer, 28.95. Winds: NW. by W., N., N. Strong gales, with rain, and squally.

November 11. Lat. 60° 10′ S.; long. 75° 00′ W. Barometer, 27.80. Winds: NW., NW. by W., ditto. Hard gales; hail, rain, and snow.

November 12. Lat. 60° 25′ S.; long. 76° 35′ W. Barometer, 28.32. Winds: N.NW., W.SW., NW. Strong gales, with hail, rain, and snow.

November 13. Lat. 59° 35′ S.; long. 76° 00′ W. Barometer, 28.50. Winds: NW., ditto, ditto. First and latter parts, moderate; middle, strong breezes.

November 14. Lat. 57° 29′ S.; long. 75° 40′ W. Barometer, 29.00. Winds: NW., ditto, SW. Moderate gales, with passing squalls.

November 15. Lat. 54° 40′ S.; long. 75° 40′ W. Barometer, 29.50. Winds: SW., NW., N. by W. Fresh gales, and squally, rainy weather.

November 16. Lat. 52° 40′ S.; long. 75° 30′ W. Barometer, 29.50. Winds: NW., ditto, ditto. Fresh gales and squally.

November 17. Lat. 51° 40′ S.; long. 76° 10′ W. Barometer, 29.20. Winds: W., ditto, NW. Fresh gales, with squalls.

November 18. Lat. 50° 57′ S.; long, 76° 36′ W. Barometer, 29.10. Winds: W.NW., ditto, ditto. Heavy gales and squally, thick and stormy weather.

November 19. Lat. 50° 05′ S.; long. 76° 35′ W. Barometer, 29.05. Winds: W.NW., ditto, ditto. Hard gales and heavy squalls."

Ship "Challenge," (J. Kenny,) New York to San Francisco; 23 days from St. Roque.

"October 27. Lat. 49° 51′ S.; long. 65° 34′ W. Barometer, 28.69; thermometer attached, 58°; temperature of air, 43°; water, 42°. Winds: NW., W., ditto. First and middle parts, strong breezes and hazy; latter part, moderating, hazy weather.

October 28. Lat. 52° 43′ S.; long. 66° 46′ W. Barometer, 28.85; thermometer attached, 51°; temperature of air, 42°; water, 41°. Winds: W. by S., ditto, SW. by W. First and middle parts, moderate breezes and pleasant; latter, strong breezes and squally.

October 29. Lat. 54° 26′ S.; long. 64° 43′ W. Barometer, 28.94; thermometer attached, 45°; temperature of air, 36°; water, 40°. Winds: SW. by S., SW., SW. and SE. First part, fresh breezes; middle, strong; latter, moderate.

October 30. Lat. 55° 07′ S.; long. 60° 54′ W. Barometer, 29.57; thermometer attached, 44°; temperature of air, 40°; water, 35°. Winds: SE., S.SE., S.SW. First part, moderate breezes; middle, squally, with snow; latter, fresh gales.

October 31. Lat. 56° 46′ S.; long. 60° 12′ W. Barometer, 29.37; thermometer attached, 38°; temperature of air, 30°; water, 32°. Winds: S.SW. to SW., ditto, ditto. First and latter parts, strong breezes and pleasant; middle part, fresh gales and light squalls of snow.

November 1. Lat. 57° 27′ S.; long. 58° 53′ W. Barometer, 29.14; thermometer attached, 38°; temperature of air, 32°; water, 32°. Winds: S.SW. to W.SW., SW. by S., S. by W. to S. [First part, fresh breezes, with snow squalls; middle, light breezes; latter, moderate breezes, with light snow.

November 2. Lat. 56° 07′ S.; long. 61° 33′ W. Barometer, 29.05; thermometer attached, 41°; temperature of air, 37°; water, 37°. Winds: SW., S. by W., W.SW. First and middle parts, moderate breezes; latter part, strong gales and drizzling rain, hard squalls.

November 3. Lat. 57° 18′ S.; long. 64° 11′ W. Barometer, 28.97; thermometer attached, 39°; temperature of air, 35°; water, 36°. Winds: SW. by W., SW., W.SW. First and middle parts, fresh gales, with snow squalls and light rain; latter part, strong breezes.

November 4. Lat. 56° 26′ S.; long. 66° 21′ W. Barometer, 29.18; thermometer attached, 43°; temperature of air, 42°; water, 40°. Winds: SW. by S., ditto, ditto. Strong breezes, with hard squalls.

November 5. Lat. 58° 18′ S.; long. 67° 43′ W. Barometer, 28.80; thermometer attached, 43°; temperature of air, 39°; water, 38°. Winds: SW., SW. by W., W.NW. Light breezes and hazy; latter part, moderate breezes and misty.

November 6. Lat. 58° 07′ S.; long. 68° 59′ W. Barometer, 29.00; thermometer attached, 42°; temperature of air, 40°; water, 38°. Winds: W.SW., SW. by W., SW. First part, fresh breezes, foggy and misty weather; middle part, strong breezes, with frequent snow squalls; latter part, squally.

November 7. Lat. 56° 58′ S.; long. 70° 03′ W. Barometer, 29.50; thermometer attached, 41°; temperature of air, 39°; water, 39°. Winds: W.SW., SW., SW. by S. First part, strong gales and squally; middle, moderate, with squalls; latter part, light airs.

November 8. Lat. 58° 42′ S.; long. 73° 24′ W. Barometer, 29.40; thermometer attached, 44°; temperature of air, 43°; water, 40°. Winds: W.NW., W. by S., W. First part, light airs and misty; middle, fresh breezes; latter, steady breezes.

November 9. Lat. 59° 13′ S.; long. 75° 50′ W. Barometer, 28.84; thermometer attached, 45°; temperature of air, 42°; water, 38°. Winds: W.NW. to NW. by N., W.NW., W. by N. First part, fresh breezes, misty and rainy; middle and latter parts, strong gales and rainy weather.

November 10. Lat. 59° 52′ S.; long. 77° 42′ W. Barometer, 28.71; thermometer attached, 43°; temperature of air, 41°; water, 38°. Winds: W.NW., W. by N., W. First part, fresh breezes and squally, with snow and rain; middle, squally; latter part, moderate breezes.

November 11. Lat. 59° 39′ S.; long. 79° 54′ W. Barometer, 27.74; thermometer attached, 41°; temperature of air, 40°; water, 38. Winds: NW. to N.NW., N.NW., N.NW. to W. First part, fresh breezes and rainy; middle, strong gale; latter, strong breezes and rainy.

November 12. Lat. 58° 19′ S.; long. 78° 56′ W. Barometer, 28.13; thermometer attached, 42°; temperature of air, 40°; water, 40°. Winds: W. by S., W. by N. to SW. by W., W. to SW. by W. Strong gales, with heavy squalls of snow and hail.

November 13. Lat. 57° 08′ S.; long. 79° 41′ W. Barometer, 28.56; thermometer attached, 40°; temperature of air, 34°; water, 38°. Winds: W. to NW. by W., W.SW., W. First and latter parts, strong gales, with snow squalls; middle, moderate breezes.

November 14. Lat. 55° 12′ S.; long. 79° 24′ W. Barometer, 28.99; thermometer attached, 43°; temperature of air, 40°; water, 41°. Winds: W. by S., W.SW. to NW. by W., W.NW. to S.SW. First part, fresh breezes, with snow squalls; middle and latter parts, moderate, with light squalls.

November 15. Lat. 51° 53′ S.; long. 81° 37′ W. Barometer, 29.77; thermometer attached, 44°; temperature of air, 44°; water, 42°. Winds: S.SW., SW. by W., W. First part, moderate breezes; middle, fresh gales, with squalls of snow and hail; latter part, strong breezes.

November 16. Lat. 49° 01′ S.; long. 80° 15′ W. Barometer, 29.69; thermometer attached, 47°; temperature of air, 46°; water, 46°. Winds: W.NW., ditto, W. by S. First part, fresh breezes and misty; middle and latter parts, strong breezes, foggy, misty, rainy weather."

Ship "Cyclone," (Chas. C. Osgood,) Boston to San Francisco; twenty-one days from St. Roque.

"November 1. Lat. 48° 43′ S.; long. 63° 28′ W. Barometer, 29.25; thermometer attached, 57°. Winds: NW., W.NW., NW. First part, moderate; middle, fresh gales; latter, strong.

November 2. Lat. 52° 11′ S.; long. 64° 42′ W. Barometer, 28.57; thermometer attached, 54°. Winds: NW., N.NW., NW. First part, strong breezes; middle, fresh gales; latter part, heavy gales and furious squalls.

November 3. Lat. 53° 20′ S.; long. 64° 20′ W. Barometer, 29.15; thermometer attached, 50°. Winds: W., S., W.SW. First and latter parts, strong gales; middle part, heavy squalls.

November 4. Lat. 54° 32′ S.; long. 63° 29′ W. Barometer, 29.20. Winds: W.SW., ditto, ditto; strong gales, and squalls of snow.

November 5. Lat. 55° 10′ S.; long. 63° 23′ W. Barometer, 29.45. Winds: S.SW., W.NW., SW. First part, furious gales; middle, moderate; latter part, fresh gales, snowing.

November 6. Lat. 56° 01′ S.; long. 64° 30′ W. Barometer, 29.23. Winds: W.NW., W.SW., W. by S. Strong gales; first part, rainy.

November 7. Lat. 56° 40′ S.; long. 64° 40′ W. Barometer, 29.60. Winds: W.SW., ditto, SW. Hard gales.

November 8. Lat. 57° 01′ S.; long. 67° 30′ W. Barometer, 29.55. Winds: SW., N.NW., ditto. First part, strong breezes; middle, moderate; latter, strong breezes.

November 9. Lat. 57° 42′ S.; long. 69° 39′ W. Barometer, 29.30. Winds: W.NW., NW. by W., ditto. Strong gales.

November 10. Lat. 58° 02′ S.; long. 70 50′ W. Barometer, 29.23. Winds: NW. by W., calm; ditto. First part, moderate; middle and latter parts, calm.

November 11. Lat. 56° 49′ S.; long. 71° 56′ W. Barometer, 29.55. Winds: W.SW., SW., SW. by W. First and latter parts, moderate; middle, squally and rainy.

November 12. Lat. 57° 00′ S.; long. 74° 11′ W. Barometer, 29.25. Winds: calm; NE. by N., NW. First part, calm; middle, moderate breezes, thick and rainy, with heavy squalls; latter part, strong gales, thick and misty.

November 13. Lat. 58° 08′ S.; long. 75° 20′ W. Barometer, 29.05. Winds: W. by N., W., W. by S. First and latter parts, hard gales; middle, moderate.

November 14. Lat. 57° 13′ S.; long. 76° 30′ W. Barometer, 29.60. Winds: W. by S., SW. by W., W. Strong gales.

November 15. Lat. 56° 57′ S.; long. 77° 53′ W. Barometer, 29.00. Winds: W.NW., NW., NW. by W. First part, strong breezes; middle, fresh gales, thick and rainy; latter, moderate.

November 16. Lat. 56° 37′ S.; long. 78° 00′ W. Barometer, 28.87. Winds: W., W.NW. Strong gales and squally, snow, rain, and hail.

November 17. Lat. 56° 10′ S.; long. 78° 22′ W. Barometer, 28.85. Winds: W.NW., W.SW., W. Hard gales, and heavy squalls, snow, and hail.

November 18. Lat. 54° 57′ S.; long. 78° 10′ W. Barometer, 29.10. Winds: W., WSW., ditto. Hard gales, and heavy squalls, snow, and hail.

November 19. Lat. 53° 12′ S.; long. 78° 11′ W. Barometer, 29.10. Winds: W. by S., ditto, W. Hard gales and squalls, snow and hail.

November 20. Lat. 53° 41′ S.; long. 78° 26′ W. Barometer, 29.25. Winds: W., W.NW. First and middle parts, hard gales; latter, moderating.

November 21, Lat. 51° 52′ S.; long. 79° 35′ W. Barometer, 29.70. Winds: SW., W.SW., W. by N. First and middle parts, squally; latter part, strong gales.

November 22. Lat. 50° 00′ S.; long. 79° 40′ W. Barometer, 30.00. Winds: W., SW. by W., W. by S. First and middle parts, strong gales; latter part, strong breezes."

Barque "Kremlin," (John F. Cortiss,) Boston to Valparaiso; twenty-seven days from St. Roque.

"November 17. Lat. 49° 19′ S.; long. 63° 39′ W. Barometer, 29.20; thermometer attached, 54°; temperature of air, 53°; water, 44°. Winds: S.SW., NW., W.SW. First part, fresh breezes; middle and latter parts, light breezes.

November 18. Lat. 50° 40′ S.; long. 64° 31′ W. Barometer, 28.89; thermometer attached, 48°; temperature of air, 47°; water, 42°. Winds: W.NW., W.SW., W.SW. First and middle parts, moderate breezes and hazy; latter part, strong breezes and squally.

November 19. Lat. 53° 34′ S.; long. 64° 38′ W. Barometer, 28.64; thermometer attached, 49°; temperature of air, 48°; water, 43°. Winds: W., W., NW. Strong breezes and pleasant.

November 20. Lat. 54° 54′ S.; long. 63° 18′ W. Barometer, 28.65; thermometer attached, 49°; temperature of air, 48°; water, 42°. Winds: NW., NW., calm. First part, moderate breezes; middle, light; latter, calm.

November 21. Lat. 55° 10′ S.; long. 62° 50′ W. Barometer, 29.02; thermometer attached, 46°; temperature of air, 45°; water, 41°. Winds: W., S.SW., SW. Moderate breezes and pleasant.

November 22. Lat. 55° 56′ S.; long. 63° 01′ W. Barometer, 29.50; thermometer attached, 47°; temperature of air, 46°; water, 38°. Winds: SE., calm, W.NW. First part, light airs; middle, calm; latter light airs and misty.

November 23. Lat. 56° 26′ S.; long. 63° 46′ W. Barometer, 29.50; thermometer attached, 48°; temperature of air, 47°; water, 39°. Winds: W., W.SW., NW. Light breezes and fine weather.

November 24. Lat. 57° 15′ S.; long. 67° 35′ W. Barometer, 29.00; thermometer attached, 48°; temperature of air, 47°; water, 40°. Winds: N.NW., N.NW., W.SW. Light breezes and hazy.

November 25. Lat. 57° 45′ S.; long. 70° 05′ W. Barometer, 28.98; thermometer attached, 48°; temperature of air, 47°; water, 40°. Winds: NW., W.NW., W.NW. Fresh breezes and pleasant.

November 26. Lat. 57° 40′ S.; long. 73° 45′ W. Barometer, 29.62; thermometer attached, 47°; temperature of air, 46°; water, 40°. Winds: NW., N.NW., NW. First part, fresh breezes; middle and latter parts, strong gales.

November 27. Lat. 58° 33′ S.; long. 74° 35′ W. Barometer, 28.40; thermometer attached, 44°; temperature of air, 43°; water, 38°. Winds: NW., W., W.SW. Strong gales and pleasant.

November 28. Lat. 57° 30′ S.; long. 75° 12′ W. Barometer, 28.58; thermometer attached, 46°; temperature of air, 45°; water, 39°. Winds: W.SW., W., W.NW. First part, strong gales; latter and middle, fresh gales and foggy.

November 29. Lat. 56° 59′ S.; long. 75° 09′ W. Barometer, 28.51; thermometer attached, 44°; temperature of air, 43°; water, 39°. Winds: NW., W.SW., W. First part, fresh breezes; middle and latter, hard gales.

November 30. Lat. 56° 19′ S.; long. 76° 06′ W. Barometer, 28.74; thermometer attached, 44°; temperature of air, 43°; water, 40°. Winds: W., W.SW., SW. Fresh breezes and pleasant weather.

December 1. Lat. 54° 06′ S.; long. 78° 10′ W. Barometer, 29.20; thermometer attached, 43°; temperature of air, 42°; water, 42°. Winds: SW. by W., SW. by W., W.SW. Fresh breezes, with snow and hail squalls.

December 2. Lat. 53° 12′ S.; long. 78° 57′ W. Barometer, 29.33; thermometer attached, 46°; temperature of air, 45°; water, 43°. Winds: W.SW., W., W. by S. Moderate breezes, with hail and snow squalls.

December 3. Lat. 51° 54′ S.; long. 80° 20′ W. Barometer, 29.12; thermometer attached, 44°; temperature of air, 43°; water, 43°. Winds: calm, S.SW., S.SW. First part, calm; middle and latter parts, fresh breezes.

December 4. Lat. 49° 00′ S.; long. 81° 00′ W. Barometer, 29.62; thermometer attached, 47°; temperature of air, 46°; water, 45°. Winds: S.SW., S., S. Fresh breezes, with snow squalls."

Ship "Susan L. Fitzgerald," (Edward Pesend,) Baltimore to Cobija; twenty-four days from St. Roque.

"November 20. Lat. 49° 18′ S.; long. 64° 30′ W. Barometer, 29.35; thermometer attached, 54°. Winds: W., calm, S.SW. First part, fresh breezes and squally; middle, calm; latter, brisk breezes.

November 21. Lat. 52° 17′ S.; long. 64° 56′ W. Barometer, 29.45; thermometer attached, 56°. Winds: S.SW., SW., W. Fresh winds and puffy.

November 22. Lat. 55° 20′ S.; long. 65° 30′ W. Barometer, 29.10; thermometer attached, 50°. Winds: W., W., W.SW to S.SW. First part, fresh gales; middle and latter parts, heavy gales and furious squalls, with hail.

November 23. Lat. 55° 54′ S.; long. 64° 00′ W. Barometer, 29.30; thermometer attached, 42°. Winds: S.SW., S.SW., S.SW. Furious gales, with violent squalls of hail, snow, and rain.

November 24. Lat. 56° 53′ S.; long. 65° 00′ W. Barometer, 29.10; thermometer attached, 40°. Winds: calm, W., SW by W. First part, calm; middle, strong breezes, heavy gale, with violent squalls of hail and snow.

November 25. Lat. 58° 00′ S.; long. 65° 50′ W. Barometer, 28.80; thermometer attached, 36°. Winds: W. by S. to W. by N., W. by S. to W. by N., W. by S. to W. by N. Baffling and squally, with hail, snow, and sleet.

November 26. Lat. 58° 33′ S.; long. 66° 00′ W. Barometer, 28.50; thermometer attached, 35°. Winds: W., W., W. Furious squalls, with hail, snow, and sleet.

November 27. Lat. 59° 10′ S.; long. 67° 10′ W. Barometer, 28.30; thermometer attached, 35°. Winds: W., calm, E.SE. First part, furious squalls, with hail and snow; middle, calm; latter part, light breezes.

November 28. Lat. 58° 30′ S.; long. 69° 12′ W. Barometer, 28.30; thermometer attached, 34°. Winds: W.SW., NW., W. First part, light breezes; middle and latter, heavy gale, with snow and sleet.

November 29. Lat. 59° 30′ S.; long. 68° 00′ W. Barometer, 28.30; thermometer attached, 36°. Winds: W., W., W. Heavy gales, with squalls of terrific fury, with hail and snow.

November 30. Lat. 58° 30′ S.; long. 68° 30′ W. Barometer, 28.20; thermometer attached, 34°. Winds: W., W., SW. First and middle parts, furious gales, with violent squalls of hail, snow, and sleet; latter part, heavy gale.

December 1. Lat. 58° 04′ S.; long. 69° 20′ W. Barometer, 29.60; thermometer attached, 34°. Winds: SW., W.SW., W. First part, heavy gale; middle part, strong breezes, with snow and sleet; latter part, moderate breezes, with hail, snow, and sleet.

December 2. Lat. 57° 46′ S.; long. 72° 10′ W. Barometer, 28.70; thermometer attached, 36°. Winds: N.NW., calm, SE. First part, light breezes; middle, calm; latter, moderate breezes.

December 3. Lat. 55° 16′ S.; long. 75° 30′ W. Barometer, 29.50; thermometer attached, 40°. Winds: SW., W., W.SW. First part, fresh breezes; middle, strong; latter, strong gale, with snow and sleet.

December 4. Lat. 53° 04′ S.; long. 75° 30′ W. Barometer, 29.70; thermometer attached, 40°. Winds: W.SW., W.SW., W.SW. Strong gales and squally, with snow and hail.

December 5. Lat. 54° 25′ S.; long. 78° 00′ W. Barometer, 29.20; thermometer attached, 42°. Winds: W., W.NW., W.NW. Strong gales, with hail, rain, snow, and sleet.

December 6. Lat. 53° 00′ S.; long. 78° 00′ W. Barometer, 29.10; thermometer attached, 40°. Winds: W.NW., W., S. First part, strong gales and rainy; middle, light and moderate winds; latter part, light breezes and rainy.

December 7. Lat. 49° 35′ S.; long. 80° 31′ W. Barometer, 29.50; thermometer attached, 40°. Winds: S. to W., S. to W., S. to W. Baffling winds and squally."

Ship "Wild Ranger," (J. Henry Sears,) New York to San Francisco; 22 days from St. Roque.

"November 25. Lat. 49° 51′ S.; long. 65° 09′ W. Barometer, 29.80; thermometer attached, 55°; temperature of air, 61°; water, 47°. Winds: NW., NW., SW. Moderate breezes.

November 26. Lat. 52° 41′ S.; long. 66° 03′ W. Barometer, 29.50; thermometer attached, 55°; temperature of air, 59°; water, 45°. Winds: NW., N.NW., W.NW.

November 27. Lat. 55° 20′ S.; long. 65° 41′ W. Barometer, 29.30; thermometer attached, 51°; temperature of air, 53°; water; 43°. Winds: W.NW., W., W. by N. First and middle parts, moderate breezes; latter, fresh breezes.

November 28. Lat. 56° 02′ S.; long. 66° 42′ W. Barometer, 29.18; thermometer attached, 49°; temperature of air, 48°; water, 42°. Winds: W. by S., W. by S., W.SW. First part, fresh breezes; middle and latter parts, strong gales.

November 29. Lat. 56° 40′ S.; long. 67° 00′ W. Barometer, 28.72; thermometer attached, 57°; temperature of air, 46°; water, 42°. Winds: W.SW., W. by S., W. by S. First part, fresh breezes; middle and latter, strong gales and squalls of hail and snow.

November 30. Lat. 57° 31′ S.; long. 67° 25′ W. Barometer, 28.98; thermometer attached, 52°; temperature of air, 49°; water, 42°. Winds: W. by S., W. by S., W. by S. First part, heavy gale; middle, fresh gale; latter, strong breezes.

December 1. Lat. 57° 30′ S.; long. 68° 09′ W. Barometer, 29.31; thermometer attached, 45°; temperature of air, 43°; water, 40°. Winds: W. by S., W.SW., W.SW. Strong breezes, with hail, rain, and snow squalls.

December 2. Lat. 57° 13′ S.; long. 69° 01′ W. Barometer, 29.50; thermometer attached, 57°; temperature of air, 39°; water, 40°. Winds: W.SW., W.SW., W. by S. Strong breezes, with frequent squalls of snow, rain, and hail.

December 3. Lat. 57° 01′ S.; long. 69° 01′ W. Barometer, 29.33; thermometer attached, 58°; temperature of air, 40°; water, 40°. Winds: W. by S., calm, E. to E.NE. First and latter parts, light breezes; middle, calm.

December 4. Lat. 56° 06′ S.; long. 73° 07′ W. Barometer, 29.60; thermometer attached, 59°; temperature of air, 39°; water, 41°. Winds: E., SE., S. by W. First part, light breezes; middle, moderate; latter, fresh breezes, with frequeut squalls of snow and hail.

December 5. Lat. 53° 58′ S.; long. 75° 46′ W. Barometer, 29.70; thermometer attached, 57°; temperature of air, 42°; water, 42°. Winds: SW., W.SW., SW. First part, fresh breezes; middle and latter, strong breezes, with rain squalls.

December 6. Lat. 50° 39′ S.; long. 77° 46′ W. Barometer, 30.07; thermometer attached, 51°; temperature of air, 49°; water, 44°. Winds: W.SW., W. by S., W. by S. Strong breezes, with heavy squalls of wind and rain.

December 7. Lat. 47° 09′ S.; long. 77° 10′ W. Barometer, 30.09; thermometer attached, 51°; temperature of air, 52°; water, 49°. Winds: W. by S., W., W. by N. First part, strong breezes; middle and latter, moderate breezes and squally, with rain."

Cape Horn Crossings.—December.

Name of vessel.	From parallel of St. Roque to 50° S.	Longitude of crossing parallels east of Cape Horn.			Latitude of crossing meridians south of Cape Horn.			Longitude of crossing parallels west of Cape Horn.			From 50° S. in the Atlantic to 50° S. in the Pacific.
		50° S.	53° S.	56° S.	67° W.	71° W.	75° W.	55° S.	53° S.	50° S.	
	Days.	*Long. W.*	*Long. W.*	*Long. W.*	*Lat. S.*	*Lat. S.*	*Lat. S.*	*Long. W.*	*Long. W.*	*Long. W.*	*Days.*
Westward Ho	21	63°	66°	64°	57°	56°	55°	73°	80°	82	13
Austiss	24	62	64	64	58	57	56	80	81	79	18
Flying Fish	24	64	65	66	55	56	55	74	76	79	7
John Gilpin	19	64	65	66	57	56	57	79	83	84	11
Wild Pigeon	23	65	65	66	56	56	56	79	82	85	16
John Jay	30	65	64	64	56	57	56	76	79	79	19
J. E. Donnell	34	61	63	65	56	56	55	77	78	79	13
George Raynes	26	64	64	65	56	56	55	75	78	80	11
Tigris	30	62	64	65	56	58	59	78	80	82	18
Seaman	23	62	65	66	57	57	54	75	75	78	12
Adelaide	29	61	64	66	58	58	56	78	79	79	19
Westward Ho	21	66	66	65	57	56	56	78	80	82	24
Franconian	28	62	63	63	57	57	57	81	83	83	19
Cyclone	22	54	56	60	59	59	56	78	81	82	18
Samuel Lawrence	25	63	64	65	57	57	56	76	77	78	15
Golden City	22	65	65	67	57	57	56	76	77	79	10
Ringleader	21	64	65	64	58	58	58	78	79	80	12
Arthur	32	66	65	66	57	58	56	80	80	80	19
Eureka	25	65	66	66	57	58	59	86	85	86	18
Squantum*	28	65	66	66	57	57	57	76	77	79	19
Cornet	24	63	65	63	57	56	56	75	75	81	19
Hussar	28	62	65	65	58	58	59	80	81	83	15
Wild Pigeon	21	65	66	66	57	58	56	76	81	81	18
Chenango	35	63	64	65	57	58	55	74	77	81	27
Kate and Alice	33	63	64	66	57	58	57	76	77	77	19
Saxonville	38	64	66	64	56	58	58	74	78	79	16
Morning Light	25	63	64	63	57	58	58	77	78	80	15
Samuel Appleton	25	65	66	65	56	57	59	82	82	82	16
Sophonia	32	65	65	66	56	56	56	75	78	79	29
S. L. Fitzerald	24	64	65	66	56	57	55	75	77	78	11
Wild Ranger	22	65	66	67	57	57	54	73	75	77	11
Mameluke	30	65	66	67	56	58	57	82	82	83	15
Bald Eagle	24	65	66	66	56	57	56	75	79	81	12
Sweepstakes	24	63	65	70	56	56	57	81	83	83	10
Raduga	25	64	64	65	57	57	57	76	77	78	18
Wings of the Morning	27	64	66	69	55	56	56	79	80	81	12
Winged Arrow	27	65	65	67	56	56	56	83	84	84	17
Ringleader	20	63	64	66	56	58	58	82	83	84	13
Means	26.2	63.5	64.6	65.5	56.7	57.0	56.5	77.6	79.4	80.7	15.9

* Last in the 7th edition; the 18 others are new.

Ship "Wings of the Morning," (H. H. Lovell,) Philadelphia to San Francisco; 26 days from St. Roque.

"December 9. Lat. 49° 40′ S.; long. 63° 50′ W. Barometer, 29.50; thermometer attached, 54°; temperature of air, 56°; water, 49°. Winds: W., S., SE. by E. First part, moderate breezes; middle and latter parts, light breezes.

December 10. Lat. 51° 42′ S.; long. 65° 50′ W. Barometer, 29.48; thermometer attached, 52°; temperature of air, 54°; water, 48°. Winds: E., SE., SE. by E. Moderate breezes.

December 11. Lat. 53° 00′ S.; long. 66° 00′ W. Barometer, 29.55; thermometer attached, 52°; temperature of air, 54°; water, 48°. Winds: E.S.E., E., NW. Light baffling winds.

December 12. Lat. 54° 44′ S.; long. 68° 20′ W. Barometer, 29.50; thermometer attached, 53°; temperature of air, 55°; water, 46°. Winds: N.NW., N.NW., N. First and middle parts, light breezes and hazy; latter, moderate breezes.

December 13. Lat. 56° 37′ S.; long. 69° 45′ W. Barometer, 29.30; thermometer attached, 52°; temperature of air, 54°; water, 45°. Winds, N., N.NE., N.NE. First and middle, brisk breezes; latter, baffling, with light rain showers.

December 14. Lat. 56° 26′ S.; long. 74° 00′ W. Barometer, 29.20; thermometer attached, 52°; temperature of air, 52°; water, 44°. Winds: W. by N., W.NW., N.NW. First part, light baffling airs; middle part, moderate; latter, fresh breezes, with light rain squalls.

December 15. Lat. 57° 00′ S.; long. 77° 30′ W. Barometer, 29.40; thermometer attached, 50°; temperature of air, 52°; water, 43°. Winds: W., W.NW., NW. First and middle parts, strong breezes and rainy; latter, fresh gales, with constant rain.

December 16. Lat. 57° 25′ S.; long. 80° 40′ W. Barometer, 29.35, thermometer attached, 51°; temperature of air, 53°; water, 43°. Winds: N.NW., N.NW., NW. Fresh breezes and rainy.

December 17. Lat. 57° 04′ S.; long. 81° 45′ W. Barometer, 29.25; thermometer attached, 49°; temperature of air, 51°; water, 43°. Winds: NW. by W., SW., S.SW. First part, moderate breezes and rainy; middle and latter parts, light breezes.

December 18. Lat. 55° 30′ S.; long. 79° 55′ W. Barometer, 29.20; thermometer attached, 48°; temperature of air, 50°; water, 44°. Winds: N.NW., N.NW., N.NW. Moderate breezes, foggy, with light showers of rain.

December 19. Lat. 55° 00′ S.; long. 79° 30′ W. Barometer, 29.05; thermometer attached, 48°; temperature of air, 50;° water, 46. Winds: NW., N., W. First part, moderate breezes; middle and latter parts, light baffling airs.

December 20. Lat. 53° 00′ S.; long. 80° 00′ W. Barometer, 29.30; thermometer attached, 50°; temperature of air, 52°; water, 47°. Winds: calm, W., W.SW. First part, calm; middle, moderate breezes; latter, fresh gales and squally.

December 21. Lat. 50° 13′ S.; long. 81° 25′ W. Barometer, 29.92; thermometer attached, 48°; temperature of air, 50°; water, 49°. Winds: SW. by W., SW., SW. First part, strong breezes; middle, moderate; latter part, light breezes."

Ship "Ringleader," (Richard Mathews,) Boston to San Francisco; 20 days from St. Roque.

"December 11. Lat. 49° 10′ S.; long. 62° 45′ W. Barometer, 29.45; temperature of air, 53°; water, 50°. Winds: NE., N. by E., N.NE. First part, moderate; middle, brisk breezes; latter, fresh gales.

December 12. Lat. 53° 15′ S.; long. 64° 30′ W. Barometer, 29.40; temperature of air, 46°; water, 46°. Winds: N.NE., N.NE., NE. First and middle parts, fresh breezes; latter part, moderate.

December 13. Lat. 56° 00′ S.; long. 66° 25′ W. Barometer, 29.59; temperature of air, 52°; water, 46°. Winds: N.NE., N.NE., W. First part, light breezes; middle, brisk; latter, fresh.

December 14. Lat. 57° 42′ S.; long. 70° 10′ W. Barometer, 29.60; temperature of air, 46°; water, 47°. Winds: W.NW., W.NW., W.NW. Fresh breezes; latter, thick and rainy.

December 15. Lat. 58° 40′ S.; long. 72° 40′ W. Barometer, 29.50; temperature of air, 46°; water, 42°. Winds: W.NW., W.NW., W.NW. First and middle parts, fresh gales; latter part, heavy gales.

December 16. Lat. 58° 30′ S.; long. 74° 00′ W. Barometer, 29.20; temperature of air, 46°; water, 41°. Winds: NW. by W., S. and calm, calm. First part, heavy gales and squally; middle, light breezes and calm; latter part, calm.

December 17. Lat. 57° 35′ S.; long. 73° 05′ W. Barometer, 29.20; temperature of air, 44°; water, 42°. Winds: calm, W.NW., NW. by N. First part, calm; middle, strong breezes; latter, brisk breezes, misty and foggy.

December 18. Lat. 57° 35′ S.; long. 77° 50′ W. Barometer, 29.00; temperature of air, 51°; water, 42°. Winds: NW. by N., NW., calm and NW. First part, brisk breezes and misty; middle, moderate breezes and foggy; latter part, calm and light breezes.

December 19. Lat. 57° 15′ S.; long. 80° 30′ W. Barometer, 29.30; temperature of air, 45°; water, 43°. Winds: calm and N.NW., S. First part, calm and light breezes; middle, stormy; latter, light breezes.

December 20. Lat. 55° 15′ S.; long. 82° 30′ W. Barometer, 29.70; temperature of air, 52°; water, 43°. Winds: W., NW., NW. Light breezes, thick, and foggy.

December 21. Lat. 54° 35′ S.; long. 84° 00′ W. Barometer, 29.80; temperature of air, 50°; water, 43°. Winds: NW. by W., W.NW., W. to NW. Light breezes, thick, and foggy.

December 22. Lat. 53° 00′ S.; long. 83° 10′ W. Barometer, 30.00; temperature of air, 52°; water, 46°. Winds: W.NW., N.NW., N.NW. First and middle, light breezes and foggy; latter, fresh breezes and foggy, and light rain.

December 23. Lat. 52° 10′ S.; long. 85° 15′ W. Barometer, 29.80; temperature of air, 52°; water, 46°. Winds: N.NW., W.NW., W.NW. to NW. First part, fresh breezes, thick and foggy; middle, moderate breezes and foggy; latter part, light breezes, foggy and rainy.

December 24. Lat. 50° 20′ S.; long. 83° 45′ W. Barometer, 29.60; temperature of air, 52°; water, 48°. Winds: W.NW., W. by N., W. by N. First part, light breezes and foggy; middle part, fresh breezes; latter part, brisk breezes."

Ship "Raduga," (M. W. Green,) Boston to Honolulu; 25 days from St. Roque.

"December 12. Lat. 50° 27′ S.; long. 64° 50′ W. Barometer, 29.46; temperature of air, 58°; water, 50°. Winds: N.NE., N.NE., NW. Heavy gales.

December 13. Lat. 52° 48′ S.; long. 64° 30′ W. Barometer, 27.70; temperature of air, 50°; water, 48. Winds: W.SW., SW., S. by W. Fresh gales.

December 14. Lat. 53° 10′ S.; long. 64° 00′ W. Barometer, 29.98; temperature of air, 56°; water, 48°. Winds: SE., N., SE. Light breezes and cloudy.

December 15. Lat. 54° 32′ S.; long. 64° 02′ W. Barometer, 30.12; temperature of air, 53°; water, 46°. Winds: calm, NW., NW. First part, calm; middle, moderate; latter, fresh breezes.

December 16. Lat. 56° 04′ S.; long. 66° 02′ W. Barometer, 29.88. Winds: W. by N., W., SW. Fresh breezes and pleasant.

December 17. Lat. 56° 54′ S.; long. 66° 44′ W. Barometer, 29.68. Winds: W.SW., W.SW., SW. Hard gales.

December 18. Lat. 57° 64′ S.; long. 67° 35′ W. Barometer, 29.66; temperature of air, 52°; water, 44°. Winds: SW., NW. by W., N.NW. Strong breezes.

December 19. Lat. 57° 06′ S.; long. 70° 37′ W. Barometer, 29.54; temperature of air, 57°; water, 46°. Winds: E., SW., SW. by W. Light breezes.

December 20. Lat. 56° 10′ S.; long. 72° 44′ W. Barometer, 29.56; temperature of air, 48°; water, 47°. Winds: SW. by S., W.SW., W.SW. Moderate breezes.

December 21. Lat. 56° 58′ S.; long. 74° 44′ W. Barometer, 29.56; temperature of air, 54°; water, 45°. Winds: W., W. by N., W. by N. Strong breezes. ("Instruments broken and observations discontinued.")

December 22. Lat. 57° 35′ S.; long. 76° 36′ W. Winds: W. by N., W., W. Strong breezes and foggy.

December 23. Lat. 58° 21′ S.; long. 80° 26′ W. Winds: W.NW., W.NW., W.NW. Strong gales and foggy.

December 24. Lat. 57° 29′ S.; long. 80° 13′ W. Winds: W., N.NE., W.NW. Moderate gales.

December 25. Lat. 56° 08′ S.; long. 76° 32′ W. Winds: W., W.SW., W. Hard gales, and dangerous cross sea.

December 26. Lat. 55° 29′ S.; long. 76° 56′ W. Winds: N.NW., SW., SW. Strong gales.

December 27. Lat. 52° 23′ S.; long. 76° 20′ W. Winds: SW., W. by N., W. by N. Strong breezes.

December 28. Lat. 52° 29′ S.; long. 77° 08′ W. Winds: W.NW., W.NW., NW. Strong gales and heavy squalls.

December 29. Lat. 51° 44′ S.; long. 77° 17′ W. Winds: W., SW., W. Hard gales, with squalls of rain, hail, and snow.

December 30. Lat. 50° 03′ S.; long. 78° 13′ W. Winds: W., NW., N.NW. Strong gales, with squalls of rain and hail."

Ship "Bald Eagle," (W. H. Treadwell,) New York to San Francisco; 23 days from St. Roque.

"December 22. Lat. 48° 57′ S.; long. 63° 58′ W. Barometer, 29.55; thermometer attached, 69°; temperature of air, 62°; water, 51°. Winds: SE. by S., N.NE. to E.SE., N.NE. Light airs and rainy.

December 23. Lat. 52° 15′ S.; long. 66° 37′ W. Barometer, 29.16; thermometer attached, 69°; temperature of air, 61°; water, 46°. Winds: W., W., W. First and middle parts, fresh breeze; latter part, light breezes.

December 24. Lat. 54° 33′ S.; long. 65° 12′ W. Barometer, 28.09; thermometer attached, 63°; temperature of air, 60°; water, 46°. Winds: SW. to NW., W., SW. First and latter parts, light breeze; middle, moderate breezes, thick and rainy.

December 25. Lat. 55° 00′ S.; long. 65° 15′ W. Barometer, 29.01; thermometer attached, 66°; temperature of air, 53°; water, 47°. Winds: SE., S., N.NE. First part, fresh breezes; middle and latter, moderate.

December 26. Lat. 56° 46′ S.; long. 66° 20′ W. Barometer, 28.83; thermometer attached, 65°; temperature of air, 56°; water, 43°. Winds: N.NE. to W.SW., W.SW., S.SW. Light breezes.

December 27. Lat. 56° 40′ S.; long. 67° 50′ W. Barometer, 28.88; thermometer attached, 64°; temperature of air, 56°; water, 43°. Winds: NW., W., W.SW. Light baffling breezes.

December 28. Lat. 57° 27′ S.; long. 70° 43′ W. Barometer, 28.65; thermometer attached, 64°; temperature of air, 56°; water, 44°. Winds: W.SW., NW., W. First and middle parts, fresh breezes; latter part, fresh gale, thick and rainy.

December 29. Lat. 58° 30′ S.; long. 73° 43′ W. Barometer, 28.36; thermometer attached, 65°; temperature of air, 52°; water, 42°. Winds: W., W.NW., NW. by W. First and middle parts, fresh gales and squally; latter, fresh breezes.

December 30. Lat. 56° 36′ S.; long. 75° 21′ W. Barometer, 28.98; thermometer attached, 69°; temperature of air, 46°; water, 44°. Winds: SW., SW., SW. Fresh gales and squally.

December 31. Lat. 56° 13′ S.; long. 75° 47′ W. Barometer, 29.04; thermometer attached, 61°; temperature of air, 53°; water, 44°. Winds: SW. by W., SW. by W., W. by S. First and middle parts, fresh gales with hail and rain squalls; latter part, fresh breezes.

January 1. Lat. 54° 04′ S.; long. 78° 47′ W. Barometer, 28.75; thermometer attached, 65°; temperature of air, 54°; water, 44°. Winds: W.NW., N.NE., NW. First part, moderate breezes, thick and rainy; middle, fresh breezes; latter part, light breezes, thick and rainy.

January 2. Lat. 52° 04′ S.; long. 81° 00′ W. Barometer, 28.09; thermometer attached, 58°; temperature of air, 58°; water, 46°. Winds: calm, SE., S. to SW. First part, calm, thick and rainy; middle and latter parts, fresh breezes and thick.

January 3. Lat. 48° 45′ S.; long. 82° 12′ W. Barometer, 29.06; thermometer attached, 66°; temperature of air, 51°; water, 48°. Winds: SW., SW. by W., E.SE. First and middle parts, moderate breezes with rain squalls; latter, light breezes with sprinkling rain."

Ship "Golden City," (R. Canfield,) New York to San Francisco; 22 days from St. Roque.

"December 15. Lat. 49° 38′ S.; long. 64° 21′ W. Barometer, 29.53; temperature of air, 49°; water, 49°. Winds: E.NE. and calm, N.NW., W. by S. First part, light airs and calm; middle and latter part, light breezes.

December 16. Lat. 52° 01′ S.; long. 65° 04′ W. Barometer, 29.50; temperature of air, 47°; water, 45°. Winds: NW., SW. by W., W. by S. First and latter parts, moderate; middle, squally.

December 17. Lat. 54° 58′ S.; long. 64° 48′ W. Barometer, 29.45; temperature of air, 44°; water, 44°. Winds: W., SE. to NE., SW. First part, strong breezes; middle, squally and rainy; latter, moderate breezes and squally.

December 18. Lat. 55° 46′ S.; long. 65° 09′ W. Barometer, 29.40; temperature of air, 49°; water, 44°. Winds: SW. by W., W. to SW., W.NW. to NW. Light breezes.

December 19. Latitude, none; longitude, none. Barometer, 29.20; temperature of air, 44°; water, 39°. Winds: W. to SW., W. to SW., W. to W.NW. First and middle parts, moderate breezes, and rain squalls; latter, fresh breezes.

December 20. Lat. 56° 40′ S.; long. 68° 10′ W. Barometer, 29.00; temperature of air, 40°; water, 44°. Winds: NW. by W., NW. and calm, W. SW. First part, moderate breezes, thick, and rainy; middle, light airs; latter, strong breezes.

December 21. Lat. 57° 06′ S.; long. 69° 46′ W. Barometer, 28.78; temperature of air, 41°; water, 41°. Winds: W. to N.NW., NW. and calm, W.NW. First part, hard breezes; middle, light airs and calm; latter, fresh breezes.

December 22. Lat. 56° 50′ S.; long. 71° 40′ W. Barometer, 29.30; temperature of air, 41°; water, 40°. Winds: NW. by W., W.SW., SW. First part, fresh breezes; middle and latter parts, strong gales, and squally.

December 23. Lat. 56° 35′ S.; long. 73° 39′ W. Barometer, 29.27; temperature of air, 43°; water, 41°. Winds: SW., W., W.NW. First and middle parts, strong breezes and rainy; latter part, moderate.

December 24. Lat. 55° 19′ S.; long. 76° 26′ W. Barometer, 29.52; temperature of air, 41°; water, 41°. Winds: W., SW., SW. First and middle parts, light breezes and rainy; atter part, strong breezes and rainy.

December 25. Lat. 52° 11′ S.; long. 77° 29′ W. Barometer, 29.67; temperature of air, 44°; water, 45°. Winds: W.SW., do., do. Strong breezes, with occasional rain.

December 26. Lat. 49° 39′ S.; long. 79° 26′ W. Barometer, 29.70; temperature of air, 45°; water, 45°. Winds: W.SW., do., W. Fresh breezes and squally."

RESUMÉ OF CAPE HORN CROSSINGS.

Days from—	Jan.	Feb.	March.	April.	May.	June.	July.	August.	Sept.	Oct.	Nov.	Dec.	Means.
St. Roque to parallel of 50° S.....	25.0	26.6	27.3	30.2	29.7	29.3	29.5	31 8	26.9	26.2	24.3	25.7	27.7
50° S. in Atlantic to 50° S. in Pacific..	16.7	17.6	18.2	17.	18.8	15.5	18.3	17.	20.1	18.8	20.4	15.7	17.8
St. Roque to 50° S. in Pacific.....	41.5	44.2	45.5	47.2	48.5	44.8	47.8	48.8	47.	45.	44.7	41.4	45.5

There are some ships whose passages to latitude 50° in the Atlantic are too long to be taken into the average. They make such bad time as to constitute an exception from the generality. Such is the A. F. Jenness, with her 44 days in February. She, it will be recollected, is among the September (p. 464, 7th ed.) crossings to St. Roque. In that case her time from the United States to the line was 77 days; and her performance on that occasion, because it was out of all rule, was rejected from the means then.

From the parallel of Cape St. Roque to the parallel of 50° south, at the usual crossing place for the Cape Horn trader, is about 2,900 miles—not quite the distance from New York to Liverpool. And the most striking feature in this table is perhaps the length of the time between these parallels.

The distance from the average crossing of 50° in the Atlantic, around the Cape, to the average crossing of the same parallel in the Pacific, is nearly half the distance from the parallel of St. Roque to the Atlantic crossing of 50° south, and the time occupied around the Cape is, considering winds and sea, by no means disproportionate.

The average distance made good against the current around Cape Horn is 80 miles a day. The average distance from the parallel of St. Roque to that of 50°, through a mild climate, and with no such opposing current, is 105 miles the day. And the average distance made good by the "liners" *from* Liverpool to New York is 95 miles a day; *to* Liverpool the average made good is 135 miles.

These Cape Horn crossings are derived from the mean of nearly 400 passages taken at random, and they give us, it may be supposed, what may be finally considered as a *fair* average, for it really differs only a "dog's watch" from the average, as stated in the seventh edition of this work, from the mean of 220 passages. So it appears that the passage from England to New York under canvas, in the winter time, is nearly as difficult as the passage around the Horn.

Navigators are recommended to give these tables an attentive examination, for they are instructive. January and December are good months from St. Roque around the Horn, giving an average passage of 41.5 days. February and November give only three days longer. March and October are still worse, the passage then being aggravated by the difficulties from the parallel of 50° in the Atlantic to 50° in the Pacific. The months from April to August are worse than all, and here the difficulty lies chiefly from St. Roque to the parallel of 50°, the

average of that part of the passage being about 20 per cent. longer than it is in January. In March, May, and July, and from September to November, the doubling of Cape Horn is most difficult, the monthly average being between 19 and 20 days from the parallel of 50° on one side to the same parallel on the other. The best months for doubling it are from December to April, inclusive, the average being about 17 days.

On the other hand, August gives the largest average from the parallel of St. Roque to that of 50°, and November the smallest. From March to August, inclusive, the monthly mean for this part of the route is 29.3 days, while for the six other months the average is 25.8 days. Thus it ceases to be any longer a matter of opinion, for actual experience has decided that, as a rule, the months of the least daylight give the longest passages from Cape St. Roque around the Horn.

It is, however, useless to go into any further discussion of this table here. Every navigator can do that for himself. It is only necessary to call his attention to the *apparently* very tedious time* generally which navigators have from the parallel of St. Roque to that of 50° S.; how nearly all vessels pursue the same route, and how those vessels that go east of the Falklands, though they reach 50° sooner, lose all they gain in getting west after clearing those islands.

Take, as an instance, the ships which did this in July. Their average time to 50° south in the Atlantic was 28, and thence around the Horn, 22 days; total, 50. The average of the inside ones for that month is 30 and 18 days, total 48, or a gain of two days by passing inside of the Falkland Islands.

These tables afford the navigator who is running for a quick passage fresh points of departure in the middle of the ocean. Here he can compare his progress with the progress made by those who have preceded him at the same season of the year, and see how much he has to gain to come up with the foremost among them, or how much he can afford to spare, and still hold his own with the best of them.

THE STRAITS OF MAGELLAN.

Many of the vessels engaged in the *coasting* trade of the United States have now to pass these straits or double Cape Horn on their way to or fro between the Atlantic and Pacific ports of the country. Steamers will always find it to their advantage to pass through the straits.

"In them," says a brother officer, after having made the passage through in 83 days under canvas, "the winds and weather are more moderate, the sea smooth, the anchorages good and safe, the tides, taken at the right moment, an important auxiliary, and, with proper care and look out, and rigid adherence to the Sailing Directions and Charts of Captains P. P. King and Fitzroy, R. N., excepting where changes have naturally taken place, the dangers are of little importance.

"The head winds in the western reaches present the greatest obstacles, and, in my opinion, it is at Cape Isidro or Cape Froward that the difficulties commence. The almost perennial strong westerly winds form the only objection to the navigation of these waters."

Among the many expedients to which the dangers of the sea compel vessels to resort, or among the emergencies which spring up from the business of commerce, sailing vessels, and especially small craft, may now and then find it to their advantage to take to the straits. As a rule, however, it is *the* route for steamers, but not, unless in exceptional cases, for sailers.

* Average distances made good per day: From St. Roque to 50° S. 105 miles; from line to 38° S. 105 miles, (p. 576;) from 30° N. to line, (new route,) 111 miles; ditto, (middle,) 97; ditto, (old,) 89, (p. 373;) from Lizard to 30° N. 110 miles, (p. 371;) thence to line, 100 miles, (p. 370.)

THE SOUTH ATLANTIC.

FROM LAT. 0° TO LONG. 0°.

Sailing directions, based on actual observations and derived from a laborious investigation of the winds and currents in all the commercial ports of the south Atlantic, have been given for every one of the principal routes that run to and from across, or up and down through that ocean. Only for the homeward route, sailing directions have not been given for vessels coming out of the south Atlantic. But these also will be given in the proper place. By the charts and by these tables of "time and crossings," mile stones for all the practical purposes of navigation have been set up at sea, and finger boards fixed to the winds, in such a manner that the navigator, though a stranger in the Atlantic ocean, may find his way across it not only by the best and quickest paths, but he is reminded daily, by a mere glance at the tables, how much he is behind time, or how much he is ahead of time during any part of the voyage. They will also show him where and when he has gained or lost on this average time. Thus every shipmaster is about to be put upon his mettle in a race against time, and the moment he blunders he will discover that a mistake has been made. These tables must prove highly instructive and useful on board ship. The idea of time from crossing to crossing in them is borrowed from the Sailing Directions published by that most efficient of coadjutors, the Meteorological Institute of Utrecht.

For this valuable improvement in the tables of crossing generally navigators are indebted to that admirable man of the sea, Jansen, of the Dutch navy. In a paper in 1855 on the Sailing Directions, published from the Meteorological Institute of Holland, he says:

* * * * * * * * * * * *

"The tables of crossings were designed by me in imitation of the *Tables of Crossings of Maury's Sailing Directions.* Yet it occurred to me that the observations (eindnitkomsten) merely of voyages were not sufficient to enable us to judge critically their results. Therefore for every crossing I have placed the intervals (de etmalen) which are used, so as to come from one point of intersection to another."

Lieut. Van Gough, Jansen's successor, has in all the tables of the Institute carried out this idea. The route to India and back he has divided into sections; the first section lies between the English channel and the line; the second between the line and the cape; the third around the cape, and the fourth between the cape and the Straits of Sunda, &c. So that the beaten track to India and back is thus divided into sections and rendered as plain as any highway on the land. The oldest stage-coach driver in the country can scarcely be better acquainted with the "mud holes," "the tight stretches," and the "smooth places" of the road, than these tables will make the navigator with the difficult parts of the India route.

The tables of the sort already given for the north Atlantic, being followed and studied for a voyage or two, will impart a practical knowledge of winds, which, in a general way, will be useful in all seas. Therefore before proceeding to discuss further the routes through the south Atlantic, I claim for a few moments the attention of every navigator who has followed me so far, or who intends to go further, with the Wind and Current Charts for his guide.

And first about *currents, tide rips, and drift.* Referring to chapter XV, and page 328, volume I, I quote from bottle the papers and co-operators:

Waifs from the sea, received at the Observatory May 6, 1858.

"1. A bottle was thrown overboard by Captain Langston, of the American ship Parana, December 27, 1857, in lat. 3° 43′ S., long. 35° 35′ W., and picked up on the coast of Alcantara, (Brazil,) in lat. 2° 17′ S., long. 44° 20′ W., by Manoel Joao Conceiçao, on the 18th of February, 1858. Drift about north 81° west 530 miles, in 142 days, being at the rate of about 3½ miles a day."—(Forwarded to the Observatory by Alexander Thomson, esq., United States consul, Maranham.)

"2. A bottle was thrown overboard by Captain Stickney, of the American ship 'Corinne,' December 5, 1856, in lat. 11° 44′ S., long. 12° 32′ W., and picked up on the Island of Cutia, (coast of Brazil,) some time between March 1 and 22, 1858, by Sra. Emiliana, in lat. 2° 13′ S., long. 43° 40′ W. Drift about north 73° west 1,940 miles, in say 460 days, being at the rate of four miles a day."—(Forwarded by Alexander Thomson, esq., United consul, Maranham.)

"3. A bottle was thrown overboard from the Austrian frigate 'Novara,' Com. Wüllerstorf, June 28, 1857, in lat. 26° N., long. 25° 40′ W., and was picked up on the Grand bay, Turk's Island, lat. 21° 32′ N., long. 71° 10′ W., March 27, 1858, by a police officer. Drift *south* 84° west 2,520 miles, in 272 days, being at the rate of about nine miles a day."—(Forwarded to the Observatory by Commander W. Hamilton, royal navy.)

"4. A bottle from her British Majesty's ship Highflyer, Captain Shadwell, October 18 1856, lat. 25° 59′ S., long. 14° 26′ W., which was picked up on Parrot Kay, lat. 21° 57′ N. long. 72° 06′ W., April 10, 1858. Drift north 49° west 4,400 miles, in 539 days, being at the rate of about eight miles a day."—(Forwarded by Commander Hamilton, royal navy.)

In his log for May 31, 1854, lat. 2° 30′ S., long. 26° 40′ W., Captain Holt, of the Falcon, remarks:

"Regarding *current rips*, I think most navigators are deceived. Current rips are caused by opposite winds on the equator or in the variables, and I think nine times out of ten there is no current, although the observations may give a little easting or westing. All ships close-hauled will make more or less leeway in light winds and a heavy swell, (*as is usually the case in the variables betwixt the trades,*) which is accounted for as current; but in my opinion there is no current to affect a vessel materially, getting south in the variables. There is a strong magnetic influence not yet accounted for also. I have always noted in the variables that the water has a very black appearance, if the sky be ever so clear, and the temperature of the water and air much higher; and how sensibly one can perceive the change in the color of the water and the temperature, only with light airs from the SE. or NE., as you approach the trades, indicating you are out of the doldrums."

"In your Sailing Directions," says Captain G. W. Ginn, of the John Knox, "you seem to encourage speculation on the part of those navigators who are co-operating with you in collecting data for the Wind and Current Charts, &c. I have not indulged in anything of that sort in filling the column of 'remarks,' for I hardly feel myself competent for the recording of facts, much less that of drawing conclusions therefrom. As I have a plenty of time at present, and this leaf will not interfere with the abstract, I will, however, copy from a note book of my own a few remarks suggested on passing through some extensive tide rips:

"*Observation.*—Sunday evening, March 22, 1857, lat. 9° 31′ S., long. 42° 57′ W.

"The sea has all day presented one of those phenomena usually called tide rips. As I am in-

clined to think the phenomena of tide rips, or what usually bears that name, are somewhat various, the effects of various causes, I will attempt to describe the one here alluded to. To a person situated in a high position, the sea presents itself in alternate streaks or patches, extending with irregular and broken outlines in a northeastern and southwestern direction; distinguished by the exceedingly ruffled surface of the one and the singularly glossy smoothness of the other. Besides this distinction there is another, though less marked in its features. Independent of the above mentioned distinction, there is a general undulating motion to the sea from northeast to southwest, which, in the former of the above mentioned stripes or streaks, undulates with a remarkable regularity under a foaming and extremely agitated surface; while in the latter the motion is very irregular, yet the surface remains as unruffled as a sea of oil. The extent of these streaks transversely, is as various as their outlines are broken and irregular, varying from a hundred yards to a mile and upwards; longitudinally, they extend from horizon to horizon, often converging, however, and uniting two in one. This is the sort of tide rip usually met with in the vicinity of shallow and uneven soundings; the cause I attribute to the momentary derangement in the level of the waters of the sea, by a stratum of water, whether upper or under, passing over an uneven bed, and the phenomenon is the result of the mobile waters seeking to regain their level. Perhaps this also may be effected by two under currents meeting from different sources. Another sort of tide rip may often be seen extending across the entrance of some river, bay, or sound, where there is considerable rise or fall to the tides, and not unfrequently met with far out to sea during light winds. Its appearance is somewhat unique—a sort of incessant sloping up of water over a considerable extent of the sea, without any perceptible horizontal motion. This I take to be the effect of a sudden obstruction to, or derangement in, a vibratory motion that is going on at a considerable depth below the surface, though it may, perhaps, be imperceptible to the eye from above. Admitting this conjecture to be a correct one, I think the equatorial tide rips, so called, may be thus accounted for, by supposing two waves having received their impulse remote from each other under the northeast and southeast trade winds, and meeting in opposite directions in the calm regions about the equator. That there is a vibrating movement in connexion with the waves of the sea, at a considerable depth below the surface, I think there is no question; and that this vibrating motion, meeting with some sudden impediment in its progress, should set in motion a multitude of minute vibrations in an upward direction, and thus produce this peculiar agitation of water at the surface, is a conjecture not, I think, without some appearance of plausibility.

"I may add, in conclusion, that I concur with Captain William L. Phinney in the feeling that, aside from any pecuniary profit to myself from your labors, you have done me good as a man by eliciting my attention to a truly interesting and instructive source of useful knowledge, and by showing me how to dispose of much of my unoccupied time in a way that may be of advantage to myself and perhaps useful to others."

In the eye of commerce and navigation the north and south Atlantic present themselves in very different aspects. The waters of the former are ploughed by almost every ship in the world; the great thoroughfares in it lie crosswise; they run from side to side, as between Europe and America; and the argosies of commerce ply back and forth on the business of trade, in this sea, like a weaver's shuttle.

On the other hand, Africa is wild, South America is without ships, and there is very little business between them, and consequently less coming and going between the opposite shores

of the south than of the north Atlantic. The thoroughfares on it are not crosswise, but rather lengthwise in this sea.

Now, the best place of entering this sea is the same for all vessels, whether from Europe or the United States, and whether they be bound to south America or around either of the great southern capes.

If a chain were stretched along the equator so that no vessel could pass between the meridian of 20° W. and Africa, navigation, at least as far as India and China, Australia, California, Brazil, and Pacific traders are concerned, would not be incommoded in the least, either on the outward or the inward voyage.

It is to the west of 25° W. that vessels from Europe have been advised to cross the line. This brings the great route for trans-equatorial voyages both from Europe and America into one through the south Atlantic; consequently, the sailing directions from the line to Cape Horn are the same, whether the vessel be from Europe or America; and so, also, are they the same from the line as far as the offings of Good Hope for all vessels, whether from Europe or America, that are bound anywhere between Australia and the Straits of Sunda.

Therefore, before discussing any other route through the south Atlantic, it will be well to take a general view of routes through that ocean, especially for the benefit of those navigators who are bound to or around the Cape of Good Hope.

Navigators coming from Europe think it out of the way when they are advised to cross the line on the American side. They say, admit that on account of the winds you can from the Lizard reach the line in 30° W. as soon as you can in 20° W., yet from 20° W. on the line to the fair way of Good Hope the distance is 400 miles less than it is from 30° W. on the line.

The distance from the Lizard *via* lat. 0°, long. 30° W., to the fair way of the Cape of Good Hope, is 6,600 miles; whereas, along the usual route *via* lat. 0°, and 20° W., it is only 6,000 miles. This difference, many maintain, cannot be made up by the winds. Let us see. The tables of time and crossings from the Lizard to the line show that the western route and a crossing on the American side, as west of 26° may be called, do give the shortest passages to the line.

In another part of this work will be found a table of crossing "from latitude 0° to longitude 0°," which table serves as a guide that far for all vessels bound to or beyond the Cape of Good Hope. In that table the vessels that cross the equator east of 26° are separated from those that cross it west of that meridian, and it appears that those which cross the equator on the American side, *i. e.*, west of 26°, do, notwithstanding the increased distance, actually make on the average shorter passages to the fair way of Good Hope than those do which cross east of 26° W.—(See page 575.)

Our co-operators in Holland have published from their institute the time and crossings of 455 Dutch ships, from the Lizard to the line, and of 424 from the line to the prime meridian off the Cape of Good Hope. The crossings and time to the line are given separately for those that passed inside of the Cape Verde islands; also, for those that passed outside. One hundred and fourteen passed to the eastward of those islands. Their average crossings of the line is in 22° 2′ W., with a passage of 34.1 days from the English channel; 341 passed west of the Cape Verdes: they crossed the line in 22° 6′, after a passage of 32.7 days from the channel. Thus indicating what the pilot and trade wind charts had already suggested, viz: that time may be saved, on the passage from Europe to the line, by keeping further off from the coast of

Africa than the old beaten track lies, and by crossing the equator nearer the American coast than is the wont with European vessels.

From the line down through the southeast trades of the Atlantic to the prime meridian, these tables of Utrecht give the time and crossings of 424 Dutch vessels. Of these, 55 crossed the equator to the west of its point of intersection with the meridian of 26° W.; and the rest, (369,) to the east of that meridian. To the line the average time of crossing appears, by the Dutch logs, to be: east of 26°, 33.4 days in 22° 15′, and west of 26°, 32.3 days in 29° 34′. Again confirming what the charts have suggested in favor of a more westwardly crossing.

From these tables and the Dutch we derive the following statement as to the average passage from lat. 0° to long. 0°, on the route to India, of those vessels that cross the equator west, and of those vessels that cross it east of its intersection with the meridian of 26° W.

From latitude 0° to longitude 0°, along the route through the trades of South Atlantic to Cape of Good Hope and ports beyond.

Date.	Crossings E. of 26° on the equator.						Crossings W. of 26° on the equator.					
	Dutch vessels.			American.			American.			Dutch.		
	Lat. 0°.	Long. 0°.	Days.	Days.	Lat. 0°.	Long. 0°.	Days.	Lat. 0°.	Long. 0°.	Days.	Lat. 0°.	Long. 0°.
	Long.	*Lat.*										
January	22°.7 W.	37°.2 S.	25.5	23.8	23°.9 W.	36°.4 S.	24.7	29°.7 W.	38°.8 S.			
February	21°	37°	25.7	25.8	21°.8	37°.4	25.3	28°.3	37°.3			
March	21°.7	37°	27.4	28.0	22°.6	38°.1	25.4	27°.7	38°.7			
April	23°.7	36°.2	25.4	26.7	21°.2	36°.5	24.6	28°.1	36°.7			
May	23°.7	36°.2	26.3	27.2	21°.2	35°.7	37.2	28°.9	37°.7			
June	24°.2	36°	24.8	25.0	22°.5	35°	25.5	28°.7	36°.4			
July	21°.7	36°.5	25.0	22.2	23°.6	35°.6	23.7	28°.7	37°.2			
August	20°.5	36°.2	21.5	24.2	22°.4	35°.8	25.8	28°.3	41°.3			
September	21°.7	36°.5	24.0	22.1	22°.3	37°.5	23.6	28°.9	38°.4			
October	25°.7	37°	21.8	25.1	21°.7	39°.6	22.3	29°.4	39°.2			
November	23°.7	37°.5	22.8	23.4	23°.7	37°.2	22.2	31°.4	39°.3			
December	22°.7	37°	23.8	23.0	24°.5	39°.5	24.5	29°.3	37°.9			
Mean	22°.7	36°.8	24.8	24.7	22°.6	37°	24.6	29°.0	38°.2	24.9	29°.9	36°.9

These times and crossings are derived from the means of 310 American and 424 Dutch ships. The agreement between them, as to time, is remarkable. The mean crossings of each fleet east of 26° are so nearly at the same place that they enable us to judge as to the average sailing qualities of the Dutch and American vessels on their *outward* voyage around the Cape of Good Hope. From the place of their eastern crossing of latitude 0° to their crossing of longitude 0° in the South Atlantic the distance in round numbers is 2,500 miles, and the time 24.6 days by the American and 24.7 by the Dutch—a difference so small that it may be considered merely accidental, and not as owing to any difference, as to sailing qualities, between thetwo classes of ships. The tracks therefore may be considered as identical, both as to route, time, and distance. The average distance "*made* good" along this part of the main eastern track is about 105 miles a day both by Dutchmen and Americans.

It is of great consequence to know the relative sailing qualities of the vessels that, under different flags, are co-operating with us; especially of those whose logs, like the Dutch, English, and French, may be subjected to a separate and independent discussion.

From the western crossing the difference of time is a little more marked—the distance from the crossing on the equator to the prime meridian being by the Dutch track about 2,700 miles, by the American 175 further—the Americans making the run in about seven hours less time.

If the average rate of sailing—viz., 105 miles good per day—from the eastern crossing be assumed as the average rate for the vessels that cross west also, we may rightly infer that from the western crossing the American vessels really gain during the run to the prime meridian about two days' sail—viz., they go 175 miles further in less time than the Dutch—and at the end of that time they are really in a better position for continuing the voyage, *for the further south you cross the prime meridian the better—i. e.*, the parallel of 38° S. intersects it at a better crossing place than the parallel of 37° does; and for all vessels bound to Australia, China, or India, the best crossing of longitude 0° is about 40° S., and rather to the south than to the north of that parallel.

Seeing, then, that we cannot ascribe this difference of two days to the sailing qualities of the vessels—Dutch and American on the *outward* voyage—to what shall we ascribe it? Clearly we may set it down as being due to difference of winds. Owing to the winds, the distance actually sailed from the eastern crossing to the prime meridian is quite as great if not greater than that from the western crossings. This will appear obvious by the inspection either of the track charts of the South Atlantic or of the time tables from latitude 0° to longitude 0°.

It will be observed that the outward tracks of those India bound vessels which cross the line about 25° make, through the SE. trades, a sort of curve, of which the centre is situated somewhere on the continent of Africa, thus indicating that the SE. trades have more southing in them on the eastern than on the western side of the Atlantic.

The mean crossing on the equator by the vessels that go east of 26° is in 22° 40′ W., and of those that go west it is in longitude 29°.28′. The mean crossing of 20° S. by the former is in 29°, or 6° 20′ to the west of their crossing at the equator, while for the latter it is only 2° 14′. Consequently a vessel that crosses the equator at the mean place E. of 26° has to make thence to 20° S. a course of south 17° W., whereas one that crosses the equator at the mean crossing west has to make to 20° S. a course of south 7° W. only, as per following table:

Crossings.

	East, between long. 26° and 20° on the equator.						West of 26° on the equator					
	Dutch vessels.			American vessels.			American vessels.			Dutch vessels.		
	Equator.	20° S.	Longitude.	Equator.	20° S.	Longitude.	Equator.	20° S.	Longitude.	Equator.	20° S.	Longitude.
	°	°	°	° ′	° ′	° ′	° ′	° ′	° ′	° ′	° ′	° ′
January	23¾ W	30¼ W.	6½ W.	23 56 W.	28 47 W.	4 51 W.	29 40 W.	30 59 W.	1 19	.....	.....	.....
February	23¾	30¼	6½	21 48	29 50	8 02	28 20	30 59	2 39	.....	.....	.....
March	22¼	29¾	7½	22 38	28 29	5 51	27 42	30 06	2 24	.....	.....	.....
April	22¼	30½	8¼	21 13	27 20	6 07	28 09	33 07	4 58	.....	.....	.....
May	23¾	31½	7¾	21 11	29 00	7 49	28 56	33 14	4 18	.....	.....	.....
June	24¼	32¼	8	22 29	29 38	7 09	28 42	33 55	5 13	.....	.....	.....
July	23¾	32¼	8¼	23 34	29 27	5 53	28 42	34 00	5 18	.....	.....	.....
August	24¼	30¾	6½	22 26	30 07	7 41	29 17	33 20	4 03	.....	.....	.....
September	23¼	29	5¾	22 16	29 52	7 36	28 59	31 53	2 54	.....	.....	.....
October	24¼	29	4¼	21 41	27 31	5 50	29 24	30 57	1 33	.....	.....	.....
November	25¾	29	3¼	23 46	28 12	4 26	31 23	27 55	3 28	.....	.....	.....
December	24¼	28¾	4¼	24 32	28 04	3 32	29 18	30 02	0 44	29 54	32 24	2 30
	23 50	30 16	6 26	22 38	28 51	6 14	29 03	31 42	2 39	29 54	32 24	2 30

We have still further evidence going to show that the winds on the Brazil side have more easting in them than those on the African side of the Atlantic. Attention was called to this fact in the earlier editions of this work. It has an important bearing in favor of the western crossing.

The Dutch crossings are in their sailing directions arranged in two divisions; one group giving the tracks of all that crossed the line west of 20°, and the other all those that crossed it east of 20°. We have still further divided those of the first group into crossings east and crossings west of 26°, as per foregoing table. Let us now see what is the average course which vessels make to reach 20° S. after crossing the equator east of 20°; what after crossing the equator between 20° and 26°; and what after crossing it west of 26°; and also what is the prevailing course of the SE. trades along the route from these several crossings of the line to 20° S.

The Dutch tables contain the means of 75 vessels that crossed east of 20°. Their mean place of crossing was for the equator, in longitude 18° 3′ W.; and for 20° S. in longitude 26° 40′. Consequently, from the equator to 20° S. the vessels that take this route make "good" no better than a course of S. 23° W. Treating the other crossings in the same way, it appears that the mean direction of the SE. trade wind between latitude 0° and 20° S. is, for those vessels that cross in 18° W., SE.; for those that cross it in 22°, SE. ½ E.; and for those that cross in 30°, SE. by E. ½ E.

This is a curious but well established fact about the trades of the South Atlantic. It shows conclusively that an India bound vessel is in a better position when she is crossing the line in 30° W. than she is when crossing it in 20°, and that she can reach her port about two days sooner from the western than she can from the eastern crossing. I shall refer to this subject again, for it is an important one and one which is well worth the attention of navigators.

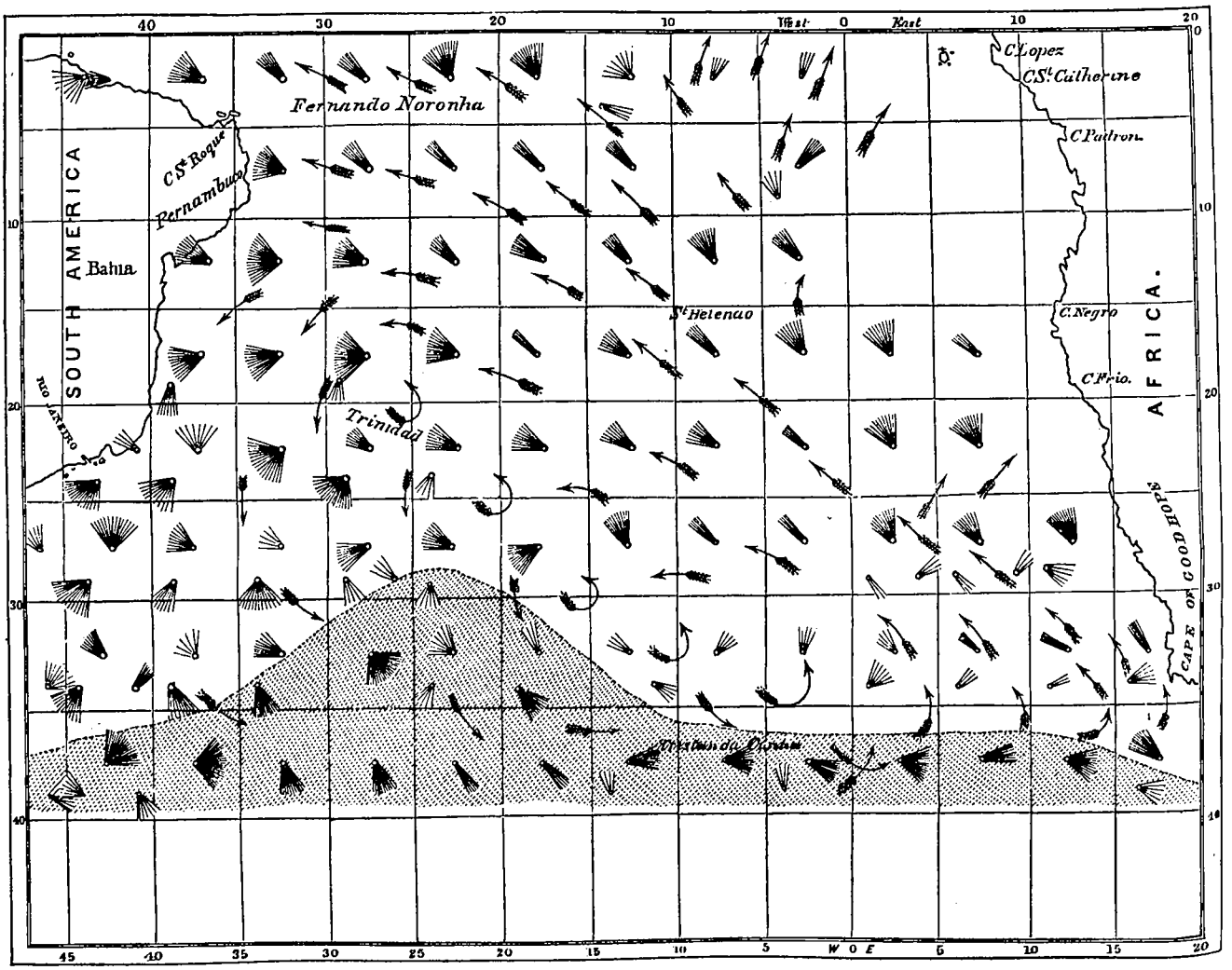
There is in the South Atlantic a streak of SE. winds that is very singular and quite well marked. It has an important influence both upon the outward and homeward voyages of all Indiamen. It will be further treated of in the homeward route from the straits of Sunda, &c.

My attention was first called to this streak of winds by Captain Jansen, of the Dutch navy, my counsellor and friend. He is a very accomplished navigator and a most excellent thinker. I am indebted to him for much valuable assistance and many fine thoughts. He it was who first called my attention to this remarkable peculiarity of the winds in the South Atlantic. It is one which bears directly upon the passage both ways between the Cape and the line for all vessels from the United States as well as from Europe.

"I have remarked," says he, "that, in February, nearly all the ships coming round the Cape of Good Hope find SE. winds in the Atlantic; they lose them only when they turn too sharp round the cape and cross 30° S. east of 10° E., and 25° S. east of 5° E., probably through the influence of the land, by which the SE. is turned to SW. and W., according to the position of the ship in regard to the land.

"We can say in general, ships coming round the Cape of Good Hope find the SE. trade wind in the South Atlantic in February, after rounding the cape, in 34° S. But ships going from the equator to the cape generally lose the SE. trade wind in February, on the meridian of 30° W., near 23° S.; on the meridian of 25° W., near 27° S.; on the meridian of 20° W., near 30° S.; on the meridian of 15° W., near 33° S. And when I say lose the SE. trade, I mean that the wind comes north of east. The SE. trade blows easterly in 10° S. when west of 28° W. Further eastward we find the SE. trade more southerly. From the equator, in

the track of the outward bound ships in February, the wind at first SE. by S. (true) becomes soon SE. and E.SE., when west of 28° W., and slower to the eastward. When the wind is east it goes generally north of east when ships stand to the south, and then from north to northwest. But when ships, with the wind from north, go too far east, then the wind turns from NW. quickly to SW. and SE., and they are obliged to tack and run out of the SE.; wherefore its limits invariably commence to be E.SE. and E., and NE. and N. to NW.—(See the arrows on the diagram.)



"Of course, ships must try to avoid running again in the SE. trade after losing it. Ships bound to the East Indies have thus no advantage in crossing the equator so far to the east; they are compelled, by the wind, to run out of the SE., and because the SE. is more easterly west of 25° W., and more southerly east of it. I think this is the best illustration why they should cross the equator west of 25° W. with great advantage, and why ships bound to Australia do better to avoid the proximity of the limit of the SE. trade-wind, and steer clear of those turning winds generally accompanied with calms.

"In another letter I'll give you the SE. in August, with the demonstration that the SW. monsoon is not the NE. trade, as was supposed, but a continuation of the SE. trade."

Another fact in illustration of the advantages of not crossing the line, on the route from Europe, as far east as 24° W., is afforded by the following statement:

"January 23, 1854. Lat. 30° 05′; long. 41° 37′

"Moderate and fine throughout. 1 p. m. spoke British ship Lord Dufferin, 68 days from Cardiff, for San Francisco. Reports crossing the line in longitude 24°, and being becalmed there twenty-one days, in company with many vessels. His longitude is 40° 20′, which cannot be correct,* being thirty miles to the west of ours, and if right we should have passed close to shore in clearing St. Augustine, although he says he compared with several on the line. Many birds about."—*(Abstract log, ship John Haven, Ricker, from New York to San Francisco.)*

The arrows of the diagram are Jansen's; the wind-vanes or brushes have been added, at my request, by Professor Flye. The data for them are afforded by the Pilot Charts of the South Atlantic. These brushes are only for February, and they merely indicate the direction of the *prevalent* winds, the heaviest shading denoting the *most* prevalent quarter. February is the southern summer; and how beautifully does this little diagram unmask the effects of the pampas of Buenos Ayres on one hand and the deserts of Africa on the other upon the winds at sea! The calm belt of Capricorn here at this season, instead of being between parallels, stretches off in the direction from Rio towards the Cape of Good Hope; so that, in this month especially, vessels bound towards the Cape of Good Hope, so far from gaining, actually lose—as suggested by Jansen and proved by Captain Ricker—by crossing the line east of 25° W.

We have here also revealed to us the cause of the difficulty with homeward bound vessels from Rio frequently find in getting an offing. It is because this calm belt is there, and it is placed there by the conflict in the air between the plains of South America and South Africa; one drawing the trade-wind east, the other west from its regular course.

Then on the polar side of the region of the SE. trades there seems to be a sort of neutral ground, which is shaded on the diagram, in which neither Africa nor America has anything to do with the winds. There appears to be here a sort of reflection or mould in the air of that tongue of cold water from the antarctic regions.—(See Thermal Charts.)

Now, besides this new and very singular feature in the summer (*our* winter) winds of the South Atlantic, the first thing that will probably strike the navigator who has not been accustomed to measure on a terrestrial globe the distance between places, will be the fact that the Cape of Good Hope, instead of being a sort of half-way station on the road-side between Europe or the United States and New Holland, is some thousand miles or more to the northward of the shortest and best route.

And the next thing will be, that the best crossing on the equator for Australian bound vessels from the United States is not to the eastward, but it is on the same meridian which affords the best crossing for the Rio or Cape Horn bound vessels.

All vessels whose route lies anywhere between Van Dieman's Land and the Straits of Sunda should, after crossing the equator, follow the same route at least as far as the meridian of 30° E. south of 45°. Indeed, the route to the Cape of Good Hope can hardly be said to diverge from the Cape Horn route until after you clear the calms of Capricorn. Nor should any vessel bound on any voyage that leads between Van Dieman's Land and Sumatra attempt to shape her course according to a great circle until she has crossed the parallel of 30° or 35° S. in about 25° W. The route thence to the Straits of Sunda is the same as the route to Australia

* On making the land we proved to be correct, and his longitude thirty miles wrong.

until you cross the meridian of 50° or 60° E. Here they diverge. Consequently, the tables of crossings to Australia, &c., and also for the route to Java Head, as far as 50° or 60° E.*

Special directions from the Cape of Good Hope, Bombay and ports W.; for Ceylon and ports N., will be given in the proper place; in the mean time, the following ice table has been prepared, with the assistance of Lieutenant Von Gough, of the Dutch Meteorological Institute:

ICE ON THE ROUTE TO INDIA AND AUSTRALIA.

Name of vessel.	Date.	Latitude.	Longitude.	Remarks.	Authority.
		° ′	° ′		
Resolution	Dec. 8, 1772	49 46 S.	19 58 E.	On the route from the Cape of Good Hope to the polar regions; saw kelp and penguins; are near the edge of ice fields.	Captain Cook's voyage.
Do	10, 1772	50 40	20 00	One ice island, 50 feet high, ½ mile in circumference	Do.
Do	13, 1772	54 00	20 52	Icebergs and ice fields	Do.
Do	14, 1772	54 55	21 44	do	Do.
Aronture	Feb. 28, 1774	53 54	6 35	Many ice islands	Do.
Do	Mar. 3, 1774	53 17	11 53	do	Do.
Do	7, 1774	48 30	14 26	Two large ice islands. From here, further to the north, no more ice is seen.	Do.
Resolution	Feb. 24, 1775	54 26	24 21	Ice islands	Do.
Do	25, 1775	52 52	26 31	The last iceberg. On the further route to the Cape of Good Hope saw no more ice.	Do.
Thetis	— —, 1789	37 30	44 00	See General Chart of the Indian Ocean, by Hobbs, 1850; additions, 1854.	Published in London, by Wilson.
Guardian	Dec. 24, 1789	44 30	44 30	Two icebergs	Horsburgh's Directory.
Harmonie	April 7, 1828	35 50	18 05	Many icebergs, some 100 feet high	Do.
Constancia	7, 1828	35 50	18 05	do do	Do.
Eliza	28, 1828	37 31	18 17	Five icebergs, 250 feet high	Do.
Farquharson	— —, 1829	39 30	49 00	See General Chart of the Indian Ocean, by Hobbs, 1850–'54.	Published in London, by Wilson.
Sara Lydia	May 1, 1839	39 30	16 11	Iceberg, 250 feet high	Dutch Log-book.
Orestes	Nov. 9, 1839	44 30	87 34	Many icebergs, the largest a mile in length, of a square form.	Nautical Magazine, 1840.
Do	10, 1839	44 44	94 48	A sunken piece of ice	Do.
Do	11, 1839	44 44	100 00	One iceburg	Do.
Seringapatam	Aug. 6, 8, 1840	38° 9°	0 01	Many icebergs and fields	Nautical Magazine, 1841.
General Baron V. Geen	16, 1840	37 32	14 10	Iceberg, about 1,000 feet high	Dutch Log-book.
Herald	16, 1840	36 10	13 41	No particularities	Nautical Magazine, 1841.
Ida	Sept. 8, 1840	40 20	26 00	One iceberg, 100 feet high, and four smaller	Do.
Earl of Durham	18, 1840	38 47	36 19	No particularities	Do.
Do	18, 1840	37 30	36 19	do	Do.
Jessica Logan	Aug. 22, 1840	41 30	14 10	One iceberg 1,000 feet long, 400 feet high	Do.
Do	23, 1840	40 25	19 00	One iceberg 400 feet long, 300 feet high	Do.
De Zeeurr	25, 1840	36 38	13 15	Two ice islands	Dutch Log-book.
Maidstone	Oct. 1, 1840	37 55	12 00	No particularities	Nautical Magazine, 1841.
Royal George	3, 1840	36 57	13 47	Two large icebergs; temperature observed at 15 and 9 miles distance.	Do.
Brigtmanns	Nov. 8, 1840	39 50	33 40	Iceberg 120 feet high	Do.
Thomas Grenville	Dec. 18, 1840	40 24	29 00	One iceberg; temperature observed at 18 miles distance.	Do.
Constant	Sept. 13, 1844	38 10	24 00	Many large icebergs on a surface of 180 miles in a direction SE., NW.	Nautical Magazine, 1845.
Urgent	12, 1844	39 4	25 50	Many icebergs	Do.
Rajasthan	—, 1844	37 8	24 00	Four icebergs 100 to 200 feet high; temperature observed when the vessel was on the leeside of the ice.	Do.

* Indian Ocean.—Ship "Lady Arabella," January 1, 1853, between long. 73° 25′ and 75° 18′ E., and lat. 44° 50′ S., was in green water; saw several pieces of kelp, and numerous fin-back whales. No shoal laid down upon the chart in that vicinity 3½° north and 4° east of Kergullen Land. Took no soundings. Navigators should keep a look out from this place, taking care to sound, and note both temperature and specific gravity.

Ice table—Continued.

Name of vessel.	Date.	Latitude.	Longitude.	Remarks.	Authority.
		° ′	° ′		
English Ship	Feb. 28, 1849	49 10 S.	30 15 E.	One large iceberg	Nautical Magazine, 1855.
Do.	Mar. 1, 1849	49 54	35 15	Many icebergs and kelp	Do.
Do.	2, 1849	50 44	39 28	Iceberg	Do.
Do.	3, 1849	.....	.....	Large iceberg	Do.
Do.	4, 1849	52 15	45 11	No ice	Do.
Do.	19, 1849	52 18	110 9	Iceberg very high	Do.
Lucipara's	Jan. 4, 1850	34 50	18 30	A piece of ice, very flat, 30 feet long, 100 feet thick, (in sight of the Cape of Good Hope.)	Dutch Log-book.
Great Britain	Sept. 28, 1853	52 10	37 7	Two large icebergs	Lieut. Maury.
Auckland	Oct. 25, 1853	53 12	21 23	Three icebergs and field-ice	Do.
Do.	26, 1853	51 10	26 20	One iceberg and field-ice	Do.
Oriental	Nov. 4, 1853	44 41	3 51 W.	Supposed ice in the neighborhood; water 44°	Do.
Do.	11, 1853	52 26	19 42 E.	One large iceberg " 31	Do.
Do.	13, 1853	52 20	27 47	Three large icebergs " 30	Do.
Do.	14, 1853	51 3	32 21	Four large icebergs " 32	Do.
Do.	15, 1853	51 20	37 6	One large iceberg " 24	Do.
Do.	25, 1853	53 26	74 19	Seen land " 34	Do.
Do.	28, 1853	53 51	86 40	Two icebergs " 33	Do.
Do.	Dec. 2, 1853	52 57	95 20	One large iceberg	Do.
Swedish brig John	Jan. 7, 1851	51 27	26 37	Ice island much decayed, and large fields of ice to southward.	Do.
Do.	8, 1851	51 53	31 47	Much ice	Do.
Do.	9, 1851	52 32	37 7	....do	Do.
Do.	10, 1851	52 50	43 3	....do	Do.
Do.	11, 1851	53 10	46 46	....do	Do.
Do.	13, 1851	53 30	54 45	Large tabular shaped ice island	Do.
Do.	19, 1851	56 48	83 16	Much broken ice; great number of tabular ice islands, all high and large, and all fresh from the barrier; immense fields of ice to southward.	Do.
Do.	20, 1851	56 35	88 42	Much ice in large fields	Do.
Do.	28, 1851	55 34	103 11	Many, and several large, ice islands	Do.
Agneta	Dec. 6, 1853	49 01	28 37	One iceberg, flat top; temperature in the cabin	Dutch Log-book.
Malay	21, 1853	48 45	35 24	One iceberg well worn	Lieut. Maury.
Gertrude	Sep. 13, 1854	46 00	12 00 W.	One large iceberg; water 32°	Do.
Do.	14, 1854	47 30	10 35	Two small icebergs..do..32	Do.
Do.	15, 1854	49 34	1 39	Three icebergs.....do..34	Do.
Do.	26, 1854	48 15	45 00 E.	One iceberg.....do..32	Do.
Do.	26, 1854	.....	.....	Think we passed near an iceberg; suddenly very cold.	Do.
Flying Dutchman	Nov. 12, 1854	43 38	8 15	Four large icebergs	Do.
Marion	16, 1854	50 10	29 26	One large iceberg	Do.
Do.	19, 1854	50 39	46 10	One large iceberg breaking up	Do.
Earl of Egliton	25, 1854	51 -2	32 00	Three ice islands	Mercantile Marine Magazine, 1855.
Do.	26, 29, 1854	52 -3	32° a 45°	About 30 icebergs	Do.
Do.	Dec. 1, 1854	52 53	73 50	Saw land.—(See Oriental, November 25, 1853)	Do.
Do.	4, 1854	52 30	88 00	Ten ice islands, and a bank of ice and snow lined the horizon; water 41°.	Do.
Do.	9, 1854	.....	.....	Three or four ice islands were in sight every day	Do.
Do.	9, 1854	52 20	102 10	The last ice seen	Do.
Tan and Hoorn	Nov. 24, 1854	44 24	22 00 W.	One small iceberg; at sunset, two others; water 52°.	Dutch Abstract Log.
Do.	Dec. 2, 1854	50 00	2 30 E.	Two icebergs, one 300 feet high; water 34°	Do.
Do.	3, 1854	51 17	6 03	Four large icebergs .....do..36	Do.
Do.	4, 1854	52 06	9 52	Nine icebergs.....do..32	Do.
Do.	5, 1854	52 29	15 23	Four icebergs.....do..31	Do.
Do.	6, 1854	52 05	15 25	.....do.....do..30	Do.
Do.	7, 1854	50 26	19 13	One iceberg .....do..35	Do.
Do.	8, 1854	49 26	22 24	..... do.....do..38	Do.
Do.	10, 1854	49 50	34 08	.....do.....do..35	Do.
Ringleader	10, 1854	47 33	18 10	Two icebergs.—(See Track Chart, series A, No. 35.)	Lieut. Maury.
Sabine	20, 1854	46 00	41 00	No particularities .....do.....do.....do	Do.

Ice table—Continued.

Name of vessel.	Date.	Latitude.	Longitude.	Remarks.	Authority.
		° ′	° ′		
Osiris	Jan. 9, 1855	47 15 S.	38 14 E.	One iceberg, 200 feet high, near Prince Edward's island; water 47°.	Dutch Abstract Log.
Do	10, 1855	47 20	41 10	Many ice fields; water 44°	Do.
White Swallow	17, 1855	44 02	2 47 W.	Fragments of an iceberg	Lieutenant Maury.
Do	20, 1855	45 33	15 33 E.	Three icebergs, one 100 feet long, 150 feet high	Do.
Malay	18, 1855	43 40	16 52 W.	26 icebergs, of all sizes	Do.
Do	19, 1855	42 18	12 08	34 do	Do.
No. 123, English ship	Feb. 27, 1855	47 13	20 00 E.	Several icebergs	Data received from the Board of Trade, Meteorological Department in England.
No. 300, English ship	Mar. 3, 1855	42 35	16 00 W.	Icebergs in great quantities; water 52°	Do.
Do	4, 1855	42 46	16 01	do do..53	Do.
Agneta	16, 1855	43 19	14 17	One piece of ice	Dutch Abstract Log.
Do	18, 1855	49 37	6 54	One piece of ice and two icebergs; water 34°	Do.
Do	19, 20, 1855	52 18	0 27	Many ice islands do..33	Do.
Do	21, 1855	52 39	5 04 E.	do do..33	Do.
Do	23, 1855	53 14	14 41	Many ice islands; one iceberg 960 feet high; water 34°.	Do.
Do	24, 1855	53 14	20 44	Nearly beset in the ice do..33	Do.
Do	25, 1855	53 00	28 00	Few pieces of ice; saw the last piece of ice	Do.
Generaal de Steurs	April 5, 1855	48 06	12 46 W.	Supposed ice in the neighborhood; water 42°	Do.
Do	6, 1855	48 46	7 47	Three large icebergs do..39	Do.
Do	9, 1855	48 44	6 43 E.	One ice island, 500 feet high; and many fields; water 40°.	Do.
Do	9, 1855	.....	.....	In the evening large quantities of icebergs and pieces; water 38°.	Do.
Do	10, 1855	48 43	11 45	One large iceberg, 400 feet high; and much broken ice: water 42°.	Do.
Do	14, 1855	46 00	27 07	Ice pieces; several very large; water 48°	Do.
No. 290, English ship	3, 1855	43 08	12 42 W.	Icebergs; large and in great quantities	Data received from the Board of Trade, Meteorological Department.
Do	11, 1855	48 57	22 30 E.	Several large icebergs	Do.
Do	12, 1855	49 59	24 55	Large icebergs	Do.
Egmond en Hoorne	May 1, 1855	Near ward's	Prince Ed- Island.	No ice; but supposed it in the neighborhood; water 36°.	Dutch Abstract Log
Barend Willem	26, 1855	do	do	One large ice island; water 42°	Do.
No. 115, English ship	26, 1855	48 00	18 00 E.	Several icebergs, one covered with snow; and broken ice; water 41°.	Data received from the Board of Trade, Meteorological Department.
Do	28, 1855	47 48	28 26	Small pieces of ice; water 42°	Do.
No. 213, English ship	Sept. 8, 1855	48 15	41 54	Iceberg	Do.
Lucipara's	Oct. 30, 1855	47 47	22 00 W.	Supposed ice in the neighborhood	Dutch Abstract Log.
Do	31, 1855	47 51	21 09	Many icebergs, some very large	Do.
Do	31, 1855	48 00	18 37	Two large icebergs	Do.
No. 257, English ship	Nov. 3, 1855	49 00	39 00 E.	One large iceberg and three very small ones, and a large flat piece of ice.	Data received from the Board of Trade, Meteorological Department.
No. 296, English ship	27, 1855	47 10	16 11 W.	Numerous icebergs	Do.
Do	28, 1855	48 04	14 20	Six icebergs passed during the day	Do.
Do	29, 1855	49 35	9 57	Large iceberg; temperature of air and water noted when about 200 yards distance.	Do.
Do	30, 1855	49 50	7 57	Large icebergs	Do.
Do	Dec. 2, 1855	49 36	1 55	Two very large icebergs, about two miles long; thick fog during the day.	Do.
Do	3, 1855	49 20	2 30 E.	Several icebergs	Do.
Do	4, 1855	48 51	9 26	About 80 icebergs, with much drift ice, passed during the 24 hours.	Do.
Do	7, 1855	48 40	26 17	Two large icebergs; temperature noted when about a mile distance from one.	Do.
Do	8, 1855	48 48	31 40	Large iceberg	Do.
Do	9, 1855	49 09	37 14	Two icebergs, distant about two miles	Do.
Do	11, 1855	49 30	49 05	Two small icebergs	Do.

Ice table.—Continued.

Name of vessel.	Date.	Latitude.	Longitude.	Remarks.	Authorities.
		° ′	° ′		
No. 296, English ship	Dec. 13, 1855	50 30 S.	60 00W.	Large iceberg, distant four miles	Data received from the Board of Trade, Meteorological Department.
No. 294, English ship	2, 1855	44 40	45 00	Passed an iceberg	Do.
No. 292, English ship	14, 1855	47 22	6 06	Two icebergs, one large	Do.
Do	15, 1855	48 06	13 21	Iceberg and several small pieces	Do.
Do	20, 1855	48 11	37 43	Large iceberg and several small pieces	Do.
Do	21, 1855	48 21	43 31	Two icebergs	Do.
Do	23, 1855	48 22	54 41	Large iceberg, about 200 feet high	Do.
Do	27, 1855	47 40	74 22	Small piece of ice	Do.
Caduceus	31, 1855	49 30	6 00	Several icebergs and very large	Nautical Mag., 1856.
Do	Jan. 2, 1856	47 15	14 00	Icebergs	Do.
Do	8, 1856	45 30	45 30	Several icebergs	Do.
Do	21, 1856	50 15	113 00	do	Do.
Malay	21, 1856	45 25	.....	One iceberg	Lieut. Maury.
Royal Charter	Mar. 31, 1856	47 20	55 00 E.	Three icebergs, about 100 feet high	Lieut. Jansen, Dutch royal navy.
Do	Apr. 1, 1856	47 55	58 30	One iceberg, small	Do.
Beverly	17, 1856	49 32	8 30	Field ice and icebergs	Lieut. Maury.
Do	18, 1856	48 35	11 00	40 icebergs	Do.
Do	19, 1856	47 15	16 33	30 icebergs	Do.
Do	20, 1856	46 50	20 23	Two icebergs	Do.
Do	22, 1856	47 30	29 25	One iceberg	Do.
Do	23, 1856	48 08	37 45	do	Do.
Do	24, 1856	48 44	43 00	do	Do.
Panama	June 20, 1856	45 10	48 43	Two large icebergs	Do.
Kandanghauer	Oct. 26, 1856	41 47	36 21	One iceberg 200 feet high, and one ice island 400 feet high.	Dutch Abstract Log.
Hellevoetsluis	27, 1856	41 00	42 00	One iceberg about 70 feet high	Do.
Hendrina	Nov. 4, 1856	41 08	42 08	Three large icebergs; direction E.NE. and W.SW., on a surface of 100 miles; 500 feet high.	Do.
Do	4, 1856	40 51	43 27	Four large icebergs	Do.
Geurtje en Maria	4, 1856	37 43	13 30W.	A piece of ice; much kelp	Do.
Friendentrourr	21, 1856	41 46	44 04 E.	One iceberg; distance about 5 miles; 172 feet high	Do.
Do	22, 1856	41 23	46 28	One ice island; distance about 9 miles	Do.
Do	24, 1856	41 03	52 48	One iceberg	Do.
Hugo Grotius	Mar. 16, 1857	42 30	66 00	Two pieces of ice, very large, on a considerable distance.	Do.

The barometer, especially in high southern latitudes, is very puzzling, particularly to those navigators who have been cruising mostly in the north Atlantic. There are many rules, in truth almost as many rules as there are generalizers, for telling by the mercury how the wind and weather are to be off Cape Horn, and how they are to be in the long stretch for easting both on the outward and homeward route from and to Australia. I am free to confess that I have never yet been able to discover the actual relation between barometric pressure and the weather off Cape Horn and in those high southern latitudes; nor have I been able to give any rule by which the mariner might *certainly* fortell the approaching storm in those seas. With the hope of discovering some rule of practical importance in this matter, blanks from the daily barometric range at sea have been prepared to accompany the abstract log.—(See plate XIX, vol. 1.)

The use of these diagrams will, I have no doubt, prove valuable and important, especially to those in the Australia and California trade. In the mean time, and in addition to what has been said at pp. 446 *et seq.*, I add the remarks of Captain George W. Brown, of the "Kitty Simpson," who is a very close observer and clever navigator. They are taken from his abstract log:

"July 3, 1857. Lat. 48° 09′ S., long. 87° 54′ E. Barometer, 28.86. Wind: NW. First part, moderate breezes, thick and rainy; middle, light winds, with foul looking weather, and squalls with rain. 5 a. m., wind suddenly from SW., with squalls and rain. 9 a. m., hard squalls; reefed the mainsail and took in the jib; ends wind on the increase; passed much kelp; numerous petrels and other birds about. I fully expected a gale from the N. or NE., with such a low glass, (28.70 in.) I find by experience a low barometer does not but rarely indicate them, unless it falls during the time it is blowing from these quarters. In this, as in the south Atlantic and Pacific oceans, a low glass with baffling winds and unsettled weather (I mean in high latitudes) is almost a sure precursor of a SW. gale, hauling suddenly to that quarter a few hours after the column has fallen to 28.70, or perhaps a tenth or two lower; and also if the barometer falls with a northerly gale and continues to fall after the gale ceases, or remains steady at 29.00, or less, then look out for a sudden shift from S. or SW., after which the silver will rise fast or not, according to the force of wind. In the heaviest gales from W. or NW., the glass seldom falls below 29.30, (that is my own experience.) I may here remark that a low barometer *does not always* indicate wind from any particular quarter, for on the 13th and 14th of June, with the glass at 29 inches on the average, I had south and easterly winds, with various kinds of weather, calms, &c.; but such cases, I think, seldom transpire; indeed, I am at a loss to know what influenced the mercury to act so contrary to the general rule, for a high glass is always experienced with SE. winds.

"July 7. Lat. 46° 39′ S., long. 103° 28′ E. Barometer, 28.80. Winds: W. First part, calm and cloudy; middle part, fresh breezes, and thick rainy weather; latter, light breezes, with cloudy weather and rain till 7 a. m. Saw plenty of kelp, some of which I caught; it appeared to have been in the water a long time, being covered with barnacles. Numerous albatross and other sea fowl about. I was much surprised to see a large black land bird, something like a ganney, hovering overhead for more than an hour, seeing there is no land that is known hundreds of miles from us; yet it is my opinion there are islands in this vicinity. The color of the water, the peculiar weather, the various birds, the abundance of kelp, and the indescribable feeling of the air, denote it. The barometer fell to 28.60 with a southerly wind again, which lasted but a few hours, when it hauled to west, the glass rising a couple of tenths, the wind gradually increasing. Now what is the meaning of the mercury being so low with southerly winds and calms? This is the second time it has shown me that the silver does not fall always for wind, or in fact any particular kind of weather, except, indeed, it be for a SE. wind, which I have always found the barometer to rise for heretofore."

ROUTES FROM EUROPE AND THE UNITED STATES TO AUSTRALIA.

The gold ports of Australia, whether the distance be measured *via* Cape Horn or by the way of the Cape of Good Hope, are between 12,000 and 13,000 miles from the Atlantic ports of the United States or Europe. The best way for vessels in the Australian trade, from Europe or the Atlantic ports of America, to *go* is by doubling the Cape of Good Hope; and the best way to *come* is *via* Cape Horn; and for this reason, viz: The prevailing winds in the extra-tropical regions of the southern hemisphere are from the NW., which of course makes

fair winds for the outward bound around the Cape of Good Hope, and fair winds for the homeward bound around Cape Horn. Here all is plain sailing; vessels homeward bound should steer by the shortest cut for Cape Horn, and the outward bound, after clearing the calms of Capricorn in the Atlantic, should shape their course as direct for the port of destination as the land and ice and the winds will permit them.

Returning by the way of Cape Horn homeward, the best route is to get south of the parallel of 45° or 50° S. as soon as you can by a SE. course. Do not hesitate, if the winds favor, to pass south of New Zealand. But whether you pass south of these islands or not, as soon as you get clear of them let the course be shaped direct for Cape Horn, recollecting that the further you keep south of the *middle* of the *straight* line on your *chart* from Van Dieman's Land to Cape Horn, the nearer you are to the great circle route, and the shorter the distance; the difference by the great circle, and by the straight course on the charts, being upwards of 1,000 miles.

The United States and Australia are nearly antipodal. A diameter of the earth having one end in the Atlantic upon the parallel of 38° N., at its intersection with the meridian of 35° W., would have the other near Port Philip, New South Wales. It will therefore be perceived how that the meridians of many places in America, being followed to the south pole and thence onward, would guide one to various places in New Holland. Thus, the same meridian line which passes through Eastport, in Maine, being continued on the other side of the world, will be found to pass near the Swan River settlement of the great Gold Continent. This meridian is a great circle; and the intercepted arc of it, therefore, represents the shortest distance between any two places that are situated upon it.

Hence it will be perceived that the great circle from New York to Australia passes very nearly through the axis of South America, thence south through the antarctic regions, and so on northwardly again till it reaches this modern Ophir. But this route is impracticable to the navigator, and it is therefore useless to give sailing directions for it.

Let us, however, look for one which, being practicable, will be found to deviate as little as possible from the great circle, and which, moreover, all things being considered, offers to vessels in the Australian trade from Europe, as well as from the United States, the fairest prospect of the most speedy passages. Having found such a route, I propose to give those navigators, whether American or European, who are co-operating with me in collecting data for my researches, the benefit of the experience derived from the logs of all the vessels that have followed the sailing directions that have been given in previous editions of this work for the new route to Australia.

Vessels that are bound southeastwardly, after crossing the line in 30° W., can generally reach, without being pinched by the way, 30° S. between 30° and 20° W. The great circle distance thence to Port Philip is, *if it could be followed*, about 6,700 miles; but it crosses the barriers of perpetual ice which forbid the passage through the antarctic regions. But if a vessel do not go south of 55°, she cannot accomplish the distance to Port Philip from the parallel and meridian of 30° in less than 7,300 miles.

The majority of vessels bound around the Cape of Good Hope cross the meridian of 20° W. between the parallels of 30° and 35° S. Here they generally aim to make a course a little to the south of east. But the great circle route to Australia would, were it practicable, require them to pass the parallel of 70° S. before crossing this meridian of 20° W. That route is the

nearest which, being practicable, deviates the least from the great circle. Mr. Towson, of Liverpool, has designated it the "composite" route. Therefore, the course of the Australian-bound vessel, when she clears the calm belt of Capricorn, between the meridians of 20° and 30° W., which we will suppose she generally does by the time she reaches the parallel of 30° S., is tangential to the parallel of the highest degree of latitude that she intends to reach. The distance *via* "composite" routes for the parallels as "vertices," of 45°, 50°, and 55° S. from 30° S., and from the meridians of 30° and of 20° W., are as follows:

From 30° S. and 30° W. to 45° S. in 20° E., thence E. to 120° E., and thence by tangent to Port Philip, 8,000 miles.

Ditto by tangent to 50° S. in 30° E., then to 100° E., and thence to Port Philip, 7,700.

From 30° S. and 20° W., by tangent to 45° S. in 30° E., and thence, as upon the parallel of 45° from 30° W., to Port Philip, 7,600.

From ditto to 50° S., long. 40° E., and thence to Port Philip, as before, from 30° W., 7,300.

From 30° S., long. 25° W., by tangent to the parallel of 55° in long. 40° E., and thence along this parallel to 90° E., and thence by tangent to Port Philip, the distance is 7,300 miles.

These tangential curves are arcs of great circles; and the navigator who will not take the trouble to get out these curves, so that he may follow them to and from the parallel or "vertex" upon which he proposes to "run down his longitude," but prefers the rhumb-line course, must make up his mind to the loss to be incurred, for even in the cases quoted above, he will lose by the rhumb-line course from a few hours' to a day's sail, according to circumstances*.

At any rate, when he comes to view the route to Australia as here described, he will perceive that the route to the Cape of Good Hope, the Red Sea, and India, as at *present* followed, turns off from it about the parallel of 30° S., and that therefore Australian-bound vessels do not care to make so much easting in the trades as is the wont of those vessels that desire either to touch at or double close around the cape; consequently it is no object with them to hug the trades as close as the cape-bound vessels do; and they hug it too close.

Here, then, as you clear the belt of SE. trade-winds there is a fork in the road—the vessel bound by the beaten track to the Cape and Calcutta going to the east; but she whose destination is for the gold fields of Victoria, or for the Straits of Sunda, should stand on to the southward, not thinking of hauling up to the eastward until she clears the calms of Capricorn and finds herself well within the region of the trade-like westerly winds of the southern hemisphere. She may then begin to edge away and to haul up gradually to the eastward, crossing 10° W. between the parallels of 40° and 50°, according to the season, and reaching

* In 1847 Mr. J. T. Towson, of Liverpool, computed a set of tables to "facilitate the practice of great circle sailing, which are published by the Admiralty. By these tables Mr. Towson has won the credit of having systemized and introduced regularly into the art or science of practical navigation a new branch, which is now known as "composite sailing"—that is, when a navigator makes up his mind to "run down his longitude" upon a certain parallel, the nearest way for *him* to get on that parallel is by arc of great circle, which, passing through the place of his ship, is tangent to that parallel. Likewise, in quitting that parallel called the "vertex," the nearest way is again by arc of tangential great circle which passes through his place of destination. Mr. Towson's tables afford the navigator simple rules and methods for finding his courses and distance by such arcs.

More recently Professor Chauvenet, of the Naval Academy at Annapolis, has invented a "great circle protractor," by which the navigator can lay off exactly, and with great facility, the arc of a great circle, however short, which he wishes to follow. In finding the arc, the protractor shows also the courses and distance. The contrivance is exceedingly simple and beautiful, making "composite sailing" very easy.

And still more recently Captain Geerken, a Dutch ship master, has proposed a plan by which the great circle may in most cases be projected with a pair of dividers on an ordinary Mercator's chart, and *generally* with sufficient accuracy for ordinary purposes.

her extreme southern parallel in our winter months near the meridian of 20° E. Upon this parallel (say from 45° to 52° S.) she should run along her "vertex" till she crosses the meridian of 100° or 120° east, when she may begin gradually to edge up for her port, but still keeping to the right of the rhumb-line on her chart, that leads to it. Hence, it will be perceived that Australian-bound vessels have nothing to do with the Cape of Good Hope. Neither they nor the outward-bound for the Straits of Sunda should wish to go within six hundred or eight hundred miles of it.

The best crossing place of 25° or 30° S. that the SE. trades will generally allow for the Australian route is about 30° W., a few degrees more or less. Here, the winds being fair, the great circle from this crossing to Port Philip will give the navigator a very correct idea as to the best course for him to pursue after reaching 25° or 30° S., at the crossing above mentioned.

The distance from it to Port Philip is about 6,500 miles, the arc of the great circle crossing the prime meridian between the parallels of 70° and 75° S., the meridian of 55° E. between the parallels of 80° and 82° S. Here it reaches its greatest southern declination, and begins then to incline northwardly. Ships cannot follow this circle; it is described only for the purpose of reminding navigators of how far south the shortest route lies, were it possible to follow it. But since they cannot do it, Australian-bound vessels are advised, after crossing the equator near the meridian of 30° W., say between 27° and 32°, as the case may be, to run down through the SE. trades, with topmast studding-sails set, if they have sea room, aiming to cross 25° or 30° S., as the winds will allow, which will be generally somewhere about 28° or 30° W., and so on, shaping their course, after they get the winds steadily from the westward, more and more to the eastward, until they cross the meridian of 20° E., or reach the parallels about which they intend to "run down their easting."

Of the seventy-odd ships that have returned me their abstracts, after having taken these "Wind and Current Charts" for their guide to Australia, one-fifth have made the run from the offings of St. Roque to port in 48 days or less, their average being 44 days, the best among them being 35 days. The mean crossing place of the prime meridian by these 14 vessels is in latitude 41° 30′, though 48° would not be too far south; and the parallels between which they "run down their easting" may be stated, in a general way, to be 45° and 48°. This is the great lane for quick runs to that new land of Ophir. No vessel, with free winds, and of choice, should think of running down her easting, at any season, on the equatorial side of 45°.

Suppose an Australian-bound vessel to be on the parallel of 30° S. in 30° W.; from this point it will be as near for her, within 15 miles—say one hour's sail—to reach the prime meridian at its intersection with 40° S. as at its intersection with 30° S. Navigators should keep in mind the difference of course and distance by Mercator and by great circle, and, after clearing the calms of Capricorn, be not loth, through fear of increasing their distance, to bear south, in order to reach the desired parallel for running down longitude; and, as a rule, this desired parallel should be reached before crossing the prime meridian, and it should not be abandoned before crossing the meridian of 120° E.

Such is the best route to Australia, the highest degree of south latitude (and, as as a rule, the further you go south the shorter the distance) which it may be prudent to touch, depending mainly on the season of the year, the ice, and the winds, the state of the ship, and the well-being of the passengers and crew. If the winds are not good and strong, bear south to look

for them. In our summer, one will not have to go so far south to look for these winds as he will in our winter. The shortest passages, therefore, will probably be made in the southern spring and early summer, when daylight, the winds, the state of the weather, and all except ice, are most favorable for reaching high southern latitudes. The Pilot Charts for the South Pacific indicate that there is a belt of westerly winds between 45° and 50° S., which are most constant and steady. If, with more ample materials and thorough discussion, this should prove to be so, the discovery will be of great importance.

Vessels, therefore, bound to Australia from the United States or Europe should take the Rio route as far as the equator. Indeed, it may be remarked, for the tenth time: the route around Cape Horn to Australia, to the east coast of Africa, and to India, may be considered as one and the same until the belt of SE. trades in the Atlantic be passed. Vessels bound from Europe should aim to cross the equator between 27° and 30° W. Further east would take them where the equatorial doldrums will prove troublesome, and where the SE. trades will be more difficult to find; further west will take them too far out of the way.—(See p. 577.)

Having crossed the equator, with sea room and a good offing from the shores of Brazil, the best course for all, whether European or American, is, as before stated, to crack on through the SE. trades with topmast studding-sails set, or at any rate with a clean rap-full. When these winds fail, as they will do, from 25° S. in *our* summer and fall, to 35° or even 40° in *our* winter and spring—especially on the African side—and the Australian trader finds himself in the horse latitudes of the southern hemisphere, his course is then nearly due *south* until he gets beyond them, and well into the strong westerly winds of that region. These "brave west winds" will be found on the American side, or W. of 20° W., between 35° and 40° S.; but in east longitude they will be found between the parallels of 45° and 55°, according to the season of the year; they prevail with great regularity and force; moreover, they are accompanied by that long rolling swell which will of itself help a vessel along many miles a day.

All the abstracts which I have as yet received from Australian-bound traders go to confirm and illustrate, in the most beautiful manner, everything that I have previously said with regard to the westerly trades of the extra tropical south, and the advantages of the southern route to Australia. I have endeavored to impress navigators with a sense of the mistake they commit in considering the Cape of Good Hope as on the way-side of their best route to Australia. It is not only a long way out of the best and most direct track for them, but the winds also, to the north of the fortieth parallel of south latitude, are much less favorable for Australia than they are to the south of this parallel. *Sailing Directions** issued by the British Admiralty, I am aware, recommend the Cape of Good Hope route, and the parallel of 39° S., as the best upon which to run down easting for Australia.

I quote from those *Sailing Directions:*

"After rounding the Cape of Good Hope, vessels bound to the south coast of Australia may safely run down their longitude, or limit the southern curve of their great circle to the parallel of 39° S., where the wind blows almost constantly from some western point, and seldom with more strength than will admit of carrying sail. In a higher latitude the weather is frequently boisterous and stormy, and sudden changes of wind, with squally, wet weather, are to be expected, especially in the winter season, after passing the islands of St. Paul and Amsterdam. Islands of ice have also been encountered in those regions, as was almost fatally

* 1853.

proved by H. M. ship Guardian striking against one in 46° or 47° S., in the beginning of summer, and nearly foundering." *

It is in the fall and winter months, when the sea is most free from icebergs—not in the summer, for every one knows that icebergs are often seen in the North Atlantic in June, and not unfrequently in July. From November to April is the worst time for ice along the Australian route.—(See ice table, p. 580.) By May, well nigh all that the summer heat could set adrift has been borne north and melted; the southern winter is the time when the icebergs are held fast, for then they are forming for the heat of the next spring and summer to break out and set adrift.

The maximum latitude, or the "vertex," to be used, must, as before said, depend upon the season of the year; and what that "vertex" is to be for any season is one of the objects of present inquiry and of these investigations touching the Australian route. It will depend upon winds, weather, ice, &c.

I hope the abstract logs from vessels in that trade will, ere long, enable me to make a satisfactory and proper decision upon this point. For, by ascertaining that point, I expect to be able to fix definitely upon a route which shall bring Australia *permanently* on the average some thirty days or more nearer to the United States and Europe than by the Admiralty route, along the parallel of 39°, that colony ever has been or can be.

In recommending this new route, and a route which differs so widely from the favorite route of the Admiralty, I should remark that I do it, not because it is an approach to the great circle route, nor because it has anything to do with the composite track, but because the winds, and the sea, and the distance, are all such as to make this route the quickest. I say the sea, because I suppose there is no more danger from icebergs, if a proper lookout be kept, than there is on the voyage between New York and Liverpool.

Under these circumstances, and until co-operators will furnish a sufficient number of journals, we cannot advise navigators exactly how far south to go without incurring risks from icebergs. They certainly may venture further to the southward in some months than in others; but how far in each month, and with what profit, remains for future investigations, based on more ample materials than have yet come to my hands to determine.

I do not venture lightly or without reflection to differ with the Hydrographic Office of England in matters of this sort. That is high authority I am aware. I knew the late distinguished officer who presided over it with such signal ability for so many years. Navigation owes him much, and I had the highest admiration and respect for him, both as an officer and a man. I therefore allude to the work of his office, upon which he has conferred well-earned renown, and to the opinions uttered by it under his worthy successor, with the utmost respect. The object that I, and those who co-operate with me, have in view is the object for which the great Hydrographic Office of the world—that of the British Admiralty—was established and is maintained, viz: the improvement of navigation, the benefit of commerce, and the good of the seafaring community.

Our objects being the same, therefore, when my investigations, which have so far been carried on through a separate and independent system of observations, lead me to results which differ from conclusions by others, I may surely be permitted to announce these results; and if they differ from Admiralty authorities, I may also be permitted, without offence, to allude to that difference, and to show, by facts and observations, not which side is entirely right—for that is not always the case with either—but which is the less wrong.

* The Australia Directory, vol. 1. Edited by John Burdwood, Master, R. N. Fifth edition, printed for the Hydrographic Office, Admiralty, 1855. Chapter I, page 1.

The following is directly to the point:

"Before sailing," Captain Albert Bowen, in the abstract log of the barque Gem of the Sea, from New York to Australia, in 1853, says: "I obtained an English Directory for the Indian Ocean and Australia, published in 1843, which recommended crossing in the latitude of 39° south, which I followed, and which I think greatly prolonged my passage. I would advise going as far south as 48°, where they will get a strong, steady wind from the westward. By crossing in 39° I very unexpectedly got a great deal of northerly and easterly wind, with more calms and light winds than I ever experienced before. I have crossed the Indian Ocean both in summer and winter, but never experienced half so much easterly winds in all before."

In further proof that the route recommended in the *Sailing Directions* of the Admiralty is too far to the north, and as an illustration of the advantages of the route which I advise, I can quote the results of actual experience. I have the abstract logs of 104 vessels, viz: of 30 that tried the Admiralty route: their average from the offings of St. Roque to Australia is 72.5 days; of 32, between the Admiralty route and 45°, with a like average of 63.4 days; of 42, south of 45°, with an average of 55 days. Thus is confirmed the remark in the 7th edition, page 745: "So far as the facts before us go, they justify the assertion that, for every degree you go south of the Admiralty route, you gain three days on the average, until you reach the parallel of 45°–6°, for the averages of the table are not below this parallel; and I believe it will turn out (and it has) that the best streak of wind, on the long run, is to be found between 45° and 50° S., (probably 48° and 52°.) It seems to be almost as steady between these parallels, from the westward, as it is anywhere from the east between the trade-wind parallels of 15° and 20°."

There is still room for improvement; and that those interested in ships, commerce, and navigation, may conceive how rich with good results, and with the promise of more, this field is, they should not forget what has been done for that part of the route which lies in the North Atlantic. To give this route to Australia a fair trial, vessels should not only take the Wind and Current Charts for their guide along that part of the route which lies between the meridians of the Cape of Good Hope and Melbourne, but they should take them for their guide all the way. I make this caution because all the vessels of the table did not do this. They either did not take the new route to the equator, and thence to the parallel of St. Roque; or, having followed it thus far, they did not continue to follow it for the rest of the voyage. The abstract logs of vessels, taken at random, that have followed the new route through the North Atlantic to the fair way of St. Roque, have been discussed, pp. 143–364. The mean gives 34 days as the average passage from the United States to the parallel of St. Roque. The present average from the channel and the western coast of England to the same parallel has been reduced from about 42 also to about 34 days—(see pp. 369 *et seq;*) there is reason to believe that this may be reduced still further. This reduction, if it takes place, will apply directly to the Australia route from Europe, for that part of it which lies north of the parallel of St. Roque is common alike to all vessels, whether bound to Australia, India, Rio, or California.

I refer co-operators to what was said in the previous editions of this work on the subject of the route to Australia. We can now test the accuracy of many of these remarks by comparing them with the results of actual experience. It was there said: "Judging from the results so far, we are entitled to say that, when the prevailing winds and currents to be encountered on the voyage from England or the English Channel to Australia shall come to be understood, and when the routes recommended according to such knowledge shall be properly followed *all the way*, the average duration of the voyage, so far from being 124 days, as it now appears to be

by the Admiralty route,* or 98 days, as it now appears to be by the vessels that have the Wind and Current Charts on board, will probably be less than 95 days from America, and not more than 91 or 92 from England or the Channel."

The table at p. 597, showing the time of seventy-four vessels by the new route from the offings of St. Roque, give the average passage from America at 95 days. All of those vessels did not follow the new route to Rio as far as the offings of St. Roque. The average passage that far is 34 days, and thence to Australia it is 58 days; so that really the passage from the United States to Australia has been actually reduced in consequence of this admirable system of nautical co-operation for physical research from 127 to 92 days; and from England, (say the Lizard,) when the new or western route thence to the line shall be followed, the average time under canvas to Australia should not be over 90 days.

In the 7th edition it was remarked:

"I do not mean to imply that vessels going by the Charts will *never* have long passages—I do not pretend to say that any more than I do that vessels going by this or that old route will *invariably* have long passages; by no means. It should be recollected that in laying down rules of conduct in Sailing Directions, the rules laid down are intended to suit the *majority* of cases. The exceptions may be many, but when compared with the whole, they will be neither numerous nor glaring enough to alter the rule.

"When I was in England, two years ago, *i. e.*, in 1853, I expressed, before the merchants of Liverpool and London, the opinion that the average passage under canvas to Australia might be so shortened for ships from all North Atlantic ports as to make it a month less than the average by the old or Admiralty route. Some of the ships in this trade, and especially some that sailed out of Liverpool, had already, under the advice of Mr. Towson, of that port, commenced to leave the Admiralty route, and to go further south in search of a shorter one; but what I proposed was to find a route which, taking winds and distance both into the account, would give the shortest attainable average; and I urged that all that was necessary for such an achievement was a better knowledge of the winds and currents by the way. And as for the passage home, that admitted of a still greater reduction on the average upon the Admiralty route, which recommends vessels homeward bound to return *via* the Cape of Good Hope instead of Cape Horn. The homeward route of the Admiralty (*via* Cape of Good Hope) may now be considered to be practically abandoned, for I have not received the log-book of a single American vessel that has attempted it; they all come by the way of Cape Horn. And in former editions of this work the prediction was ventured that that part of the route, viz: from Australia to the meridian of the Cape would, when it came to be rightly understood and properly followed, be made under canvas within 25 days. It has, during the last year, been accomplished in less time.

"I asked the merchants, ship owners and masters of England, for their co-operation to aid in the collection of the information requisite to the fulfilment of this promise; for their ships, as they pass to and fro, might 'as well as not' make the preliminary observations by which we hope to be enabled to lift up, as it were, that land of gold and set it down, for all the purposes of commerce, one month nearer to the cities and marts of the realm than it had been." [England has given a generous and hearty co-operation, and the promise has been redeemed.]

"Navigators have not yet made themselves fully acquainted with the new route, nor has

* It *now* (1859) appears to be 111 days.—(See p. 596.)

there been time yet for them to do so, or for it to be generally adopted; but even by a partial adoption only, the promise has been well nigh fulfilled. I have before me a list of vessels that arrived at Port Philip, from European and North American ports, between December 31, 1853, and July 7, 1854. This list was sent me by Captain A. D. Wood, of the Avondale, who, speaking of the vessels therein mentioned, says: 'They were taken from a file of papers in which some numbers were deficient; but, of the 362 vessels arrived up to the 7th July, inclusive, we have—

"40 vessels, or 11 per cent., who have made the passage in 90 days and less." [25 per cent. now make it in less. *Vide* table, p. 597.]

"80 vessels, or 22 per cent., including the 40 above, who have made the passage in 100 days and less.

"Average passage of the whole 362, 124 days (nearly.)

"63 vessels, or 17.4 per cent., have taken 150 days and over." [Only 1 per cent. now exceeds 150 days, p. 597.]

"8 vessels, or 2.2 per cent., have taken 200 days and over.

"This is but a sorry picture of the state of navigation, and in many instances, I believe, the passages are understated. With proper attention to the Charts and Directions and Great Circle Sailing, the longest passage of the dullest sailer ought to be less than 150 days; while such ships as the Red Jacket, Guiding Star, &c., which profess to sail 17 to 18 knots, should now and then make it in 60 days." "A. D. W."

"Of these vessels, 236 were English, 41 American, 29 Dutch, and 8 French. About 10 per cent. of the whole are known to have had the Wind and Current Charts on board. But as it is not known that all of them took the new route, no attempt has been made to separate their passages from the rest. Were they to be separated, the average for the old or admiralty route would probably be a day or two greater than it is by this showing; but, taking them all, their average is, in even numbers, 124 days."—(7th ed., pp. 792–4.)

Now, referring to the table (page 597) for those vessels that have taken the new route from the fair way of St. Roque, and taking their average passages, we find it 95 days, or 29 days less than the other; thus fulfilling the conditions both of promise and prediction.

"At the last meeting of the British Association—I again quote from 7th edition—it was stated by a distinguished gentleman from Bombay that, where he came from, it was estimated that a set of charts and sailing directions for the Eastern Seas, based upon the principles of these, would produce an annual saving to British commerce that would be equivalent to a gain of $1,000,000 to $2,000,000, (£250,000 to £500,000.)

"At first I thought this an over-estimate as to the saving they would effect, even for the whole world, in all parts of the ocean. I thought this, because I had never computed the rate per ton per day that shippers usually pay for freight across the high seas.

"Between Europe and the United States the average time both ways, from all ports, is about 40 days; and the average freight about $5 the ton, or 12½ cents per ton per day.

"From the United States to Rio the average time is about 45 days, at an average freight $8 the ton, which is at the rate of 17.7 cents the ton per day.

"From the United States and Europe to Australia the average passage without the charts is 124 days, and the average freight about $25, or 20 cents the ton per day. With the charts it is (now*) 92 days. To California the freight ranges from $25 to $30 the ton, with an average

* January, 1859

passage of 128 days.* This also gives an average rate of freight of from 18 to 22 cents per ton per day.

"To be within the mark, let us assume the average rate of freight per ton per day, under canvas, on these distant voyages, to be 15 cents, and the average size of the vessels in that trade to be only 500 tons (it is really about 700.)

"The saving to be effected thereby to vessels co-operating in this system of research, at 15 cents per ton per day for 10 days, will be on the average at the rate of $750 for each vessel of 500 tons, whose passage these charts may shorten.

"Supposing, therefore, that 150 vessels only per month, or 1,800 per year, of all flags, go from the ports of the north Atlantic ocean to Australia, it appears that the amount to be saved here is even greater than the estimated amount for the Indian ocean.

"The United States alone, therefore, are not the only nation that is interested in the results of these investigations. All who use the sea are interested in them alike.

"But the Secretary of the Navy, the Hon. J. C. Dobbin, has, on the part of the United States, with the view of enlisting the most extensive co-operation in this common plan for the common good, authorized all shipmasters that navigate the sea under friendly flags, to be placed upon the same footing with regard to the Wind and Current Charts which American shipmasters occupy. That is, any merchant captain, whatever be the flag he sails under, who will agree to keep and furnish an abstract log, of *every voyage*, according to the form prescribed and on the terms set forth before the Brussels conference, will be furnished therefor with a copy of these Sailing Directions, and of such sheets of the charts as relate to his cruising ground.

"Therefore, before applying for the charts, each master should furnish himself with *at least* one good chronometer, one good sextant, two good steering compasses, a marine barometer, and three air and water thermometers, which barometers and which thermometers have been compared with recognized standards.

"I say *at least*, because this is the smallest outfit of instruments that can enable the navigator properly to perform his part of the agreement.

"The several foreign governments invited to co-operate in this system of research, have been requested to appoint each some person to receive these charts, and distribute them to the shipmasters under the flag of his country who are properly qualified and prepared to furnish, in the required form, the observations required.

"It thus appears that navigators who are invited to co-operate in this system, are not invited to labor for naught. There is a prospect of direct pecuniary benefit to inure to every ship, the result of whose observations shall contribute to the shortening of the passage a single day; and that benefit is in saving at the rate of $75 per day for every day, on every voyage, that the passage of a vessel carrying 500 tons merchandise may be shortened."—(7th Ed., pp. 792–'5.)

The amount of tonnage under all flags that are co-operating with us is stated at 15,000,000 tons. Let us suppose that one-third of this, or 5,000,000 tons, are engaged on voyages to which this system of research applies; and that of these five millions one-fifth is always in port, the rest at sea.

Now, if we convert this 4,000,000 of tonnage that is always at sea, into cargoes of 500 tons each, we should see that the world affords constant occupation at sea for 8,000 ships of 500 tons each.

* 1859.

Let us see, in order to estimate the value of the results obtained, how much the voyages upon which these vessels are engaged have been shortened by the joint labors of all concerned in these investigations. The voyage from the United States to Rio has been reduced from 41 to 34 days, or 17 per cent.; the voyage to California from 180 to 128 days, say 25 per cent.; to Australia, from 127 to 95, also 25 per cent. The Dutch, by their investigations of the route to India, have shortened the length of that voyage quite 10 per cent. Let us suppose that the saving already effected by the Dutch, English, and American publications amounts to the general average of 10 per cent. upon all voyages. Such a saving of time would enable these 8,000 ships of 500 tons each, in consequence of the knowledge which they have derived from the results of our labors concerning the winds and currents of the sea, to do as much fetching and carrying in 329 days, as, without that knowledge, they could have done in 365 days or one year. Here is an average annual saving then of 36 days every year to each one of these 8,000 ships of the world; and this saving is computed to be worth $75 a day, for 36 days in the year, to each of the 8,000!

Without vanity, but with the virtuous glow of honest pride I may, I hope, be permitted to ask merchants, ship owners, and masters if the promises made to induce them and their governments to enter into this system of co-operation, have not been pretty fairly redeemed?

Other expectations have been realized. They are now matters of history, and I refer to them now as such, and as they were uttered and reported in previous editions of this work.

"A clipper ship, well handled, and with a good streak of luck in making the run from the United States into the variables of the southern hemisphere, will be able, now and then, to make the passage to Australia by this route in 60 days, if not in less time; but in 60 days it can be accomplished under canvas alone. It used to be a ten months' voyage.

"In that trade, clipper ships will be able to set up a strong opposition to steamers; for if we take into account the increased distance that steamers, touching at the Cape of Good Hope and one or two other places for coal, will have to go, together with the delays incident thereto, we shall see that our clipper ships have not much cause to fear that steamers will ever run them off the water in the Australian trade. Ships with steam, as an auxiliary only, may, if they go direct, drive clipper ships from that track.

"As it has been already remarked, Australia and the United States are antipodal; they are 12,000 or 13,000 geographical miles apart, and it is about as near to come *via* Cape Horn, as it is to go *via* the Cape of Good Hope. The steamers, therefore, on their return *via* the Cape of Good Hope, have head winds to contend with for that much of the way; whereas, the canvas trader, returning by Cape Horn, has fair winds to go and fair winds to come, from the Cape of Good Hope all the way west, even to Cape Horn.

"The passage from Cape Horn to the United States is sometimes made in from forty to forty-five days; and Cape Horn may be reached under canvas from Port Philip, with these westerly winds and long swells, and by keeping well to the south, in twenty or twenty-five days.

"I have great confidence in the existence, regularity, and force of these NW. trades in the great Southern Ocean, especially on the polar side of 45° S.

"The opinion may be rash, or the expression of it may seem like a boast; but, be what it may, I here repeat the prediction which I ventured some years ago, that the round voyage from the United States or England to Port Philip and home again can be made, and will be made, under canvas, by the route which these investigations will discover for us, in 130 or 135 days, or *less*.

"Nay, I went further—for so great is the confidence I had in the richness of this field and in the propelling power of these westwardly trades of the extra-tropical south—and ventured the opinion that a voyage of circumnavigation could be accomplished by this route in less time than the passage has ever yet been made by clipper ships from New York or Boston to San Francisco."—(Vide page 795, 7th edition of this work.)

One of the most wearisome tasks that one has to encounter in this undertaking to improve the sea routes of the world is to clear away the rubbish, so to speak, that blocks the way, *e. g.*, by actual observation it is shown, we will suppose, that the route between any two given ports is longer than it need be, that by departing from it and taking a new one, we discover that dangers will be lessened and voyages shortened. Now, it involves quite as much time, trouble, and labor to convince navigators that the old route is bad, as it takes to satisfy them that the new route is good.

The Admiralty route to and from Australia is one of these tedious old routes, but very difficult to break up, because of the weight and authority which every thing with the imprint of that ancient and renowned board upon it has with navigators. In former editions of these sailing directions, attention was called to that route and its faults, with the hope of inducing the compiler of the Australian Directory to examine the subject with the new lights which the discovery of gold there has, by increasing the number of vessels in that trade, shed upon it.

But the compiler sticks to the old route, as we have seen by the extract just quoted, p. 588.

Ere long, there no doubt will be abstract logs enough in Admiral Fitz Roy's office, to enable that distinguished navigator, independent of what has been already published from Washington, to satisfy any one upon this point. The observations, however, are already so ample that they leave no room to doubt as to the advantages of running down easting to Australia on the north or the south side of 39° S., the Admiralty parallel.

As far as the parallel of St. Roque, in Brazil, the path is the same for all vessels, whether they be bound by the new or the old route to Australia. I give in the subjoined tables the crossings of upwards of one hundred vessels from the Fair Way off St. Roque to Australia. The average passage of those that took the admiralty route was 72.5 days; the route between 45° S. was 63.4 days; the route south of 45° was 55 days. What more would navigators have to convince them of the advantages of the new route?

X.—*Crossings to Australia by the Admiralty Route.*

Name.	Sailed from—	Date.	LATITUDE OF CROSSING MERIDIANS EAST.														Days from St. Roque to Australia.	Days from port to Australia.
			Meridian of Greenwich.	10°.	20°.	30°.	40°.	50°.	60°.	70°.	80°.	90°.	100°.	110°.	120°.	130°.		
			° ′	° ′	° ′	° ′	° ′	° ′	° ′	° ′	° ′	° ′	° ′	° ′	° ′	° ′		
Scotia	London	May 24, 1849	34 40	38 00	39 30	39 30	39 20	39 20	40 40	40 00	39 00	39 40	41 20	43 00	45 30	46 30	71	107
Thomas Arbuthnot	Plymouth, E.	Oct. 5, 1848	38 00	37 30	38 00	38 30	39 00	39 00	39 30	39 30	39 00	39 30	40 00	40 00	40 00	41 00	67	103
Leontine	Bremen	April 7, 1848	34 30	36 30	37 00	38 00	38 30	38 30	38 00	39 00	40 00	40 00	39 00	39 00	37 30	36 00	64	107
Gem of the Sea	New York	April 19, 1853	37 00	37 30	37 00	38 00	38 00	39 00	38 30	38 00	38 00	37 00	36 30	38 00	39 00	40 00	72	105
Yarmouth	....do	March 27, 1853	36 00	37 30	39 00	40 00	39 00	40 00	40 30	40 00	39 00	37 00	38 30	39 30	40 30	40 00	89	132
Pride of the Sea	....do	July 7, 1853	36 00	37 30	38 00	37 30	38 30	39 00	39 00	39 30	39 30	39 30	40 00	40 00	40 00	39 00	55	86
Candace	....do	Feb. 13, 1853	37 00	38 00	38 00	37 00	37 00	37 00	38 00	38 00	39 00	39 00	39 00	39 00	39 30	39 30	76	101
Oregon	....do	March 22, 1853	37 00	37 00	38 00	40 00	38 00	38 30	37 00	35 30	40 00	39 00	41 00	41 00	41 00	39 00	70	103
Aura	....do	July 11, 1853	37 00	40 00	39 00	38 00	37 30	40 00	42 00	42 00	42 00	41 30	41 30	41 00	40 30	40 30	77	110
Texas	....do	May 11, 1853	37 00	37 00	37 00	38 00	38 30	39 30	40 00	40 00	38 00	39 00	38 30	39 00	38 30	39 30	68	105
Vandalia	Baltimore	March 9, 1853	37 00	38 00	39 00	40 00	41 00	40 00	41 30	42 30	40 30	41 00	41 30	40 30	40 00	39 30	80	128
Daniel Webster	New York	Feb. 12, 1853	31 00	34 00	37 00	38 00	39 00	38 30	39 00	39 30	39 00	38 30	39 00	38 00	39 00	39 30	74	109
Robertina	Glasgow	Sept. 11, 1853	38 00	38 00	40 00	40 00	40 00	40 30	40 30	39 30	39 00	39 30	39 30	39 00	39 30	40 00	78	133
Retrieve	St. John's, New Brunswick	Dec. 8, 1853	36 00	37 00	40 00	40 00	40 30	40 00	40 00	39 00	38 30	38 30	39 00	40 00	39 00	39 00	99	153
Bockland	New York	April 22, 1853	36 00	39 30	40 00	39 00	36 30	36 30	38 30	39 00	39 00	39 00	39 00	39 00	40 00	39 30	75	113
Europa	....do	March 22, 1851	37 30	38 00	39 00	40 00	41 00	39 00	37 00	38 00	38 30	40 00	40 30	38 00	40 00	41 30	74	119
Imaum	Salem	Jan. 6, 1853	37 00	39 00	39 30	39 00	39 30	38 30	37 30	37 00	37 30	37 00	38 30	39 00	40 00	40 00	79	109
Esther Francis	New York	May 31, 1853	35 00	37 00	38 30	38 30	40 30	39 00	37 00	38 00	39 00	39 30	40 00	40 00	40 00	40 00	62	112
Alert	Boston	Aug. 8, 1855	38 00	38 00	39 00	39 00	39 30	39 30	42 00	41 00	40 30	39 30	39 30	40 00	39 30	40 00	66	114
H. R. Patell	Lizard, L.	May 29, 1845	36 00	37 00	37 00	38 00	39 00	39 00	39 00	38 30	37 30	37 00	37 00	37 00	36 30	37 00	68	113
E. Corning	New York	March 3, 1853	36 00	38 00	38 30	39 00	38 30	38 30	38 30	39 00	37 30	37 30	39 00	41 00	41 00	40 30	70	104
Queen of the East	London	Oct. 18, 1853	37 00	38 30	39 00	39 30	39 30	39 00	39 30	39 00	39 00	39 00	39 30	39 30	39 30	39 30	59	97
Pamelia	New York	Feb. 18, 1853	31 00	36 00	36 30	39 00	38 00	38 00	38 00	38 00	38 00	37 30	37 00	37 30	38 00	36 00	69	100
Augustine Heard	....do	April 13, 1855	37 30	38 00	40 00	40 00	40 00	40 00	40 00	39 30	39 30	39 00	39 00	40 00	40 00	40 00	75	120
Shirley	....do	May 3, 1854	35 00	37 00	38 00	41 00	44 00	42 00	42 00	41 00	40 00	39 00	39 00	39 00	39 00	39 00	65	98
H. R. Patell	Bremen	July 28, 1846	35 00	36 00	36 00	38 00	38 00	38 00	38 00	38 00	38 00	38 00	37 00	36 00	36 00	36 00	68	93
Albany	New York	Nov. 18, 1854	37 00	40 00	39 00	41 00	41 00	41 00	41 00	39 00	39 00	39 00	40 00	40 00	40 00	40 00	71	116
T. W. Sears	....do	Oct. 26, 1853	38 00	39 00	39 00	40 00	41 00	41 00	41 00	40 00	40 00	39 00	39 00	40 00	40 00	40 00	74	122
Nestorian	....do	Oct. 9, 1854	36 00	36 00	36 00	38 00	40 00	40 00	41 00	41 00	42 00	42 00	41 00	40 00	40 00	40 00	72	116
Jalaware	London	Jan. 28, 1855	36 00	33 00	35 00	41 00	41 00	40 00	40 00	40 00	41 00	41 00	41 00	41 00	40 00	39 00	79	123
Average			36 00	37 26	38 10	39 04	39 24	39 05	39 04	39 07	39 05	39 04	39 24	39 26	39 18	39 54	72.5	111.7

Y.—*Crossings to Australia South of the Parallel of 40° South.*

Name.	Sailed from—	Date.	LATITUDE OF CROSSING MERIDIANS EAST.														Days from St. Roque to Australia.	Days from port to Australia.
			Meridian of Greenwich.	10°.	20°.	30°.	40°.	50°.	60°.	70°.	80°.	90°.	100°.	110°.	120°.	130°.		
			° ′	° ′	° ′	° ′	° ′	° ′	° ′	° ′	° ′	° ′	° ′	° ′	° ′	° ′		
Scotia	London	Oct. 1, 1850	38 50	39 50	41 00	42 40	43 00	45 00	45 30	45 20	46 00	47 20	47 20	47 00	48 30	49 30	65	101
Maria	Rio	March 13, 1853	39 20	39 30	39 50	40 10	40 10	40 00	40 20	40 30	41 00	40 00	40 00	40 00	40 00	40 00	*61	.....
Helena	New York	June 10, 1852	37 50	38 00	38 50	40 00	40 00	41 00	42 00	40 00	40 00	40 00	39 30	40 30	40 30	41 00	52	80
Nightingale	Boston	Oct. 18, 1852	39 40	40 00	40 30	42 00	44 00	45 00	45 00	45 20	45 30	44 40	44 00	43 00	42 00	42 00	51	90
Leontine	Bremen	May 16, 1850	36 00	38 00	39 00	41 00	42 30	42 00	42 00	42 00	42 00	40 00	39 00	39 00	38 30	38 00	53	87
Miltiades	Liverpool	July 8, 1852	39 00	42 30	43 30	44 30	45 00	46 00	46 00	44 00	44 00	43 50	43 00	43 30	43 30	43 00	56	100
Audubon	New York	July 3, 1853	40 40	41 00	40 00	41 00	43 00	43 00	43 30	42 00	41 00	42 00	41 30	41 00	42 30	40 00	69	105
Tarolinta	....do	June 11, 1853	44 00	42 30	43 00	45 30	46 30	46 30	47 00	47 00	47 30	47 30	47 00	47 00	45 00	41 00	*59	.....
Seargo	...do	Dec. 14, 1852	36 00	39 30	41 00	41 00	43 00	44 00	45 00	45 00	45 00	45 00	44 30	44 00	44 00	41 00	59	96
Magnolia	Boston	Sept. 21, 1853	40 00	41 00	42 00	42 20	41 40	41 00	41 20	41 30	41 00	41 00	41 00	41 00	40 30	40 00	63	107
Lady Arabella	New York	Sept. 30, 1852	36 40	38 20	39 40	39 30	42 00	43 00	44 00	44 50	44 00	44 00	44 10	44 40	44 00	42 00	69	115
Angelique	....do	Oct. 18, 1853	40 40	41 10	42 00	43 00	43 30	44 00	44 00	44 00	43 30	43 00	43 30	43 00	42 30	41 30	65	106
Humboldt	....do	March 24, 1853	44 50	46 20	47 00	48 00	49 00	50 00	50 30	51 00	51 00	49 00	48 00	47 00	47 00	43 00	57	96
Auckland	Boston	Aug. 16, 1853	53 20	53 00	53 30	51 30	52 00	52 30	53 00	53 00	52 30	52 30	53 00	54 00	50 00	44 30	64	101
Siri	New York	Sept. 14, 1853	42 00	42 00	42 00	42 00	41 00	41 00	42 00	43 00	42 30	42 00	42 00	42 00	42 00	41 00	65	115
Helena	...do	Aug. 15, 1853	42 00	42 00	41 30	43 00	43 00	44 00	45 00	45 30	46 00	47 00	46 00	45 30	45 00	42 30	48	95
Flyaway	....do	Aug. 21, 1853	37 00	38 00	37 00	43 30	43 30	43 00	43 00	43 00	43 00	43 00	43 00	43 00	41 00	39 30	46	80
Lady Franklin	....do	Sept. 2, 1853	35 00	40 00	41 00	43 00	44 30	45 00	46 30	46 00	45 30	44 20	44 00	44 00	43 30	41 30	61	107
Red Jacket	Liverpool	May 4, 1854	34 30	40 00	44 00	46 30	49 00	51 00	52 00	52 00	50 00	49 30	49 00	47 30	47 00	45 00	42	69
Oriental	Boston	Aug. 13, 1853	47 00	50 00	52 30	52 00	51 30	51 00	54 00	53 30	53 30	53 30	50 30	48 00	48 00	44 30	72	131
Parana	New York	Nov. 6, 1853	40 00	41 00	42 30	44 30	45 00	45 00	46 00	47 00	46 30	46 30	47 00	46 00	46 30	46 30	57	89
Malay	....do	Oct. 14, 1853	45 30	46 30	47 30	49 00	49 00	49 00	47 30	46 00	46 00	46 00	46 00	46 00	45 30	44 30	51	99
Europa	Boston	June 2, 1852	36 00	39 00	40 00	41 30	42 00	41 30	41 00	41 00	41 00	41 00	40 00	40 00	41 30	43 00	61	107
Avondale	Lizard Light	Dec. 16, 1853	50 00	52 00	53 00	52 00	52 00	52 00	52 00	52 30	52 00	51 00	50 30	50 00	48 30	46 00	67	98
Ringleader	Boston	Oct. 18, 1852	45 00	47 00	47 00	48 00	49 00	50 00	51 00	52 00	51 00	50 00	48 00	47 00	45 00	43 00	49	79
Malay	....do	Nov. 28, 1855	45 00	45 00	44 30	44 30	45 00	45 00	45 30	45 30	46 00	46 30	46 00	45 00	44 30	43 00	54	89
James Baines	Liverpool	April 8, 1856	37 30	38 30	41 00	44 00	46 00	48 00	48 30	49 00	47 00	47 00	44 00	43 30	43 00	43 00	46	73
Australia	New York	Jan. 26, 1856	44 30	46 00	47 00	47 00	48 00	48 00	47 00	47 00	47 00	47 00	46 00	43 00	43 00	41 00	61	86
Sweden	....do	July 3, 1855	41 00	42 30	44 00	45 00	45 00	47 00	46 00	45 00	45 00	45 00	44 30	43 00	43 00	44 00	69	114
Oriental	Boston	Feb. 21, 1856	37 00	38 00	40 00	40 00	41 00	41 00	42 00	41 00	40 00	39 30	41 00	42 30	45 30	44 00	85	119
Celestial	New York	Oct. 12, 1855	36 30	38 00	38 00	39 00	40 00	40 00	41 00	41 00	41 00	41 00	41 30	41 30	42 00	40 30	49	84
Magnolia	....do	June 7, 1855	40 30	42 00	43 00	43 30	43 00	44 00	45 00	44 00	44 00	44 00	44 30	41 30	40 00	40 00	68	112
Cynthia	....do	Dec. 27, 1855	40 30	42 30	42 30	43 00	42 30	40 00	41 00	41 00	40 00	40 00	39 00	39 00	39 30	39 00	74	103
Panama	....do	April 27, 1856	42 00	42 00	42 30	43 00	45 00	46 00	46 00	46 00	45 00	43 30	43 30	43 00	42 00	41 00	46	73
Marion	Liverpool	Aug. 27, 1854	46 00	48 00	49 00	50 00	51 00	50 30	50 30	50 00	48 00	45 00	45 00	41 00	39 00	38 00	48	104
Duchess	New York	Sept. 16, 1853	43 30	43 30	43 00	42 00	43 00	43 00	43 00	43 00	42 00	42 00	41 30	42 00	42 00	41 00	71	123
Gauntlet	London	Sept. 4, 1853	44 30	47 00	48 00	49 00	50 00	51 30	52 00	51 30	50 00	50 00	49 00	49 00	43 30	41 30	54	88
Surf	New York	Feb. 8, 1854	48 30	44 00	45 00	45 00	45 30	44 00	43 00	42 00	42 00	41 30	41 00	40 00	40 00	40 00	60	81

Y.—*Crossings to Australia South of the Parallel of* 40° *South*—Continued.

Name.	Sailed from—	Date.	LATITUDE OF CROSSING MERIDIANS EAST.														Days from St. Roque to Australia.	Days from port to Australia.
			Meridian of Greenwich.	10°.	20°.	30°.	40°.	50°.	60°.	70°.	80°.	90°.	100°.	110°.	120°.	130.		
			° ′	° ′	° ′	° ′	° ′	° ′	° ′	° ′	° ′	° ′	° ′	° ′	° ′	° ′		
Firefly	Boston	Oct. 12, 1855	41 30	43 00	42 30	43 00	43 00	43 00	43 30	43 00	42 30	42 30	43 00	42 30	41 30	41 00	60	101
Windward	New York	Dec. 29, 1854	39 00	41 30	42 00	44 30	46 00	47 00	47 00	48 30	49 00	49 00	48 00	47 00	47 00	45 00	59	94
Gertrude	....do	July 14, 1854	49 30	47 30	47 00	47 30	48 30	48 00	47 00	47 00	46 00	45 30	45 00	45 00	45 00	43 00	56	97
Whirlwind	....do	March 28, 1855	39 00	44 30	45 00	47 30	49 00	50 00	51 30	51 30	51 00	49 30	48 30	47 00	46 00	43 00	48	75
Gloriana	London	April 12, 1855	41 00	42 30	43 00	43 00	44 00	43 00	43 00	41 30	41 00	42 00	42 30	40 30	42 00	43 30	79	106
George Lee	Boston	Sept. 24, 1855	38 00	39 30	40 00	40 00	40 00	41 30	42 00	42 00	43 00	43 00	44 30	45 00	45 30	45 30	69	102
Royal Charter	Liverpool	Feb. 11, 1856	42 16	43 00	44 51	44 00	46 00	47 00	48 00	47 30	47 00	47 00	47 00	46 50	44 00	43 49	39	59
John	Lizard Light	Nov. 3, 1850	40 00	45 00	50 00	52 00	53 00	53 30	54 00	54 30	57 00	56 00	55 30	56 00	48 00	43 00	.....	95
Malay	New York	Dec. 2, 1854	43 00	44 00	44 00	44 00	44 00	45 00	45 00	45 00	45 00	45 00	45 00	45 00	44 30	42 00	48	81
Mandarin	....do	Dec. 21, 1855	41 00	41 30	43 30	44 00	47 00	48 00	49 00	50 00	49 30	50 00	48 00	47 30	44 30	41 30	47	70
Nightingale	....do	May 20, 1854	43 30	44 30	44 00	44 00	45 30	48 00	50 30	51 00	51 00	51 00	53 00	55 30	54 00	50 30	44	74
Terror	Boston	June 1, 1855	42 00	43 00	44 30	45 00	45 00	45 00	44 30	44 30	44 00	44 00	43 00	43 00	43 00	41 30	57	89
Ocean Steed	New York	Dec. 17, 1853	42 00	43 00	43 00	44 00	43 00	43 00	43 00	43 00	43 00	42 00	42 00	41 00	40 00	39 00	63	91
Plymouth Rock	Boston	Feb. 19, 1853	40 00	42 43	43 00	45 00	44 00	44 00	44 00	44 00	44 00	43 00	41 00	40 00	40 00	39 00	59	89
Azzen	New York	July 15, 1856	44 00	44 00	45 00	46 00	45 00	46 00	46 00	46 00	46 00	46 00	45 00	45 00	45 00	44 00	67	112
Gertrude	....do	Oct. 19, 1855	45 00	44 00	45 00	46 00	47 00	48 00	47 00	48 00	47 00	47 00	47 00	47 00	46 00	44 00	52	99
Dolphin	....do	Sept. 23, 1852	34 00	29 00	37 00	39 00	41 00	43 00	44 00	44 00	44 00	43 00	42 00	42 00	43 00	43 00	71	111
Black Sea	....do	Sept. 16, 1855	40 00	40 00	42 00	43 00	45 00	45 00	45 00	45 00	45 00	44 00	44 00	44 00	43 00	40 00	61	109
Flying Dutchman	....do	Sept. 15, 1854	46 00	46 00	47 00	47 00	47 00	47 00	45 00	45 00	45 00	45 00	45 00	44 00	44 00	39 00	39	82
Great Britain	Liverpool	Aug. 9, 1853	51 00	51 00	51 00	52 00	52 00	52 00	51 00	51 00	51 00	52 00	52 00	50 00	49 00	44 00	39	67
Albert Franklin	New York	Feb. 24, 1854	40 00	41 00	41 00	41 00	43 00	44 00	44 00	43 00	41 00	40 00	40 00	39 00	39 00	39 00	83	119
Golden Era	....do	Dec. 18, 1855	39 00	42 00	43 00	44 00	44 00	45 00	46 00	46 00	46 00	44 00	44 00	44 00	43 00	40 00	66	118
White Swallow	Boston	Nov. 21, 1854	45 00	45 00	46 00	46 00	46 00	47 00	46 00	46 00	46 00	46 00	46 00	46 00	45 00	43 00	53	90
Cohoto	....do	Sept. 19, 1853	44 00	44 00	44 00	44 00	44 00	44 00	44 00	44 00	44 00	44 00	44 00	44 00	44 00	41 00	62	101
Beverly	....do	March 2, 1855	45 00	48 00	47 00	47 00	48 00	49 00	49 00	48 00	48 00	48 00	48 00	47 00	44 00	42 00	58	83
Raven	Richmond	Sept. 25, 1855	42 00	43 00	45 00	45 00	45 00	45 00	47 00	47 00	46 00	47 00	47 00	47 00	46 00	45 00	60	103
Agen Henrick	Hamburg	June 3, 1855	40 00	40 00	39 00	40 00	40 00	43 00	43 00	43 00	43 00	43 00	43 00	41 00	42 00	39 00	65	108
M. Howes	Cape Henry	Sept. 5, 1855	40 00	42 00	43 00	44 00	45 00	46 00	45 00	45 00	45 00	44 00	44 00	44 00	43 00	42 00	74	119
Havana	Hampton Roads	Feb. 6, 1854	41 00	43 00	43 00	41 00	44 00	46 00	47 00	46 00	45 00	44 00	44 00	44 00	43 00	42 00	66	97
Melbourne	London	June —, 1852	40 00	43 00	45 00	45 00	45 00	45 00	44 00	40 00	40 00	39 00	40 00	41 00	41 00	40 00	53	.....
Iconium	Richmond, Va.	Feb. 8, 1854	41 00	43 00	43 00	42 00	44 00	46 00	47 00	46 00	45 00	44 00	44 00	44 00	43 00	41 00	67	97
Hamlet	Boston	June 22, 1855	39 00	39 00	40 00	41 00	41 00	41 00	41 00	41 00	40 00	41 00	41 00	40 00	40 00	41 00	71	111
Nabob	Liverpool	Sept. 8, 1854	37 00	39 00	40 00	41 00	41 00	41 00	41 00	41 00	41 00	40 00	40 00	41 00	42 00	42 00	60	101
Falcon	New York	Sept. 23, 1855	37 00	38 00	39 00	40 00	40 00	41 00	41 00	40 00	40 00	40 00	41 00	40 00	40 00	40 00	35	73
Averages			41 16	42 30	42 07	44 03	44 55	45 33	45 33	45 32	45 14	44 55	44 35	44 10	43 26	42 00	58.7	95.1

These tables ought, it appears to me, to be conclusive as to the relative merits of the route north of 39°, as per Admiralty, when compared with those of the route south of 45°, as per the results of actual observations and experience.

The matter is one of consequence; it is important to satisfy the nautical mind with regard to it, and therefore I adduce other evidence.

In February, 1856, the excellent Jansen, of the Dutch navy, sailed from England in the Royal Charter—auxiliary steamer—for Australia, from Melbourne. He writes:

"In my report I have given a plain demonstration that your route to Australia is excellent. For this demonstration I had the logs of three ships that sailed the same day from the soundings before the English channel—that of the Kent, of the Joseph Tarret, and the Royal Charter.

"The Kent, a London clipper, under command of an old hand in the Australian trade—one of those clever sailors who have so much experience that they trust nothing else than their own judgment. He had your charts on board, but did not look in them at all. He had written an article formerly, in one of the Australian papers, that he was able to make as quick a passage along the Admiralty route (38° south) as any one else along a more southern route; and he took a wager with his passengers that he should beat the Royal Charter by ten days, at least. Away he went at 7 a. m. of the same day on which we sailed at 2 p. m.

"Joseph Tarret, a Liverpool clipper, of the Black Ball line, under command of a very clever man, who had never made a voyage to Australia. He had your charts and sailing directions on board, to guide him along this first voyage. He had been disappointed by the weather in the Irish channel, but the day of our departure he was off Cork, and thus in a better position than the two other ships that sailed from Plymouth.

"The Royal Charter, a new ship, on her first great experimental trip, of 2,700 tons, with a very small auxiliary power of two hundred horses, was under command of one of those clever sailors and navigators who form their judgment by comparing their own experience with that of others, and who have found that this comparison has strengthened their self-reliance, because they found that their conclusions made from their own few observations were in accordance with the conclusions made from a great number of observations by other sailors.

"Joseph Tarret followed your directions to the line. Kent went the old route, between the Cape de Verde islands and the coast of Africa; and the Royal Charter, trusting on her engines to go through the calms, followed in her wake, expecting to gain upon her competitor by steam, and with the intention to enter the SE. trade in 25° W. and to go then with flowing sheets to the SW. in search for easterly and northerly winds, and to steer then south and S.SE., to prevent running again in the SE. trade. The Royal Charter crossed the line in 23° W., eighteen days out; the Kent in the same spot, twenty days out; and the Joseph Tarret in 29° W., twenty days out. The position of Tarret was as good if not better than the other crossing of the line. Kent, after crossing the line, kept to the eastward, and lost in running through the SE. trade two days, and was thus three days becalmed in sight of Tristan d'Acunha.

"Joseph Tarret followed, with Royal Charter, your directions; and Tarret was able to keep not only pace with the big ship, but, being more to the westward, actually gained upon her, in spite of steam and greater sailing power. (See abstract route Tarret, March 19, p. 601.) After crossing 30° and 35° south, the diagram of my investigations, showing the limits of the SE. trade in February, encouraged both ships to go to the eastward before they were fairly in the westerly winds, against your directions. Both ships arrived in the calms of Capricorn; but

by going to the southward again they found the northerly winds. Your directions are excellent in prescribing not to go more to the eastward than S.SE. till you are fairly in the brave westerly winds. We have lost two, the Tarret one day by neglecting your good advice.

"The Royal Charter made a passage to Melbourne in fifty-nine, Kent and Joseph Tarret in seventy days—the last named ship from off Cork.

"We ran our longitude in 48° south in a succession of fair gales; but the Tarret, following a few days later the same track, found more moderate winds. The Kent, in 38°, moderate and variable winds. Still, here the Kent gained upon Tarret what she had lost in the SE. trade. But if Royal Charter should have found moderate winds in 48° south, I am convinced that her captain should have gone further to the southward in search for better winds. His intention was to go as far south as 51°, expecting to find there the winds which he found in 48° 47′.

"About the icebergs and the warm water I have written in a former letter to you: It appears to me that the warm current from the Indian Ocean crosses the parallel of 45° S., east of Kerguelen land in March, because I found the weather and the climate on the same parallel (47°) west of Kerguelen land similar to a winter season and east of it similar to a spring season, except the hail, which, with southerly winds, is a true companion along this route, without any electrical phenomena.

Abstracts of three ships compared.

Date.	Cosmopolite.		Date.	Royal Charter.		Tarret.	
	Latitude.	Longitude.		Latitude.	Longitude.	Latitude.	Longitude.
	° ′	° ′		° ′	° ′	° ′	° ′
February 17	.....	.....	February 17	48 20 N.	6 41 W.	49 02 N.	10 15 W.
18	49 24 N.	5 28 W.	18	45 18	8 27	47 02	12 01
	47 32	9 12	19	45 19	8 58	45 18	13 18
	43 58	14 06	20	42 20	10 28	41 54	14 40
	40 24	15 05	21	39 14	12 34	38 44	16 33
	38 44	15 58	22	37 15	14 42	37 10	17 00
	36 00	16 39	23	34 22	15 41	34 10	18 40
	32 28	19 07	24	30 46	17 10	31 14	19 20
	29 32	20 13	25	28 02	19 21	28 45	21 35
	26 49	21 23	26	25 29	19 38	26 23	22 32
	23 39	22 41	27	22 07	20 05	23 35	24 30
	20 46	24 22	28	19 01	20 31	20 48	25 15
	18 11	25 43	29	16 00	20 30	18 43	25 50
	15 52	25 59	March 1	12 58	20 26	16 27	26 45
	13 27	26 24	2	9 55	20 46	14 25	27 10
	10 54	25 26	3	6 55	21 09	11 49	27 11
	8 41	25 24	4	4 00	21 21	9 16	27 10
	6 04	25 16	5	1 25	22 02	6 29	27 20
	3 03	25 22	6	1 16 S.	23 42	3 40	27 24
	0 25	26 23	7	4 01	24 20	1 03	27 58
	2 52 S.	28 30	8	5 56	26 18	1 36 S.	29 24
	6 43	30 07	9	9 52	28 22	5 02	30 54
	9 54	31 19	10	12 44	29 44	7 55	31 55
	13 12	32 49	11	16 00	30 30	10 42	32 32
	16 31	32 27	12	19 30	30 38	13 29	33 16
	20 33	31 03	13	23 30	30 19	16 57	32 34
	24 34	28 57	14	28 10	29 26	21 02	31 50
	28 32	26 05	15	32 09	27 38	25 14	31 15
	30 58	23 09	16	35 03	24 57	29 09	30 00
	32 25	21 17	17	36 05	22 10	32 40	27 25
	34 23	19 33	18	38 43	19 22	35 16	23 20
			19	41 01	13 57	37 22	19 19
			20	42 09	8 49	38 40	16 00
			21	41 22	4 10	41 05	15 20
			22	42 16	0 41	42 00	13 20
			23	42 11	4 25 E.		
			24	43 16	9 35		
			25	43 52	15 37		
			26	44 51	20 22		
			27	44 54	28 31		
			28	45 37	33 52		
			29	46 13	39 29		
			30	46 27	45 13		
			31	47 00	52 43		
			April 1	48 08	59 28		
			2	47 18	66 24		
			3	47 31	72 28		
			4	47 31	78 48		
			5	47 23	86 42		
			6	47 10	93 02		
			7	47 02	100 09		
			8	46 51	107 25		
			9	45 40	112 57		
			10	44 39	116 09		

"I cannot find the log of the Kent. Perhaps you will receive some logs to compare with those. The Sardinian and Greenock sailed the same time—the first to Melbourne; the last to Sidney. Instead of the log of the Kent I have extracted the log of the Cosmopolite, a Dutch vessel, built after a clipper model which I brought home from New York. Her captain is a very clever man and one of our best co-operators. The Cosmopolite was bound to Java, and performed the passage from Helvoetsluis to Batavia in 76 days. By running, in March, more round the SE. trade, and in more southern latitudes, she should have made a quicker passage."

Captain Geo. S. Paine, of the ship "*Robert Patten*," December 1, 1857, says:

"In regard to your great work, Charts, Sailing Directions, &c., and the benefit derived therefrom, I would say that I look upon it not alone as a useful and beneficial work to the commercial world—the most so, in my opinion, that has ever been given to the navigator—but also as a scientific and philosophic work; a work which tends to open our eyes and awaken our ideas to the great and beautiful works of nature; and I think there can no longer remain a doubt on the minds of any who have used them, as to their correctness.

"I have endeavored during the past voyage to follow your directions as near as practicable, and believe I have done so. You will see by the journal that we fell to leeward of St. Roque some thirty miles, and had no difficulty in beating round, and that too in a very dull ship. Thence to Australia I followed Maury's directions until I found wind enough, as much as I desired to run across with, which I did between the parallels of 45° and 48°, with a regular sea, no ice, and no bad weather; in short, the finest sailing I have ever met with. On my arrival at Port Adelaide I found that ours was among the best passages for the season, notwithstanding the very dull sailing qualities of the ship.

"The passages on the Admiralty route ranged from 115 to 160 days, and the quickest were those who ran between the parallels of 45° and 50°.

"In regard to the route from Australia to Manilla, I had no practical knowledge and but little information, but was advised by all with whom I had any talk upon the subject to go to the eastward, but, having a different opinion myself, I took the western route, and found, on my arrival at Manilla, that my passage was much shorter than those who went to the eastward. I should, I think, recommend the western route during the Australian summer months, but during the winter months perhaps it would be advisable to take the eastern route."

Letter from Captain Griffith of the Tarolinta.

"Sailing from Rio, my purpose was to reach 50° S. as speedily as possible, without inclining much to the eastward, leaving it a question for future determination whether to go south of that parallel or not; but meeting with heavy weather and deep trying seas soon after leaving port, my ship began to complain a great deal, many of her fastenings working more than was pleasant with so long a run before her; and what was most vexatious, the bolting of the rudder as far down as could be seen was gone, the pieces forming it apparently but slightly held together, and playing from side to side as every swell touched it; besides having a wounded bowsprit, I was deterred from going far south, lest I should involve the ship in pack ice.

"It was no fair weather track we sailed along—a clear stretch of 7,000 miles, with heavy gales and topping seas urging us on. But it would be a glorious one for a 1,500 ton racer to spread her canvas on. It is the water for making great day's runs—for Yankee clippers to astonish the commercial world with reports of extraordinary speed. I have never sailed in any part of the ocean where the winds were so constantly strong and fair for running east.

"I found that the gales in this Southern Ocean are similar to those of the North Atlantic in their changes, with reference to the equator, and are attended with like changes in the barometric column. A gale beginning at NE. is attended by misty or drizzling weather, and a falling barometer; veering to NW., the weather improves, the barometer becoming nearly stationary; reaching W., the wind falls light, with a clearing sky, the barometer rising slowly. Soon after this it settles in the SW., blowing a steady gale, the barometer now rising faster than it fell in the beginning. I can but give, in general terms, the results of my observations upon that very useful instrument, the marine barometer, in connexion with winds and weather, lest I carry my report to too great a length.

"With southerly gales attended with drizzle, the barometer rises slowly until it reaches a height somewhere about 30.25; then the wind may be expected to haul to the NE. Never but once, up to the present time, have I known a wind springing up in the SE. to back into the SW.

"At NE. the gale continues with the same force and weather, barometer falling in the same ratio that it rose until it reaches 29.75, or near it; then the wind passes the north point, blowing heaviest at N.NW. (the barometer stationary,) a sort of last effort, continuing only an hour or two. After this, hauls to W., barometer rising slowly; soon getting south of W., it becomes heavy, barometer rising rapidly.

"South of the 40th degree of latitude, with the barometer stationary at about 30.00, and the wind freshening in the NW. with drizzling weather, a strong gale from the north will almost invariably come up in a few hours, accompanied by thick weather and heavy squalls, the barometer falling rapidly.

"It will probably last until the barometer reaches 29.00, or $\frac{1}{10}$ lower, when it will haul, moderating suddenly to W.NW., with clearing weather. After the lapse of a few hours it will haul into the SW. and blow up heavy, the barometer rising faster than it fell, with fine weather, except an occasional snow or hail squall. I find that generally after the barometer has attained a height of 29.75, the SW. wind becomes light and backs into the NW., freshens up, and repeats.

"But if the wind holds in the NW. moderate and pleasant, the barometer falling slowly, it may continue for several days; after which it hauls to the SW., and blows a fresh and steady breeze, with clear weather, the barometer slowly rising. If the barometer does not rise when the wind has passed south of west, or perhaps, continues to fall a little, the wind also becoming light and unsteady, look out for a heavy squall from the south.

"These southerly squalls approach so suddenly, that at the same time you feel the south-westerly air, you see the water foaming under the squall's advancing front not more than a few hundred yards distant. Their violence, short of a tornado, cannot be overrated; they are charged with snow and hail, and reduce the temperature to 22°; the barometer rising. After a few hours the weather moderates and clears, the wind backing into NW. If, however, the shift does not take place in a squall, but begins blowing up at S.SW., a heavy gale will follow from S. or S.SE., with thick weather, lasting from 8 to 50 hours, then backing as before.

"I found a falling barometer to be invariably attended with drizzling weather, and a rising one with clear weather; and its greatest fall occurred when the wind was a little east of north. Its greatest rise is always with the wind SW.

"The sea rises and falls, operated upon by the various winds, with great rapidity; also showing a facility in accommodating itself to any new direction that is remarkable. In the log I send you, you will find the results of some estimates I made upon the height of waves, their

velocity, and the distance between their crests. I took observations upon the largest only, repeating them often enough to give a good approximate idea.

"From longitude 66° E. to 104° E., on or about the 47th parallel, the water had a dirty, shoal appearance, like that on soundings inside of the Gulf Stream along our own coast. The swell ran in parallel lines somewhat like the beginning of a breaker. The dense fog that prevailed most of the time, I thought went far to account for so strange an appearance; but, as the same was observed when the atmosphere was clear, I was at a loss to reconcile it without the existence of a bank of soundings. I did not have the lead cast more than once, because the wind was strong and fair, rendering it difficult to do so to any purpose without much loss of time. And then, though the ship was luffed to, no satisfactory result was obtained, her drift being too great. After arriving in Port Philip, I learned from several captains that they had observed a similar discoloration. Comparing the information thus received, I found it extended over a surface of ocean lying in a southeasterly direction, say from lat. 41° S., long. 40° E. to lat. 54°, long. 120° E.; the direction of a current you will find in the log.

"I consider the display of lightning on the 20th October last so remarkable, that I make the following lengthy extract from my journal:

" 'First part, light airs from N.NW. and calms; weather cloudy; barometer falling slowly; middle part, light variable airs and clear; barometer still falling; latter part, variable airs and calms; weather in the NW. dark and threatening, with an occasional flash of lightning, until 8 p. m., when the breeze settled in that quarter; barometer falling fast; furled topgallant sails, jib, and spanker. At 9, calm; lightning more vivid, with loud claps of thunder; hauled up the courses and double-reefed the topsails, expecting a heavy burst. Large ship in sight heading SE., with her topsail-yards on the cap. At 10 p. m. a breeze springing up in the NW., accompanied by heavy rain, thunder, and lightning; the ship enveloped in pitchy darkness, illuminated by bright flashes every few seconds; after each flash the atmosphere filled with cones of light, darting about in every direction along the yards and rigging, frequently passing within arm's length, much to the astonishment of the men on deck. Corposants on the mast-heads and yard-arms. The lightning preceding the severest claps of thunder seeming to pass between the masts, close to the deck, in a horizontal direction; barometer now at a stand; temperature of the atmosphere 2° higher; no change in that of the water. Midnight, light breezes from the NW. and overcast; ship under all plain sail.

"The entrance into Port Philip is exceedingly narrow, being only one and a half miles wide; its bottom is composed of a ridge of angular rocks, giving very irregular soundings; directly within or without the depth increases, over mud or sand.

"It may readily be imagined with what velocity the tide must run through such an entrance to elevate or depress the surface of so large a bay three feet. This rapid tide, mounting up and seeking its way across the rocky bottom of the entrance, produces, in the smoothest weather, a whirling and boiling at the surface; and, when opposed by a stiff breeze, heavy breakers arise and extend across the entrance, creating so much noise and confusion as might easily alarm a stranger, if he came without a proper knowledge of it.

"My ship, when between the Heads with a stiff breeze, became for a few minutes totally unmanageable, slewing round against both helm and sails. The limits of the reefs extending from the Heads cannot be distinguished by any difference in the appearance of the breakers.

"A rock with only 11 feet of water over it has lately been discovered, by several vessels

being wrecked upon it, dangerously situated near the extremity of the reef off Point Nepean. Pilots paid by government begin to show themselves outside the Heads.

"However, a stranger need have no fear of the entrance, provided the breeze is commanding and fair, and he steers in according to the directions of the Admiralty's Charts.

"Good anchorage is found all about the bay in from ten to fifteen fathoms, on a bottom of blue mud, so tenacious that ships frequently break their windlasses in attempts to purchase their anchors."

Captain W. H. West to Lieutenant M. F. Maury.

JULY, 1856.

"I herewith enclose abstract log of ship 'Sirocco,' from Philadelphia to San Francisco, thence to Hong Kong, China, and back to San Francisco.

"Relative to the passage from Philadelphia to Cape St. Roque, I followed your directions for July as nearly as the winds would permit. At the same time I will be candid, and own that I did not at that time look upon your Wind and Current Charts in the same light that I do now. I think they are invaluable.

"In October, 1852, I left Liverpool for Port Adelaide, Australia, with 800 emigrants. At that time I had never seen your Charts, I am sorry to say. I went by the Admiralty Sailing Directions, and also the advice of several masters having some experience (as I supposed) in the South Atlantic. They made me quite nervous when they spoke of the current off Cape St. Roque. I worked to the eastward 5° N., whereas I might have crossed four days before. I believe that if the Admiralty Charts had been overboard, and yours substituted, my passage would have been shortened fifteen or twenty days."

Captain Richard Matthews, of the Ringleader, to Lieutenant Maury.

"Accompanying this I hand you my abstract log of ship Ringleader, of Boston, from Boston, October 17, for Melbourne, Australia. As you are rather short of abstracts on this route, and the Ringleader's were rather out of the common course, at least as far as the equator, (I will write you a few lines, as I was rather sparing in my remarks,) which goes to substantiate your theory in your Sailing Directions. Ten days after leaving Boston I was in latitude 32°, longitude 47°, in good position for a new track, but the wind being from E. to E.SE., I of course stood to the south on port tack, thinking the wind would favor some when I got within the region of the NE. trades, but they failed all together; E.SE. wind continued.

"On the 5th of November, I was in latitude 14°, longitude 42°. Being so far to the west caused some anxiety, and my only hope was then to make my easting in the doldrums, as in times past I have always had an opportunity. SW. squalls at last; but those failed.

"On the 7th of November, latitude 9°, longitude 39° 30′, I got in the doldrums. Calms and squalls from E. to SE., which lasted two days.

"On the 9th of November, latitude 7°, longitude 36° 30′, took the SE. trades brisk. I was compelled to stand on the port tack, braced as sharp as possible, and trust to something I could hardly expect; but fortune rather began to favor me, as I was able to cross the equator the 14th of November, in longitude 36° 40′, in 27 days 16 hours from Boston. After crossing the wind remained pretty steady at SE. by E., strong, making now and then aboard to the east to keep to the east of a line drawn from St. Roque to longitude 37° on the equator.

"On the 17th stood in near Cape St. Roque, tacked off a few hours when the wind hauled to E.NE.; tacked ship and went past; free winds.

"On the morning of the 19th stopped at Pernambuco to land my mate with a broken arm.

"We worked up from longitude 36° 40′, crossing to St. Roque in three days, which was wonderful.

"The bugbear of NW. current is all a humbug, for I found no current in the least*, nor did I last year when bound to San Francisco, (an abstract was forwarded to you,) when I crossed in longitude 34°, and fell to leeward of St. Roque, wind SE., and cleared Cape St. Augustine in three days. If I had undertaken either time to make my easting to the north of the equator, I might have spent ten days and then been in a worse situation than from where I started. Your very valuable Sailing Directions and Charts I have great faith in, and was determined on leaving Boston to follow them to a letter, but I had an unusual hard run of winds which caused my track to be an extreme case; winds compelled me to take this route or abandon your instructions. I was sometimes almost in despair; but having a good clipper ship under foot I would not abandon your guide, and by doing so I believe I shortened my passage to Cape St. Roque by at least ten days, which I owe to your very valuable work. [The Sancho Panza, p. — proves by her course the correctness of this opinion. Please refer to Hildreth's remarks, p. —, in connexion with this letter.] It cannot be too highly valued, and every shipmaster that navigates the wide waters ought to be in possession of it.

"The SE. trades were strong and favorable, which run me to latitude 30° S., when I had a few round turns and variable winds to continue till I got in about latitude 47° S. when westerly winds commenced, and I shaped my course to make the circle as you recommend. But in latitude 48° S., longitude 19° W., I fell in with large icebergs and heavy gales of wind from the west, which obliged me to stick her away to the east before the sea, which lasted till I got abreast of Kerguelen Land, in latitude 52°; from thence the weather became better, but the water changed to appearance of soundings, which continued so till we got in longitude 110° E., when it became of dark deep sea appearance again. Passed bunches of kelp daily from Cape of Good Hope to Australia. Saw but few birds, and no lightning or thunder. Since I arrived at this port I have been informed that a ship arrived here recently who reports falling in with land in latitude 53° S., longitude 75° E., near where I had light water; island about 50 miles long. I have no doubt of its existence, as every appearance indicated the approach of land. I only regret I had not sounded, for since I read this report I believe there could not have been more than 30 fathoms of water for some distance we run over. I am bound to Calcutta and Boston.

"P. S. The newly discovered islands named above I have made particular inquiries about, which lie in latitude 53° S., longitude 73° E.; two or three of 20 or 30 miles long, &c." [They are Heard's Islands.—See Track Chart.]

Captain O. E. Sonnenstein, of the Norma of Gottenburg, to Lieutenant Maury.

JULY, 1856.

"Having, in the sixth edition of your valuable book of Sailing Directions, read some remarks relative to the ice that may be met with on a voyage to Australia, I think I may offer

* See what Captain Hildreth, of the Sancho Panza, says p. 328.

you an abstract log from such a voyage, (kept by me while mate of the John of Gottenburg,) and inclose the same herewith.

"I regret much that the John was not found in the requisite instruments for making the many interesting observations whereto the voyage afforded opportunity.

"Returning to Europe this vessel took the admiralty route and had 124 days to England; and an English vessel that sailed before the John had 30 days longer passage, same route."

I conjecture that in that wide expanse of water which stretches entirely around the coast, and over which the "brave west winds" of the extra-tropical south prevail, there is a general current from west to east that belts the coast. The bottle picked up at sea by Captain Williams bears testimony in favor of this conjecture.

Bottle paper.—Ship Ocean Chief, from Melbourne to Liverpool, January 1, 1857; latitude 42° 40′ south, longitude 42° 32′ west.

All well. Thirty days out.

T. J. TOBIN, *Commander.*

If this is picked up, please publish it. T. J. T.

Picked up at sea by Captain Williams, of the whale ship Gideon Howland, December 16, 1857; lat. 39° 50′ S., long. 36° 35′ E. Say 3,600 miles in 350 days, = 10′ per day.

JUNE 19, 1855.

Bottle paper.—DEAR SIR: The ship this day is in latitude 22° 26′ south, longitude 169° east. Thick weather. Winds fresh—baffling—from NE. to N.

SAM. C. H. CUSHMAN, *Master of Ship Tuskinaw.*

N. B. I am bound to Hong Kong.

M. F. MAURY, Esq.

Found February 15, 1858, in Port Fitz Roy harbor, New Zealand, in lat. 36° 12′ S., long. 175° 22′ E. Forwarded by G. R. West, esq., U. S. consul for Bay of Islands.

As further testimony in favor of the southern route, I add the abstract logs themselves kept by some of the vessels that took the Admiralty route, that they may be compared with like by the new route. The seventh edition contains also much interesting matter of this sort which, having been once published, it is thought not worth while to reproduce here. The abstracts that were then published, together with those that are continued in this volume, are sufficient to illustrate these routes. The navigator is referred to that edition.

Admiralty route.

Abstract log of the *ship "Albany,"* (L. B. Gorham, captain,) from New York to Port Philip; 45 days out.

"January 3, 1854. Lat. 7° 35′ S.; long. 29° 14′ W. Barometer, 30.30; air, 83°; water, 79°. Winds: SE. to E.SE. Fine trades and pleasant weather.

January 4. Lat. 10° 06′ S.; long. 20° 30′ W. Barometer, 30.30; air, 81°; water, 79°. Winds: E.SE. to SE. Moderate and fine.

January 5. Lat. 12° 30′ S.; long. 29° 45′ W. Barometer, 30.35; air, 79°; water, 79°. Winds: E.SE. to E. Moderate, with fresh squalls.

January 6. Lat. 15° 29′ S.; long. 29° 30′ W. Barometer, 30.33; air, 81°; water, 79°. Winds: E.SE. to E. Moderate and fresh breezes, and clear.

January 7. Lat. 18° 26′ S.; long. 28° 30′ W. Barometer, 30.33; air, 81°; water, 79°. Winds: E. to E.NE. Moderate and fresh squalls, and clear.

January 8. Lat. 20° 18′ S.; long. 27° 52′ W. Barometer, 30.43; air, 79°; water, 79°. Winds: E. to E.NE. Moderate and fresh; ends light and fine weather.

January 9. Lat. 21° 25′ S.; long. 27° 09′ W. Barometer, 30.34; air, 75°; water, 78°. Winds: E. to NE. and NW. Light and variable, with fresh squalls and light rain.

January 10. Lat. 23° 26′ S.; long. 25° 14′ W. Barometer, 30.33; air, 76°; water, 77°. Winds: N. to E.NE. Light, moderate, and fresh, with lightning.

January 11. Lat. 25° 32′ S.; long. 23° 03′ W. Barometer, 30.41; air, 78°; water, 79°. Winds: NE. Moderate and squalls.

January 12. Lat. 27° 55′ S.; long. 20° 38′ W. Barometer, 30.39; air, 77°; water, 77°. Winds: E.NE. Fine and clear.

January 13. Lat. 29° 48′ S.; long. 18° 39′ W. Barometer, 30.50; air, 75°; water, 72°. Winds: E.NE. Fresh breezes and clear.

January 14. Lat. 30° 40′ S.; long. 16° 54′ W. Barometer, 30.51; air, 74°; water, 72°. Winds: E.NE. to N.NE. Moderate and light.

January 15. Lat. 30° 55′ S.; long. 16° 25′ W. Barometer, 30.56; air, 76°; water, 73°. Winds: NE. to NW. Light, variable, and clear.

January 16. Lat. 31° 20′ S.; long. 15° 45′ W. Barometer, 30.54; air, 75°; water, 73°. Winds: NE. to NW. Light variable airs and fine weather.

January 17. Lat. 32° 00′ S.; long. 14° 12′ W. Barometer, 30.50; air, 75°; water, 73°. Winds: NW. Light breezes and fine weather.

January 18. Lat. 32° 28′ S.; long. 12° 09′ W. Barometer, 30.41; air, 68°; water, 72°. Winds: NW. to S.SE. Moderate and clear.

January 19. Lat. 32° 56′ S.; long. 11° 08′ W. Barometer, 30.40; air, 69°; water, 71°. Winds: S.SE. to E.SE. Fresh and cloudy.

January 20. Lat. 33° 17′ S.; long. 9° 57′ W. Barometer, 30.43; air, 73°; water, 71°. Winds: E.NE. to N.NW. Moderate, with light rain.

January 21. Lat. 34° 27′ S.; long. 8° 26′ W. Barometer, 30.46; air, 80°; water, 82°. Winds: N.NW. to N.NE.

January 22. Lat. 35° 35′ S.; long. 6° 13′ W. Barometer, 30.45; air, 76°; water, 67°. Winds: N.NE. to N.NW. Light and foggy.

January 23. Lat. 35° 13′ S.; long. 3° 30′ W. Barometer, 30.51; air, 67°; water, 67°. Winds: N. to S. by E. Light, variable, and cloudy.

January 24. Lat. 35° 51′ S.; long. 3° 09′ W. Barometer, 30.61; air, 66°; water, 66°. Winds: S.SE. to SE. Moderate and light; weather cloudy.

January 25. Lat. 36° 26′ S.; long. 2° 44′ W. Barometer, 30.65; air, 68°; water, 67°. Winds: SE. to NE. Light and calm.

January 26. Lat. 37° 11′ S.; long. 0° 30′ W. Barometer, 30.54; air, 67°; water, 65°. Winds: N. to N.NE. Light and clear.

January 27. Lat. 39° 00′ S.; long. 3° 18′ E. Barometer, 30.15; air, 64°; water, 65°. Winds: N. to N. by E. Moderate and cloudy; end, strong breezes and rainy.

January 28. Lat. 39° 48′ S.; long. 6° 57′ E. Barometer, 30.10; air, 61°; water, 60°. Winds: N. to N.NW. Strong, with heavy rain.

January 29. Lat. 39° 45′ S.; long. 10° 35′ E. Barometer, 30.38; air, 59°; water, 58°. Winds: N. to W.NW. Fresh and passing squalls; discolored water.

January 30. Lat. 39° 46′ S.; long. 13° 48′ E. Barometer, 30.52; air, 57°; water, 62°. Winds: W.SW. to S. Fresh and moderate; discolored water.

January 31. Lat. 38° 58′ S.; long. 17° 23′ E. Barometer, 30.46; air, 56°; water, 60°. Winds: S. to S.SW. Moderate and cloudy.

February 1. Lat. 39° 05′ S.; long. 20° 20′ E. Barometer, 30.31; air, 65°; water, 73°. Winds: S.SW. Strong and cloudy, with passing squalls.

February 2. Lat. 39° 04′ S.; long. 22° 07′ E. Barometer, 30.15; air, 67°; water, 68°. Winds: SW. to W.SW. Strong breezes and squally; middle and latter parts, calm.

February 3. Lat. 39° 26′ S.; long. 26° 03′ E. Barometer, 30.10; air, 65°; water, 70°. Winds: W. to W.SW. Moderate and squally.

February 4. Lat. 39° 28′ S.; long. 29° 10′ E. Barometer, 30.32; air, 56°; water, 62°. Winds: SW. to S. by W. Moderate and cloudy; squally weather.

February 5. Lat. 39° 15′ S.; long. 29° 52′ E. Barometer, 30.30; air, 57°; water, 61°. Winds: S. to SE. Light and variable.

February 6. Lat. 40° 37′ S.; long. 29° 57′ E. Barometer, 30.33; air, 57°; water, 59°. Winds: SE. Fresh and cloudy.

February 7. Lat. 41° 17′ S.; long. 29° 53′ E. Barometer, 30.34; air, 56°; water, 59°. Winds: SE. to S. by E. Fresh and cloudy; squally weather.

February 8. Lat. 41° 07′ S.; long. 30° 40′ E. Barometer, 30.40; air, 60°; water, 58°. Winds: S. and calm. Cloudy weather.

February 9. Lat. 41° 30′ S.; long. 33° 40′ E. Barometer, 30.16; air, 60°; water, 58°. Winds: N. to N.NE. Light and variable.

February 10. Lat. 40° 48′ S.; long. 36° 34′ E. Barometer, 30.35; air, 58°; water, 60°. Winds: N.NW. to S.SE. Moderate and misty, with rain.

February 11. Lat. 40° 18′ S.; long. 38° 52′ E. Barometer, 30.40; air, 64°; water, 67°. Winds: SE. to E.NE. Light and strong; cloudy weather.

February 12. Lat. 41° 44′ S.; long. 42° 50′ E. Barometer, 30.32; air, 56°; water, 57°. Winds: NE. Strong, and foggy weather.

February 13. Lat. 41° 40′ S.; long. 47° 18′ E. Barometer, 30.06; air, 63°; water, 61°. Winds: NE. to N. Strong, with hard squalls and heavy rain.

February 14. Lat. 41° 26′ S.; long. 51° 49′ E. Barometer, 30.38; air, 48°; water, 57°. Winds: N.NW. to W.SW. Strong and cloudy, with rain.

February 15. Lat. 41° 25′ S.; long. 55° 51′ E. Barometer, 30.49; air, 49°; water, 57°. Winds: W.SW. Strong and cloudy.

February 16. Lat. 41° 28′ S.; long. 59° 26′ E. Barometer, 30.80; air, 57°; water, 62°. Winds: SW. to W. Moderate, variable, and cloudy.

February 17. Lat. 40° 58′ S.; long. 62° 18′ E. Barometer, 30.82; air, 59°; water, 60°. Winds: W. to W.NW. Moderate, light, and cloudy.

February 18. Lat. 40° 55′ S.; long. 63° 57′ E. Barometer, 30.73; air, 63°; water, 61°. Winds: S.SW. to N.NW. Light and cloudy.

February 19. Lat. 40° 01′ S.; long. 67° 05′ E. Barometer, 30.51; air, 59°; water, 58°. Winds: N.NW. Moderate and pleasant.

February 20. Lat. 39° 23′ S.; long. 70° 20′ E. Barometer, 30.54; air, 63°; water, 61°. Winds: NW. to W.NW. Moderate and clear; light rain showers.

February 21. Lat. 39° 05′ S.; long. 72° 50′ E. Barometer, 30.60; air, 61°; water, 60°. Winds: N.NW. Light and clear.

February 22. Lat. 39° 01′ S.; long. 76° 05′ E. Barometer, 30.54; air, 64°; water, 62°. Winds: N. to N. by E. Light and moderate; clear weather.

February 23. Lat. 38° 49′ S.; long. 78° 38′ E. Barometer, 30.52; air, 65°; water, 63°. Winds: N. to NW. Moderate and light airs; large patches of kelp.

February 24. Lat. 39° 00′ S.; long. 80° 18′ E. Barometer, 30.48; air, 65°; water, 62°. Winds: NW. to N.NE. Light, variable air and calm; clear weather.

February 25. Lat. 39° 15′ S.; long. 83° 34′ E. Barometer, 30.41; air, 64°; water, 63°. Winds: N. to N.NE. Moderate and cloudy.

February 26. Lat. 39° 38′ S.; long. 87° 28′ E. Barometer, 30.32; air, 59°; water, 59°. Winds: N. to W.SW. Moderate and cloudy, misty weather.

February 27. Lat. 40° 13′ S.; long. 91° 28′ E. Barometer, 30.52; air, 57°; water, 59°. Winds: W.SW. to W. Fine and cloudy; ends, light breezes and clear.

February 28. Lat. 40° 22′ S.; long. 95° 00′ E. Barometer, 30.42; air, 58; water, 58°. Winds: W.NW. Moderate and dark, cloudy weather.

March 1. Lat. 40° 29′ S.; long. 94° 22′ E. Barometer, 30.32; air, 60°; water, 57°. Winds: NW. to N.NW. Fine breezes and cloudy, with rain.. I have observed much colored water the whole of this route, from the cape up to the island of St. Paul, generally of a light green color in clear weather; in dark, cloudy weather it has the appearance of the water on our coast inside of the Gulf Stream.

March 2. Lat. 40° 35′ S.; long. 102° 40′ E. Barometer, 30.31; air, 54°; water, 57°. Winds: N.NW. to S. by W. Fresh, with constant rain.

March 3. Lat. 39° 32′ S.; long. 103° 56′ E. Barometer, 30.30; air, 63°; water, 60°. Winds: S. by W. Fresh gales, with continued rain; ends, calm and cloudy.

March 4. Lat. 40° 00′ S.; long. 106° 38′ E. Barometer, 30.31; air, 56°; water, 57°. Winds: S.SW. to SW. Moderate and calm, with rain.

March 5. Lat. 40° 38′ S.; long. 110° 47′ E. Barometer, 30.08; air, 52°; water, 56°. Winds: SW. to W.SW. Fresh and squalls.

March 6. Lat. 40° 33′ S.; long. 114° 33′ E. Barometer, 30.11; air, 58°; water, 57°. Winds: SW. Fresh and squally.

March 7. Lat. 40° 14′ S.; long. 117° 38′ E. Barometer, 30.07; air, 62°; water, 57°. Winds: SW. to W.SW. Moderate and fine.

March 8. Lat. 40° 04′ S.; long. 121° 56′ E. Barometer, 29.87; air, 63°; water, 60°. Winds: NW. Fine breeze; ends, hard gales.

March 9. Lat. 39° 58′ S.; long. 125° 17′ E. Barometer, 30.00; air, 60°; water, 58°. Winds: NW. to W.SW. Heavy gales and thick weather. Hove to for three hours; ends, fresh gales and cloudy.

March 10. Lat. 40° 05′ S.; long. 129° 04′ E. Barometer, 30.06; air, 63°; water, 60°. Winds: W.SW. to W.NW. Brisk gales and passing squalls.

March 11. Lat. 40° 20′ S.; long. 132° 52′ E. Barometer, 30.02; air, 64°; water, 60°. Winds: W. Brisk gales and passing squalls.

March 12. Lat. 40° 00′ S.; long. 136° 24′ E. Barometer, 29.99; air, 58°; water, 58°. Winds: NW. Moderate and variable.

March 13. Lat. 39° 54′ S.; long. 140° 04′ E. Barometer, 29.91; air, 55°; water, 57°. Winds: W.SW. to W. Moderate, and fresh gales and squalls.

March 14. Lat. 30° 07′ S.; long. 143° 22′ E. Barometer, 30.31; air, 62°; water, 62°. Winds: W.SW. Moderate, with fresh squalls. At 10 a. m. made the land, bearing NE.; distant 10 leagues.

March 15. Lat. ——; long. ——. Moderate and variable wind. At 4 p. m. Cape Otway distant 3 leagues. At noon took a pilot on board; stood in and anchored off Port Philip."

Abstract log of the *Brig "Retriever,"* (George Grey, captain,) from St. John's, New Brunswick, to Port Philip. 1854. 54 days out.

"February 1. Lat. 6° 53′ S.; long. 25° 30′ W. Winds: SE. to E.SE. Light.

February 2. Lat. 8° 00′ S.; long. 25° 23′ W. Winds: E.SE. Light.

February 3. Lat. 10° 00′ S.; long. 25° 15′ W. Winds: SE. by E. Light.

February 4. Lat. 11° 28′ S.; long. 25° 12′ W. Winds: SE. Light.

February 5. Lat. 13° 24′ S.; long. 25° 30′ W. Winds: SE. by S. Light.

February 6. Lat. 15° 04′ S.; long. 25° 19′ W. Winds: SE. to E. Light.

February 7. Lat. 16° 41′ S.; long. 24° 56′ W. Winds: E.SE. Light.

February 8. Lat. 18° 20′ S.; long. 25° 00′ W. Winds: E.SE. to SE. Light.

February 9. Lat. 19° 44′ S.; long. 25° 04′ W. Winds: SE. Light and cloudy.

February 10. Lat. 20° 28′ S.; long. 25° 16′ W. Winds: SE. Light and clear.

February 11. Lat. 20° 47′ S.; long. 25° 50′ W. Winds: SE. by E. Light and clear.

February 12. Lat 21° 31′ S.; long. 26° 11′ W. Winds: SE. Light and clear.

February 13. Lat. 22° 21′ S.; long. 26° 57′ W. Winds: S.SE. Light and clear.

February 14. Lat. 23° 44′ S.; long. 27° 38′ W. Winds: S.SE. Light and clear.

February 15. Lat. 24° 45′ S.; long. 27° 54′ W. Winds: SE. by S. Light and clear.

February 16. Lat. 25° 18′ S.; long. 28° 16′ W. Winds: SE. by S. to S. Light and clear.

February 17. Lat. 25° 16′ S.; long. 28° 11′ W. Winds: South and calm.

February 18. Lat. 25° 38′ S.; long. 28° 09′ W. Winds: S. S. S. Nearly calm throughout.

February 19. Lat. 26° 38′ S.; long. 27° 04′ W. Winds: NE. by E. Moderate and clear.

February 20. Lat. 28° 03′ S.; long. 25° 52′ W. Winds: E.NE. Moderate and clear.

February 21. Lat. 29° 01′ S.; long. 25° 32′ W. Winds: E. to E.SE. Very light and clear.

February 22. Lat. 19° 54′ S.; long. 25° 18′ W. Winds: E.SE. Very light and clear.

February 23. Lat. 30° 32′ S.; long. 24° 54′ W. Winds: East. Very light and clear.

February 24. Lat. 31° 19′ S.; long. 28° 10′ W. Winds: NE. by E. Very light and clear; freshening.

February 25. Lat. 31° 43′ S.; long. 19° 36′ W. Winds: N.NE. to N. Fresh and clear.

February 26. Lat. 31° 55′ S.; long. 18° 02′ W. Winds: North. Moderate and clear.

February 27. Lat. 32° 18′ S.; long. 16° 16′ W. Winds: N. to N.NE. Moderate and clear.

February 28. Lat. 32° 41′ S.; long. 13° 34′ W. Winds: N.NE. to N.NW. Moderate and clear.

March 1. Lat. 32° 50′ S.; long. 11° 59′ W. Winds: N.NW. Moderate and clear.

March 2. Lat. 33° 24′ S.; long. 9° 05′ W. Winds: NW. Fresh, with rain, and foggy.

March 3. Lat. 33° 55′ S.; long. 7° 00′ W. Winds: NW. to W. Fresh gales and squalls.

March 4. Lat. 34° 08′ S.; long. 5° 20′ W. Winds: S.SW. to S. Hard gales; ends moderate.

March 5. Lat. 33° 40′ S.; long. 4° 00′ W. Winds: SE. to S. Light airs and cloudy; a heavy SW. swell.

March 6. Lat. 34° 35′ S.; long. 4° 09′ W. Winds: E. to NE. Light airs and clear.

March 7. Lat. 35° 20′ S.; long. 2° 07′ West. Winds: N.NE. Light airs and clear.

March 8. Lat. 36° 21′ S.; long. —. Winds: N. to N.NW. Light airs and clear.

March 9. Lat. 36° 49′ S.; long. 3° 16′ E. Winds: N.NW. to N. by E. Light airs and clear.

March 10. Lat. 36° 29′ S.; long. 7° 33′ E. Winds: North. Light airs and clear.

March 11. Lat. 36° 43′ S.; long. 10° 24′ E. Winds: NW. to S.SW. Light airs and cloudy; ends, fresh gales and rain squalls.

March 12. Lat. 37° 12′ S.; long. 14° 30′ E. Winds: S.SW. Fresh gales and rains; ends clear.

March 13. Lat. 37° 37′ S.; long. 15° 54′ E. Winds: S.SW. Moderate and calm; clear weather.

March 14. Lat. 36° 40′ S.; long. 17° 40′ E. Winds: S. by W. to S. by E. Moderate and clear.

March 15. Lat. 36° 17′ S.; long. 18° 00′ E. Winds: S. to SE. Fresh and hazy.

March 16. Lat. 37° 46′ S.; long. 17° 43′ E. Winds: S.SE to SE. Fresh and hazy.

March 17. Lat. 38° 17′ S.; long. 17° 39′ E. Winds: S.SE. to E.SE. Cloudy, with rain squalls.

March 18. Lat. 39° 57′ S.; long. 18° 54′ E. Winds: E. to E.SE. Moderate and clear.

March 19. Lat. 40 10′ S.; long. 20° 21′ E. Winds: E.NE. Light airs; calms and fogs.

March 20. Lat. 40° 03′ S.; long. 22° 40′ E. Winds: NE. to SE. Light and foggy; ends, strong gales.

March 21. Lat. 40° 25′ S.; long. 24° 00′ E. Winds: SE. to S. Heavy gales; ends moderating.

March 22. Lat. 40° 08′ S.; long. 26° 40′ E. Winds: S.SW. to N. Fresh and clear.

March 23. Lat. 40° 13′ S.; long. 28° 51′ E. Winds: W.NW. Moderate and clear.

March 24. Lat. 40° 12′ S.; long. 30° 57′ E. Winds: NW. to S.SE. Moderate and clear.

March 25. Lat. 40° 25′ S.; long. 32° 43′ E. Winds: SE. to NE. by E. Light airs and clear.

March 26. Lat. 40° 20′ S.; long. 34° 21′ E. Winds: NE. to S. Light and rainy.

March 27. Lat. 39° 35′ S.; long. 35° 11′ E. Winds: SE. to E.SE. Fresh and cloudy.

March 28. Lat. 40° 16′ S.; long. 36° 49′ E. Winds: E. to N. Light, rain and haze.

March 29. Lat. 40° 04′ S.; long. 38° 50′ E. Winds: NW. to S. by E. Light and hazy.

March 30. Lat. 40° 24′ S.; long. 41° 25′ E. Winds: S.SW. Fresh, and dark weather.

March 31. Lat. 40° 18′ S.; long. 42° 19′ E. Winds: S. by W. to S.SE. Light and clear.

April 1. Lat. 39° 36′ S.; long. 43° 13′ E. Winds: S. by W. to E.SE. Light winds and clear.

April 2. Lat. 39° 00′ S.; long. 43° 33′ E. Winds: E.SE. to E.NE. Light winds and clear.

April 3. Lat. 40° 46′ S.; long. 40° 40′ E. Winds: SE. to NW. Light winds and clear.

April 4. Lat. 40° 38′ S.; long. 47° 54′ E. Winds: N.NW. Light winds and clear.

April 5. Lat. 40° 19′ S.; long. 50° 27′ E. Winds: N.NE. Light and clear; latter part rain.

April 6. Lat. 39° 51′ S.; long. 53° 29′ E. Winds: N.NE. Fresh and rainy.

April 7. Lat. 38° 59′ S.; long. 57° 14′ E. Winds: N. by E. Strong gales, with rain and fog.

April 8. Lat. 39° 59′ S.; long. 58° 25′ E. Winds: West. Light airs, with rain.

April 9. Lat. 39° 48′ S.; long. 59° 40′ E. Winds: SW. to NE. Light and clear.

April 10. Lat. 39° 16′ S.; long. 64° 01′ E. Winds: N.NE. to N. Fresh gales and squally.

April 11. Lat. 38° 48′ S.; long. 68° 02′ E. Winds: North. Fresh gales, with heavy rain and haze.

April 12. Lat. 38° 47′ S.; long. 70° 48′ E. Winds: S.SW. Moderating; ends clear.

April 13. Lat. 38° 55′ S.; long. 72° 57′ E. Winds: S.SW. to SW. Clear and fine.

April 14. Lat. 38° 51′ S.; long. 74° 38′ E. Winds: W. to S. by E. Clear and fine.

April 15. Lat. 38° 50′ S.; long. 76° 05′ E. Winds: N. by E. to NW. Clear and pleasant; made St. Paul's island.

April 16. Lat. 38° 29′ S.; long. 78° 57′ E. Winds: NW. to S.SW. Strong gales and clear.

April 17. Lat. 38° 20′ S.; long. 82° 13′ E. Winds: S.SW. Strong gales and squally.

April 18. Lat. 38° 02′ S.; long. 86° 03′ E. Winds: SW. Strong gales and squally.

April 19. Lat. 38° 22′ S.; long. 88° 23′ E. Winds: SW. to W. Strong and clear.

April 20. Lat. 38° 38′ S.; long. 91° 47′ E. Winds: W. to N. Strong and clear.

April 21. Lat. 38° 24′ S.; long. 94° 47′ E. Winds: W. to NW. Light and cloudy.

April 22. Lat. 38° 54′ S.; long. 98° 22′ E. Winds: NW. to N.NW. Fresh and cloudy.

April 23. Lat. 38° 41′ S.; long. 100° 20′ E. Winds: N. by E. to W. by N. Fresh and cloudy.

April 24. Lat. 39° 02′ S.; long. 102° 57′ E. Winds: W. to W. by S. Fresh, with rain.

April 25. Lat. 39° 25′ S.; long. 106° 41′ E. Winds: W. to NW. Light and clear.

April 26. Lat. 39° 41′ S.; long. 109° 45′ E. Winds: NW. to N. Light and clear.

April 27. Lat. 39° 40′ S.; long. 112° 58′ E. Winds: N. to W.SW. Fresh and squally, with rain.

April 28. Lat. 39° 14′ S.; long. 114° 21′ E. Winds: S.SW. to SW. Light and clear.

April 29. Lat. 39° 00′ S.; long. 117° 33′ E. Winds: SW. Light and clear.

April 30. Lat. 38° 55′ S.; long. 120° 45′ E. Winds: W.SW. Light and clear; ends squally, with rain.

May 1. Lat. 38° 54′ S.; long. 125° 38′ E. Winds: W.SW to S.SW. Strong and clear.

May 2. Lat. 39° 03′ S.; long. 127° 53′ E. Winds: S.SW. Strong and clear.

May 3. Lat. 39° 02′ S.; long. 128° 53′ E. Winds: W. to W.NW. Light.

May 4. Lat. 38° 56′ S.; long. 130° 52′ E. Winds: W.NW. to N. by E. Light.

May 5. Lat. 39° 20′ S.; long. 132° 51′ E. Winds: NW. to SE. Light airs.

May 6. Lat. 38° 49′ S.; long. 133° 20′ E. Winds: E.SE. to E.NE. Light airs.

May 7. Lat. 38° 56′ S.; long. 135° 56′ E. Winds: N.NE to N. by W. Light airs.

May 8. Lat. 39° 17′ S.; long. 139° 46′ E. Winds: N.NW. to S.SW. Strong and squally.

May 9. Lat. 39° 17′ S.; long. 140° 38′ E. Winds: S.SW. to S. Strong breeze and squally, with hail and rain during the first and middle parts. At 1 (p. m.) made King's island, and at 11.30 a. m. Flinder's Point, bore west; distant 6 miles. Arrived at Port Philip."

Abstract log of the *Ship "Candace,"* (James Arguit, captain,) from New York to Australia; 26 days out.

"March 11. Lat. 7° 18′ S.; long. 32° 18′ W. Barometer, 29.95; air, 82°; water, 82°. Winds: SE. by S. Brisk and clear, pleasant weather.

March 12. Lat. 8° 53′ S.; long. 32° 40′ W. Barometer, 29.95; air, 83°; water, 82°. Winds: SE. Calm and baffling.

March 13. Lat. 11° 50′ S.; long. 33° 23′ W. Barometer, 30.00; air, 76°; water, 81°. Winds: SE. to SE. by S. Brisk; ends, light and squalls.

March 14. Lat. 14° 46′ S.; long. 34° 33′ W. Barometer, 30.00; air, 82°; water, 83°. Winds: SE. by S. and SE. Brisk; heavy rain squalls.

March 15. Lat. 17° 32′ S.; long. 35° 04′ W. Barometer, 30.09; air, 84°; water, 83°. Winds: SE. Moderate and pleasant.

March 16. Lat. 20° 19′ S., long. 35° 37′ W. Barometer, 30.10; air, 83°; water, 82°. Winds: SE. Strong and fine weather.

March 17. Lat. 22° 42′ S.; long. 35° 15′ W. Barometer, 30.10; air, 84°; water, 82°. Winds: SE. to E.SE. Moderate and pleasant.

March 18. Lat. 24° 16′ S.; long. 34° 10′ W. Barometer, 30.10; air, 82°; water, 80°. Winds: E.SE. to E.NE. Light winds and clear weather.

March 19. Lat. 24° 16′ S.; long. 34° 11′ W. Barometer, 30.10; air, 82°; water, 80°. Winds: Calm; weather clear.

March 20. Lat. 24° 03′ S.; long. 32° 44′ W. Barometer, 30.05; air, 80°; water, 80°. Winds: Calm, and SE.; calm until 4 p. m., at which time a very large water spout formed from a heavy black globular looking cloud, half a mile SE. from us; at 4.30 p. m. a good breeze from the SE.; kept the ship off to clear the water spout, which agitated the water for a quarter of a mile in circumference. In the middle, the water appeared to shoot up in many conical-shaped columns; on the outer part of the circle the water appeared to bubble up like in a boiling cauldron. The lower end of the column was inclined some 20° to the NE. of the upper part, and the whole in motion to the eastward. After the spout broke up the cloud increased very much in magnitude, from which we had much rain. During the night heavy rain squalls.

March 21. Lat. 25° 08′ S.; long. 34° 04′ W. Barometer, 30.09; air. 76°; water, 78°. Winds: S.SE. Strong gales, with heavy rain.

March 22. Lat. 26° 26′ S.; long. 35° 40′ W. Barometer, 30.10; air, 74°; water, 76°. Winds: S.SE. Moderate and clear, with a heavy swell from the SE.

March 23. Lat. 27° 29′ S.; long. 36° 30′ W. Barometer, 30.10; air, 74°; water, 73°. Winds: SE. Moderate and clear, a heavy swell from the SE.

March 24. Lat. 28° 59′ S.; long. 35° 42′ W. Barometer, 29.98; air, 73°; water, 74°. Winds: E.SE. to NE. Light and clear; ends, brisk and cloudy.

March 25. Lat. 30° 32′ S.; long. 32° 50′ W. Barometer, 29.75; air, 75°; water, 73°. Winds: NE. to NW. Brisk, and a heavy swell; latter part, a heavy squall.

March 26. Lat. 31° 56′ S.; long. 30° 00′ W. Barometer, 29.90; air, 71°; water, 72°. Winds: W.SW. to SW. Moderate and fine weather.

March 27. Lat. 31° 57′ S.; long. 29° 13′ W. Barometer, 29.98; air, 70°; water, 70°. Winds: First part, calm; ends, light SW. winds and clear.

March 28. Lat. 32° 13′ S.; long. 26° 19′ W. Barometer, 30.05; air, 69°; water, 70°. Winds: S. by W. Light and clear, a heavy SW. swell.

March 29. Lat. 32° 24′ S.; long. 23° 25′ W. Barometer, 30.20; air, 69°; water, 70°. Winds: S. to S.SW. Moderate and clear, a heavy SW. swell.

March 30. Lat. 32° 00′ S.; long. 21° 14′ W. Barometer, 30.22; air, 69°; water, 70°. Winds: S.SE. to SE. Brisk and clear.

March 31. Lat. 32° 45′ S.; long. 21° 00′ W. Barometer, 30.25; air, 69°; water, 69°. Winds: SE. Very light and clear.

April 1. Lat. 33° 42′ S.; long. 20° 25′ W. Barometer, 30.30; air, 71°; water, 70°. Winds: SE. to E. by N. Very light and clear weather; sea smooth.

April 2. Lat. 34° 11′ S.; long. 18° 36′ W. Barometer, 30.30; air, 72°; water, 68°. Winds: E.NE. Light and clear.

April 3. Lat. 35° 22′ S.; long. 15° 05′ W. Barometer, 30.25; air, 72°; water, 70°. Winds: E.NE. to NE. Light; ends, brisk winds and clear weather.

April 4. Lat. 36° 35′ S.; long. 11° 56′ W. Barometer, 30.19; air, 68°; water, 65°. Winds: N.NE. to N. Moderate and clear; at 8 a. m. discovered the island of Tristan de Cunha; bearing SW., distant thirty or thirty-five miles; water discolored.

April 5. Lat. 36° 30′ S.; long. 7° 11′ W. Barometer, 30.18; air, 68°; water, 66°. Winds: N.NE. Brisk and clear.

April 6. Lat. 36° 36′ S.; long. 4° 08′ W. Barometer, 30.19; air, 68°; water, 68°. Winds: N. to N.NW. Light and passing clouds, with fine rain.

April 7. Lat. 37° 00′ S.; long. 1° 20′ W. Barometer, 30.16; air, 68°; water, 64°. Winds: NW. to NE. Light and cloudy, damp, misty weather; smooth sea.

April 8. Lat. 37° 18′ S.; long. 2° 37′ E. Barometer, 30.10; air, 67°; water, 64°. Winds : NE. Brisk winds, and damp, misty weather.

April 9. Lat. 37° 43′ S.; long. 6° 38′ E. Barometer, 29.95; air, 66°; water, 62°. Winds : NE. Moderate and clear ; sea smooth.

April 10. Lat. 37° 39′ S.; long. 9° 34′ E. Barometer, 29.80; air, 63°; water, 62°. Winds : N.NE. to to NW. Light and clear.

April 11. Lat. 37° 51′ S.; long. 13° 55′ E. Barometer, 30.00; air, 57°; water, 57°. Winds : SW. Brisk and squally.

April 12. Lat. 37° 20′ S.; long. 16° 22′ E. Barometer, 30.10; air, 62°; water, 64°. Winds : S.SW. to E.SE. Strong gales and clear.

April 13. Lat. 38° 00′ S.; long. 16° 42′ E. Barometer, 29.65; air, 64°; water, 62°. Winds : E.SE. to E.NE. Heavy gales and a heavy, confused sea.

April 14. Lat. 38° 12′ S.; long. 20° 20′ E. Barometer, 29.65; air, 69°; water, 73°. Winds : NE. to N.NW. Light and calm ; a heavy sea running.

April 15. Lat. 38° 06′ S.; long. 25° 12′ E. Barometer, 29.50; air, 67°; water, 69°. Winds : N.NW. Heavy gales and rain squalls ; a heavy sea.

April 16. Lat. 37° 01′ S.; long. 26° 27′ E. Barometer, 29.58; air, 61°; water, 64°. Winds : N.NW. to N.NE. Strong gales and thick weather ; ends, light and baffling.

April 17. Lat. 36° 49′ S.; long. 30° 29′ E. Barometer, 29.70; air, 66°; water, 68°. Winds: NW. to SW. Brisk gales and passing rain squalls.

April 18. Lat. 36° 50′ S.; long. 32° 57′ E. Barometer, 29.80; air, 63°; water, 70°. Winds: S.SW. Strong gales with heavy rain squalls.

April 19. Lat. 35° 52′ S.; long. 34° 44′ E. Barometer, 30.10; air, 62°; water, 67°. Winds: S.SW. to S. Strong gales and continued rain squalls.

April 20. Lat. 35° 46′ S.; long. 36° 18′ E. Barometer, 30.27; air, 63°; water, 68°. Winds: S.SW. Calm and baffling.

April 21. Lat. 36° 43′ S.; long. 39° 12′ E. Barometer, 30.20; air, 67°; water, 66°. Winds: NW. to N.NW. Light and clear.

April 22. Lat. 37° 20′ S.; long. 43° 18′ E. Barometer, 30.20; air, 68°; water, 67°. Winds: N.NW. Brisk winds and clear.

April 23. Lat. 37° 11′ S.; long. 47° 02′ E. Barometer, 30.25; air, 68°; water, 66°. Winds: N.NW. Moderate and clear.

April 24. Lat. 37° 05′ S.; long. 49° 57′ E. Barometer, 30.30; air, 68°; water, 67°. Winds: N.NW to NW. Light and clear; mild weather.

April 25. Lat. 37° 26′ S.; long. 52° 04′ E. Barometer, 30.28; air, 68°; water, 66°. Winds: NW. to N.NW. Light and pleasant.

April 26. Lat. 37° 41′ S.; long. 55° 51′ E. Barometer, 30.00; air, 66°; water, 66°. Winds: N.NW. to N.NE. Moderate and clear.

April 27. Lat. 38° 10′ S.; long. 60° 35′ E. Barometer, 29.55; air, 66°; water, 64°. Winds: N. to N.NE. Moderate and clear.

April 28. Lat. 38° 19′ S.; long. 63° 30′ E. Barometer, 28.85; air, 66°; water, 67°. Winds: N.; brisk and thick weather; ends, a strong gale from SW. Put her before it and scud under bare poles. Barometer, 28.80.

April 29. Lat. 37° 32′ S.; long. 67° 12′ E. Barometer, 29.34; air, 56°; water, 62°. Winds: SW. by W. to NW. by W. Fresh gales and hard squalls.

April 30. Lat. 37° 58′ S.; long. 70° 57′ E. Barometer, 29.80;a ir, 58°; water, 60°. Winds: NW. to SW. Moderate gales and strong hail squalls.

May 1. Lat. 38° 23′ S.; long. 74° 17′ E. Barometer, 30.25; air, 56°; water, 60°. Winds: SW. and calm; commences brisk winds and clear, and ends calm.

May 2. Lat. 38° 46′ S.; long. 76° 30′ E. Barometer, 30.25; air, 58°; water, 59°. Winds: light and baffling; ends, brisk winds from the E.NE. and cloudy.

May 3. Lat. 39° 13′ S.; long. 80° 21′ E. Barometer, 30.00; air, 58°; water, 58°. Winds: NE. Brisk and cloudy; ends, strong gale and clear. At 4 p. m. the island of St. Paul, east, 20 miles distant.

May 4. Lat. 39° 27′ S.; long. 83° 20′ E. Barometer, 29.72; air, 60°; water, 58°. Winds: E.NE. Moderate and baffling, with rainy weather.

May 5. Lat. 38° 58′ S.; long. 86° 54′ E. Barometer, 29.75; air, 58°; water, 58°. Winds: W.SW. Brisk winds and squalls; ends, baffling and unsteady.

May 6. Lat. 38° 54′ S.; long. 91° 20′ E. Barometer, 29.87; air, 58°; water, 56°. Winds: W. to W.NW. Brisk and thick, disagreeable weather.

May 7. Lat. 38°. 50′ S.; long. 95° 09′ E. Barometer, 30.20; air, 55°; water, 54°. Winds: W.SW to SW. Brisk and squally.

May 8. Lat. 38° 58′ S.; long. 98° 30′ E. Barometer, 30.20; air, 55°; water, 54°. Winds: W.SW to W.NW. Light and clear throughout.

May 9. Lat. 39° 03′ S.; long. 102° 42′ E. Barometer, 30.00; air, 56°; water, 55°. Winds: W.NW. to W.SW. Brisk winds and clear; latter part, squally.

May 10. Lat. 39° 07′ S.; long. 106° 42′ E. Barometer, 30.05; air, 54°; water, 54°. Winds: W. by N. Brisk winds and thick foggy weather.

May 11. Lat. 39° 12′ S.; long. 109° 42′ E. Barometer, 30.05; air, 54°; water, 53°. Winds: W., brisk; ends, light and damp weather.

May 12. Lat. 39° 21′ S.; long. 114° 50′ E. Barometer, 30.00; air, 51°; water, 54°. Winds: W.NW. to SW. Strong winds, clear cold weather.

May 13. Lat. 39° 17′ S.; long. 119° 25′ E. Barometer, 30.15; air, 52°; water, 54°. Winds: SW. to W.SW. Brisk and passing squall.

May 14. Lat. 39° 21′ S.; long. 122° 51′ E. Barometer, 30.28; air, 51°; water, 54°. Winds: W.SW. to W. Brisk; ends, light, with rain squalls.

May 15. Lat. 39° 18′ S.; long. 125° 30′ E. Barometer, 30.28; air, 53°; water, 53°. Winds: W. to NE. Light and changeable weather.

May 16. Lat. 39° 29′ S.; long. 128° 43′ E. Barometer, 30.25; air, 53°; water, 54°. Winds: NE. to N. Light and misty weather.

May 17. Lat. 39° 33′ S.; long. 131° 58′ E. Barometer, 30.25; air, 55°; water, 56°. Winds: N. to N.NE. Light and clear.

May 18. Lat. 39° 29′ S.; long. 136° 40′ E. Barometer, 30.10; air, 56°; water, 56°. Winds: N. by E. to N. Brisk and clear.

May 19. Lat. 39° 15′ S.; long. 141° 21′ E. Barometer, 30.05; air, 56°; water, 58°. Winds: N. to N.NE. Brisk and pleasant weather.

May 20. Lat. 39° 14′ S.; long. 146° 01′ E. Barometer, 29.90; air, 57°; water, 57°. Winds: N. to N.NW. Brisk gales; at 2 p. m. Cape Otway light, bearing N., distant 8 miles; at 3 Rodando Island, E. ¾ S., distant 15 miles.

May 21. Lat. 37° 43′ S.; long. 149° 26′ E. Barometer, 30.30; air, 57°; water, 58°. Winds: NW. to W. Brisk winds and squally.

May 22. Lat. 36° 19′ S.; long. 150° 30′ E. Barometer, 30.50; air, 59°; water, 63°. Winds: SW. First part, light; end, calm; at noon, Montagua Island, W. by N., 10 miles.

May 23. Lat. 35° 13′ S.; long. 151° 18′ E. Barometer, 30.48; air, 62°; water, 64°. Winds: N.NE. to N.NW. Light winds and very clear.

May 24. Lat. 34° 46′ S.; long. 151° 20′ E. Barometer, 30.30; air, 66°; water, 68°. Winds: N. to N.NE. Brisk wind and clear; a strong southerly current.

May 25. Lat. —°; long. —°. Winds: N. to SW. Brisk and clear, with a strong southerly current; at 9 a. m. passed between Sydney head; at 10 anchored in the harbor."

Abstract log of the *Ship "Vandalia,"* (P. T. Marshall, captain,) from Baltimore to Port Philip, 1853; 41 days out.

"April 28. Lat. 7° 52′ S.; long. 28° 30′ W. Barometer, 29.90; air, 83°; water, 78°. Winds: S.SE. Moderate breezes and pleasant.

April 29. Lat. 9° 20′ S.; long. 28° 41′ W. Barometer, 29.90; air, 83°; water, 78°. Winds: S.SE. to SE. Strong and pleasant.

April 30. Lat. 11° 17′ S.; long. 29° 00′ W. Barometer, 29.90; air, 84°; water, 77°. Winds: SE. to E.SE. Brisk and pleasant; ends, light.

May 1. Lat. 12° 44′ S.; long. 29° 08′ W. Barometer, 29.80; air, 81°; Winds: E.SE. Light and clear.

May 2. Lat. 15° 08′ S.; long. 28° 59′ W. Barometer, 29.90; air, 82°; water, 78°. Winds: E.SE. Brisk and pleasant; ends, light.

May 3. Lat. 16° 46′ S.; long. 28° 37′ W. Barometer, 29.90; air, 83°; water, 79°. Winds: E.SE. to E. Light and fine weather.

May 4. Lat. 17° 44′ S.; long. 28° 20′ W. Barometer, 30.00; air, 79°; water, 79°. Winds: E.SE. to E.NE. Light and cloudy.

May 5. Lat. 18° 51′ S.; long. 26° 23′ W. Barometer, 30.00; air, 76°. Winds: NE. Moderate and squally, with rain; a very heavy sea from the SE.

May 6. Lat. 19° 50′ S.; long. 25° 06′ W. Barometer, 29.90; air, 80°. Winds: N.NW. to NE. Light, with rain; ends, strong breeze and squally; Cape pigeons about.

May 7. Lat. 20° 40′ S.; long. 24° 10′ W. Barometer, 29.90; air, 76°; water, 78°. Winds: NE., S.SW., and NE. Strong and squally.

May 8. Lat. 22° 16′ S.; long. 21° 45′ W. Barometer, 30.00; air, 79°; water, —°. Winds: NE. Strong and dark cloudy weather.

May 9. Lat. 23° 29′ S.; long. 19° 42′ W. Barometer, 30.01; air, 76°. Winds: NE. to E.NE. Moderate; dark gloomy weather.

May 10. Lat. —; long. —. Barometer, 29.90; air, 76°; water, 77°. Winds: N. to W. Strong and squally.

May 11. Lat. 25° 00′ S.; long. 16° 19′ W. Barometer, 30.00; air, — °. Winds: W. to S. Strong, with rain; ends, heavy gales.

May 12. Lat. 24° 36′ S.; long. 15° 09′ W. Barometer, 30.01; air, 70°; water, 76°. Winds: S. to S.SE. Strong gales, with heavy squalls.

May 13. Lat. 25° 30′ S.; long. 15° 53′ W. Barometer, 30.02; air, 71°. Winds: S. to S.SE. Strong breezes and passing squalls; ends, light and pleasant; Cape pigeons about.

May 14. Lat. 25° 54′ S.; long. 16° 29′ W. Barometer, 30.02; air, 73°. Winds: S. and calm. First part, moderate; ends, calm.

May 15. Lat. 28° 18′ S.; long. 15° 35′ W. Barometer, 30.00; air, 73°; water, 72°. Winds: NE. to N.NE. Light and pleasant; ends, strong and squally.

May 16. Lat. 30° 08′ S.; long. 14° 57′ W. Barometer, 30.00; air, 71°. Winds: N. to W. Strong gales, with heavy rain; ends, moderate gales and fine weather.

May 17. Lat. 31° 35′ S.; long. 12° 52′ W. Barometer, 30.00; air, 68°; water, —°. Winds: W. to SW. Strong and squally.

May 18. Lat. 31° 44′ S.; long. 10° 54′ W. Barometer, 30.01; air, 66°; water, 70°. Winds: S. Strong and squally; a turbulent sea.

May 19. Lat. 31° 49′ S.; long. 9° 43′ W. Barometer, 30.03; air, 64°. Winds: S.SW. to S.SE. Strong and squally, with rain.

May 20. Lat. 32° 57′ S.; long. 10° 10′ W. Barometer, 30.03; air, 62°; water, 68°. Winds: S. Light and baffling; dark gloomy weather.

May 21. Lat. 34° 22′ S.; long. 9° 29′ W. Barometer, 30.01; air, 63°. Winds: NE. to N.NW. Light and cloudy; ends, pleasant gales and passing squalls.

May 22. Lat. 35° 20′ S.; long. 7° 00′ W. Barometer, 29.90; air, 56°; water, 62°. Winds: N.NW. to S.SW. Strong and cloudy; ends, light.

May 23. Lat. 36° 36′ S.; long. 4° 38′ W. Barometer, 29.55; air, 55°; water, 61°. Winds: SW. to NW. Light and baffling; ends, strong gales and squalls.

May 24. Lat. 37° 01′ S.; long. 1° 51′ W. Barometer, 29.40; air, 52°; water, 60°. Winds: W. to SW. Strong and squally.

May 25. Lat. 37° 48′ S.; long. 1° 34′ E. Barometer, 29.80; air, 53°; water, 59°. Winds: SW. to W. Strong gales and cloudy.

May 26. Lat. 38° 06′ S.; long. 5° 16′ E. Barometer, 29.80; air, 54°; water, —°. Winds: NW. Moderate gales and squalls.

May 27. Lat. 38° 02′ S.; long. 8° 04′ E. Barometer, 30.01; air, 54°; water, 53°. Winds: W.NW. to W. Moderate gales and cloudy, hazy weather.

May 28. Lat. 38° 25′ S.; long. 12° 17′ E. Barometer, 30.01; air, 56°; water, 61°. Winds: W.NW. to NW.; pleasant gales and cloudy, hazy weather.

May 29. Lat. 38° 34′ S.; long. 13° 55′ E. Barometer, 30.03; air, 56°; water, 61°. Winds: S., N.NE., and N. Light and baffling; ends, brisk and cloudy.

May 30. Lat. 39° 10′ S.; long. 17° 00′ E. Barometer, 30.00; air, 60°. Winds: N.NW. Strong and squally; rainy weather.

May 31. Lat. 39° 08′ S.; long. 21° 22′ E. Barometer, 29.90; air, 61°; water, 70°. Winds: N. Strong, with rain; ends, heavy gales, with squalls.

June 1. Lat. 39° 13′ S.; long. 25° 36′ E. Barometer, 30.00; air, 62°; water, 75°. Winds: W. to W.NW. Strong gales and cloudy.

June 2. Lat. 39° 36′ S.; long. —. Barometer, 30.01; air, 63°. Winds: SW. to W.NW. Light, with rain; ends, fresh gales and passing squalls.

June 3. Lat. 39° 48′ S.; long. 29° 04′ E. Barometer, 30.00; air, 67°. Winds: NW. Pleasant gales and fair weather.

June 4. Lat. 39° 52′ S.; long. 30° 00′ E. Barometer, 30.00; air, 54°; water, 54°. Winds: NW. to S.SW. Light and calm; dark cloudy weather.

June 5. Lat. 39° 25′ S.; long. 32° 01′ E. Barometer, 30.03; air, 50°; water, —°. Winds: SW. to S.SE. Light, with rain; ends, strong gales and squalls.

June 6. Lat. —; long. —. Barometer, 29.70; air, —. Winds: E.NE. to SW. Strong gales, with cloudy, rainy weather.

June 7. Lat. 40° 55′ S.; long. 35° 43′ E. Barometer, 29.80; air, 52°; water, 53°. Winds: SW. to E.NE. Light airs and calms.

June 8. Lat. 40° 59′ S.; long. 35° 43′ E. Barometer, 29.80; air, 52°; water, 53°. Winds: SW. to E.NE. Light and rainy, misty weather.

June 9. Lat. 41° 03′ S.; long. 39° 50′ E. Barometer, 29.90; air, 48°. Winds: NE. to NW. Strong gales and squalls.

June 10. Lat. 41° 04′ S.; long. 42° 08′ E. Barometer, 30.00; air, 46°. Winds: W.SW. Heavy gales and hard squalls, with a heavy sea.

June 11. Lat. 40° 25′ S.; long. —. Barometer, 30.00; air, 44°; water, 56°. Winds: SW. to S.SW. Heavy gales and hard squalls, with a turbulent sea.

June 12. Lat. —; long. —. Barometer, 30.00; air, 48°. Winds: S.SW. Heavy gales and clear; latter part misty, with much rain.

June 13. Lat. —; long. —. Barometer, 29.90; air, 50°; water, 55°. Winds: SW. to W.SW. Heavy gales, with thick weather.

June 14. Lat. 40° 08′ S.; long. 52° 19′ E. Barometer, 29.90; air, 52°. Winds: SW. to NW. Heavy gales and thick weather; ends, more moderate.

June 15. Lat. 41° 17′ S.; long. 56° 10′ E. Barometer, 30.01; air, 48°. Winds: NW. to SW. Strong gales and rainy weather; ends, light and baffling winds and passing clouds.

June 16. Lat. 41° 37′ S.; long. 58° 59′ E. Barometer, 29.94; air, 52°; water, 56°. Winds: SW. to N. Light, variable, and cloudy; ends, strong gales and squally weather.

June 17. Lat. 41° 44′ S.; long. 62° 03′ E. Barometer, 30.00; air, 50°. Winds: Strong breeze, with hard squalls, rain and lightning; ends, light variable winds, and cloudy.

June 18. Lat. 41° 50′ S.; long. 63° 28′ E. Barometer, 30.00; air, 54°; water, 56°. Winds: SW. to NE. Light baffling airs and calms; ends, strong breezes and cloudy.

June 19. Lat. 42° 05′ S.; long. 67° 23′ E. Barometer, 29.40; air, 54°. Winds: NE. to N.NW. Heavy gales, with thick, rainy weather; barometer very low and falling. I expect a heavy gale, and have made the ship snug for it.

June 20. Lat. 42° 35′ S.; long. 70° 52′ E. Barometer, 28.00; air, 55°. Winds: N. to W. Hard gales, veering from north to west, blowing at times a perfect hurricane; sharp lightning and heavy thunder. Six hours under bare poles.

June 21. Lat. 41° 50′ S.; long. 75° 40′ E. Barometer, 28.01; air, 55°; water, 55°. Winds: NW. to W. Gale increasing, with violent squalls of hail; ship making such bad weather that I am obliged to lighten her by heaving overboard cargo; sea running very high; got a drag over the stern of forty fathom line, attached to a studding-sail yard; found great relief from it. This has been the most severe hurricane I have ever experienced. Threw overboard four hundred barrels of flour.

June 22. Lat. 40° 56′ S.; long. 78° 49′ E. Barometer, 28.40; air, —. Winds: W.NW. to W.SW. Gale still raging with great fury; sea making clean breaches over the stern, carrying away the bulwarks fore and aft; barometer as low as 28.00; under bare poles for eighteen hours; decks swept fore and aft.

June 23. Lat. 40° 30′ S.; long. 82° 24′ E. Barometer, 30.00; air, 49°. Winds: W.NW. to W.SW. Strong gales and squally; a turbulent cross sea; ship under close reefs.

June 24. Lat. 40° 54′ S.; long. 86° 10′ E. Barometer, 30.10; air, 52°. Winds: NW. to W.NW. Strong gales, with cloudy, misty weather.

June 25. Lat. 41° 17′ S.; long. 89° 40′ E. Barometer, 30.30; air, 54°. Winds: NW. Pleasant gales and fine weather; a high sea.

June 26. Lat. 41° 15′ S.; long. 93° 22′ E. Barometer, 30.30; air, 52°; water, 49°. Winds: W.NW. Moderate gales, with dark, misty weather.

June 27. Lat. 41° 10′ S.: long. 97° 00′ E. Barometer, 29.90; air, —. Winds: W.NW. to NW. Strong and cloudy; ends, hard gales and rainy.

June 28. Lat. 41° 24′ S.; long. 101° 04′ E. Barometer, 29.90; air, 50°. Winds: W.NW. to W. Strong gales and squally.

June 29. Lat. 40° 44′ S.; long. 104° 51′ E. Barometer, 29.70; air, —. Winds: W. to W.NW. Strong gales, with rainy weather; a rough sea.

June 30. Lat. 40° 39′ S.; long. 109° 20′ E. Barometer, 29.60; air, —. Winds: W.NW. to N. Strong gales, with squalls.

July 1. Lat. 40° 28′ S.; long. 112° 28′ E. Barometer, 29.30; air, —. Winds: N.NW. to W. Hard gales, with squally, rainy weather; barometer falling; ship snug for a hard gale.

July 2. Lat. 40° 37′ S.; long. 115° 50′ E. Barometer, 29.30; air 54°. Winds: W. to W.NW. Moderate gales, with squally weather.

July 3. Lat. 40° 11′ S.; long. 119° 20′ E. Barometer, 29.10; air, —. Winds: N. to NW. Hard gales and severe squalls; rain and lightning.

July 4. Lat. 39° 34′ S.; long. 123° 16′ E. Barometer, 29.30; air, 52°. Winds: N.NW. to W.NW. Hard gales, with heavy squalls, rain, thunder and lightning; ends more moderate.

July 5. Lat. —; long. —. Barometer, 28.90; air, —; water, 50°. Winds: NW. Very hard gales, with rainy, squally weather.

July 6. Lat. 39° 37′ S.; long. 129° 19′ E. Barometer, 29.10; air, 52°; water, 46°. Winds: NW. to W. Hard gales, with heavy squalls of hail, thunder, and lightning; ship hove to for five hours.

July 7. Lat. —; long. —. Barometer, 28.80; air, 52°. Winds: W. to NW. Heavy gales and squally; ship hove to.

July 8. Lat. —; long. —. Barometer, 29.50; air, 46°; water, 53°. Winds: NW. to SW. Strong gales and hail squalls.

July 9. Lat. 39° 21′ S.; long. 135° 53′ E. Barometer, 30.00; air, 46°; Winds: S. to SE. Strong breezes and rainy weather.

July 10. Lat. 39° 25′ S.; long. 135° 33′ E. Barometer, 30.00; air, 48°; water, 52°. Winds: SE. Strong and cloudy.

July 11. Lat. 39° 22′ S.; long. 135° 44′ E. Barometer, 30.00; air, —. Winds: SE. Light and cloudy; a high sea from the SW.

July 12. Lat. 39° 23′ S.; long. 136° 04′ E. Barometer, 29.90; air, 51°; Winds: SE. to SW. Light, baffling airs and cloudy weather.

July 13. Lat. 39° 25′ S.; long. 137° 37′ E. Barometer, 29.90; air, 50°. Winds: SW. Light airs and calm; ends, fresh gales and cloudy.

July 14. Lat. 39° 30′ S.; long. 139° 30′ E. Barometer, 29.90; air, 52°; water, 52°. Winds: SW. to NW. Light and baffling, with occasional squalls.

July 15. Lat. 39° 20′ S.; long. 142° 30′ E. Barometer, 29.80; air, 56°. Winds: NW. to W. Moderate, with passing clouds; passed large patches of kelp.

July 16. Lat. —; long. —. Barometer, —. Winds: W. to NW. First part, moderate and squally; at 1 p. m. made Cape Otway, N.NE. by compass, distant 39 miles; at 7 a. m. made the entrance of the harbor of Port Philip, N.NE., distant 12 miles.

July 17. Strong gales, with thick, rainy weather: at 4 p. m. passed between the heads; took a pilot on board; at 7 a. m. anchored in Port Philip. 81 days from Cape St. Roque."

Abstract log of the *Barque "Yarmouth,"* (E. Sampson, captain,) from New York to Australia; 42 days out.

"May 8, 1853. Lat. 6° 11′ S.; long. 33° 37′ W. Barometer, —; air, 79°; water, 75°. Winds: E.SE. to SE. Well clear of Cape St. Roque in 43 days out, with a dull sailing ship; her best running has not been known to exceed eight knots, and on a wind never over four or five. Had I crossed much to the eastward of 32°, I have every reason to believe that I should have made a much longer passage to St. Roque.

May 9. Lat. 7° 18′ S.; long. 34° 30′ W.; air, 78°; water, 78°. Winds: SE. to S.SE. Squally, cloudy weather.

May 10. Lat. 7° 50′ S.; long. 34° 04′ W. Air, 78°; water, 78°. Winds: SE. to S. Light baffling and squally, with rain.

May 11. Lat. 7° 39′ S.; long. 34° 26′ W. Air, 78°; water, 78°. Winds: S. to E.SE. Fresh and squally.

May 12. Lat. 8° 53′ S.; long. 34° 28′ W. Air, 80°; water, 78°. Winds: E. to E.SE. Light trades, and pleasant.

May 13. Lat. 10° 28′ S.; long. 34° 36′ W. Air, 80°; water, 79°. Winds: E.SE. Moderate and pleasant.

May 14. Lat. 11° 30′ S.; long. 34° 16′ W. Air, 80°; water, 79°. Winds: E.SE. to E. Light winds, with heavy rain showers.

May 15. Lat. 12° 46′ S.; long. 34° 55′ W. Air, 79°; water, 79°. Winds: E.SE. Light, and overcast.

May 16. Lat. 13° 18′ S.; long. 35° 10′ W. Air, 79°; water, 79°. Winds: E.SE. to SE. Light and baffling, with rain showers.

May 17. Lat. 13° 55′ S.; long. 36° 15′ W. Air, 80°; water, 79°. Winds: S.SE. Very moderate and pleasant.

May 18. Lat. 14° 18′ S.; long. 36° 15′ W. Air, 79°; water, 78°. Winds: S.SE. to SE. Moderate and pleasant.

May 19. Lat. 16° 00′ S.; long. 35° 30′ W. Air, 79°; water, 78°. Winds: SE. to E.SE. Moderate and passing clouds; ends, strong trades and pleasant.

May 20. Lat. 17° 30′ S.; long. 34° 15′ W. Air, 78°; water, 78°. Winds: E. to E.NE. Strong trades and pleasant.

May 21. Lat. 20° 05′ S.; long. 33° 34′ W. Air, 76°; water, 78°. Winds: E.NE. to NE. Fine and cloudy.

May 22. Lat. 21° 12′ S.; long. 32° 10′ W. Air, 76°; water, 77°. Winds: NE. to SW. Baffling and calm, and cloudy, with rain.

May 23. Lat. 22° 29′ S.; long. 30° 42′ W. Air, 75°; water, 77°. Winds: N. to N.NW. Variable winds, with rain showers.

May 24. Lat. 24° 09′ S.; long. 28° 29′ W. Air, 75°; water, 74°. Winds: NE. Fresh and cloudy.

May 25. Lat. 25° 55′ S.; long. 26° 32′ W. Air, 74°; water, 73°. Winds: NE. to N.NW. Moderate and hazy, with rain showers.

May 26. Lat. 26° 20′ S.; long. 25° 50′ W. Air, 74°; water, 73°. Winds: NE. to N. Moderate; heavy rain.

May 27. Lat. 28° 18′ S.; long. 23° 43′ W. Air, 73°; water, 72°. Winds: N. Fresh and cloudy; continued heavy rain.

May 28. Lat. 28° 43′ S.; long. 22° 55′ W. Air, 73°; water, 72°. Winds: N. to W. Moderate and squally; frequent rain showers.

May 29. Lat. 28° 39′ S.; long. 22° 00′ W. Air, 72°; water, 70°. Winds: W.SW. to SE. Very light and baffling.

May 30. Lat. 29° 35′ S.; long. 21° 20′ W. Air, 70°; water, 70°. Winds: E.SE. to N. Moderate, with occasional rain squalls.

May 31. Lat. 30° 30′ S.; long. 20° 28′ W. Air, 69°; water, 70°. Winds: N. to NW. Light and calm, and cloudy weather.

June 1. Lat. 31° 33′ S.; long. 18° 58′ W. Air, 66°; water, 68°. Winds: NW. to SW. Fresh breezes and rainy; ends, calm.

June 2. Lat. 32° 00′ S.; long. 15° 20′ W. Air, 66°; water, 65°. Winds: W. to S. Fresh breezes and squally.

June 3. Lat. 31° 50′ S.; long. 14° 10′ W. Air, 68°; water, 66°. Winds: SE. to NE. Moderate and pleasant.

June 4. Lat. 32° 24′ S.; long. 13° 00′ W. Air, 68°; water, 65°. Winds: NE. Moderate and calm.

June 5. Lat. 32° 58′ S.; long. 10° 40′ W. Air, 65°; water, 63°. Winds: N. to SW. Fresh and pleasant.

June 6. Lat. 32° 57′ S.; long. 8° 26′ W. Air, 62°; water, 62°. Winds: S.SW. Moderate and cloudy; a heavy SW. swell; ends, calm.

June 7. Lat. 33° 34′ S.; long. 6° 50′ W. Air, 62°; water, 62°. Winds: S.SW. to SW. Light and calm, with occasional squalls.

June 8. Lat. 38° 51′ S.; long. 4° 26′ W. Air, 62°; water, 62°. Winds: SW. Moderate, with occasional rain showers.

June 9. Lat. 35° 05′ S.; long. 3° 16′ W. Air, 62°; water, 62°. Winds: W. to N.NW. Light and pleasant; ends, strong gales and cloudy.

June 10. Lat. 36° 17′ S.; long. 00° 16′ E. Air, 61°; water, 62°. Winds: N. to N.NW. Fresh and pleasant; ends, squally, with rain.

June 11. Lat. 36° 18′ S.; long. 2° 00′ E. Air, 56°; water, 58°. Winds: N.NW. to W. Moderate and squally, with rain.

June 12. Lat. 37° 40′ S.; long. 4° 30′ E. Air, 54°; water, 56°. Winds: NW. to SW. Moderate, with passing clouds.

June 13. Lat. 37° 00′ S.; long. 7° 10′ E. Air, 50°; water, 52°. Winds: NW. to SW. Moderate and squally, with light rain, hail, and snow.

June 14. Lat. 37° 31′ S.; long. 10° 30′ E. Air, 50°; water, 50°. Winds: SW. to NW. Squally; ends, moderate and clear.

June 15. Lat. 37° 40′ S.; long. 12° 20′ E. Air, 50°; water, 48°. Winds: W. Moderate, with occasional rain.

June 16. Lat. 38° 28′ S.; long. 14° 23′ E. Air, 52°; water, 50°. Winds: W. to W.NW. Fresh and hazy.

June 17. Lat. 38° 06′ S.; long. 15° 25′ E. Air, 54°; water, 58°. Winds: W.NW. Fresh gales and cloudy; ends, light and calm; strong current against us of 2½ knots per hour.

June 18. Lat. 38° 34′ S.; long. 19° 25′ E. Air, 56°; water, 62°. Winds: W.NW. to NW. Commences light and calm; ends, moderate and fair weather.

June 19. Lat. 39° 00′ S.; long. 22° 20′ E. Air, 62°; water, 64°. Winds: W.NW. to W. Fresh and fair; ends, light and hazy.

June 20. Lat. 39° 35′ S.; long. 25° 49′ E. Air, 60°; water, 62°. Winds: W.NW. to NE. Fine breezes and pleasant.

June 21. Lat. 39° 50′ S.; long. 26° 20′ E. Air, 62°; water, 62°. Winds: NE. to N. Moderate and hazy.

June 22. Lat. 39° 50′ S.; long. 29° 00′ E. Air, 62°; water, 58°. Winds: N. to NW. Fresh and cloudy.

June 23. Lat. 39° 55′ S.; long. 30° 15′ E. Air, 54°; water, 54°. Winds: NW. to NE. Moderate and calm, with rain squalls.

June 24. Lat. 39° 40′ S.; long. 33° 50′ E. Air, 52°; water, 56°. Winds: N. to NW. Fresh gales and squally.

June 25. Lat. 39° 29′ S.; long. 34° 00′ E. Air, 48°; water, 60°. Winds: W.NW. to S. Moderate and cloudy, with rain.

June 26. Lat. 39° 12′ S.; long. 38° 15′ E. Air, 45°; water, 60°. Winds: S. to S.SW. Fresh gales, with rain; ends, moderate and cloudy.

June 27. Lat. 39° 23′ S.; long. 41° 20′ E. Air, 55°; water, 55°. Winds: W. to NW. Moderate and pleasant; ends, cloudy, with rain.

June 28. Lat. 39° 29′ S.; long. 44° 37′ E. Air, 58°; water, 55°. Winds: NW. to N. Fresh and squally; ends, light and pleasant.

June 29. Lat. 39° 42′ S.; long. 45° 32′ E. Air, 58°; water, 59°. Winds: NW. to N. Light and pleasant.

June 30. Lat. 40° 13′ S.; long. 49° 35′ E. Air, 59°; water, 55°. Winds: N.NW. to N. Fine breezes and pleasant; a smooth sea.

July 1. Lat. 40° 16′ S.; long. 53° 00′ E. Air, 57°; water, 60°. Winds: N. to NE. Fresh breezes and cloudy; smooth sea and strong tide rips.

July 2. Lat. 40° 20′ S.; long. 56° 00′ E. Air, 60°; water, 60°. Winds: NE. to N. Fresh and squally; ends, a heavy gale, with rain.

July 3. Lat. 40° 36′ S.; long. 58° 58′ E. Air, 60°; water, 59°. Winds: N. to N.NW. Moderate, with rain.

July 4. Lat. 40° 14′ S.; long. 63° 47′ E. Air, 60°; water, 56°. Winds: N.NW. to NW. Strong breezes and cloudy.

July 5. Lat. 40° 06′ S.; long. 66° 14′ E. Air, 56°; water, 60°. Winds: W.NW. Strong gales; obliged to carry all the canvas the ship could bear to keep her clear of the sea.

July 6. Lat. 39° 43′ S.; long. 69° 27′ E. Air, 57°; water, 55°. Winds: W.NW. to NW. Begins, strong gales; ends, moderating.

July 7. Lat. 39° 20′ S.; long. 73° 00′ E. Air, 57°; water, 57°. Winds: NW. Heavy gales with passing clouds.

July 8. Lat. 38° 53′ S.; long. 75° 38′ E. Air, 52°; water, 55°. Winds: N.NW. Heavy gales and squalls, with rain.

July 9. Lat. 38° 56′ S.; long. 78° 25′ E. Air, 50°; water, 55°. Winds: W.NW. to W. Squally and hazy.

July 12. Lat. 36° 51′ S.; long. 82° 33′ E. Air, 50°; water, 55°. Winds: W. Since the 9th instant I have experienced very heavy weather; blew away my topsail, foresail, and fore topmast stay-sail, in a heavy thunder squall. Ship broached to and we were unable to get her off until every sail was split; then hove to under a main spencer. Struck by a heavy sea, which carried away the jib-boom, the houses on deck, stove in the bulwarks, and carried away two boats. I am scudding under a lower studding-sail set under the fore-yard, as I am unable to open the hatches to get out a new suit of sails.

July 13. Lat. 36° 46′ S.; long. 83° 30′ E. Air, 50°; water, 55°. Winds: W. by N. to W. Strong gales with heavy squalls; bent and set the foresail.

July 14. Lat. 36° 37′ S.; long. 86° 30′ E. Air, 47°; water, 55°. Winds: W. Continuous heavy gales; bent a main topsail and main topmast stay-sail; set a reefed mainsail.

July 15. Lat. 36° 54′ S.; long. 88° 33′ E. Air, 50°; water, 55°. Winds: W. Gale moderating, with occasional squalls; bent and set a close reefed fore-topsail.

July 16. Lat. 36° 37′ S.; long. 90° 43′ E. Air, 50°; water, 54°. Winds: W.SW. to S. Moderate and fine weather; carrying top-gallantsail on single reef; tacked to the SW.

July 17. Lat. 37° 05′ S.; long. 89° 46′ E. Air, 48°; water, 52°. Winds: S. to E.SE. Very light and baffling.

July 18. Lat. 37° 46′ S.; long. 90° 10′ E. Air, 49°; water, 52°. Winds: E.SE. to NE. Very moderate and hazy.

July 19. Lat. 38° 00′ S.; long. 93° 53′ E. Air, 52; water, 52°. Winds: N.NE. Fine and pleasant; rigged out a jib-boom.

July 20. Lat. 38° 17′ S.; long. 96° 51′ E. Air, 52°; water, 52°. Winds: E.NE. to NW. Fine and pleasant.

July 21. Lat. 38° 38′ S.; long. 100° 08′ E. Air, 52°; water, 52. Winds: NW. to W. Fresh and fair; ends, squalls, with rain.

July 22. Lat. 38° 52′ S.; long. 103° 00′ E. Air, 52°; water, 52°. Winds: W. Brisk breeze and fair weather.

July 23. Lat. 39° 00′ S.; long. 106° 20′ E. Air, 48° water, 50. Winds: W. to W.SW. Brisk, with rain squalls.

July 24. Lat. 39° 00′ S.; long. 109° 12′ E. Air, 50°; water, 50°. Winds: W.SW. to NW. Fresh and moderate.

July 25. Lat. 39° 40′ S.; long. 112° 00′ E. Air, 52°; water, 50°. Winds: NW. Moderate; ends, heavy gales.

July 26. Lat. 40° 30′ S.; long. 115° 09′ E. Air, 48°; water, 49°. Winds: NW. Moderate, with heavy squalls.

July 27. Lat. 40° 26′ S.; long. 117° 53′ E. Air, 48°; water, 48°. Winds: NW. to W. Strong and moderate, cloudy weather.

July 28. Lat. 40° 18′ S.; long. 120° 53′ E. Air, 50°; water, 45°. Winds: W. to W.NW. Moderate and hazy.

July 29. Lat. 40° 13′ S.; long. 124° 15′ E. Air, 52°; water, 50°. Winds: N. Fresh and pleasant.

July 30. Lat. 40° 26′ S.; long. 127° 12′ E. Air, 53°; water, 51°. Winds: N. Fresh and moderate, and cloudy.

July 31. Lat. 40° 00′ S.; long. 130° 28′ E. Air, 53°; water, 51°. Winds: N. Light, and fine weather, with occasional light rain.

August 1. Lat. 39° 51′ S.; long. 133° 12′ E. Air, 53°; water 51°. Winds: N.NE. to W. Light and baffling; ends, steady wind, and rain showers.

August 2. Lat. 39° 37′ S.; long. 135° 54′ E. Air, 53°; water, 51°. Winds: NW. to W. Moderate, fair, and squally.

August 3. Lat. 39° 23′ S.; long. 138° 44′ E. Air, 52°; water, 54. Winds: NW. to W.SW. Light, with occasional light rain.

August 4. Lat. 39° 03′ S.; long. 141° 40′ E. Air, 52°; water, 54°. Winds: W. to N. Moderate, thick, and hazy weather; ends, strong winds and clear weather; at midnight made the light on Cape Otway. At daylight saw the land, eight miles distant; shaped a course for the entrance of the harbor and *anchored.*"

Abstract log of the *ship "Shirley,"* (Nicholas T. Snell, captain,) from New York to Port Philip, 1854, 33 days out.

"June 7. Lat. 7° 20′ S.; long. 33° 24′ W. Barometer, 29.94. Winds: S.SE. to SE. by E. Gentle breeze and passing clouds.

June 8. Lat. 9° 26′ S.; long. 34° 40′ W. Barometer, 29.90. Winds: SE. Light trade.

June 9. Lat. 11° 00′ S.; long. 34° 58′ W. Barometer, 29.90. Winds: E.SE. to SE. Variable, and passing rain showers.

June 10. Lat. 13° 47′ S.; long. 35° 37′ W. Barometer, 29.90. Winds: E.SE. Light and cloudy.

June 11. Lat. 15° 22′ S.; long. 35° 47′ W. Barometer, 30.00. Winds: E. to SE. Variable; dark, heavy clouds about the horizon.

June 12. Lat. 17° 00′ S.; long. 35° 11′ W. Barometer, 30.00. Winds: E.NE. Light, calm and variable; sharp lightning during the night.

June 13. Lat. 17° 21′ S.; long. 35° 00′ W. Barometer, 30.10. Winds: S. to SE. Variable breezes and rain squalls.

June 14. Lat. 18° 00′ S.; long. 35° 57′ W. Barometer, 30.20. Winds: S.SE. to SE. Frequent heavy squalls; a tumbling sea.

June 15. Lat. 19° 25′ S.; long. 37° 34′ W. Barometer, 30.25. Winds: E.NE. Light, and fine weather.

June 16. Lat. 21° 34′ S.; long. 38° 13′ W. Barometer, 30.20. Winds: E.NE. Light and variable; fine weather.

June 17. Lat. 23° 02′ S.; long. 37° 53′ W. Barometer, 30.20. Winds: E.NE. Light breezes and fine weather.

June 18. Lat. 24° 10′ S.; long. 34° 45′ W. Barometer, 30.25. Winds: N. to E.NE. Light and baffling; weather fine.

June 19. Lat. 25° 03′ S.; long. 36° 28′ W. Barometer, 30.25. Winds: E. Light and baffling.

June 20. Lat. 26° 50′ S.; long. 36° 16′ W. Barometer, 30.25. Winds: SE. to E.NE.

June 21. Lat. 28° 07′ S.; long. 35° 43′ W. Barometer, 30.25. Winds: E.NE. to N.NE. Light, and smooth sea.

June 22. Lat. 29° 39′ S.; long. 34° 01′ W. Barometer, 30.18. Winds: N.NE. Gentle; light passing clouds.

June 23. Lat. 31° 13′ S.; long. 30° 06′ W. Barometer, 30.00; air, 65°; water, 64°. Winds: N.NE. Moderate, with rain showers; saw the first Cape pigeon to-day.

June 24. Lat. 32° 29′ S.; long. 26° 03′ W. Barometer, 30.00; air, 65°; water, 62°. Winds: N. to NW. Stiff, and cloudy.

June 25. Lat. 32° 33′ S.; long. 21° 27′ W. Barometer, 30.15; air, 56°; water, 62°. Winds: W.NW. to S.SW. Commences stiff breeze; ends, light, and squalls.

June 26. Lat. 32° 43′ S.; long. 18° 14′ W. Barometer, 30.23; air, 59°; water, 61°. Winds: W.NW. to N. Light and baffling.

June 27. Lat. 33° 02′ S.; long. 16° 19′ W. Barometer, 30.18; air, 63°; water, 62°. Winds: N. to N.NW. Light and baffling, cloudy weather.

June 28. Lat. 33° 18′ S.; long. 11° 33′ W. Barometer, 30.12; air, 62°; water, 62°. Winds: N. Fine breeze and clear weather, a smooth sea.

June 29. Lat. 33° 40′ S.; long. 7° 37′ W. Barometer, 30.05; air, 63°; water, 62°. Winds: N. Fine breeze and a smooth sea; saw the first kelp.

June 30. Lat. 34° 08′ S.; long. 3° 20′ W. Barometer, 30.05; air, 61°; water, 61°. Winds: N.

July 1. Lat. 34° 55′ S.; long. 00° 50′ E. Barometer, 30.00; air, 59°; water, 59°. Winds: N.NE.

July 2. Lat. 35° 59′ S.; long. 4° 55′ E. Barometer, 29.65; air, 61°; water, 59°. Winds: NE. by N. to N.

July 3. Lat. 36° 52′ S.; long. 9° 20′ E. Barometer, 29.40; air, 55°; water, 57°. Winds: NW. to W.NW.

July 4. Lat. 37° 47′ S.; long. 13° 56′ E. Barometer, 29.44; air, 55°; water, 57°. Winds: W.SW. to SW.

July 5. Lat. 37° 56′ S.; long. 18° 26′ E. Barometer, 29.60; air, 53°; water, 60°. Winds: W.SW. to S.SW.

July 6. Lat. 37° 41′ S.; long. 22° 59′ E. Barometer, 29.85; air, 55°; water, 56°. Winds: S.SW. to S. by E.

July 7. Lat. 37° 25′ S.; long. 26° 02′ E. Barometer, 30.15; air, 52°; water, 64°. Winds: S. by E. to E. Variable.

July 8. Lat. 38° 29′ S.; long. 27° 52′ E. Barometer, 30.23; air, 56°; water, 66°. Winds: E. to E.NE. Variable.

July 9. Lat. 40° 44′ S.; long. 29° 46′ E. Barometer, 30.35; air, 56°; water, 56°. Winds: E.NE. Light.

July 10. Lat. 41° 34′ S.; long. 32° 16′ E. Barometer, 30.45; air, 55°; water, 56°. Winds: E. by N. Light.

July 11. Lat. 42° 39′ S.; long. 35° 28′ E. Barometer, 30.48; air, 54°; water, 52°. Winds: E. by N. Light.

July 12. Lat. 43° 47′ S.; long. 39° 20′ E. Barometer, 30.40; air, 46°; water, 45°. Winds: E.NE. Light. Saw small patches of kelp.

July 13. Lat. 44° 15′ S.; long. 44° 40′ E. Barometer, 30.18; air, 45°; water, 43°. Winds: NE. to NE. by N. and W.NW. Cloudy.

July 14. Lat. 43° 47′ S.; long. 48° 41′ E. Barometer, 30.16; air, 40°; water, 40°. Winds: W. to S. Variable, and foggy weather.

July 15. Lat. 43° 09′ S.; long. 50° 43′ E. Barometer, 29.65; air, 46°; water, 41°. Winds: NE. to NW. Variable, and foggy.

July 16. Lat. 42° 39′ S.; long. 55° 23′ E. Barometer, 29.80; air, 41°; water, 43°. Winds: NW. to SW. Cloudy.

July 17. Lat. 42° 14′ S.; long. 59° 47′ E. Barometer, 30.15; air, 45°; water, 52°. Winds: SW. to S. by E. Begins moderate, ends calm.

July 18. Lat. 41° 05′ S.; long. 63° 05′ E. Barometer, 30.35; air, 52°; water, 56°. Winds: N. to NW. Moderate and calm.

July 19. Lat. 40° 47′ S.; long. 65° 54′ E. Barometer, 30.40; air, 56°; water, 56°. Winds: N.NW. Fog and rain.

July 20. Lat. 40° 38′ S.; long. 69° 35′ E. Barometer, 30.25; air, 55°; water, 55°. Winds: N.NW. to W.NW. Saw kelp.

July 21. Lat. 40° 29′ S.; long. 74° 03′ E. Barometer, 29.85; air, 54°; water, 54°. Winds: NW. to SW. Dark and cloudy.

July 22. Lat. 39° 52′ S.; long. 78° 27′ E. Barometer, 29.75; air, 42°; water, 50°. Winds: SW. Cloudy.

July 23. Lat. 39° 39′ S.; long. 84° 24′ E. Barometer, 29.95; air, 46°; water, 51°. Winds: SW. by W. Moderate and calm.

July 24. Lat. 39° 29′ S.; long. 86° 55′ E. Barometer, 29.95; air, 45°; water, 52°. Winds: W.SW. to NW. Cloudy.

July 25. Lat. 39° 21′ S.; long. 92° 00′ E. Barometer, 29.75; air, 54°; water, 52°. Winds: W.NW.

July 26. Lat. 39° 30′ S.; long. 96° 13′ E. Barometer, 29.80; air, 54°; water, 52°. Winds: W.NW. to N. Cloudy and foggy.

July 27. Lat. 39° 31′ S.; long. 101° 07′ E. Barometer, 29.75; air, 54°; water, 52°. Winds: N. to NW.

July 28. Lat. 39° 55′ S.; long. 104° 27′ E. Barometer, 29.45; air, 52°; water, 52°. Winds: W.NW. to SW.

July 29. Lat. 39° 40′ S.; long. 107° 44′ E. Barometer, 29.70; air, 48°; water, 52°. Winds: SW. to S. by E.

July 30. Lat. 39° 22′ S.; long. 112° 07′ E. Barometer, 29.95; air, 49°; water, 51°. Winds: S. by E. to S.SE.

July 31. Lat. 39° 02′ S.; long. 116° 07′ E. Barometer, 30.15; air, 51°; water, 54°. Winds: SE. and S.SE., and calm.

August 1. Lat. 38° 38′ S.; long. 117° 33′ E. Barometer, 30.25; air, 51°; water, 52°. Winds: S., calm, S.SW.

August 2. Lat. 38° 30′ S.; long. 118° 16′ E. Barometer, 30.34; air, 50°; water, 53°. Winds: south and calm.

August 3. Lat. 38° 38′ S.; long. 119° 36′ E. Barometer, 30.34; air, 55°; water, 52°. Winds: NE. to N.

August 4. Lat. 39° 06′ S.; long. 123° 05′ E. Barometer, 30.18; air, 54°; water, 54°. Winds: N. to W.NW.

August 5. Lat. 39° 15′ S.; long. 128° 02′ E. Barometer, 29.91; air, 54°; water, 54°. Winds: W.NW. to NW.

August 6. Lat. 39° 15′ S.; long. 131° 17′ E. Barometer, 30.04; air, 54°; water, 54°. Winds: W.NW. to W.SW.

August 7. Lat. 39° 26′ S.; long. 136° 04′ E. Barometer, 29.95; air, 53°; water, 53°. Winds: W.SW. to SW.

August 8. Lat. 39° 38′ S.; long. 139° 58′ E. Barometer, 30.05; air, 52°; water, 51°. Winds: W.SW. to W.NW. At 6 a. m. made Cape Otway, bearing NE. by E. ½ E.; distant nine leagues.

August 9. Lat. 38° 51′ S.; long. 143° 43′ E. Barometer, 30.10; air, 50°; water, 54°. Winds: NW., calm, NE., strong.

August 10. At 8 a. m. took a pilot. Cape Neaphen bearing NE., distant two leagues. At 9.30 a. m. passed the heads."

Having satisfactorily shown that the parallel of 39° is not the best to run down longitude upon to Australia; that the distance along that parallel is greater than it is along the route

somewhat south of 45°; that the winds along the latter route are much more favorable, and that the passages by it are actually shorter, the next step is to afford examples and illustrations as to the new route.

The calms of Capricorn being cleared, the navigator, after looking at the ice tables, after examining the tables of crossing, after studying the Pilot Charts, and then after having made up his mind as to the parallel upon which he will aim to run down his longitude, will find his way so plain that he cannot go wrong. Heard's islands (see charts) are the only dangers of uncertain position on the wayside.

Tables of crossing from the offings of St. Roque to the prime meridian have been prepared, to illustrate the end of the route. They serve equally well, so far, for vessels bound to China or through any of the "passages" between Australia and Sumatra.

FROM THE LINE TO THE PRIME MERIDIAN.

Name.	Date of crossing the equator.	Longitude of crossing equator.	Longitude of crossing the parallels of—							Latitude of crossing the meridian of Greenwich.	Days.
			5° S.	10° S.	15° S.	20° S.	25° S.	30° S.	35° S.		
		° ′	° ′	° ′	° ′	° ′	° ′	° ′	° ′	° ′	
Pequot	Jan. 2	24 20	30 00	31 00	33 00	33 30	30 30	27 40	5 00 E.	33 40	30
Tyber	23	27 15	31 00	31 40	38 10	37 00	30 00	22 40	5 50 W.	38 40	39
Storm	4	30 00	33 00	35 10	33 00	29 00	25 00	21 10	13 50	41 30	23
Malay	3	31 00	31 10	31 00	30 50	29 50	29 30	28 20	26 20	43 10	18
Envoy	30	25 20	27 40	29 40	26 50	27 30	25 20	23 30	14 50	37 10	23
Brothers	23	27 50	31 30	31 40	31 20	31 10	29 20	22 30	0 30	35 00	30
Minnetouka	9	32 00	32 50	33 00	32 30	29 10	27 30	24 00	13 00	39 20	22
Windward	29	30 40	33 30	34 30	34 30	33 00	31 40	31 05	26 00	39 00	23
Saxonville	4	30 20	30 30	30 00	26 20	24 50	23 00	10 05	5 00 E.	32 30	21
Lewis	1	24 00	27 00	29 40	29 50	28 50	24 30	19 00	0 30 W.	34 10	23
Fenelon	6	29 00	32 00	33 10	32 30	31 10	32 20	28 40	11 00	37 15	34
Iosco	12	26 50	30 00	32 30	32 10	29 20	26 30	22 15	15 40	35 50	29
Pontiac	17	30 10	31 22	33 12	33 10	31 40	29 30	24 20	20 50	40 10	25
Lowell	1	31 40	32 40	33 10	33 10	32 30	30 10	26 20	23 30	43 15	26
Cynthia	22	30 45	32 00	32 00	33 00	32 30	31 00	27 10	20 00	40 20	28
Lepante	13	32 20	32 55	32 20	32 20	31 50	27 10	22 40	10 25	38 20	27
Stornoway	24	22 35	26 20	26 30	27 00	26 40	22 00	11 00	3 00 E.	33 00	24
Sea Witch	13	29 00	31 20	31 30	31 40	31 30	31 20	32 10	16 10 W.	36 50	18
Houqua	27	25 30	28 15	28 50	29 30	29 30	25 40	15 00	14 00	39 10	19
Petrel	3	30 00	30 50	30 30	29 20	27 00	25 40	21 50	5 15	36 00	20
Orb	23	23 10	29 30	32 00	33 10	31 40	29 00	20 40	3 20	35 30	24
Surprise	14	25 00	29 30	30 20	29 20	28 40	29 20	28 30	26 00	37 50	19
Margaret Mitchell	27	27 20	31 00	32 20	32 40	30 30	24 10	23 10	17 10	39 00	28
Niobe	29	30 00	32 00	34 10	34 30	32 50	31 20	30 20	23 25	38 55	24
Indiaman	19	31 20	32 10	34 00	34 30	34 20	34 00	32 50	29 40	43 10	21
Siam	14	27 35	28 30	29 25	29 40	29 50	26 40	27 00	18 30	37 35	25
Mandarin	11	31 10	33 40	32 50	31 50	32 10	30 40	28 50	23 40	40 50	18
Gentoo	8	28 40	32 00	33 00	31 10	26 50	25 20	24 30	21 30	37 50	21
T. Scattergood	3	25 00	25 05	27 30	28 30	29 00	28 00	28 00	26 40	41 05	23
Cynthia	15	27 45	32 20	33 00	33 30	33 40	30 40	24 10	16 30	38 40	25
Franklin	20	20 30	23 30	25 00	25 30	24 00	24 20	22 00	9 50	36 15	29
East of 26°		23 56	26 19	28 56	30 31	28 47	26 31	21 42	9 41	36 22	23.8
West of 26°		29 40	31 44	32 27	32 23	30 59	28 45	25 13	15 59	38 47	24.7

Abstract log of the ship "*Mandarin*," (Captain John W. C. Perit,) from New York to Melbourne, (Australia;) 23 days out.

"January 14, 1856. Lat. 7° 15′ S.; long. 33° 30′ W. Barometer, 29.36; air, 81°; water, 80°. Winds: S.SE. to E. Moderate and cloudy.

January 15. Lat. 10° 29′ S.; long. 32° 38′ W. Barometer, 29.37; air, 81°; water, 81°. Winds: E.SE., light and moderate. Cloudy weather.

January 16. Lat. 14° 03′ S.; long. 31° 58′ W. Barometer, 29.39; air, 81°; water, 80°. Winds: E.SE. Moderate and pleasant.

January 17. Lat. 17° 26′ S.; long. 31° 44′ W. Barometer, 29.45; air, 80°; water, 80°. Winds: E. by S. to SE. Fresh, with passing clouds.

January 18. Lat. 20° 10′ S.; long. 32° 10′ W. Barometer, 29.45; air, 79°; water, 78°. Winds: E.SE. Moderate, and passing clouds.

January 19. Lat. 23° 13′ S.; long. 30° 25′ W. Barometer, 29.45; air; 79°; water, 78°. Winds: E. and E. by S. Light and hazy.

January 20. Lat. 25° 37′ S.; long. 30° 25′ W. Barometer, 29.45; air, 79°; water, 78°. Winds: E. Fresh, with light rain squalls.

January 21. Lat. 29° 48′ S.; long. 29° 20′ W. Barometer, 29.48; air, 75°; water, 75°. Winds: E.SE. Fine breezes and pleasant.

January 22. Lat. 32° 35′ S.; long. 26° 51′ W. Barometer, 29.49; air, 73°; water, 72°. Winds: E.NE. Light and moderate, and cloudy.

January 23. Lat. 35° 15′ S.; long. 23° 41′ W. Barometer, 29.49; air, 71°; water, 71°. Winds: E.NE. Moderate breezes, with passing clouds.

January 24. Lat. 37° 04′ S.; long. 20° 38′ W. Barometer, 29.49; air, 72°; water, 71°. Winds: E.NE. to NE. Fine breezes and passing clouds; birds about.

January 25. Lat. 37° 53′ S.; long. 17° 43′ W. Barometer, 29.49; air, 68°; water, 68°. Winds: NE. to N.NW. Light and overcast.

January 26. Lat. 38° 49′ S.; long. 15° 06′ W. Barometer, 49.50; air, 68°; water, 68°. Winds: N.NW. Light and foggy weather.

January 27. Lat. 39 °40′ S.; long. 10° 51′ W. Barometer, 29.42; air, 62°; water, 63°. Winds: N.NW. Fine breezes and thick foggy weather, and light rain.

January 28. Lat. 40° 16′ S.; long. 6° 09′ W. Barometer, 29.37; air, 53°; water, 53°. Winds: NW. by W. to W.SW. Moderate breezes and foggy weather.

January 29. Lat. 40° 51′ S.; long. 1° 05′ W. Barometer, 29.40; air, 57°; water, 57°. Winds: SW. by W. Strong and squally.

January 30. Lat. 40° 10′ S.; long. 2° 32′ E. Barometer, 29.45; air, 54°; water, 55°. Winds: SW. by S. Moderate and cloudy.

January 31. Lat. 40° 58′ S.; long. 6° 35′ E. Barometer, 29.54; air, 56°; water, 57°. Winds: S.SE. to SW. Moderate and squally, with showers of rain.

February 1. Lat. 41° 27′ S.; long. 11° 10′ E. Barometer, 29.52; air, 57°; water, 57°. Winds: SW. by S. to S. Variable and cloudy, squally weather.

February 2. Lat. 41° 50′ S.; long. 13° 55′ E. Barometer, 29.41; air, 52°; water, 53°. Winds: S. to W. and N. Baffling winds and misty weather.

February 3. Lat. 42° 24′ S.; long. 16° 41′ E. Barometer, 29.40; air, 50°; water, 50°. Winds: N. and NW. Variable and passing clouds.

February 4. Lat. 43° 30′ S.; long. 21° 22′ E. Barometer, 29.43; air, 52°; water, 52°. Winds: NW. to N.NW. Moderate and clear during first part; latter part, light rain.

February 5. Lat. 43° 35′ S.; long. 26° 20′ E. Barometer, 29.40; air, 56°; water, 56°. Winds: N.NW. Light and cloudy, with rain.

February 6. Lat. 44° 02′ S.; long. 29° 14′ E. Barometer, 29.40; air, 52°; water, 54°. Winds: SW. Moderate and strong; weather cloudy, with rain.

February 7. Lat. 45° 02′ S.; long. 33° 16′ E. Barometer, 29.20; air, 51°; water, 50°. Winds: N.NE. Strong breezes, and cloudy, rainy weather; a high sea running.

February 8. Lat. 45° 46′ S.; long. 38° 33′ E. Barometer, 29.08; air, 45°; water, 45°. Winds: NW. Strong breezes, with hail and rain squalls.

February 9. Lat. 46° 45′ S.; long. 43° 33′ E. Barometer, 29.32; air, 48°; water, 44°. Winds: N.NW. Moderate and passing clouds; large quantities of sea weed about.

February 10. Lat. 47° 59′ S.; long. 50° 03′ E. Barometer, 29.37; air, 49°; water, 45°. Winds: N.NW. to N. Strong breezes and passing clouds; numerous penguins about.

February 11. Lat. 48° 42′ S.; long. 56° 51′ E. Barometer, 29.30; air, 48°; water, 41°. Winds: N. Moderate breezes and foggy; a heavy sea running.

February 12. Lat. 49° 12′ S.; long. 61° 50′ E. Barometer, 29.14; air, 47°; water, 41°. Winds: NW. Moderate breezes and pleasant.

February 13. Lat. 49° 42′ S.; long. 65° 08′ E. Barometer, 29.42; air, 43°; water, 41°. Winds: NW. to SW. Moderate and overcast.

February 14. Lat. 50° 13′ S.; long. 68° 32′ E. Barometer, 29.33; air, 44°; water, 40°. Winds: SW. to N.NE. Light, with snow and rain.

February 15. Lat. 49° 48′ S.; long. 74° 10′ E. Barometer, 29.20; air, 41°; water, 40°. Winds: NW. to W.SW. Strong breezes and cloudy. At 1 p. m. made Round island to the southward of Desolation island, bearing N. about 15 miles.

February 16. Lat. 49° 18′ S.; long. 79° 20′ E. Barometer, 29.24; air, 42°; water, 39°. Winds: N.NW. Fine breezes and pleasant.

February 17. Lat. 49° 36′ S.; long. 83° 21′ E. Barometer, 29.28; air, 42°; water, 40°. Winds: N.NW. to NE. Moderate and overcast; passed large quantities of kelp.

February 18. Lat. 49° 41′ S.; long. 89° 30′ E. Barometer, 28.48; air, 46°; water, 44°. Winds: SE. to W. Moderate gales, with rain.

February 19. Lat. 49° 10′ S.; long. 95° 23′ E. Barometer, 29.14; air, 46°; water, 45°. Winds: NW. by W. Strong and passing clouds.

February 20. Lat. 48° 02′ S.; long. 100° 23′ E. Barometer, 29.24; air, 48°; water, 45°. Winds: NW. by N. Strong and cloudy.

February 21. Lat. 48° 28′ S.; long. 106° 00′ E. Barometer, 28.42; air, —°; water, —°. Winds: NE. to N.NW. Blowing a gale, fog, hail, and rain.

February 22. Lat. 47° 21′ S.; long. 111° 33′ E. Barometer, 29.15; air, 49°; water, 50°. Winds: NW. Squalls, with passing clouds and foggy weather.

February 23. Lat. 46° 00′ S.; long. 116° 50′ E. Barometer, 29.12; air, 55°; water, 47°. Winds: NW. Strong and cloudy.

February 24. Lat. 44° 34′ S.; long. 122° 21′ E. Barometer, 29.25; air, 54°; water, 52°. Winds: N. Moderate and cloudy; passed large quantities of kelp.

February 25. Lat. 42° 49′ S.; long. 125° 08′ E. Barometer, 29.48; air, 56°; water, 52°. Winds: W. Fresh and steady; weather pleasant.

February 26. Lat. 41° 50′ S.; long. 128° 18′ E. Barometer, 29.57; air, 56°; water, 56°. Winds: W. Moderate and pleasant.

February 27. Lat. 41° 21′ S.; long. 133° 13′ E. Barometer, 29.42; air, 58°; water, 57°. Winds: W. to NW. Variable and cloudy.

February 28. Lat. 39° 07′ S.; long. — —. Barometer, 29.06; air, 58°; water, 58°. Winds: NE. to SW. Moderate and squally, rainy weather.

February 29. Lat. 39° 07′ S.; long. 142° 30′ E. Barometer, 29.30; air, 55°; water, 58°. Winds: SW. Strong and cloudy; water of a greenish tinge, as though we were on soundings.

March 1. Fine, clear weather. Wind SW. to NE. Passed Cape Otway; at 10 a. m. made Melbourne head; noon, a pilot on board; stood into Holser's bay, and anchored at 8 p. m.; 71 days."

Ship "*Malay*," (Samuel Hutchinson, jr.,) New York to Melbourne.

"January 16, 1855. Lat. 39° 12′ S.; long. 23° 49′ W. Barometer, 30.02; temperature of air, 61°; of water, 60°. Winds: N.NE. and N.NW. to N. Unsteady, light and strong breezes with continued rain till 9½ a. m., then misty and cloudy weather; a confused sea throughout; every appearance of current; many birds, but no Cape pigeons; all light sails set.

January 17. Lat. 41° 21′ S.; long. 21° 39′ W. Barometer, 29.88; temperature of air, 51°; of water, 53.5. Winds: N. to W.SW., SW. by W. and SW. Until 4 p. m. light airs, with thick fog; afterwards moderate breezes, with cloudy weather; latter part, fresh breezes; at noon in main royal; course S.SE. ½ E. computed.

January 18. Lat. 43° 42′ S.; long. 16° 52′ W. Barometer, 29.68; temperature of air, 46°; of water, 48°. Winds: SW., SW. and SW. First and middle parts, fresh SW. breezes; at night, misty weather; latter part, very light, with spells of thick mist; at 5 a. m. passed two icebergs; one at four miles distant appeared like three separate ones; the other higher and table-topped; the air altered 3°, the water none; morning, passed several, and at noon there were twenty-five in sight, of all sizes and shapes; shall steer east till out of this vein, for with a strong wind and this weather should not be able to avoid them; tide rips around.

January 19. Lat. 43° 18′ S.; long. 12° 08′ W. Barometer, 29.75; temperature of air, 45°; of water, 48°. Winds: SW. by S., S.SW., and SW. by S. First, light SW. breezes; keeping ship up and off to avoid the icebergs and small ice, from six to twenty feet above water, of which there were large quantities; in the night saw but two bergs, the last at 4 a. m.; having seen in all sixty bergs, some as high as 300 feet, and very large, (at a distance having the shape of a brick,) others smaller, down to the small ice; had it been blowing a gale, could not have avoided them; tide rips around.

January 20. Lat. 43° 00′ S.; long. 6° 53′ W. Barometer, 29.71; temperature of air, 52°; of water, 49°.5. Winds: SW. ½ W., W., and W.NW. First, moderate, with rain squalls and cloudy weather; middle and latter parts, fresh breezes with cloudy weather and light rain; heavy westerly swell setting in; strong tide rips; all light sails set; have not, intentionally, made a mile of northing.

January 21. Lat. 43° 13′ S.; long. 1° 36′ W. Barometer, 29.72; temperature of air, 55°; of water, 48°. Winds: W.NW., to W., W.NW., and NW. First and middle, moderate, cloudy, drizzly weather; latter part, fresh breezes and cloudy weather; all light sails set; shall keep between 43° and 45° if these winds hold, for I did no better in 49° last year. It was my intention this voyage to be in lat. 50°, long. 20° E.; thence to lat. 52°, when off Desolation; but the ice we met has caused me to alter the route, and shall now be governed by the winds, steering southerly, should they become light; tide rips.

January 22. Lat. 43° 21′ S.; long. 3° 36′ E. Barometer, 29.85; temperature of air, 54°; of water, 49.5°. Winds: NW., NW., and W.NW. First and middle parts strong NW. winds,

with cloudy weather and fine rain; latter part, very light, with fine weather; all sail set; tide rips.

January 23. Lat. 43° 31′ S.; long. 7° 09′ E. Barometer, 29.95; temperature of air, 51°; of water, 48°. Winds: NW., N., and N.NE. to N. by W. Light breezes, freshening, the latter part with fog and a westing swell; a school of whales around at noon; all larboard studding sails set; tide rips around.

January 24. Lat. 43° 51′ S.; long. 13° 09′ E. Barometer, 29.60; temperature of air, 54°; of water, 52°. Winds: N. by W., N., and N. First and middle parts, fresh winds, with fog; latter part, strong winds, with light rain; at 8½, in topmast studding sails and mizen-royal; at noon, mizen top-gallant sail and main-royal; tide rips.

From the Line to the Prime Meridian.

Name.	Date o f crossing the equator.	Longitude of crossing the equator.	Longitude of crossing the parallels of— 5° S.	10° S.	15° S.	20° S.	25° S.	30° S.	35° S.	Latitude of crossing the meridian of Greenwich.	Days.
		° ′	° ′	° ′	° ′	° ′	° ′	° ′	° ′	° ′	
Storm	Feb. 2	26 00	29 00	31 20	32 00	33 20	34 10	34 40	18 50	35 05	22
Sappho	5	25 10	28 20	31 00	32 30	31 00	27 10	18 00	12 00	38 30	25
Roboreus	25	23 00	27 00	29 00	28 40	26 00	23 10	19 40	15 30	38 00	30
Reward	1	17 50	22 50	26 50	28 40	26 00	27 30	26 10	19 50	37 00	31
Ceres	11	27 00	29 35	30 00	32 00	33 50	31 20	28 50	13 40	37 40	26
Suffolk	6	21 00	25 00	26 30	30 00	26 00	25 00	22 30	17 20	38 00	23
New Jersey	22	17 40	21 15	25 40	27 10	28 50	23 40	23 10	3 30	35 50	25
Euterpe	24	32 50	33 30	33 10	33 00	36 00	41 40	44 00	45 00	38 20	28
Medford	27	28 30	31 20	32 25	32 15	31 00	27 40	18 30	7 30	37 30	31
Josiah Quincy	2	29 00	30 20	30 40	31 50	31 40	31 30	27 10	14 20	36 10	30
Valparaiso	3	23 10	27 20	28 35	28 50	29 40	30 30	29 40	21 00	38 50	21
David Brown	23	28 00	30 30	29 50	30 10	30 10	30 10	27 00	16 00	37 50	14
Gertrude	26	29 10	31 05	31 30	32 30	32 00	25 50	25 00	17 30	36 00	22
Brothers	10	27 30	29 40	31 20	31 40	31 15	27 20	22 20	2 50 E.	32 40	30
Australia	17	30 10	31 50	32 10	33 00	33 00	32 00	29 50	27 50 W.	44 30	26
Quickstep	2	28 00	28 40	28 20	28 20	27 50	25 30	15 50	5 10	36 10	30
Dashaway	4	27 30	31 00	33 00	33 50	37 20	38 15	37 00	25 20	37 30	21
Imaum	2	29 45	31 00	32 20	32 00	28 00	22 00	10 45	4 40	37 10	28
Falcon	13	26 40	29 00	31 00	31 40	31 30	29 10	29 30	19 20	36 50	23
Stephen Lurman	12	26 20	30 00	32 30	32 35	31 50	29 20	22 05	13 30	37 50	25
Storm King	11	28 45	30 50	31 20	31 30	31 00	30 00	25 00	16 00	36 30	24
Recovery	12	24 50	29 30	29 00	33 00	31 50	31 10	26 10	26 10	37 30	26
Means of crossings east of 26°		21 48	25 53	26 39	29 50	28 28	26 53	23 37	16 28	37 25	25.8
West of 26°		28 20	30 29	31 24	31 53	30 59	30 23	26 34	16 07	37 19	25.3

Abstract log of the *Ship "Australia,"* (Captain Nathaniel J. Kinsman,) from New York to Melbourne, 1856; 24 days out.

"February 20. Lat. 7° 36′ S.; long. 31° 59′ W. Barometer, 29.70; air, 82°; water, 77°. Winds: E.SE. to S.SE. Moderate and squally, with rain.

February 21. Lat 9° 00′ S.; long. 32° 14′ W. Barometer, 29.73; air, 79°; water, 82°. Winds: S.SE. to E. by S. Fresh and passing clouds; squally, with lightning during the night.

February 22. Lat. 11° 38′ S.; long. 32° 03′ W. Barometer, 29.78; air, 82°; water, 81°. Winds: E. to E.SE. Moderate and cloudy, with rain.

February 23. Lat. 14° 39′ S.; long. 32° 51′ W. Barometer, 29.82; air, 82°; water, 81°. Winds: E.SE. Brisk trades, and fine weather.

February 24. Lat. 17° 05′ S.; long. 33° 07′ W. Barometer, 29.87; air, 78°; water, 80°. Winds: E. to SE. Moderate breezes and pleasant.

February 25. Lat. 19° 38′ S.; long. 33° 22′ W. Barometer, 29.91; air, 82°; water, 80°. Winds: E. Moderate breezes, and cloudy.

February 26. Lat. 21° 57′ S.; long. 32° 45′ W. Barometer, 29.90; air, 83°; water, 81°. Winds: E. to E.NE. Moderate, with rain squalls.

February 27. Lat. 28° 50′ S. long. 32° 21′ W. Barometer, 29.91; air, 84°; water, 79°. Winds: E. to E.NE. Moderate and pleasant.

February 28. Lat. 24° 36′ S.; long. 32° 13′ W. Barometer, 29.84; air, 87°; water, 81°. Winds: E. Light and pleasant.

February 29. Lat. 25° 47′ S.; long. 32° 01′ W. Barometer, 29.86; air, 83°; water, 78°. Winds: N.NE. Light and pleasant.

March 1. Lat. 27° 34′ S.; long. 31° 33′ W. Barometer, 29.87; air, 78°; water, 77°. Winds: E.NE. Light and pleasant.

March 2. Lat. 29° 34′ S.; long. 30° 39′ W. Barometer, 29.90; air, 78°; water, 76°. Winds: E.NE. Moderate and cloudy, with lightning.

March 3. Lat. 32° 01′ S.; long. 29° 30′ W. Barometer, 29.93; air, 75°; water, 74°. Winds: E. by N. Moderate, with passing rain squalls.

March 4. Lat. 34° 52′ S.; long. 27° 45′ W. Barometer, 29.86; air, 73°; water, 70°. Winds: NE. Fresh and cloudy, with rain squalls; a rough sea.

March 5. Lat. 37° 47′ S.; long. 25° 44′ W. Barometer, 29.68; air, 70°; water, 66°. Winds: N.NE. Fresh and squally, with rain.

March 6. Lat. 38° 59′ S.; long. 23° 45′ W. Barometer, 29.74; air, 67°; water, 65°. Winds: N.NW. to W.SW. Moderate breezes, and thick, misty weather.

March 7. Lat. 38° 44′ S.; long. 21° 05′ W. Barometer, 29.85; air, 57°; water, 52°. Winds: S.SW. Moderate breezes, and thick, rainy weather.

March 8. Lat. 39° 26′ S.; long. 18° 23′ W. Barometer, 29.98; air, 56°; water, 61°. Winds: SW. by S. Strong and squally; water of a greenish color; albatross and storm "petrels" in company, but no cape pigeon.

March 9. Lat. 40° 23′ S.; long. 15° 29′ W. Barometer, 29.93; air, 56°; water, 59°. Winds: W.SW. Fresh, and passing clouds; a heavy swell from the SW.

March 10. Lat. 41° 28′ S.; long. 11° 42′ W. Barometer, 29.80; air, 52°; water, 57°. Winds: W.SW. to S.SE. Brisk breezes, and cloudy.

March 11. Lat. 41° 25′ S.; long. 10° 10′ W. Barometer, 29.87; air, 53°; water, 55°. Winds: E.NE. to NE. Moderate, and passing clouds.

March 12. Lat. 43° 38′ S.; long. 6° 28′ W. Barometer, 29.76; air, 52°; water, 50°. Winds: W.NW. to SW. by W. Strong and squally, with rain.

March 13. Lat. 43° 57′ S.; long. 3° 16′ W. Barometer, 29.92; air, 47°; water, 48°. Winds: SW. by W., to N. by E. Fresh and cloudy.

March 14. Lat. 44° 30′ S.; long. 0° 58′ E. Barometer, 29.62; air, 46°; water, 48°. Winds: N.NE. to NW. Strong, with drizzly, rainy weather.

March 15. Lat. 44° 52′ S.; long. 5° 04′ E. Barometer, 29.45; air, 46°; water, 43°.

Winds: W.SW. to W.NW. Brisk and cloudy; a striking change in the temperature of the atmosphere.

March 16. Lat. 45° 23′ S.; long. 7° 52′ E. Barometer, 29.08; air, 45°; water, 43°. Winds: W.NW. Light and drizzly.

March 17. Lat. 45° 56′ S.; long. 11° 28′ E. Barometer, 29.26; air, 41°; water, 45°. Winds: W.SW. Moderate gales and hard squalls.

March 18. Lat. 46° 33′ S.; long. 16° 04′ E. Barometer, 29.53; air, 39°; water, 42°. Winds: W. by S. Moderate gales, and frequent squalls of hail and snow; saw a large iceberg covered with snow at 8; ice in sight to the northward from the royal yard.

March 19. Lat. 46° 56′ S.; long. 20° 44′ E. Barometer, 29.65; air, 42°; water, 42°. Winds: NW. to SW. by W. Moderate gales and passing clouds; at 11 a. m. passed between two icebergs, one very large and the other small; sighted another.

March 20. Lat. 47° 02′ S.; long. 24° 52′ E. Barometer, 29.88; air, 41°; water, 41°. Winds: SW. by W. to NW. by W. Fresh breezes, and cloudy; at 3 and 6 p. m. passed two icebergs; at 10 and 12 passed two icebergs.

March 21. Lat. 47° 13′ S.; long. 30° 07′ E. Barometer, 29.38; air, 42°; water, 38°. Winds: N.NW. Fresh gales and squally.

March 22. Lat. 47° 27′ S.; long. 33° 55′ E. Barometer, 29.66; air, 40°; water, 39°. Winds: NW. Fresh and passing rain squalls.

March 23. Lat. 47° 32′ S.; long. 38° 25′ E. Barometer, 29.69; air, 42°; water, 39. Winds: NW. to N.NE. Fresh and cloudy; passed a large iceberg, two small ones, and several pieces of floating ice.

March 24. Lat. 47° 44′ S.; long. 40° 48′ E. Barometer, 29.23; air, 40°; water, 40°. Winds: N.NE. to SW. Moderate breezes and thick, foggy weather, with rain.

March 25. Lat. 47° 57′ S.; long. 42° 00′ E. Barometer, 29.25; air, 40°; water, 40°. Winds: SW. by W. to N.NE. Light and baffling; thick, rainy weather.

March 26. Lat. 48° 05′ S.; long. 46° 36′ E. Barometer, 29.00; air, 42°; water, 40°. Winds: N.NW. to NW. Moderate, and fresh gales; passed kelp.

March 27. Lat. 47° 45′ S.; long. 51° 35′ E. Barometer, 29.00; air, 42°; water, 41°. Winds: NW. to N.NE. Moderate gales and pleasant.

March 28. Lat. 47° 24′ S.; long. 56° 06′ E. Barometer, 29.09; air, 44°; water, 46°. Winds: N. to NW. Moderate gales and passing squalls.

March 29. Lat. 47° 03′ S.; long. 60° 47′ E. Barometer, 29.23; air, 45°; water, 47°. Winds: NW. to N.NW. Fresh gales and passing squalls.

March 30. Lat. 47° 11′ S.; long. 64° 34′ E. Barometer, 29.22; air, 48°; water, 44°. Winds: NW. to N.NW. Fresh gales and squalls, with rain.

March 31. Lat. 46° 59′ S.; long. 68° 47′ E. Barometer, 29.59; air, 43°; water, 42°. Winds: W.NW. Strong, with occasional squalls.

April 1. Lat. 47° 21′ S.; long. 73° 30′ E. Barometer, 29.17; air, 48°; water, 39°. Winds: NE. to N.NE. Strong breeze and cloudy.

April 2. Lat. 47° 27′ S.; long. 77° 48′ E. Barometer, 29.32; air, 48°; water, 45°. Winds: NW. Brisk breezes and pleasant.

April 3. Lat. 47° 09′ S.; long. 82° 24′ E. Barometer, 29.61; air, 40°; water, 47°. Winds: NW. to W. by S. Fresh breezes and snow squalls.

April 4. Lat. 47° 18′ S.; long. 87° 05′ E. Barometer, 29.20; air, 47°; water, 51°. Winds: W. to NW. Fresh and squally, with hail and rain.

April 5. Lat. 46° 58′ S.; long. 92° 06′ E. Barometer, 29.15; air, 44°; water, 46°. Winds: NW. to W. Strong gales and passing clouds; a high sea.

April 6. Lat. 47° 10′ S.; long. 96° 20′ E. Barometer, 28.49; air, 48°; water, 41°. Winds: NW. Hard gales and violent squalls.

April 7. Lat. 46° 34′ S.; long. 97° 50′ E. Barometer, 29.17; air, 42°; water, —. Winds: W. to SW. Hard gales and squalls, with snow and hail.

April 8. Lat. 45° 40′ S.; long. 102° 06′ E. Barometer, 29.18; air, 41°; water, 45°. Winds: SW. Hard gales and squalls.

April 9. Lat. 44° 08′ S.; long. 106° 36′ E. Barometer, 29.05; air, 45°; water, 49°. Winds: SW. to S.SW. Hard gales and a rough sea.

April 10. Lat. 43° 17′ S.; long. 109° 46′ E. Barometer, 29.36; air, 48°; water, 51°. Winds: S.SW. Fresh gales and squally.

April 11. Lat. 43° 00′ S.; long. 113° 15′ E. Barometer, 29.57; air, 44°; water, 52°. Winds: S.SW. Fresh breezes and cloudy.

April 12. Lat. 43° 13′ S.; long. 117° 22′ E. Barometer, 29.60; air, 51°; water, 50°. Winds: SW. to W.NW. Fresh, with passing clouds.

April 13. Lat. 43° 08′ S.; long. 121° 30′ E. Barometer, 29.58; air, 51°; water, 49°. Winds: W. Moderate, with rain.

April 14. Lat. 42° 26′ S.; long. 124° 52′ E. Barometer, 29.62; air, 50°; water, 53°. Winds: W. to NW. Moderate and cloudy, with rain.

April 15. Lat. 41° 53′ S.; long. 128° 34′ E. Barometer, 29.73; air, 50°; water, 56°. Winds: W.SW. to S.SE. Brisk.

April 16. Lat. 41° 07′ S.; long. 131° 47′ E. Barometer, 30.03; air, 50°; water, 56°. Winds: S.SE. to S.SW. Light and pleasant.

April 17. Lat. 40° 40′ S.; long. 134° 01′ E. Barometer, 29.95; air, 56°; water, 56°. Winds: W. by S. to SW. by W. Light and moderate.

April 18. Lat. 40° 13′ S.; long. 137° 10′ E. Barometer, 29.58; air, 55°; water, 58°. Winds: SW. to S. Brisk breezes, and passing showers of rain.

April 19. Lat. 39° 26′ S.; long. 140° 46′ E. Barometer, 29.53; air, 52°; water, 60°. Winds: SW. to SW. by S. Strong gales and passing squalls.

April 20. Lat. 39° 21′ S.; long. 143° 28′ E. Barometer, 29.45; air, 54°; water, 60°. Winds: SW. to S.SW. Strong gales and heavy rain squalls; sounded in 80 fathoms; coral bottom.

April 21. Lat. —; long. —. Barometer, 29.72; air, —; water, —. Winds: SW. Strong breezes, with squally, rainy weather. At 8 p. m. sounded in 55 fathoms, fine sand; at 8.20 p. m. made Cape Otway, light bearing NW. by N., 20 miles distant; at same time noticed an eclipse of the moon; at 3 a. m. hauled by the wind and stood off shore until daylight; at 6.30 a. m. stood in; at 11.15 passed through the head, and, having no pilot, anchored in south channel, in 86 days and 6 hours from Sandy Hook; at noon pilot came on board, got under way, and anchored off Williamstown.

From the Line to the Prime Meridian.

Name.	Date of crossing the equator.	Longitude of crossing the equator.	Longitude of crossing the parallels of— 5° S.	10° S.	15° S.	20° S.	25° S.	30° S.	35° S.	Latitude of crossing the meridian of Greenwich.	Days.
		° ′	° ′	° ′	° ′	° ′	° ′	° ′	° ′	° ′	
Cincinnatus	Mar. 25	22 40	26 30	28 40	30 40	27 30	23 30	20 00	10 10	40 10	34
Clifford Wayne	5	24 20	25 00	26 30	26 40	27 30	23 00	19 50	12 20	36 50	25
Tyber	4	22 30	22 40	25 00	27 50	26 45	26 50	19 00	13 20	37 00	38
Windward	6	24 40	29 00	31 00	31 50	30 30	28 00	21 00	14 40	38 20	21
William Frothingham	1	23 20	26 00	27 50	28 30	28 30	24 15	9 50	0 50	35 20	25
Gravina	7	28 20	31 40	32 30	33 30	33 30	30 00	25 12	12 00	35 40	22
Royal Charter	5	22 00	25 00	28 20	30 00	30 20	29 30	28 30	25 00	42 20	17
Hector	29	20 20	22 40	23 20	24 30	25 00	20 50	12 50	7 20	38 20	29
Pamelia	16	27 45	29 00	30 20	29 40	25 00	22 10	13 40	7 30 E.	31 20	29
Surf	4	29 40	31 50	32 00	31 30	30 40	25 40	26 00	20 50 W.	43 30	26
Albert	27	26 00	27 50	31 00	33 00	33 00	31 40	24 20	10 30	38 40	26
Ariel	26	26 50	28 40	31 00	31 20	30 30	27 00	19 40	5 40	36 20	30
Oriental	22	26 00	28 20	29 00	30 10	30 15	28 30	28 20	10 05	36 40	30
Jalawar	8	27 20	29 30	30 55	28 30	26 30	22 50	20 20	13 15	36 10	22
Ganges	19	25 50	28 00	28 40	29 30	29 40	28 30	22 20	14 30	40 40	26
Romance of the Sea	1	28 30	31 10	31 30	32 30	31 40	30 00	27 00	23 40	39 10	21
Pilgrim	22	20 00	23 10	26 20	27 20	28 00	26 30	10 40	2 00	35 45	38
Emu	30	21 10	24 20	26 00	30 00	31 00	30 20	29 00	14 20	35 30	27
Clarendon	26	22 10	25 15	27 50	28 00	28 40	26 00	19 30	14 00	39 00	29
Architect	25	29 00	29 00	29 10	30 10	29 50	30 50	29 10	16 20	40 30	23
Means of crossings east of 26°		22 38	24 15	25 24	29 04	28 29	25 38	19 20	11 40	38 06	28.0
Means of crossings west of 26°		27 42	29 40	32 02	31 07	30 06	28 12	23 43	11 37	38 40	25.4

Abstract log of the *Ship "Royal Charter,"* (F. Boyse, sr., commander,) from Liverpool to Melbourne; 20 days out.

"March 8, 1856. Lat. 6° 58′ S.; long. 26° 18′ W. Barometer, —. Moderate trades and clear, pleasant weather.

March 9. Lat. 9° 52′ S.; long. 28° 22′ W. Moderate trades and cloudy.

March 10. Lat. 12° 44′ S.; long. 29° 44′ W. Light trades and pleasant.

March 11. Lat. 16° 00′ S.; long. 30° 39′ W. Light trades and clear weather. At 3.30 lowered the screw and turned ahead the engine.

March 12. Lat. 19° 30′ S.; long. 30° 38′ W. Moderate trades and fine weather. At 2.30 stopped the engine and hoisted up the screw.

March 13. Lat. 23° 30′ S.; long. 30° 19′ W. Moderate and fresh trades and clear.

March 14. Lat. 28° 10′ S.; long. 29° 26′ W. Fresh breezes and pleasant.

March 15. Lat. 32° 09′ S.; long. 27° 38′ W. Fresh breezes and pleasant weather.

March 16. Lat. 35° 03′ S.; long. 24° 57′ W. Moderate winds and fine weather.

March 17. Lat. 36° 05′ S.; long. 22° 10′ W. Variable winds and calm. At 7.30 lowered the screw. Midnight, light variable air and rain.

March 18. Lat. 38° 43′ S.; long. 19° 22′ W. Winds: E. to E.NE. Light breezes and cloudy. At 1 a. m. stopped the engine and disconnected the screw. Ends, fresh breezes and a high sea.

March 19. Lat. 41° 01′ S.; long. 13° 57′ W. Winds: NE., NW., and S.SE. Fresh and clear.

March 20. Lat. 42° 09′ S.; long. 8° 49′ W. Winds: S.SE. Commences, fresh breeze and cloudy; ends, light breeze and hazy. Got up steam and lowered the screw.

March 21. Lat. 41° 22′ S.; long. 4° 10′ W. Winds: S.SE. to SW. Light and cloudy; latter part, freshening. Stopped the engine and disconnected the screw.

March 22. Lat. 42° 16′ S.; long. 0° 41′ W. Winds: light and variable; weather clear. At 2 lowered the screw and steamed under fore-and-aft sails.

March 23. Lat. 42° 11′ S.; long. 4° 25′ E. Winds: W.NW. to S.SW. Moderate breezes and cloudy. At midnight stopped the engine and disconnected the screw.

March 24. Lat. 43° 16′ S.; long. 9° 35′ E. Winds: SW. to W.NW. Fresh, and fine weather.

March 25. Lat. 43° 52′ S.; long. 15° 37′ E. Winds: NW. to W. Moderate breezes and cloudy, with light rain.

March 26. Lat. 44° 51′ S.; long. 20° 22′ E. Winds: W.NW. to NW. by W. Moderate breezes and cloudy.

March 27. Lat. 44° 04′ S.; long. —. Winds: W.NW. to W.SW. Strong and squally, with rain; a heavy sea.

March 28. Lat. 45° 37′ S.; long. 33° 52′ E. Winds: W. to NW. Strong, cloudy, and squally; a high sea running.

March 29. Lat. 46° 13′ S.; long. 39° 29′ E. Winds: W. by N. to N.NE. Moderate and cloudy, hazy weather.

March 30. Lat. 46° 27′ S.; long. 45° 13′ E. Winds: NW. to W.NW. Fresh and hazy, with light rain; latter part, clear.

March 31. Lat. 47° 06′ S.; long. 52° 43′ E. Winds: NW. to W.NW. Fresh breezes and cloudy.

April 1. Lat. 48° 08′ S.; long. 59° 28′ E. Winds: NW. Strong, with heavy hail squalls.

April 2. Lat. 47° 18′ S.; long. 66° 24′ E. Winds: NW. Strong gales and hard squalls, with snow. Kerguelen Land bearing S. 52° E., distant 134 miles.

April 3. Lat. 47° 31′ S.; long. 72° 28′ E. Winds: W. Fresh gales and squally.

April 4. Lat. 47° 31′ S.; long. 78° 48′ E. Winds: N. to W.NW. Fresh breezes and cloudy.

April 5. Lat. 47° 23′ S.; long. 86° 42′ E. Winds: N. to W.NW. Fresh breezes and squally.

April 6. Lat. 47° 10′ S.; long. 93° 02′ E. Winds: W.NW. to NW. Fresh and cloudy; latter part, blowing a most terrific hurricane.

April 7. Lat. 47° 02′ S.; long. 100° 03′ E. Winds: NW. to W.NW. Strong gales, with hail, rain, and snow squalls.

April 8. Lat. 46° 51′ S.; long. 107° 25′ E. Winds: W. to W.SW. Strong breezes and squally, with hail, rain, and snow.

April 9. Lat. 45° 40′ S.; long. 112° 57′ E. Winds: W. to S.SW. First part, strong breezes and squally; latter part, calm; lowered the screw and started the engine.

April 10. Lat. 44° 39′ S.; long. 116° 08′ E. Winds: S.SE. Strong breezes and squally, with heavy rain. Stopped the engine and hoisted up the screw.

April 11. Lat. 44° 24′ S.; long. 121° 05′ E. Winds: S. by W. to S.SW. Moderate and cloudy. Cape Otway bearing N. 72° E.; distant 1,000 miles.

April 12. Lat. 44° 10′ S.; long. 127° 14′ E. Winds: W.SW. Moderate breezes and cloudy.

April 13. Lat. 43° 49′ S.; long. 133° 24′ E. Winds: NW. to W. Moderate breezes and fine weather; latter part, strong breezes and squally.

April 14. Lat. 42° 50′ S.; long. 138° 45′ E. Winds: NW. to W.SW. Commences fresh gales and squally, with rain; ends, light breezes and cloudy.

April 15. Lat. 41° 00′ S.; long. 142° 07′ E. Winds: N.NW. Moderate and clear; latter part, light air and cloudy; lowered the screw and started the engines.

April 16. Lat. ———; long. ———. Light breezes and pleasant. At 5.30 a. m. sighted the land on the port bow; at 8, Cape Otway, bearing W., distant 20 miles; at noon took a pilot on board; passed the heads and proceeded to anchorage."

From the Line to the Prime Meridian.

Name.	Date of crossing the equator.	Longitude of crossing the equator.	Longitude of crossing the parallels of— 5° S.	10° S.	15° S.	20° S.	25° S.	30° S.	35° S.	Latitude of crossing the meridian of Greenwich.	Days.
		° ′	° ′	° ′	° ′	° ′	° ′	° ′	° ′	° ′	
Queen of the East	April 23	23 40	25 50	29 00	30 40	30 20	28 00	24 10	6 10	36 20	19
Georgetown	7	21 00	24 30	26 30	28 20	26 30	24 00	24 40	17 30	39 40	41
Friendship	7	20 00	25 00	30 20	30 00	29 30	23 50	19 10	16 10	36 30	25
Virginia	16	21 00	20 20	23 20	24 20	25 50	26 30	22 30	7 10	37 00	31
Eliza	8	23 00	24 10	25 10	26 00	26 00	26 20	20 00	7 10	36 00	21
Clifford Wayne	17	23 10	26 00	30 00	31 00	29 30	29 30	25 00	17 00	36 30	27
Ann	7	22 05	24 05	28 00	31 00	31 50	33 20	34 20	26 40	36 40	29
Whirlwind	23	28 05	30 00	32 00	33 40	35 00	32 00	21 40	12 00	39 00	16
E. Corning	4	27 40	31 10	31 50	31 40	30 00	23 30	19 30	7 25	35 30	24
Brewer	14	23 00	24 30	26 10	26 20	26 50	26 00	18 00	12 30	36 40	29
Northern Light	14	28 50	30 40	33 40	34 20	35 40	34 50	33 20	25 00	39 40	20
Lucia Maria	22	27 30	28 30	29 30	31 00	29 30	27 40	22 50	6 00	36 00	20
Scargo	29	28 10	31 00	33 20	34 50	35 40	23 40	25 30	18 40	35 40	30
Florence	29	31 20	34 00	34 00	33 40	32 05	29 20	26 30	11 00	39 00	26
Thomas Campbell	20	24 30	27 00	30 00	31 40	31 50	29 30	10 30	0 50 E.	34 40	21
Scotia	27	13 10	17 30	20 00	21 20	21 20	20 30	7 30	1 40	34 40	19
Horsburg	28	29 20	33 20	34 40	35 30	35 55	34 20	25 20	7 30	35 40	28
Rienzi	14	26 15	30 30	32 30	30 20	27 00	28 30	21 50	8 00	32 15	30
Lantao	17	28 50	31 00	32 50	35 10	32 20	23 20	20 10	6 00 W.	36 15	27
Annie Buckman	5	26 50	29 00	30 15	31 40	31 50	26 45	23 20	3 00 E.	34 30	25
Storm Bird	11	28 45	31 00	34 30	35 00	35 40	36 30	35 00	27 20 W.	42 30	28
E. F. Willets	23	27 30	30 40	33 40	35 50	36 10	33 45	29 50	24 20	36 40	26
Haidee	26	27 00	30 40	32 45	32 30	33 50	25 00	15 40	2 20	34 40	20
Essex	5	19 40	19 10	22 00	23 00	22 30	22 00	22 20	16 50	37 10	33
Houqua	9	20 30	24 10	26 45	28 30	30 10	31 50	32 00	17 40	36 00	26
Means of crossings east of 26°		21 13	23 31	26 26	26 21	27 32	26 46	21 40	13 19	36 29	26.7
West of 26°		28 09	30 53	32 43	34 41	33 07	29 10	24 39	9 21	36 43	24.6

Abstract log of the *Ship "Whirlwind,"* (John N. Giet, captain,) from New York to Melbourne, Australia, 1855.

"April 25. Lat. 6° 00′ S.; long. 31° 00′ W. Barometer, 29.95; air, 83°. Winds: SE. Fine SE. trades and passing squalls.

April 26. Lat. 10° 00′ S.; long. 31° 56′ W. Barometer, 30.10; air, 82°. Winds: SE. Fine trades and fair weather.

April 27. Lat. 13° 20′ S.; long. 33° 00′ W. Barometer, 30.10; air, 81°. Winds: SE. Fine breezes and fair weather.

April 28. Lat. 16° 25′ S.; long. 34° 15′ W. Barometer, 30.00; air, 81°. Winds: SE. Moderate and passing squalls.

April 29. Lat. 19° 42′ S.; long. 35° 10′ W. Barometer, 30.20; air, 80°. Winds: SE. Light winds and fine weather.

April 30. Lat. 23° 03′ S.; long. 34° 05′ W. Barometer, 30.40; air, 80°. Winds: E.SE. Fine breezes and passing clouds.

May 1. Lat. 26° 00′ S.; long. 30° 50′ W. Barometer, 30.10; air, 79°. Winds: E.NE. Fine breezes.

May 2. Lat. 28° 25′ S.; long. 27° 00′ W. Barometer, 30.20; air, 78°. Winds: NE. Moderate; saw a total eclipse of the moon at 1.30 a. m.

May 3. Lat. 29° 52′ S.; long. 23° 42′ W. Barometer, 30.26; air, 77°. Winds: N.NE. Light and fair.

May 4. Lat. 30° 44′ S.; long. 21° 30′ W. Barometer, 30.40; air, 72°. Winds: N. Light, and fine weather.

May 5. Lat. 32° 23′ S.; long. 18° 28′ W. Barometer, 29.95; air, 71°. Winds: variable. Strong and cloudy.

May 6. Lat. 34° 12′ S.; long. 14° 00′ W. Barometer, 29.80; air, 69°. Winds: N.NW. Strong and cloudy.

May 7. Lat. 35° 56′ S.; long. 9° 40′ W. Barometer, 29.80; air, 69°. Winds: N.NW. Strong and squally; carried away the crossjack yard.

May 8. Lat. 37° 37′ S.; long. 5° 10′ W. Barometer, 29.50; air, 66°. Winds: NE. Strong gales and a high sea.

May 9. Lat. 38° 39′ S.; long. 1° 40′ W. Barometer, 29.65; air, 65° Winds: NW. Strong gales and a high sea.

May 10. Lat. 40° 02′ S.; long. 3° 21′ E. Barometer, 29.80; air, 64°. Winds: NE. and NW. Strong and hazy.

May 11. Lat. 40° 02′ S.; long. 5° 06′ E. Barometer, 30.00; air, 58°. Winds: W. and E. Commences brisk; ends, light airs and calm.

May 12. Lat. 41° 15′ S.; long. 6° 38′ E. Barometer, 30.00; air, 56°. Winds: E. Light airs; latter part, strong winds and thick weather.

May 13. Lat. 43° 10′ S.; long. 6° 40′ E. Barometer, 29.90; air, 54°. Winds: E., E.SE. Brisk, with thick weather. Lost overboard Frank Robinson, seaman, of Brooklyn, N. Y.

May 14. Lat. 44° 30′ S.; long. 8° 35′ E. Barometer, 29.75; air, 54°. Winds: E. Strong, clear weather.

May 15. Lat. 44° 30′ S.; long. 10° 47′ E. Barometer, 29.50; air, 53. Winds: NE. Moderate and rainy.

May 16. Lat. 44° 34′ S.; long. 16° 06′ E. Barometer, 29.80; air, 50. Winds: W.SW. Strong gales, with heavy hail squalls.

May 17. Lat. 44° 50′ S.; long. 21° 40′ E. Barometer, 30.50; air, 50. Winds: W.SW. Strong gales and violent hail and snow squalls.

May 18. Lat. 45° 20′ S.; long. 27° 52′ E. Barometer, 30.00; air, 55°. Winds: W. to NW. Moderate and hazy.

May 19. Lat. 47° 20′ S.; long. 34° 00′ E. Barometer, 30.10.; air, 52°. Winds: NW. Strong gales and thick weather.

May 20. Lat. 48° 15′ S.; long. 37° 00′ E. Barometer, 29.23; air, 50°. Winds: NW. Strong gales and heavy rain.

May 21. Lat. 49° 10′ S.; long. 44° 30′ E. Barometer, 29.80; air, 48°. Winds: Westers and strong gales and hazy.

May 22. Lat. 49° 23′ S.; long. 49° 20′ E. Barometer, 29.60; air, 47°. Winds: Westers. First part, strong winds; latter part, light and hazy.

May 23. Lat. 50° 12′ S.; long. 51° 58′ E. Barometer, 29.30; air, 43°. Winds: NE. Light; a heavy fall of snow.

May 24. Lat. 50° 16′ S.; long. 52° 20′ E. Barometer, 29.50; air, 40°. Winds: E.NE. Strong gales and snow; ends, calm.

May 25. Lat. 50° 16′ S.; long. 53° 10′ E. Barometer, 29.18; air, 40°. Winds: E. Light variable winds and heavy snow squalls.

May 26. Lat. 51° 00′ S.; long. 57° 40′ E. Barometer, 29.90; air, 41°. Winds: NE. Moderate and fine weather.

May 27. Lat. 51° 30′ S.; long. 61° 30′ E. Barometer, 29.90; air, 41°. Winds: NE. Moderate; weather fine.

May 28. Lat. 52° 10′ S.; long. 67° 50′ E. Barometer, 28.65; air, 45°. Winds: N. Brisk and strong gales.

May 29. Lat. 51° 35′ S.; long. 74° 15′ E. Barometer, 28.80; air, 42°. Winds: W.SW. Strong gales and a high sea.

May 30. Lat. 50° 45′ S.; long. 79° 30′ E. Barometer, 29.40; air, 43°. Winds: Westers. Strong gales and snow.

May 31. Lat. 49° 45′ S.; long. 85° 30′ E. Barometer, 29.50; air, 46°. Winds: Westers. Moderate, and passing squalls of hail.

June 1. Lat. 49° 30′ S.; long. 91° 25′ E. Barometer, 29.45; air 45°. Winds: W.SW. Moderate, with passing hail squalls.

June 2. Lat. 48° 45′ S.; long. 96° 50′ E. Barometer, 29.50; air, 45°. Winds: W.SW. Fine breezes and passing snow squalls.

June 3. Lat. 48° 20′ S.; long. 102° 05′ E. Barometer, 29.50; air, 45°. Winds: W. Moderate and strong, with thick weather.

June 4. Lat. 47° 42′ S.; long. 108° 00′ E. Barometer, 29.10; air, 45°. Winds: W.NW. Strong gales and thick rainy weather.

June 5. Lat. 46° 55′ S.; long. 114° 20′ E. Barometer, 29.05; air, 47°. Winds: Westers. Strong gales and high sea.

June 6. Lat. 46° 35′ S.; long. 118° 15′ E. Barometer, 28.46; air, 47°. Winds: NW. Moderate, with high sea.

June 7. Lat. 46° 05′ S.; long. 120° 00′ E. Barometer, 28.70; air, 48°. Winds: Variable, with heavy rain and hail squalls.

June 8. Lat. 45° 10′ S.; long. 124° 30′ E. Barometer; 29.00; air, 48°. Winds: Same. Squally, with rain.

June 9. Lat. 43° 10′ S.; long. 130° 00′ E. Barometer, 29.60; air, 48°. Winds: W.NW. Brisk breeze and heavy rain squalls.

June 10. Lat. 41° 30′ S.; long. 135° 40′ E. Barometer, 29.70; air, 50°. Winds: NW. Strong gales and high seas.

June 11. Lat. 39° 10′ S.; long. 141° 50′ E. Barometer, 29.94; air, 52°. Winds: W.SW. Fine strong gales from the W.SW., with heavy hail squalls, Cape Otway bearing this day at noon E. ½ N., distant 90 miles."

From the Line to the Prime Meridian.

Name.	Date of crossing the equator.	Longitude of crossing the equator.	Longitude of crossing the parallels of— 5° S.	10° S.	15° S.	20° S.	25° S.	30° S.	35° S.	Latitude of crossing the meridian of Greenwich.	Days.
		° ′	° ′	° ′	° ′	° ′	° ′	° ′	° ′	° ′	
Surprise	May 13	30 00	30 40	32 50	33 00	34 40	33 50	27 30	25 00	40 40	31
Reward	6	17 30	20 20	23 00	24 00	26 20	25 00	17 00	.....	35 00	25
Sophia	8	24 10	28 00	29 10	29 20	27 40	27 00	24 20	10 00	37 00	28
Sophia	1	29 50	31 00	33 40	35 10	32 20	31 30	25 00	2 00	35 50	28
Yarmouth	3	32 00	34 00	34 20	35 40	33 30	27 00	20 40	3 16	36 10	38
Sarah	3	18 40	23 30	26 15	27 10	27 00	28 00	20 00	7 30	37 10	24
Gloriana	5	28 30	32 30	34 10	36 30	35 00	29 20	26 40	17 10	41 00	36
Europa	2	20 30	25 00	28 20	30 40	33 10	29 00	21 10	5 40	37 30	21
J. Q. Adams	22	26 10	30 20	34 30	36 00	37 30	37 40	25 50	8 20	36 20	26
Santiago	3	31 00	32 40	33 20	30 00	28 10	21 30	14 40	9 00	40 10	31
Orissa	16	30 20	32 00	34 30	35 40	35 30	33 00	23 30	12 10	39 20	23
Surprise	7	28 30	30 40	31 10	31 40	30 40	17 10	7 20	2 00	37 30	25
James Baines	3	30 20	33 00	33 50	33 00	31 30	29 50	28 10	10 00	37 40	22
Judge Shaw	24	27 40	29 40	33 20	36 20	32 30	27 40	17 40	4 00 E.	34 15	31
Augustine Heard	26	26 00	28 30	31 10	33 10	31 50	29 00	21 00	13 00 W.	37 00	30
Prospero	22	21 40	23 00	25 00	26 40	27 20	23 20	12 00	4 00 E.	34 00	22
Surprise	7	28 30	31 00	31 20	31 40	30 40	17 10	5 10	2 00 W.	37 00	24
Panama	23	27 00	30 00	31 20	33 00	34 50	35 15	30 30	25 00	41 50	19
Houqua	22	26 30	28 00	28 20	30 00	31 30	24 20	13 50	8 00	36 10	22
Horatio	29	32 25	34 00	34 30	35 15	35 40	30 25	21 50	1 45	36 00	25
Earl of Clare	6	21 20	23 50	27 00	28 20	26 00	29 00	25 40	12 00 E.	33 50	31
Red Jacket	29	23 45	25 00	30 40	33 00	31 40	30 20	26 25	3 50	34 05	20
Candace	12	31 00	31 40	33 30	35 20	35 50	34 40	31 40	23 00 W.	40 30	28
Horsburg	12	29 50	31 30	33 40	33 00	36 00	35 20	27 20	6 00	36 30	28
William Goddard	5	25 40	28 30	32 00	35 40	30 30	28 40	19 20	11 30	36 45	40
Joshua Bates	21	28 05	31 20	33 00	34 40	32 15	29 50	22 20	4 20	36 50	28
Levant	27	26 20	26 50	30 20	32 30	33 20	35 20	32 20	5 20	35 30	22
Martha	14	17 30	23 10	26 30	28 40	31 20	33 10	31 00	12 20	36 40	24
Means of crossings east of 26°	.....	21 11	24 28	27 32	29 16	29 00	28 10	22 57	3 01	35 46	27.2
West of 26°	.....	28 56	31 01	32 46	33 46	33 14	29 27	21 45	9 07	37 41	27.2

Abstract log of the *Ship "James Baines,"* (Charles McDonnell, commander,) from Liverpool to Melbourne; 28 days out.

"May 6, 1856. Lat. 7° 51′ S.; long. 33° 44′ W. Barometer, 29.90; air, 80°; water, 79°. Winds: S.SE. to E.SE. Commences with moderate breezes. Middle part, the same; latter part, clear and pleasant.

May 7. Lat. 10° 21′ S.; long. 33° 51′ W. Barometer, 29.80; air, 79°; water, 79°. Winds:

NOTE.—Distance sailed towards Cape Otway 14,135 miles; to the heads 14,209 miles. It will be observed that the "Whirlwind" did not average (as in the case of the "Flying Scud") upwards of 400 miles per day, (as published in the Journal of Commerce of March 24, 1855,) still the "Whirlwind" has performed the voyage in 75 days. Maury's course is the proper one, and with favorable chances a good sailing ship can make the voyage in 60 days.

E.SE. First part, light airs; midnight, the same; experienced during the last 24 hours a current setting westerly ½ a knot per hour. Noon, light airs, heavy clouds coming from SE.

May 8. Lat. 13° 28′ S.; long. 33° 31′ W. Barometer, 29.90; air, 79°; water, 78°. Winds: E. to NE. First part, light airs and clear, pleasant weather. Midnight, light showers of rain. Noon, wind at NE.; gloomy.

May 9. Lat. 16° 28′ S.; long. 33° 00′ W. Barometer, 29.95; air, 79°; water, 79°. Winds: NE. to N.NE. Commences with light airs and steady. At midnight, heavy showers of rain. At 4 a. m., wind chopped into south and fell calm. At noon, heavy rain and squalls; latter part, the same.

May 10. Lat. 17° 49′ S.; long. 32° 31′ W. Barometer, 29.95; air, 77°; water, 78°. Winds: N.NE. and W.NW. This day begins with light airs and heavy rains. Midnight, clear and pleasant. At 4 a. m., wind at west, light. Noon, calms and sultry. Current setting easterly, ½ a knot per hour.

May 11. Lat. 19° 03′ S.; long. 32° 05′ W. Barometer, 29.95; air, 78°; water, 78°. Winds: N. to N.NE. First part, almost calm. At midnight, light breeze springing up from N.NE., which continues during the day. Current setting same as yesterday; weather cloudy.

May 12. Lat. 21° 06′ S.; long. 30° 58′ W. Barometer, 29.95; air, 76°; water, 75°. Winds: W. to N.NW. Commences with light airs from the north. A heavy squall begun at north and blew around westerly to SE., then begun to back into south, round west, into north again. Midnight, light airs and clear weather. At noon, weather threatening; wind very light.

May 13. Lat. 22° 06′ S.; long. 30° 07′ W. Barometer, 30.00; air, 75°; water, 74°. Winds: NW. and N.NW. First part, light airs from N.NW. Midnight, wind and weather same. Noon, calms.

May 14. Lat. 23° 51′ S.; long. 30° 19′ W. Barometer, 30.00; air, 74°; water, 75°. Winds: S. by W. to W.NW. First part, light airs and clear; midnight, the same, with heavy dew. Noon, breeze increasing and getting cloudy.

May 15. Lat. 26° 52′ S.; long. 29° 32′ W. Barometer, 30.10; air, 75°; water, 74°. Winds: E. by S. to N.NE. Commences with light airs and cloudy. Midnight, breeze freshening, with light rain; 8 a. m., breeze still freshening; noon, wind and weather same.

May 16. Lat. 30° 15′ S.; long. 28° 08′ W. Barometer, 29.85; air, 73°; water, 74°. Winds: W.NW. to E.SE. First part, heavy rain and squalls. Ship taken aback and wind chopped into south. Midnight, squally and heavy rain. Noon, clear breeze, moderate, heavy sea from S.SW.

May 17. Lat. 31° 40′ S.; long. 24° 21′ W. Barometer, 29.85; air, 62°; water, 70°. Winds: W.NW. to S. by E. Commences with moderate breezes and cloudy, wind flying from west to south. Noon, strong breezes and squalls; heavy sea from S.SE.

May 18. Lat. 31° 40′ S.; long. 17° 54′ W. Barometer, 29.85; air, 59°; water, 65°. Wind, south. Commences with strong gales and terrific squalls and heavy rain; midnight, the same; noon, moderating.

May 19. Lat. 32° 58′ S.; long. 12° 49′ W. Barometer, 30.00; air, 60°; water, 61°. Winds: SW. Begins with weather moderating, a long heavy roll setting from south. Midnight, squalls and showers of rain. Noon, wind and weather the same.

May 20. Lat. 34° 08′ S.; long. 11° 40′ W. Barometer, 30.00; air, 57°; water, 60°. Winds: W.SW. to W.NW. Begins with light airs and drizzling rain. Midnight, squalls of rain; wind moderate; a. m, wind freshening; weather clear; noon, same.

May 21. Lat. 37° 36′ S.; long. 8° 05′ W. Barometer, 29.75; air, 52°; water, 58°. Winds: W.NW. to NW. Begins with increasing breeze and heavy squalls, attended with rain. 8 p. m., squalls increasing. Midnight and noon, wind moderate.

May 22. Lat. 38° 17′ S.; long. 5° 54′ W. Barometer, 29.70; air, 47°; water, 54°. Winds: W. to S. First part, moderate breezes and pleasant. Midnight, squalls and showers of rain. Wind hauling to the southward; a. m., wind SE., tacked to the southward and westward; noon, strong breezes, cloudy.

May 23. Lat. 39° 45′ S.; long. 6° 39′ W. Barometer, 29.90; air, 47°; water, 59°. Winds: SE. Commences with increasing breeze, and eastern sky very red. Barometer rising. At 4 p. m., every sail off the ship but foresail, blowing a heavy gale and confused sea from SW. Midnight, wind and weather the same. At 8 a. m., wore ship to northward and eastward, heavy squalls and rain. Noon, wind and weather the same.

May 24. Lat. 38° 22′ S.; long. 3° 14′ W. Barometer, 29.90; air, 49°; water, 54°. Winds: S.SE. to S.SW. Commences with heavy gales, with squalls of rain; midnight, the same; 8 a. m., still increasing, weather thick; noon, weather thick, and squalls very heavy.

May 25. Lat. 37° 40′ S.; long. 3° 26′ E. Barometer, 29.60; air, 56°; water, 59°. Winds: S.SW. Commences with heavy gales. I have never before experienced so heavy a gale with such a high barometer. Midnight, wind the same, with heavy sea; noon, the same.

May 26. Lat. 38° 38′ S.; long. 10° 00′ E. Barometer, 29.70; air, 52°; water, 54°. Winds: SW. to W.SW. Commences with strong gales, and a heavy sea running. Squalls of rain; midnight, gale decreasing. 4 a. m., still moderating. At noon, moderate breezes and pleasant weather.

May 27. Lat. 40° 29′ S.; long. 17° 41′ E. Barometer, 29.80; air, 51°; water, 56°. Winds: W.SW. to SW. First part, gentle breezes and clear. Midnight, wind and weather the same. At 8. a. m., breeze freshening and heavy black clouds rising from SW. Noon, wind and weather the same.

May 28. Lat. 42° 44′ S.; long. 25° 48′ E. Barometer, 29.55; air, 54°; water, 48°. Winds: W.SW. Commences with brisk gales and occasional heavy squalls, accompanied with rain. Midnight, wind increasing; noon, the same.

May 29. Lat. 44° 15′ S.; long. 30° 51 E. Barometer, 29.75; air, 53°; water, 42°. Winds: West. First part, strong gales and fine clear weather; heavy sea. Midnight, less wind and sea; 4 a. m., more moderate; noon, light breezes, dark, gloomy weather.

May 30. Lat. 46° 16′ S.; long. 36° 56° E. Barometer, 29.50; air, 40°; water, 42°. Winds: W.NW. to W.SW. First part, light breezes and gloomy; 8 p. m., breeze increasing, weather clear. Barometer falling. Midnight, fresh gales. At 8 a. m., a heavy snow squall. Noon, fresh gales and clear weather, with snow showers.

May 31. Lat. 46° 51′ S.; long. 43° 54′ E. Barometer, 29.20; air, 39°; water, 40°. Winds: WNW. to S.SW. Commences with fresh breezes and squalls. At 10 p. m., ran through between Petit and Grand Princes islands; proximity to the islands caused a very sudden fall of mercury, whilst the thermometer was as suddenly acted upon, possibly from the large amount of snow upon the islands. Midnight, fresh with snow squalls; noon, the same.

June 1. Lat. 47° 08′ S.; long. 46° 00′ E. Barometer, 29.30; air, 30°; water, 36°. Winds: S.SW. to W. First part, fresh breezes and squalls, with heavy snow showers; wind decreasing; midnight, still decreasing; snow showers; noon, calm, and barometer going down.

June 2. Lat. 47° 46′ S.; long. 47° 46′ E. Barometer, 29.10; air, 31°; water, 35°.

Winds: N. and E.NE. Commences with light air, and variable, with heavy snow squalls; midnight, weather and wind the same. 6 a. m., calms, and heavy dark clouds coming up from N. NW. Barometer falling very fast. Noon, light breeze springing up from north. Barometer still falling; there must be a heavy gale close upon us from the sudden fall of mercury.

June 3. Lat. 48° 19′ S.; long. 52° 35′ E. Barometer, 28.40; air, 32°; water, 37°. Winds: E.NE. to W. First part, light breeze. Barometer still falling; midnight, observed the fluctuation of barometer about ½ an inch in the tube, the wind coming in gusts, with a howling noise. Sea tumbling about in all directions. 8 a. m., fine pleasant weather; noon, the same. Barometer rising slowly.

June 4. Lat. 48° 13′ S.; long. 58° 00′ E. Barometer, 28.60; air, 31°; water, 34°. Winds: W. Begins with moderate breeze, and variable from W.NW. to W.SW. Weather getting a little settled. Barometer rising; midnight, squalls and snow showers; noon, wind and weather the same.

June 5. Lat. 48° 56′ S.; long. 61° 41′ E. Barometer, 28.60; air, 37°; water, 38°. Winds: W. to E.NE. Commences with fresh breezes and snow squalls; midnight, wind decreasing, and northering; hard frost. 4 a. m., almost calm, and wind E.NE. Noon, light breeze springs up from the south.

June 6. Lat. 47° 55′ S.; long. 65° 55′ E. Barometer, 28.90; air, 35°; water, 38°. Winds: W. to W.NW. First part, heavy snow and light breezes; wind very variable; midnight, strong breeze and heavy squalls; noon, fine breeze and clear.

June 7. Lat. 48° 48′ S.; long. 70° 00′ E. Barometer, 28.20; air, 35; water, 39°. Winds: NW. to E.SE. First part, light; midnight, wind into east, and light. At 8 a. m., breeze increasing and thick, with heavy snow squalls. Sighted Kerguelen's land; bearing S.SW.

June 8. Lat. 47° 34′ S.; long. 71° 19′ E. Barometer, 28.40; air, 35°; water, 37°. Winds: SE. to S.SW. Commences with moderate breezes; midnight, blowing a hard gale. 4 a. m., gale abating; noon, less wind; heavy sea still running.

June 9. Lat. 47° 35′ S.; long. 76° 20′ E. Barometer, 28.40; air, 37°; water, 39°. Winds: S. to S.SW. Commences, gale abating; midnight, sea going down; noon, fresh breezes and thick foggy weather, with sleet at times.

June 10. Lat. 47° 00′ S.; long. 81° 00′ E. Barometer, 28.50; air, 39°; water, 42°. Winds: SW. to NW. Commences with fresh breezes and squalls of sleet; midnight, wind and weather the same; ends with gentle breezes, wind variable.

June 11. Lat. 47° 45′ S.; long. 85° 00′ E. Barometer, 28.80; air, 39°; water, 42°. Wind: SW. to NW. Commences with wind light, and hauling from west to north, with occasional light squalls of rain; 4 a. m., strong gale; 8 a. m., light breezes and rain; at noon, tacked to north; wind at SE.; weather unsettled.

June 12. Lat. 46° 18′ S.; long. 89° 31′ E. Barometer, 29.05; air, 42°; water, 42°. Winds: S.SE. to SW. Commences with light breezes with sleet; wind variable from SW. to N. At 1 p. m., wind SE.; tacked to NE. Midnight, clear, and wind hauling southerly. I have always experienced as soon as the wind (along here) gets into N., that it hauls round easterly into SW., and blows from that quarter; when the gale has reached its height, it then begins to veer northerly by west, and the barometer begins to rise fast, until the wind gets into the north; it then stands whilst the wind retraces its westerly course round into SE., and then blows again; latterly falls calm, and the wind again springs up from NW. Noon, light breezes and wind westing.

June 13. Lat. 46° 18′ S.; long. 92° 12′ E. Barometer, 29.10; air, 42°; water, 45°. Winds: S. to E.SE. Commences with light breezes with showers of sleet. Midnight, fine and clear; noon, breeze fresh and steady.

June 14. Lat. 45° 10′ S.; long. 93° 58′ E. Barometer, 28.80; air, 42°; water, 44°. Winds: SE. to E.NE. First part, light breezes and variable; midnight, breeze begins to freshen, and haul to W. Noon, wind increasing.

June 15. Lat. 45° 50′ S.; long. 96° 00′ E. Barometer, 28.60; air, 39°; water, 43°. Winds: SE. to S. SW. Commences with fresh gales, and falling barometer. At 8 a. m., gale abating. Noon, gale fresh, heavy sea, and showers of sleet.

June 16. Lat. 43° 39′ S.; long. 101° 00′ E. Barometer, 29.80; air, 44°; water, 47°. Winds: SW. to W.SW. Commences with fresh breezes and squalls of sleet. Midnight, wind and weather the same; 8 a. m,, more moderate; noon, sighted a ship ahead; at 1 p. m., was alongside of her, and at 2 p. m. she was out of sight astern. James Baines was going 17 knots with main sky-sail set; the Libertas, for such was her name, was under double reefed topsails.

June 17. Lat. 43° 31′ S.; long. 106° 15′ E. Barometer, 29.50; air, 41°; water, 49°. Winds: SW. to S.SW. Commences with fresh breezes and squalls of sleet; heavy sea running; midnight, almost calm, with heavy hail showers; 8 a. m., breeze increasing; noon, clear, with occasional snow squalls.

June 18. Lat. 42° 47′ S.; long. 115° 54′ E. Barometer, 29.20; air, 40°; water, 48°. Winds: W. to SW. First part, breeze freshening; at 6 p.m., wind SW. and freshening; at 8.30 p. m., in all starboard stunsails; ship going 21 knots, with main skysail set; midnight, fresh gale and fine clear night; 8 a. m., wind and weather same; noon, less wind, attended with snow squalls.

June 19. Lat. 42° 42′ S.; long. 118° 00′ E. Barometer, 29.40; air, 48°; water, 51°. Winds: W. to SW. Commences with fresh gales and sleet squalls. Midnight, wind strong, and hauling to northward; at 4 a. m., wind N.NE.; tacked to the N.; 8 a. m., wind SW., with drizzling rain; noon, fresh breeze, and fine clear weather.

June 20. Lat. 42° 47′ S.; long. 125° 00′ E. Barometer, 29.40; air, 44°; water, 47°. Winds: SW. to W. First part, fresh breezes and squalls, with sleet; midnight, heavy squalls and snow; 8 a. m., strong and squally; noon, wind and weather the same.

June 21. Lat. 42° 59′ S.; long. 132° 16′ E. Barometer, 29.30; air, 50°; water, 50°. Winds: W. to N. by W. Commences with strong breezes and squally; midnight, wind and weather same; a. m., wind hauling to northward; noon, ends squally with rain, hail, and snow.

June 22. Lat. 41° 40′ S; long. 134° 58′ E. Barometer, 29.30; air, 50°; water, 51°. Winds: NW. to W. Commences with strong breezes and squalls; at 5 p. m. ship was struck with a most terrific squall, which lasted in full strength only about three minutes. The ship broached to, blew away all head sails, fore-topsail, fore-top-gallant-sail, main topmast and middle staysails, mainsail, and main-top-gallant-sail, mizzen lower and mizzen topmast staysails; carried away main-top-gallant-mast and main yard. I never before experienced such a terrific gust of wind. The barometer gave no indication, whatever, of the approach of the squall. Midnight, moderate breezes and fine clear weather, with frequent flashes of lightning; 8 a. m., fine and clear ; noon, wind hauling to NW., with light rain at intervals.

June 23. Lat. 39° 41′ S.; long. 139° 46′ E. Barometer, 29.70; air, 53°; water, 52°. Winds: N.NW. to W. Begins with gentle breezes and occasional squalls; midnight, fine and clear; at 4 a. m., sighted land ahead, N.NE., 5 miles; at 6 a. m., Cape Otway, bearing north.

June 24. Lat. 38° 45′ S.; long. 144° 18′ E. Barometer, 29.80; air, 56°; water, 54°. Winds: N.NW. to NW. Commences with light airs and puffy; at 7 p. m. came to anchor."

Abstract log of the *Ship "Panama,"* (William P. Cave, captain,) from New York to Melbourne, Australia; 28 days out.

"May 25, 1856. Lat. 7° 15′ S.; long. 30° 50′ W. Barometer, 30.21; air, 65°; water, . Winds: SE. to S.SE. Moderate; a heavy sea.

May 26. Lat. 10° 59′ S.; long. 31° 20′ W. Barometer, 30.11; air, 83°; water, 81°. Winds: SE. Fresh and squally.

May 27. Lat. 14° 13′ S.; long. 32° 33′ W. Barometer, 30.10; air, 80°; water, 79°. Winds: SE. Fresh trades and hard squalls.

May 28. Lat. 17° 47′ S.; long. 34° 10′ W. Barometer, 30.10; air, 81°; water, 78°. Winds: SE. and S.SE. Fresh trades and hard squalls.

May 29. Lat. 19° 47′ S.; long. 34° 49′ W. Barometer, 30.10; air, 81°; water, 78°. Winds: SE. Moderate trades and passing squalls. Have never seen the wind hang so much to the south.

May 30. Lat. 22° 32′ S.; long. 35° 19′ W. Barometer, 30.10; air, 80°; water, 78°. Winds: SE. to E.SE. Moderate, with passing squalls.

May 31. Lat. 25° 15′ S.; long. 35° 17′ W. Barometer, 29.95; air, 77°; water, 74°. Winds: E.NE. to N.NE. Begins with moderate winds and clear; middle, quite moderate; latter, quite a fine breeze, and every appearance of a fresh N. wind.

June 1. Lat. 28° 15′ S.; long. 33° 54′ W. Barometer, 29.98; air, 71°; water, 73°. Winds: N. and NW. Begins with fresh winds; middle and latter parts, baffling, with heavy rains.

June 2. Lat. 29° 44′ S.; long. 31° 12′ W. Barometer, 30.00; air, 71°; water, 69°. Winds: W.NW. to S. Begins with moderate and squally; middle part the same, with heavy sea; ends calm.

June 3. Lat. 30° 50′ S.; long. 30° 30′ W. Barometer, 30.00; air, 71°; water, 69°. Winds: S.SE and NE. Commences calm; middle and latter parts moderate.

June 4. Lat. 34° 16′ S.; long. 28° 24′ W. Barometer, 29.81; air, 63°; water, 67°. Winds: N. to W.SW. Commences with moderate wind; middle and latter part, strong gales and heavy sea. I am steering well to the south, having been deceived heretofore by hauling more to the eastward before crossing 30° S.

June 5. Lat. 36° 41′ S.; long. 23° 43′ W. Barometer, 29.72; air, 54°; water, 59°. Winds: W.NW to W.SW. Commences with strong gales and heavy squalls; middle and latter parts, the same, with heavy SW. swell.

June 6. Lat. 38° 01′ S.; long. 18° 37′ W. Barometer, 29.80; air, 53°; water, 58°. Winds: W. Begins fresh with heavy sea and squalls; middle and latter parts, more moderate. Strong northerly current.

June 7. Lat. 39° 35′ S.; long. 15° 44′ W. Barometer, 29.76; air, 55°; water, 56°. Winds: NW. to W.SW. Begins with fresh wind; middle part, light winds with sharp hail squalls; latter part, quite moderate. Strong current setting to the north.

June 8. Lat. 41° 24′ S.; long. 10° 35′ W. Barometer, 29.80; air, 51°; water, 54°. Winds: W.NW. Commences with moderate winds; at 10 p. m., fresh breezes with squalls of hail and rain; latter part, blowing strong.

June 9. Lat. 41° 37′ S.; long. 5° 37′ W. Barometer, 30.02; air, 53°; water, 52°. Winds: W. to W.NW. Begins with moderating gale; middle part, moderate; latter part, the same; heavy southwest rollers.

June 10. Lat. 41° 14′ S.; long. 2° 39′ W. Barometer, 29.85; air, 53°; water, 52°. Winds: W.NW to NE. Begins with moderate ten knot breeze; middle, light and baffling; latter part, light airs and calms.

June 11. Lat. 41° 50′ S.; long. 00° 50′ E. Barometer, 29.50; air, 47°; water, 50°. Winds: W.NW to W.SW. Begins with light airs; middle part, moderate breeze; latter part, fresh gales and squally.

June 12. Lat. 41° 48′ S.; long. 6° 48′ E. Barometer, 29.60; air, 43°; water, 48°. Winds: SW. Begins with strong gales and sharp snow squalls; middle part, fresh and squally; latter part, moderating.

June 13. Lat. 42° 05′ S.; long. 12° 10′ E. Barometer, 29.50; air, 42°; water, 47°. Winds: Westers. Begins moderate and squally; middle, strong gales with heavy squalls; latter part, wind increasing.

June 14. Lat. 42° 28′ S.; long. 17° 02′ E. Barometer, 29.25; air, 46°; water, 44°. Winds: NW. Begins with strong gales and terrific squalls; middle part, the same; latter part, more moderate; confused sea.

June 15. Lat. 42° 35′ S.; long. 22° 01′ E. Barometer, 29.70; air, 44°; water, 46°. Winds: SW. to W.NW. Begins with moderate wind; middle part, strong gales and heavy squalls; latter part, strong gales and tremendous heavy sea.

June 16. Lat. 42° 50′ S.; long. 27° 46′ E. Barometer, 30.00; air 46°; water, 42°. Winds: W.NW. Begins with strong gales and heavy squalls; middle and latter part, moderating.

June 17. Lat. 43° 14′ S.; long. 32° 15′ E. Barometer, 29.30; air, 46°; water, 50°. Winds: West. Begins quite moderate, with heavy sea; middle part, fine breeze; latter part, moderate and fine.

June 18. Lat. 44° 02′ S.; long. 37° 55′ E. Barometer, 29.31; air, 46°; water, 47°. Winds: W.NW. to NE. Commences with moderate winds and fine weather; middle part, fresh; ends blowing heavy.

June 19. Lat. 45° 09′ S.; long, 43° 13′ E. Barometer, 29.20; air, 51°; water, 42°. Winds: N.NE. to N.NW. Commences with heavy gales and thick weather; middle part, the same; latter part, strong.

June 20. Lat. 45° 01′ S.; long. 48° 43′ E. Barometer, 29.38; air, 45°; water, 39°. Winds: NW. Begins with strong gales and heavy cross sea; middle part, blowing heavy from N. to NE.; latter part, the same. Passed between two large icebergs, each nearly 500 feet high.

June 21. Lat. —; long. —. Barometer, 29.51; air, 45°; water, 40°. Winds: NW. to NE. Commences with moderating gale; middle part, fine breeze and foggy; latter part, moderate, with thick fog.

June 22. Lat. —; long. —. Barometer, 29.40; air, 53°; water, 43°. Winds: North and NE. Commences with moderate breezes and thick; middle part, fresh; ends the same.

June 23. Lat. 45° 58′ S.; long. 64° 30′ E. Barometer, 29.60; air, 50°; water, 44°. Winds: N.NE. Begins with fresh winds and thick fog; middle part, thunder squalls and sharp lightning; ends the same.

June 24. Lat. 45° 36′ S.; long. 69° 28′ E. Barometer, 29.31; air, 45°; water, 42°.

Winds: E.NE. Begins with moderate winds; middle, strong gales and constant rains; latter part, strong gales and thick scud.

June 25. Lat. 45° 02′ S.; long. 78° 08′ E. Barometer, 29.65; air, 46°; water, 50°. Winds: W.SW. Throughout this day strong gales and heavy sea.

June 26. Lat. 44° 18′ S.; long. 82° 34′ E. Barometer, 29.60; air, 46°; water, 48°. Winds: W.SW. Begins with strong gales; middle and latter part, more moderate.

June 27. Lat. 43° 33′ S.; long. 88° 25′ E. Barometer, 29.70; air, 44°; water, 51°. Winds: W.SW. Begins with a moderating gale; sea, falling; middle part, more moderate, with mist; ends the same.

June 28. Latitude 43° 33′ S.; long. 94° 08′ E. Barometer, 30.00; air, 44°; water, 51°. Winds: S.SW. Throughout these 24 hours moderate winds and smooth sea.

June 29. Lat. 43° 34′ S.; long. 99° 47′ E. Barometer, 29.62; air, 66°; water, 51°. Winds: W.NW. Begins with moderate winds; middle part, moderate, with light mist; latter part, fresh and cloudy.

June 30. Lat. 43° 04′ S.; long. 104° 00′ E. Barometer, 30.10; air, 67°; water, 66°. Winds: S.SW. to W. by N. Commences with fresh winds and cloudy; wind canting gradually to the south; middle part, wind light and puffy; latter part, gentle winds and smooth sea.

July 1. Lat. 43° 00′ S.; long. 109° 07′ E. Barometer, 30.20; air, 67°; water, 50°. Winds: W.NW. Throughout these 24 hours moderate winds and smooth sea.

July 2. Lat. 42° 50′ S; long. 114° 39′ E. Barometer, 30.05; air, 66°; water, 52°. Winds: NW. and W.SW. Begins with moderate winds; middle part, the same; at 5 a. m. wind shifted to W.SW.; latter part, gentle breezes and fine weather.

July 3. Lat. 42° 16′ S.; long. 120° 20′ E. Barometer, 30.90; air 66°; water, 49°. Winds: West. Begins with moderate winds and pleasant weather; middle part, the same; latter part fresh and squally.

July 4. Lat. 41° 33′ S.; long. 126° 01′ E. Barometer, 30.00; air, 66°; water, 50°. Winds: W. SW. and W. Begins fresh and squally; middle and latter part the same.

July 5. Lat. 41° 00′ S.; long. 131° 57′ E. Barometer 29.90; air, 66°; water, 49°. Winds: W.SW. Begins with moderate winds and sharp squalls; middle part, the same; latter part, fresh.

July 6. Lat. 39° 22′ S.; long. 137° 10′ E. Barometer, 30.10; air, 66°; water, 50°. Winds: W.SW. Begins with moderate winds and squally; middle and latter parts, the same.

July 7. Lat. 39° 57′ S.; long. 142° 10′ E. Barometer, 30.20; air, 64°; water, 49°. Winds: South. Begins with fresh winds and rough sea; middle part, more moderate; latter part, quite moderate.

July 8. Lat. 39° 13′ S.; long. 143° 29′ E. Barometer, 30.33; air, 50°; water, 49°. Winds: SE. Begins with light winds; middle and latter part, light airs.

July 9. Lat. 38° 55′ S.; long. 144° 10′ E. Barometer, 30.20; air, 64°; water, 51°. Winds: S.SW. and E.NE. Begins with very light wind; saw the light bearing NW. by W.; distant ten or twelve miles.

July 10. Took on board the pilot; made my passage from Sandy Hook in 74 days."

From the Line to the Prime Meridian.

Name.	Date of crossing the equator.	Longitude of crossing the equator.	Longitude of crossing the parallels of— 5° S.	10° S.	15° S.	20° S.	25° S.	30° S.	35° S.	Latitude of crossing the meridian of Greenwich.	Days.
		° ′	° ′	° ′	° ′	° ′	° ′	° ′	° ′	° ′	
Henry Ware	June 2	28 30	29 40	30 20	32 00	32 20	17 00	10 00	00 00	35 00	29
Terror	29	31 00	32 50	34 20	35 00	32 10	28 40	24 50	20 00	42 00	29
Edward	21	28 50	29 40	31 30	33 20	32 40	29 10	21 00	1 00	34 40	25
Derby	1	22 30	21 40	24 30	28 00	27 00	28 00	23 00	14 00	38 00	22
Catherine	29	15 25	17 20	22 10	25 15	27 40	25 10	14 50	4 00	36 30	26
Sachem	9	19 40	21 00	22 00	22 30	20 30	19 00	6 00	3 14 E.	33 00	20
Ann	18	27 00	28 30	33 30	35 30	34 30	29 30	23 00	8 00 W.	33 40	22
Penguin	17	26 30	26 50	27 00	28 00	29 10	29 00	13 40	7 30 E.	33 50	26
E. Norris	22	31 30	33 00	35 00	36 20	37 00	38 30	33 10	32 30 W.	40 20	29
Asia	7	22 30	27 00	31 40	34 40	34 20	31 00	30 00	1 47	35 50	37
Gustavus Adolphus	20	27 30	30 00	33 40	35 10	37 20	35 20	32 00	18 00	36 20	25
Said Bin Sultan	4	28 00	30 40	35 00	35 40	37 00	35 50	26 15	10 00	38 40	36
Panther	27	29 15	31 30	34 10	34 20	35 30	29 30	23 50	14 15	38 10	22
Thomas Campbell	4	24 10	27 00	28 30	30 50	31 00	28 30	16 10	5 00	36 00	24
John Bell	24	22 20	25 30	26 30	28 20	30 15	29 50	26 10	15 40	37 15	21
Persia	12	25 20	29 00	32 00	35 00	35 45	32 30	26 15	17 20 E.	32 30	24
Seringapatam	1	22 20	25 00	27 00	31 00	33 40	34 00	38 40	13 10	30 30	27
Fortitude	25	27 45	29 30	30 50	33 00	33 50	29 00	22 00	14 00 W.	36 25	22
Albert Edward	27	24 45	24 40	25 25	25 20	28 40	26 55	20 20	13 00	42 00	26
Union	18	26 20	28 15	28 50	29 35	33 00	29 00	24 10	5 20	35 48	21
John Q. Adams	27	29 50	31 10	30 30	30 00	30 50	30 00	27 20	4 00	36 00	24
Oneida	24	29 20	32 00	33 35	34 10	33 30	31 30	27 10	13 00	40 00	20
Joshua Bates	4	29 00	30 00	32 30	32 30	31 00	26 00	18 00	4 40	37 00	20
Panama	14	25 00	26 00	27 30	28 20	29 30	26 00	21 20	8 20 E.	32 55	24
Candace	19	31 40	33 00	34 20	34 50	35 50	34 00	12 50	9 00 W.	37 00	26
Texas	14	31 45	33 00	34 40	36 00	37 50	31 45	20 40	9 40	36 40	34
Telamachus	4	25 00	27 30	26 50	26 50	29 20	20 40	10 10	1 20 E.	31 30	23
Resource	19	26 15	29 00	30 40	32 20	33 10	32 00	32 00	26 50 W.	28 40	28
Martha	22	27 20	30 20	33 00	34 00	34 00	30 00	25 20	2 00	35 40	22
Astraea	19	20 55	23 10	24 20	27 00	28 00	26 10	12 00	2 50 E.	34 00	26
Means of crossings east of 26°		22 29	24 34	26 32	28 35	29 38	27 18	20 24	0 36 W.	35 00	25.0
West of 26°		28 42	30 29	32 24	33 25	33 55	30 19	23 44	10 15	36 26	25.5

Log of the *ship* "*Red Jacket*," (Captain Samuel Reed) from Liverpool to Melbourne; 27 days out.

"May 31, 1854. Lat. 7° 12′ S.; long. 27° 38′ W. Winds: S.SE. Light trades, and sultry weather.

June 1. Lat. 10° 12′ S.; long. 30° 39′ W. Winds: S.SE. Stiff and fair.

June 2. Lat. 13° 18′ S.; long. 32° 44′ W. Winds: S.SE. Moderate breeze and fair weather.

June 3. Lat. 16° 04′ S.; long. 33° 24′ W. Winds: E.SE. Light and variable.

June 4. Lat. 18° 34′ S.; long. 31° 50′ W. Winds: E.SE. Light and variable.

June 5. Lat. 19° 16′ S.; long. 31° 36′ W. Winds: E.SE. Light and calm.

June 6. Lat. 20° 17′ S.; long. 31° 36′ W. Winds: E.SE. Calm and sultry; a heavy swell from the SW.

June 7. Lat. 21° 35′ S.; long. 31° 43′ W. Winds variable and light.

June 8. Lat. 21° 30′ S.; long. 30° 15′ W. Winds variable and light.

June 9. Lat, 24° 25′ S.; long. 32° 09′ W. Winds variable and light.

June 10. Lat. 27° 43′ S.; long. 29° 39′ W. Winds: N.NW. Moderate and stiff.

June 11. Lat. 30° 17′ S.; long. 26° 25′ W. Winds: NW. First part, moderate breezes; latter part, light, with rain.

June 12. Lat. 32° 13′ S.; long. 24° 09′ W. Winds variable; weather fair.

June 13. Lat. 32° 46′ S.; long. 18° 12′ W. Winds: S.SW. Stiff, and a high cross sea.

June 14. Lat. 32° 45′ S.; long. 13° 00′ W. Winds: SW. by S. First part, strong; latter part, light; a high sea.

June 15. Lat. 30° 50′ S.; long. 10° 14′ W. Winds: SW. by S. Light and variable; a cross sea.

June 16. Lat. 32° 50′ S.; long. 7° 47′ W. Winds variable; a current setting north.

June 17. Lat. 34° 29′ S.; long. 1° 55′ W. Winds: S.SW. First part, strong; latter part, light.

June 18. Lat. 33° 39′ S.; long. 2° 00′ E. Winds, light.

June 19. Lat. 33° 44′ S.; long. 3° 50′ E. Winds: S. Light.

June 20. Lat. 36° 33′ S.; long. 3° 50′ E. Winds: E. Light, and cloudy.

June 21. Lat. 39° 51′ S.; long. 9° 30′ E. Winds: E.NE. Light, and cloudy.

June 22. Lat. 41° 10′ S.; long. 13° 42′ E. Winds: E.NE. Moderate, and fair.

June 23. Lat. 43° 32′ S.; long. 17° 45′ E. Winds: E.NE. Moderate and light.

June 24. Lat. 44° 56′ S.; long. 22° 27′ E. Winds: E.NE. Moderate and light.

June 25. Lat. 46° 31′ S.; long. 29° 20′ E. Winds: N.NW. Stiff; cloudy, and drizzling rain.

June 26. Lat. 48° 06′ S.; long. 34° 44′ E. Winds variable and stiff; rain and sleet.

June 27. Lat. 50° 06′ S.; long. 42° 19′ E. Winds: NW. Fresh and squally, with hail; very cold weather.

June 28. Lat. 50° 54′ S.; long. 49° 16′ E. Winds: W.NW. Squalls with hail showers.

June 29. Lat. 50° 30′ S.; long. 56° 34′ E. Winds: N.NW. Squalls; weather variable; entire fore part of the ship covered with ice.

June 30. Lat. 52° 03′ S.; long. 63° 50′ E. Winds: N.NW. Fresh, with hail squalls; very cold; air, 19°.

July 1. Lat. 51° 39′ S.; long. 71° 21′ E. Winds: N.NW. Fresh, with hail squalls; latter part, light; air 19°.

July 2. Lat. 50° 29′ S.; long. 72° 26′ E. Winds: SW. First part, calm; latter part, heavy gales and heavy sea.

July 3. Lat. 50° 12′ S.; long. 80° 30′ E. Winds: W.SW. First part, heavy gales; latter part, fresh breezes; high sea and freezing.

July 4. Lat. 49° 25′ S.; long. 88° 30′ E. Winds variable. Fresh gales and heavy sea; freezing, rain and sleet.

July 5. Lat. 49° 13′ S.; long. 95° 00′ E. Winds: N.NW. First part, light, with heavy rain; latter part, stiff, with squalls.

July 6. Lat. 48° 38′ S.; long. 104° 15′ E. Winds: W.NW. Strong gales and squalls, and heavy sea. Distance run, 400 miles.

July 7. Lat. 47° 25′ S.; long. 112° 44′ E. Winds variable in strength and direction. Distance run, 299 miles.

July 8. Lat. 46° 38′ S.; long. 119° 44′ E. Winds: N.NW. Stiff, and squalls with rain. Distance run, 350 miles.

July 9. Lat. 45° 09′ S.; long. 129° 18′ E. Winds: N.NW. Strong and squally, with rain. Distance run, 357 miles.

July 10. Lat. 42° 42′ S.; long. 134° 38′ E. Winds: N.NW. Fine weather. Distance run, 334 miles.

July 11. Lat. 40° 36′ S.; long. 139° 35′ E. Winds: NW. Heavy squalls, with rain. Distance run, 245 miles.

July 12. Lat. —; long. —. Winds: N.NW. Fine weather; made King's Island at 10.50 p. m.; crossed the bar at 11.50 p. m. Passage from Rock light-house to Port Philip heads, 69 days, 11 hours and 15 minutes; passage under sail, 67 days and 13 hours. Total distance run, 13,880 miles."

Abstract log of the *ship "Nightingale"* (Captain Samuel W. Marther,) from New York to Melbourne, Australia; 31 days out:

"June 20. Lat. 7° 06′ S.; long. 29° 32′ W. Barometer, 30.01; air, 76°; water, 78°. Winds: E. to SE. Squally, rainy weather; wind baffling during the night.

June 21. Lat. 10° 48′ S.; long. 31° 11′ W. Barometer, 30.02; air, 76°; water, 79°. Winds: S. to E. Brisk breezes and squalls, with rain; ends fair.

June 22. Lat. 14° 12′ S.; long. 32° 01′ W. Barometer, 30.07; air, 76°; water, 77°. Winds: SE. by E. Strong trades and squalls.

June 23. Lat. 18° 11′ S.; long. 32° 40′ W. Barometer, 30.15; air, 75°; water, 76°. Winds: SE. by E. Brisk trades, and pleasant. Notwithstanding our poor chances to the equator, I hope to see Melbourne in 80 days.

June 24. Lat. 21° 16′ S.; long. 33° 16′ W. Barometer, 30.20; air, 72°; water, 74°. Winds: SE. by E. Light, with beautiful weather. Getting further west than I like.

June 25. Lat. 24° 15′ S.; long. 33° 10′ W. Barometer, 30.03; air, 73°; water, 74°. Winds: E. by S. Light; weather pleasant; sea smooth.

June 26. Lat. 26° 35′ S.; long. 32° 34′ W. Barometer, 30.23; air, 71°; water, 69°. Winds: E. Light and pleasant.

June 27. Lat. 28° 42′ S.; long. 32° 14′ W. Barometer, 30.12; air, 70°; water, 67°. Winds: E.NE., N., and NW. Light variable breezes and squalls, with rain.

June 28. Lat. 31° 12′ S.; long. 31° 02′ W. Barometer, 29.80; air, 65°; water, 66°. Winds: SW. and S. Moderate breezes, with rain squalls.

June 29. Lat. 32° 43′ S.; long. 28° 24′ W. Barometer, 29.70; air, 58°; water, 60°. Winds: S.SE. Squalls, with rain.

June 30. Lat. 32° 31′ S.; long. 24° 45′ W. Barometer, 30.00; air, 56°; water, 63°. Winds: S. by E. Fresh gales and squalls.

July 1. Lat. 33° 15′ S.; long. 22° 41′ W. Barometer, 30.08; air, 56°; water, 62°. Winds: S.SW. Light, with heavy puffs; a heavy swell from the southward.

July 2. Lat. 34° 20′ S.; long. 20° 07′ W. Barometer, 29.99; air, 60°; water, 60°. Winds: E., N., and N. by W. Light baffling airs and pleasant light rain during the night.

July 3. Lat. 37° 27′ S.; long. 18° 04′ W. Barometer, 29.80; air, 60°; water, 56°. Winds: W.NW. to N. by W. Light, with rain squalls; thick murky weather.

July 4. Lat. 39° 54′ S.; long. 13° 48′ W. Barometer, 29.56; air, 56°; water, 53°. Winds: NW. Fresh, with rainy, damp weather; cape pigeons in abundance.

July 5. Lat. 41° 43′ S.; long. 8° 33′ W. Barometer, 29.35; air, 45°; water, 49°. Winds: NW. to W.NW. Fine breezes, with occasional squalls.

July 6. Lat. 43° 04′ S.; long. 2° 44′ W. Barometer, 29.30; air, 44°; water, 46°. Winds: W.NW. Fresh, with squalls of rain, hail, and sleet.

July 7. Lat. 43° 33′ S.; long. 2° 41′ E. Barometer, 29.67; air, 38°; water, 44°. Winds: W. to S.SW. Moderate breezes, with constant hail, sleet, and snow squalls.

July 8. Lat. 43° 56′ S.; long. 7° 25′ E. Barometer, 29.85; air, 43°; water, 43°. Winds: NW. and N. Fine breezes and clear weather; sea smooth.

July 9. Lat. 43° 34′ S.; long. 14° 01′ E. Barometer, 29.78; air, 46°; water, 44°. Winds: NE. Fine breezes and pleasant.

July 10. Lat. 44° 53′ S.; long. 17° 40′ E. Barometer, 29.70; air, 46°; water, 44°. Winds: W.NW. to S.SW. Light and variable.

July 11. Lat. 44° 00′ S.; long. 24° 28′ E. Barometer, 29.80; air, 46°; water, 49°. Winds: S.SW. Light; a damp hazy atmosphere.

July 12. Lat. 43° 49′ S.; long. 28° 35′ E. Barometer, 30.01; air, 48°; water, 50°. Winds: NW. to S.SE. Light baffling air and pleasant.

July 13. Lat. 43° 57′ S.; long. 30° 20′ E. Barometer, 29.85; air, 47°; water, 48°. Winds: NE. to S. Light and variable; weather pleasant.

July 14. Lat. 44° 21′ S.; long. 33° 31′ E. Barometer, 29.66; air, 50°; water, 42°. Winds: N.NE. First part, light air and calms; latter part, brisk breezes. Passed kelp in small quantities.

July 15. Lat. 45° 39′ S.; long. 40° 46′ E. Barometer, 29.40; air, 50°; water, 40°. Winds: N.NE. Brisk breezes and hazy, with light rain squalls.

July 16. Lat. 46° 48′ S.; long. 45° 42′ E. Barometer, 29.55; air, 43°; water, 38°. Winds: E. by N. to N. Variable, with light rain; passed through large fields of kelp.

July 17. Lat. 48° 16′ S.; long. 50° 54′ E. Barometer, 29.60; air, 46°; water, 36°. Winds: NW. Brisk, with thick foggy weather and light rain.

July 18. Lat. 49° 32′ S.; long. 56° 53′ E. Barometer, 29.60; air, 44°; water, 37°. Winds: E. by N. to NW. Brisk breezes, with light rain, and thick misty weather.

July 19. Lat. 50° 34′ S.; long. 62° 58′ E. Barometer, 29.15; air, 42°; water, 35°. Winds: N.NW. Light and moderate, with dense fog and damp weather.

July 20. Lat. 50° 52′ S.; long. 69° 04′ E. Barometer, 29.28; air, 38°; water, 34°. Winds: W. to W.NW. Moderate and strong, with snow squalls; pleasant during the intervals.

July 21. Lat. 50° 50′ S.; long. 76° 39′ E. Barometer, 29.38; air, 32°; water, 34°. Winds: W.NW. Fresh, with occasional violent snow squalls.

July 22. Lat. 50° 44′ S.; long. 82° 53′ E. Barometer, 29.60; air, 33°; water, 34°. Winds: SW. Brisk breezes and pleasant, with occasional snow and hail squalls.

July 23. Lat. 50° 42′ S.; long. 87° 39′ E. Barometer, 29.45; air, 41°; water, 36°. Winds: NW. to NE. Moderate and light, with pleasant weather.

July 24. Lat. 50° 42′ S.; long. 95° 45′ E. Barometer, 29.25; air, 42°; water, 38°. Winds: E.NE. Variable and cloudy, with snow squalls.

July 25. Lat. 52° 56′ S.; long. 99° 25′ E. Barometer, 29.45; air, 40°; water, 36°. Winds: E.NE. First part, strong breezes and clear; latter part, light breezes and snow squalls.

July 26. Lat. 54° 32′ S.; long. 105° 49′ E. Barometer, 29.52; air, 38°; water, 35°. Winds: E.NE. Thick disagreeable weather, with constant rain squalls.

July 27. Lat. 55° 28′ S.; long. 112° 29′ E. Barometer, 29.45; air, 38°; water, 34°. Winds: NE. Squally, rainy weather; the westerly winds which we were led to expect in these latitudes have sadly disappointed us, this being the fourth day the wind has been to the eastward; hope soon to have a change, or we shall be on a cruise to verify Lieutenant Wilkes' discoveries in the South Atlantic ocean.

July 28. Lat. 55° 49′ S.; long. 118° 45′ E. Barometer, 29.45; air, 38°; water, 36°. Winds: N. Disagreeable rainy, foggy weather.

July 29. Lat. 53° 55′ S.; long. 123° 49′ E. Barometer, 29.48; air, 42°; water, 37°. Winds: N.NW. Fresh breezes, with thick foggy weather, hard squalls, and a high sea.

July 30. Lat. 50° 24′ S.; long. 131° 52′ E. Barometer, 29.35; air, 44°; water, 42°. Winds: W. to SW. Strong, steady breezes and cloudy. *Ship making* 16 *knots* by log.

July 31. Lat. 46° 48′ S.; long. 134° 29′ E. Barometer, 29.74: air, 46°; water, 46°. Fine steady winds; pleasant weather.

August 1. Lat. 43° 09′ S; long. 137° 38′ E. Barometer, 29.90; air, 50°; water, 48°. Winds: W.SW. and W. Moderate and pleasant.

August 2. Lat. 40° 19′ S.; long. 141° 40′ E. Barometer, 30.05; air, 55°; water, 52°. Winds: W.SW. and SW. Light and pleasant. At 1 p. m. made Cape Otway light, bearing N.NE., twenty miles distant; at 12 m. took a pilot just outside the head of Port Philip; at 8 p. m. dropped anchor in Hobson's bay—75 days.

From the Line to the Prime Meridian.

Name.	Date of crossing the Equator.	Longitude of crossing the Equator.	LONGITUDE OF CROSSING THE PARALLELS OF—							Latitude of crossing the meridian of Greenwich.	Days.
			5° S.	10° S.	15° S.	20° S.	25° S.	30° S.	35° S.		
		° ′	° ′	° ′	° ′	° ′	° ′	° ′	° ′	° ′	
Esther Francis	July 15	21 10	23 10	24 50	26 20	27 30	25 30	16 20	1 40 E.	34 50	18
Splendid	5	28 00	30 30	31 30	33 20	35 50	33 00	27 00	22 00 W.	37 50	25
Ann	14	26 00	31 20	33 00	35 30	35 40	33 00	21 30	13 50	38 10	31
Panama	13	24 50	27 00	28 00	29 50	31 30	31 20	27 00	14 00	37 00	27
Valkyrine	25	22 55	25 20	27 20	29 10	28 00	18 50	8 30	5 00 E.	34 00	18
George	30	28 00	29 40	32 20	33 20	33 20	27 40	14 20	3 50 W.	35 50	22
Resolute	2	30 10	32 00	33 00	34 20	34 50	32 30	31 40	11 40	35 10	23
John Bertram	9	32 50	33 20	34 20	34 10	34 30	33 50	31 20	16 30	37 00	19
Ann Maria	24	28 20	31 00	31 50	35 30	35 40	34 40	31 30	2 40	35 10	24
Caribbean	23	24 30	28 50	30 50	33 00	35 30	35 40	27 40	7 00 E.	32 50	20
Navigator	6	28 10	29 30	29 30	28 30	28 40	20 20	19 00	4 30 W.	36 20	23
Escort	31	26 00	28 40	33 00	36 20	37 10	34 20	19 00	11 54	38 30	24
H. R. Patell	9	23 20	25 30	27 00	29 40	30 50	32 30	28 40	3 20	36 00	27
Orion	19	29 55	32 00	33 40	34 00	36 00	37 50	30 10	27 20	42 15	26
Nor-Wester	23	32 30	34 20	34 30	36 40	37 10	35 10	31 20	19 00	33 30	20
Lantao	10	31 30	33 00	35 30	36 00	36 10	34 25	25 10	11 40	38 00	22
Falcon	14	26 00	29 40	30 30	31 25	30 30	28 00	21 00	7 50	36 30	19
Juniata	1	27 20	30 40	30 50	31 40	31 40	30 30	30 25	22 00	35 40	24
Charles	4	24 30	26 00	27 00	28 40	29 25	32 00	28 40	8 30	36 30	23
Talbot	16	27 10	27 50	29 40	32 50	34 40	33 40	24 20	14 50	36 30	26
Prince de Joinville	27	23 15	24 40	26 10	28 00	29 20	26 40	20 40	12 30	36 25	20
Candace	7	25 00	25 20	27 00	29 50	29 30	29 40	17 00	1 00 E.	34 40	21
Hippogriffe	4	27 55	31 10	32 20	30 00	29 40	27 15	25 50	11 00 W.	37 50	26
Magnolia	14	34 35	35 40	35 10	34 50	35 30	35 30	33 00	27 00	40 30	31
Mary	2	24 00	24 20	27 00	27 00	26 20	25 00	15 00	4 45	36 00	18
Akbar	8	26 20	26 10	26 15	28 10	29 00	21 00	15 00	5 20	38 00	23
Agawam	11	26 00	28 10	30 00	33 00	36 00	33 30	30 00	22 30	36 20	30
Lucia	18	22 10	23 00	27 30	27 20	26 40	21 20	18 40	12 40	37 45	30
East of 26°		23 34	25 19	27 18	28 53	29 27	27 51	20 48	4 06	35 36	22.2
West of 26°		28 42	30 49	32 03	33 13	34 00	31 25	25 39	14 11	37 10	23.7

Abstract log of the *ship* "*Terror*," (R. H. Waters, captain,) from Boston to Australia, 1855.

July 3, 1855. Lat. 7° 09′ S.; long. 34° 00′ W. Barometer, 30.25. Winds: S.SE. Fair weather; made aboard to the eastward.

July 4. Lat. 7° 12′ S.; long. 32° 54′ W. Barometer, 30.30. Wind: S. by E. Strong and squally. Stood 20 hours to the eastward.

July 5. Lat. 8° 16′ S.; long. 33° 20′ W. Barometer, 30.30. Wind: S.SE. Fresh and cloudy. Stood 8 hours to the eastward.

July 6. Lat. 10° 42′ S.; long. 34° 21′ W. Barometer, 30.30. Wind: SE. Fresh and fair weather.

July 7. Lat. 13° 30′ S.; long. 35° 05′ W. Barometer, 30.30. Wind: E.SE. Moderate and brisk.

July 8. Lat. 16° 16′ S.; long. 34° 50′ W. Barometer, 30.40. Winds: E.SE. to S.SE; Moderate and brisk.

July 9. Lat. 17° 29′ S.; long. 34° 34′ W. Barometer, 30.40. Winds: E. to N. Gentle, ending calm.

July 10. Lat. 18° 47′ S.; long. 33° 58′ W. Barometer, 30.40. Winds: N., NW., and SW. Light airs and calm.

July 11. Lat. 19° 55′ S.; long. 32° 12′ W. Barometer, 30.50. Winds: SW. to S.SW. Gentle airs; ends, brisk breezes and pleasant.

July 12. Lat. 21° 53′ S. long. 30° 38′ W. Barometer, 30.50. Winds: SW. by S. Brisk and cloudy; squally weather.

July 13. Lat. 22° 08′ S.; long. 27° 55′ W. Barometer, 30.40. Winds: SW. by S. to S.SE. Fresh squalls and a heavy head sea.

July 14. Lat. 23° 00′ S.; long. 27° 14′ W. Barometer, 30.43. Winds: S.SE. to S. Cloudy and squally, with rain.

July 15. Lat. 24° 10′ S.; long. 28° 43′ W. Barometer, 30.45. Winds: S. to SE. Cloudy and squally, with rain.

July 16. Lat. 26° 44′ S.; long. 27° 20′ W. Barometer, 30.40. Winds: E. by S. to E.NE. Freshening and cloudy.

July 17. Lat. 29° 57′ S.; long. 24° 50′ W. Barometer, 30.25. Winds: N.NE to N.NW. Fresh gales and cloudy; squally weather, with rain.

July 18. Lat. 32° 28′ S.; long. 22° 20′ W. Barometer, 30.30. Winds: W.NW. to W. Fresh; ending light.

July 19. Lat. 33° 50′ S.; long. 21° 18′ W. Barometer, 30.30. Winds: W.SW. to NW. Light and cloudy.

July 20. Lat. 36° 14′ S.; long. 19° 51′ W. Barometer, 30.25. Winds: SW. by W. Fresh and cloudy, with rain squalls.

July 21. Lat. 38° 56′ S.; long. 16° 51′ W. Barometer, 30.00. Winds: SW. to W.SW. Moderate and fresh gales; ends, squally.

July 22. Lat. 40° 16′ S.; long. 14° 25′ W. Barometer, 29.50. Winds: W.SW. to SW. by W. Fresh gales and heavy squalls; hail and rain; a bad sea; ship hove to.

July 23. Lat. 41° 41′ S.; long. 12° 33′ W. Barometer, 29.85. Winds: NW. to N.NE. Strong gales and a high sea; cloudy, rainy weather.

July 24. Lat. 42° 23′ S.; long. 8° 04′ W. Barometer, 29.40. Wind: N.NW., blowing a perfect hurricane. Hail and sleet; a high, confused sea; hove to under bare poles.

July 25. Lat. 42° 14′ S.; long. 5° 44′ W. Barometer, 29.25. Winds: NW. to W.NW. and W. Moderate and cloudy.

July 26. Lat. 41° 45′ S.; long. 3° 37′ W. Barometer, 30.65. Winds: W., W.SW. and SW. Light; ends, brisk and cloudy.

July 27. Lat. 42° 09′ S.; long. 00° 55′ W. Barometer, 30.60. Winds: W., E.NE., and N.NE. Weather the same.

July 28. Lat. 42° 40′ S.; long. 4° 30′ E. Barometer, 30.65. Winds: N.NE. to NW. Fresh gales and cloudy.

July 29. Lat. 43° 09′ S.; long. 9° 07′ E. Barometer, 30.60. Winds: NW. Fresh gales and cloudy, unable to carry sail on account of the weakness of the spars.

July 30. Lat. 43° 38′ S.; long. 14° 00′ E. Barometer, 30.45. Winds: NW. Fresh gales and cloudy.

July 31. Lat. 43° 39′ S.; long. 17° 58′ E. Barometer, 30.40. Winds: N. to NE. Fresh and cloudy; ends, moderate.

August 1. Lat. 44° 29′ S.; long. 22° 20′ E. Barometer, 30.00. Winds: NE. Fresh gales and cloudy.

August 2. Lat. 44° 50′ S.; long. 26° 14′ E. Barometer, 29.30. Winds: NE. Strong gales and large sea, squally and rainy.

August 3. Lat. 45° 00′ S.; long. 30° 27′ E. Barometer, 29.55. Winds: N. and NW. Moderate, with hail and snow squalls.

August 4. Lat. 45° 00′ S.; long. 34° 36′ E. Barometer, 29.70. Winds: NW. to W. by N. Light and moderate, with snow; a large sea.

August 5. Lat. 45° 28′ S.; long. 36° 41′ E. Barometer, 29.00. Winds: E.NE. to N.NE. Hard puffs, threatening weather; ends, strong gales.

August 6. Lat. 45° 14′ S.; long. 41° 19′ E. Barometer, 29.65. Winds: NW. by N. to N. Fresh gales and thick squally weather.

August 7. Lat. 45° 17′ S.; long. 45° 05′ E. Barometer, 30.40. Winds: N. to E.NE. Wind moderating; ends, calm.

August 8. Lat. 45° 39′ S.; long. 48° 29′ E. Barometer, 30.40. Winds: E. to N.NE. Calm; middle and latter parts, fresh and foggy.

August 9. Lat. 45° 00′ S.; long. 53° 30′ E. Barometer, 30.20. Winds: N.NE. Strong, thick, and foggy; saw kelp.

August 10. Lat. 44° 49′ S.; long. 58° 30′ E. Barometer, 30.40. Winds: N.NE. to SW. Fresh and cloudy.

August 11. Lat. 44° 36′ S.; long. 63° 31′ E. Barometer, 30.40. Winds: SW. to NW. by W. Strong unsteady gales, and cloudy.

August 12. Lat. 44° 23′ S.; long. 68° 37′ E. Barometer, 30.50. Winds: W.SW. to W. Fresh gales and passing clouds.

August 13. Lat. 44° 24′ S.; long. 73° 53′ E. Barometer, 30.40. Winds: W.SW. Fresh gales and cloudy, a high sea; ends, moderating.

August 14. Lat. 44° 18′ S.; long. 78° 30′ E. Barometer, 30.00. Winds: W. to NW. by W. Fresh gales, with fog, and slight rain.

August 15. Lat. 44° 08′ S.; long. 84° 00′ E. Barometer, 30.00. Winds: NW. to W.SW. Strong gales, heavy clouds, and large SW. sea.

August 16. Lat. 44° 04′ S.; long. 86° 03′ E. Barometer, 30.00. Winds: W.SW. to W.NW. Heavy gales and a high sea; hove to in the night.

August 17. Lat. 43° 59′ S.; long. 89° 10′ E. Barometer, 29.50. Winds: NW. to W.SW. Heavy gales and hard squalls, with hail.

August 18. Lat. 43° 33′ S.; long. 93° 50′ E. Barometer, 29.80. Winds: SW. to S.SW. The same.

August 19. Lat. 43° 20′ S.; long. 97° 15′ E. Barometer, 30.00. Winds: S.SW. More moderate.

August 20. Lat. 43° 16′ S.; long. 100° 30′ E. Barometer, 29.90. Winds: W.SW. to W.NW. Light and smooth, squally, with snow.

August 21. Lat. 43° 15′ S.; long. 104° 50′ E. Barometer, 29.70. Winds: NW. to S.SW. Strong gales and heavy rain and sleet squalls.

August 22. Lat. 43° 15′ S.; long. 109° 30′ E. Barometer, 29.30. Winds: W.SW. to W.NW. The same as above.

August 23. Lat. 42° 50′ S.; long. 113° 30′ E. Barometer, 30.30. Winds: S.SW. to S. More moderate.

August 24. Lat. 42° 46′ S.; long. 117° 02′ E. Barometer, 30.40. Winds: S.SW. to W. Moderate, gentle, and passing clouds.

August 25. Lat. 42° 46′ S.; long. 121° 12′ E. Barometer, 30.50. Winds: W. to W. by N. Moderate and cloudy.

August 26. Lat. 42° 20′ S.; long. 126° 04′ E. Barometer, 29.90. Winds: W. Fresh gales.

August 27. Lat. 41° 36′ S.; long. 130° 00′ E. Barometer, 30.30. Winds: SW. to S.SE. Moderating.

August 28. Lat. 41° 16′ S.; long. 132° 25′ E. Barometer, 30.40. Winds: SE. to N. Light and calm; latter part, fresh puffs.

August 29. Lat. 40° 31′ S.; long. 137° 06′ E. Barometer, 30.40. Winds: N. Fresh breezes, clear and smooth.

August 30. Lat. 40° 24′ S.; long. 140° 45′ E. Barometer, 30.30. Winds: N. Brisk, clear, and pleasant.

August 31. Lat. 39° 40′ S.; long. 141° 45′ E. Barometer, 30.10. Winds: N. by E. to N.NE. Fresh gales and thick cloudy weather.

September 1. Lat. 39° 07′ S.; long. 143° 18′ E. Barometer, 30.20. Winds: N.NE. to N.NW. Light airs, clear; made Cape Otway, bearing NE.

September 2. Winds: N.NE. Light and calm; beating up for the entrance; at 11.30 a. m., received a pilot; entered the heads and anchored. I should have made the passage eight or ten days sooner, had I not been obliged to heave to on five different occasions.

From the Line to the Prime Meridian.—August.

Name.	Date of crossing the equator.	Longitude of crossing the equator.	Longitude of crossing the parallels of— 5° S.	10° S.	15° S.	20° S.	25° S.	30° S.	35° S.	Latitude of crossing the meridian of Greenwich.	Days.
		° ′	° ′	° ′	° ′	° ′	° ′	° ′	° ′	° ′	
Natchez	August 5	25 50	27 50	30 30	30 20	27 10	27 20	23 00	2 19	35 00	23
George	14	24 10	26 10	26 40	27 50	27 30	25 50	21 00	8 50	36 00	18
Osprey	15	21 10	26 00	28 00	30 10	30 50	30 10	26 00	11 40	37 30	29
Sarah	27	26 20	28 30	30 20	32 40	30 30	28 20	24 50	10 00	36 40	26
George	7	20 20	23 40	24 30	24 20	27 30	27 40	23 30	3 00 E.	34 50	21
Do.	14	18 40	20 00	23 00	25 00	24 40	24 00	17 20	6 00	34 30	21
Gertrude	22	32 20	33 20	34 00	34 50	31 50	29 20	29 30	26 40 W.	49 30	24
Hamlet	1	28 00	31 10	34 00	34 40	36 20	34 30	35 45	33 10	40 00	31
Gabella	20	25 00	27 40	30 00	33 20	36 09	37 00	26 30	6 30	35 20	24
Tarolinta	30	24 50	27 10	29 30	28 50	30 00	27 50	20 15	3 00 E.	33 40	26
Sweden	14	29 20	32 20	34 50	35 20	35 50	32 20	26 10	23 50 W.	41 20	27
Antelope	21	32 20	34 30	34 40	35 20	35 40	34 00	30 30	24 00	43 30	22
Roland	8	21 05	24 40	28 00	27 30	26 40	24 40	8 20	5 52 E.	32 00	19 9
Panther	24	22 15	24 00	27 30	29 00	26 30	12 30	10 30	3 00	33 40	22
Northumberland	1	22 15	23 00	25 20	27 40	23 00	21 50	9 00	3 30	32 25	30
Owen Glendower	28	22 30	24 40	28 00	30 20	31 05	30 00	26 20	6 00 W.	36 40	22
Cato	18	22 40	28 00	30 50	34 50	35 10	32 50	27 50	14 30	38 05	29
Miltiades	18	21 00	24 30	27 20	30 20	32 10	27 00	16 40	9 55	39 00	22
Inca	27	23 00	26 20	28 50	32 15	35 20	37 10	35 20	24 20	38 30	20
Abraham Barker	29	20 45	24 00	25 40	27 30	26 40	25 30	21 50	4 40 E.	35 30	24
Candace	27	24 10	27 00	28 30	30 50	33 50	37 20	33 00	3 50 W.	36 00	28
Two Brothers	29	20 30	21 30	24 00	24 30	28 00	27 40	20 45	12 00	36 50	33
Liverpool Packet	25	27 25	29 40	32 00	33 00	30 50	28 20	23 10	19 00	37 00	25
Grafton	10	25 25	27 00	29 40	30 45	32 15	29 20	24 00	13 40	38 50	18
Lucia	16	21 40	22 20	25 00	24 10	28 00	28 00	25 10	13 00	36 20	31
Means of crossings east of 26°	.....	22 26	25 01	27 24	28 55	30 07	28 08	22 26	5 08	35 49	24.2
Means of crossings west of 26°	.....	29 17	31 35	33 18	34 18	33 20	31 08	26 39	22 46	41 20	25.8

Abstract log of the *Ship* "*Miltiades*," (John Henry, captain,) from Liverpool to Melbourne; 41 days out.

"August 22, 1852. Lat. 8° 36′ S.; long. 26° 20′ W. Barometer, 30.00; air, 79°; water, 64°. Winds: S.SE., fresh.

August 23. Lat. 11° 27′ S.; long. 28° 15′ W. Barometer, 29.96; air, 76°; water, 64°. Winds: S.SE., strong.

August 24. Lat. 14° 16′ S.; long. 29° 44′ W. Barometer, 29.90; air, 78°; water, 63°. Winds: SE. by E., strong and very squally.

August 25. Lat. 16° 44′ S.; long. 31° 00′ W. Barometer, 29.86; air, 73°; water, 64°. Winds: SE. by S., very squally.

August 26. Lat. 18° 46′ S.; long. 31° 52 W. Barometer, 29.80; air, 70°; water, 66°. Winds: SE., fresh and squally.

August 27. Lat. 20° 07′ S.; long. 32° 06′ W. Barometer, 29.93; air, 72°; water, 65°. Winds: E.SE. and E., light.

August 28. Lat. 20° 44′ S.; long. 31° 56′ W. Barometer, 29.94; air, 73°; water, 64°. Winds: SE. to E., light.

August 29. Lat. 22° 57′ S.; long. 30° 15′ W. Barometer, 29.88; air, 76°; water, 63°. Winds: NE., light.

August 30. Lat. 24° 49′ S.; long. 28° 18′ W. Barometer, 29.90; air, 79°; water, 62°. Winds: N.NE. to N.NW.; fresh, sultry weather.

August 31. Lat. 26° 50′ S.; long. 26° 14′ W. Barometer, 29.88; air, 78°; water, 64°. Winds: N.NW., steady, and clear.

September 1. Lat. 29° 03′ S.; long. 23° 08′ W. Barometer, 29.84; air, 76°; water, 63°. Winds: N.NW. to W.NW., strong.

September 2. Lat. 29° 21′ S.; long. 19° 11′ W. Barometer, 29.92; air, 72°; water, 66°. Winds: W.NW. to SW., strong.

September 3. Lat. 29° 45′ S.; long. 17° 20′ W. Barometer, 29.90; air, 71°; water, 65°. Winds: W.SW. to SW.

September 4. Lat. 31° 00′ S.; long. 15° 35′ W. Barometer, 29.88; air, 73°; water, 62°. Winds: W. to N., light.

September 5. Lat. 33° 07′ S.; long. 12° 39′ W. Barometer, 29.87; air, 72°; water, 64°. Winds: N.NW. to SW., strong; rain at intervals.

September 6. Lat. 35° 00′ S.; long. 9° 56′ W. Barometer, 29.91; air, 68°; water, 61°. Winds: SW. by S., strong.

September 7. Lat. 36° 26′ S.; long. 6° 19′ W. Barometer, 29.74; air, 60°; water, 59°. Winds: W.SW., strong with hail.

September 8. Lat. 37° 34′ S.; long. 2° 35′ W. Barometer, 29.70; air, 59°; water, 59°. Winds: WSW. to SW.; strong gales, hail at intervals, a heavy rolling sea. Broke the marine thermometer.

September 9. Lat. 38° 59′ S.; long. 00° 54′ E. Barometer, 29.74. Wind: NW.

September 10. Lat. 40° 54′ S.; long. 4° 30. E. Barometer, 29.76. Winds: W.NW. to NW., fresh; a heavy swell from the SW.

September 11. Lat. 42° 05′ S.; long. 7° 52′ E. Barometer, 29.74. Winds: NW., strong.

September 12. Lat. 43° 26′ S.; long. 12° 07′ E. Barometer, 29.78. Winds: N.NW., moderate, damp, cold weather.

September 13. Lat. 43° 24′ S.; long. 14° 35′ E. Barometer, 29.74. Winds: NW. to W. Begins fresh winds and raining, ends light; weather, cold and damp.

September 14. Lat. 43° 48′ S.; long. 18° 20′ E. Barometer, 29.72. Winds: SW. Cold, disagreeable weather.

September 15. Lat. 43° 42′ S.; long. 21° 00′ E. Barometer, 29.70. Winds: SW., light, and very cold.

September 16. Lat. 44° 13′ S.; long. 23° 15′ E. Barometer, 29.68. Winds: W.; very cold, damp weather.

September 17. Lat. 44° 37′ S.; long. 27° 37′ E. Barometer, 29.54. Winds: W.SW.; a dreadful heavy sea from the W.SW.

September 18. Lat. 44° 37′ S.; long. 32° 55′ E. Barometer, 29.54. Winds: W.SW., strong gales.

September 19. Lat. 44° 28′ S.; long. 37° 02′ E. Barometer, 29.50 Winds: W. by N. to W.SW.; strong gales and passing showers of rain and sleet.

September 20. Lat. 45° 05′ S.; long. 41° 27′ E. Barometer, 29.57. Winds: NW., strong and squally.

September 21. Lat. 45° 50′ S.; long. 46° 06′ E. Barometer, 29.62. Winds: N.NW.; strong gales, squally, disagreeable weather.

September 22. Lat. 46° 05°. S.; long. 50° 07° E. Barometer, 29.47. Winds: W.NW. to NW.; strong gales; cold weather, with snow.

September 23. Lat. 46° 38′ S.; long. 54° 12° E. Barometer, 29.13. Winds: N. by W. and N.; strong hard squalls. At 8 p. m., made the Island of Crozets, bearing NE. about three miles, lat. 46° 12′ S.; long. 50° 40′ E.

September 24. Lat. 46° 32′ S.; long. 57° 00′ E. Barometer, 29.13. Winds: NW. to W.SW. Begins light, ends strong, with snow squalls.

September 25. Lat. 46° 05′ S.; long. 61° 37′ E. Barometer, 29.13. Winds: W. to W.SW.; strong gales, with hail; a confused, heavy sea.

September 26. Lat. 45° 06′ S.; long. 66° 40′ E. Barometer, 29.10. Winds: SW. Strong winds; bitter cold; snow and hail.

September 27. Lat. 43° 59′ S.; long. 70° 26′ E. Barometer, 29.20. Winds: SW. Strong gales, with snow and hail.

September 28. Lat. 44° 00′ S.; long. 74° 17′ E. Barometer, 29.19. Winds: W.SW. to NW. Moderating; cold, damp weather.

September 29. Lat. 44° 00′ S.; long. 78° 51′ E. Barometer, 29.20; air, 40°. Winds: NW.; light, and moderate; weather very disagreeable; snow and hail at intervals.

September 30. Lat. 44° 27′ S.; long. 83° 47′ E. Barometer, 29.20; air, 39°. Wind: W.NW. Moderate, with rain at intervals.

October 1. Lat. 43° 52′ S.; long. 88° 14′ E. Barometer, 29.18; air, 41°. Winds: W. NW. and NW. Squally, with hail.

October 2. Lat. 43° 45′ S.; long. 93° 11′ E. Barometer, 29.20; air, 40°. Winds: NW. Heavy rolling sea from SW.

October 3. Lat. 42° 44′ S.; long. 96° 42′ E. Barometer, 29.15; air, 39°. Winds: W.SW. Heavy sea, with rain and snow.

October 4. Lat. 42° 55′ S.; long. 101° 00′ E. Barometer, 29.17; air, 39°. Winds: W. SW. Strong gales, and hazy.

October 5. Lat. 43° 24′ S.; long. 105° 39′ E. Barometer, 29.20; air, 41°. Winds: W. Strong gales; with light rain.

October 6. Lat. 43° 35′ S.; long. 109° 30′ E. Barometer, 29.54; air, 44°. Winds: W. NW. Heavy rain squalls.

October 7. Lat. 43° 27′ S.; long. 114° 21′ E. Barometer, 29.74; air, 43°. Winds: W.SW. to SW. Heavy snow squalls.

October 8. Lat. 43° 22′ S.; long. 118° 30′ E. Barometer, 29.70; air, 41°. Winds: W.SW. to S.SW. Heavy snow and hail showers.

October 9. Lat. 43° 46′ S.; long. 122° 50′ E. Barometer, 29.80; air, 43°. Winds: SW. Strong; weather more mild.

October 10. Lat. 43° 59′ S.; long. 127° 30′ E. Barometer, 29.80; air, 45°. Winds: SW. Weather mild.

October 11. Lat. 42° 55′ S.; long. 131° 53′ E. Barometer, 29.76; air, 46°. Winds: S. SW. to S. Clear weather.

October 12. Lat. 41° 59′ S.; long. 136° 04′ E. Barometer, 29.80; air, 48°. Winds: S. to W. by N. Clear weather.

October 13. Lat. 40° 36′ S.; long. 140° 30′ E. Barometer, 29.87; air, 50°. Winds: W.NW. Strong, fine weather; ends squally.

October 14. Lat. 39° 48′ S.; long. 143° 52′ E. Barometer, 29.90; temperature of air, 49°. Wind: NW.; strong, hazy, and squally.

October 15. At 4 a. m. made King's island, Bass' straits; Cape Otway N. by E.; the wind came from the NE.; beat up for the land. At daylight made land north of Cape Otway; wind hauled to SW.; ran up the coast. At 2 p. m. ran into and passed the anchorage off Shortland's Bluff; no pilot offering, I kept on. At 5 p. m. clear of all danger and safely into Port Philip. Started with 308 government emigrants on board; twelve children under one year of age died during the voyage, thirteen were born; thus landing one more than we took on board."

JOHN HENRY.

From the Line to the Prime Meridian.

Name.	Date of crossing the Equator.	Longitude of crossing the Equator.	Longitude of crossing the paralells of—							Latitude of crossing the meridian of Greenwich.	Days.
			5° S.	10° S.	15° S.	20° S.	25° S.	30° S.	35° S.		
		° ′	° ′	° ′	° ′	° ′	° ′	° ′	° ′	° ′	
Hellander	Sept. 14	29 50	30 40	33 40	34 50	33 00	31 00	29 00	4 40	37 20	27
George	20	23 15	26 00	28 10	29 00	27 30	25 30	18 50	3 40	35 30	19
Vancouver	12	23 30	26 40	29 00	30 30	30 30	28 00	22 00	9 50	36 50	16
Ann Maria	16	22 00	26 20	29 00	31 00	33 20	33 00	28 30	24 00	40 00	25
George	14	26 00	27 00	26 00	28 30	28 00	26 00	22 00	4 30	36 00	22
Hanover	19	23 05	30 20	31 40	32 50	31 00	30 00	27 00	15 00	37 10	23
George	10	27 40	32 15	34 30	31 40	28 50	21 20	18 10	3 15	36 10	26
Wizard	7	28 40	30 00	31 20	33 10	34 00	33 30	30 00	15 30	38 00	16
Restitution	2	21 20	26 20	27 40	29 50	29 30	27 00	22 00	13 00	37 00	27
Monterey	19	25 30	28 20	29 50	30 00	26 20	23 40	20 20	3 00	37 10	25
Rapid	10	29 00	32 50	32 20	37 00	34 10	26 10	14 30	2 20	37 00	19
Great Britain	4	23 25	27 50	30 00	32 20	31 00	31 20	29 30	29 40	50 40	18
Arabella	8	22 30	25 20	27 00	29 10	29 00	23 10	17 40	14 20	38 00	24
Cohota	9	23 40	30 00	33 00	35 40	34 20	28 00	17 50	1 00	36 30	23
Vision	27	26 15	29 00	32 20	33 50	33 10	29 10	29 00	2 00 E.	34 20	28
Alert	23	29 40	31 40	33 40	34 20	34 30	30 30	26 00	11 00 W.	39 00	23
Josiah Bradlee	21	28 15	30 00	31 00	31 40	31 20	30 50	28 10	3 00	36 10	22
Elizabeth	29	21 00	24 30	26 00	28 25	29 30	29 40	22 00	6 40	35 35	23
N. B. Palmer	28	32 20	33 00	34 00	34 00	29 30	25 00	21 30	13 15	37 30	20
Congress	15	19 20	23 00	25 10	28 20	28 20	24 30	24 15	0 40 E.	34 50	25
Tsar	19	28 30	28 50	29 35	29 30	28 30	26 45	26 30	9 40 W.	37 00	24
Hurricane	4	18 40	20 00	23 20	25 50	28 10	25 50	15 00	10 00 E.	31 40	18
Siri	3	31 00	31 50	33 20	36 10	35 00	30 40	28 10	19 30 W.	39 20	24
Auckland	18	30 40	32 20	32 15	30 40	32 40	34 00	33 30	28 00	53 15	33
Means of crossings east of 26°		22 16	26 13	28 19	30 14	29 52	27 28	22 04	8 50	37 34	22.1
Means of crossings west of 26°		28 59	30 47	32 00	32 56	31 53	28 44	25 32	9 23	38 25	23.6

Abstract log of the ship "*Great Britain*," Captain B. R. Mathews, from Liverpool to Port Philip, Australia; 23 days out.

"September 6, 1853. Lat. 5° 12′ S.; long. 27° 47′ W. Air, 80°; water, 76°. Winds: fresh from S.SE. Fair weather; run 217 miles.

September 7. Lat. 8° 19′ S.; long. 29° 46′ W. Air, 80°; water, 76°. Winds: S.SE., moderate and fresh. Fine weather; run 222 miles.

September 8. Lat. 11° 23′ S.; long. 31° 44′ W. Air, 87°; water, 72°. Winds: S.SE., fresh and moderate. Fine weather; run 217 miles.

September 9. Lat. 14° 59′ S.; long. 32° 21′ W. Air, 77°; water, 70°. Winds: SE. Fresh and moderate. Run 219 miles.

September 10. Lat. 18° 13′ S.; long. 32° 21′ W. Air, 72°; water, 72°. Winds: E.SE. Fresh and moderate. Run 194 miles.

September 11. Lat. 21° 07′ S.; long. 31° 03′ W. Air, 79°; water, 76°. Winds: NE. Light and calm. Distance run 189 miles.

September 12. Lat. 23° 26′ S.; long. 31° 26′ W. Air, 72°; water, 72°. Winds: SE. First part, light; latter part, strong. Run 140 miles.

September 13. Lat. 26° 45′ S.; long. 31° 26′ W. Air, 68°; water, 64°. Winds: E. by S. Fresh and strong. Run 199 miles.

September 14. Lat. 30° 05′ S.; long. 31° 06′ W. Air, 68°; water, 64°. Winds: E. Strong, fresh, and moderate. Run 201 miles.

September 15. Lat. 33° 44′ S.; long. 29° 26′ W. Air, 62°; water, 61°. Winds: E.NE. Moderate throughout. Run 238 miles.

September 16. Lat. 37° 26′ S.; long. 27° 35′ W. Air, 58°; water, 56°. Winds: NE. Fresh and strong. Run 240 miles.

September 17. Lat. 41° 16′ S.; long. 24° 24′ W. Air, 51°; water, 48°. Winds: NE. and E.NE. Strong and squally. Distance run, 266 miles.

September 18. Lat. 44° 41′ S.; long. 21° 29′ W. Air, 49°; water, 45°. Winds: N.NE. and N.NW. Moderate and fresh gales. Run 249 miles.

September 19. Lat. 47° 33′ S.; long. 17° 28′ W. Air, 42°; water, 40°. Winds: W. and N.NW. Light and calm. Run 241 miles.

September 20. Lat. 48° 49′ S.; long. 13° 38′ W. Air, 39°; water, 36°. Winds: variable, light, and calm. Run 159 miles.

September 21. Lat. 49° 45′ S.; long. 7° 29′ W. Air, 39°; water, 37°. Winds: N.NE. and N.NW. First part, light winds; latter part, moderate and fresh gales. Run 257 miles.

September 22. Lat. 50° 42′ S.; long. 1° 33′ W. Air, 36°; water, 32°. Winds: NW. Fresh and squally; latter part, snow at intervals. Run 236 miles.

September 23. Lat. 50° 47′ S.; long. 4° 49′ E. Air, 32°; water, 32°. Winds: NW. and W.SW. Fresh gales and snow at intervals. Run 228 miles.

September 24. Lat. 50° 37′ S.; long. 11° 37′ E. Air, 32°; water, 30°. Winds: W.SW. Fresh gales and squalls with snow, hail, and sleet. Run 272 miles.

September 25. Lat. 50° 37′ S.; long. 18° 39′ E. Air, 31°; water, 32°. Winds: W.SW. Gale moderating; snow showers at intervals; ends, fine weather; sea going down. Run 282 miles.

September 26. Lat. 51° 02′ S.; long. 25° 07′ E. Air, 30°; water, 30°.05. Winds: W. and W.NW. First part, moderate; ends, fresh gales and squally with heavy snow showers. Run 234 miles.

September 27. Lat. 52° 03′ S.; long. 32° 22′ E. Air, 31°; water, 32°. Winds: NW. and W.NW. Fresh breezes; weather frosty, with passing snow showers; hazy at intervals; run 276 miles.

September 28. Lat. 52° 01′ S.; long. 37° 07′ E. Air, 38°; water, 32°. Winds: NW. and SW. First part, moderate; middle and latter parts, light winds; saw two ice-bergs to the northward; run 176 miles.

September 29. Lat. 52° 07′ S.; long. 44° 04′ E. Air, 29°; water, 31°. Winds: SW. and W. First part, moderate; middle and latter parts, fresh gales and squally, with snow; run 256 miles

September 30. Lat. 53° 46′ S.; long. 48° 50′ E. Air, 32°; water, 30°. Winds: W.NW., variable, and E.SE. Fresh and strong gales; very ugly weather; high, cross, confused sea; heavy snow squalls; run 199 miles.

October 1. Lat. 52° 14′ S.; long. 52° 01′ E. Air, 32°; water, 31°. Winds: NE. and SW. Strong and moderate gales; high, cross, dangerous sea; squally, with snow; run 148 miles.

October 2. Lat. 50° 48′ S.; long. 57° 59′ E. Air, 33°; water, 36°. Winds: W. to E.NE. Strong and moderate gales, and squally, with snow; sea very high, confused, and dangerous; distance run 239 miles.

October 3. Lat. 51° 15′ S.; long. 63° 36′ E. Air, 36°; water 32°. Winds: E. to W.NW. Moderate gales; weather much improved; run 214 miles.

October 4. Lat. 51° 20′ S.; long. 70° 25′ E. Air, 36°; water, 36°. Winds: W.NW. to NE. Moderate winds and gales; weather unsettled; distance run 258 miles.

October 5. Lat. 51° 09′ S.; long. 76° 08′ E. Air, 44°; water, 41°. Winds: NW. to N.NE. Strong breezes and unsettled weather; distance run 221 miles.

October 6. Lat. 51° 09′ S.; long. 81° 58′ E. Air, 39°; water, 34°. Winds: N.NW., W.NW., and NE. Moderate and light; distance run 215 miles.

October 7. Lat. 51° 44′ S.; long. 90° 05′ E. Air, 44°; water, 46°. Winds: NE. and N.NE, Moderate and strong; distance run 308 miles.

October 8. Lat. 51° 40′ S.; long. 97° 11′ W. Air, 44°; water, 45°. Winds: N.NE. to NW. Strong and fresh; distance run 265 miles.

October 9. Lat. 51° 13′ S.; long. 105° 26′ E. Air, 49°; water, 46°. Winds: N. and NW. Strong, fresh, and calm; distance run 312 miles.

October 10. Lat. 50° 15′ S.; long. 113° 14′ E. Air, 39°; water, 33°. Winds: N. and NE. Fresh, strong, and squally, with snow; distance run 300 miles.

October 11. Lat. 49° 26′ S.; long. 121° 21′ E. Air, 46°; water, 40°. Winds: NE. and N. Strong; distance run 318 miles.

October 12. Lat. 46° 45′ S.; long. 127° 31′ E. Air, 52°; water, 41°. Winds: NW. Strong and hazy weather; distance run 295 miles.

October 13. Lat. 44° 23′ S.; long. 132° 13′ E. Air, 58°; water, 47°. Winds: N.NW. Moderate and light; distance run 243 miles.

October 14. Lat. 42° 45′ S.; long. 137° 23′ E. Air, 48°; water, 46°. Winds: NE. Moderate and light; distance run 245 miles.

October 15. Lat. 41° 14′ S.; long. 141° 27′ E. Air, 52°; water, 55°. Winds: N. and N.NW. Moderate and fresh, weather clear; distance run 204 miles.

October 16. Lat. 37° 17′ S.; long. 144° 39′ E. Air, 30°; water, 61°. Winds: NW. to SW. Arrived at Port Philip—64 days.

From the Line to the Prime Meridian.—October.

Name.	Date of crossing the equator.	Longitude of crossing the equator.	Longitude of crossing the parallels of— 5° S.	10° S.	15° S.	20° S.	25° S.	30° S.	35° S.	Latitude of crossing the meridian of Greenwich.	Days.
		° ′	° ′	° ′	° ′	° ′	° ′	° ′	° ′	° ′	
Restitution	Oct. 11	19 30	23 20	25 40	27 20	28 40	29 10	26 00	17 00	37 00	25
Georgian	12	28 15	30 40	32 00	32 00	30 10	24 50	21 40	11 10	39 00	25
Pompey	29	26 10	28 50	31 00	33 20	32 40	25 30	15 00	8 10	36 00	25
Emerald	27	27 10	29 10	29 50	30 45	30 30	26 30	18 20	4 20	36 30	25
Phœnix	6	23 10	27 40	28 00	28 00	29 20	27 00	21 00	3 10	36 10	24
Argonaut	5	25 40	27 00	28 40	28 00	25 00	25 30	25 20	5 40	37 30	28
Nabob	15	32 40	34 00	33 40	32 45	29 40	26 30	24 20	17 00	39 20	19
Marion	21	25 45	31 00	34 30	35 30	33 40	30 00	39 30	22 00	45 00	21
Gauntlet	7	23 00	27 30	29 00	30 00	30 40	33 00	30 30	24 10	44 20	22
Parodi	16	30 22	33 10	33 40	32 40	30 15	27 00	24 00	15 30	39 20	22
Lowell	23	28 30	31 50	33 10	32 30	31 30	28 50	24 30	20 20	43 10	24
Annie Buckman	12	32 50	34 40	33 20	32 00	30 00	26 00	23 50	4 20	36 00	24
Peacock	21	27 40	30 50	32 20	32 40	31 30	29 00	23 00	14 00	38 40	18
Flying Dutchman	25	29 50	32 50	33 40	33 20	33 10	32 00	27 50	24 30	46 50	17
Oriental	16	31 30	33 00	31 00	30 30	28 00	24 50	26 30	25 30	40 20	19
M. Howes	17	28 30	31 00	33 10	32 30	32 45	31 20	25 10	17 50	39 20	26
Columbia	23	16 40	21 40	23 00	25 40	26 10	25 00	18 00	1 00	36 45	29
George Lee	25	30 00	31 30	33 25	33 10	33 00	30 30	24 00	12 00	37 55	26
Granada	23	31 30	33 20	34 20	33 00	31 10	27 30	24 30	16 10	39 50	21
Oriental	8	20 25	24 30	27 00	29 30	28 50	27 50	26 50	24 40	46 45	29
Levant	31	27 30	28 10	28 50	28 15	26 00	23 20	18 50	7 00	36 30	22
Adventure	5	19 50	22 30	22 00	25 40	24 10	21 00	20 20	18 40	36 55	30
Friendship	22	21 10	24 20	24 30	24 50	24 20	19 00	16 30	16 00	36 00	28
Means of crossings east of 26°		21 41	25 30	26 55	27 16	27 31	26 38	23 53	14 42	39 36	25.1
West of 26°		29 24	31 37	32 23	32 46	30 57	27 20	22 57	14 08	39 11	22.3

Abstract log of the *Ship "Flying Dutchman,"* (A. Hubbard, captain,) from New York to Port Philip, Australia; 42 days out.

"October 28, 1854. Lat. 9° 39′ S.; long. 33° 47′ W. Barometer, 30.01; air, 82°; water, 80°. Winds: E.SE. Fresh, weather fine.

October 29. Lat. 14° 03′ S.; long. 33° 23′ W. Barometer, 30.01; air, 82°; water, 79°. Winds: E. by S. Fresh and puffy.

October 30. Lat. 18° 15′ S.; long. 33° 19′ W. Barometer, 30.09; air, 83°; water, 78°. Winds: E. by S. Moderate and variable.

October 31. Lat. 22° 33′ S.; long. 32° 51′ W. Barometer, 30.07; air, 81°; water, 74°. Winds: E.NE. Fresh and unsteady, passing clouds.

November 1. Lat. 25° 53′ S.; long. 30° 39′ W. Barometer, 30.06; air, 78°; water, 72°. Winds: N.NE. and N. Moderate.

November 2. Lat. 28° 53′ S.; long. 30° 39′ W. Barometer, 29.84; air, 65°; water, 67°. Winds: N. to S.SW. Strong breezes, with light rain; a heavy sea from the northward.

November 3. Lat. 29° 38′ S.; long. 28° 32′ W. Barometer, 29.92; air, 69°; water, 67°. Winds: SW. by S. Moderate, weather pleasant; a long, high sea from the SW.

November 4. Lat. 30° 53′ S.; long. 27° 18′ W. Barometer, 30.02; air, 72°; water, 66°. Winds: N. and N.NE. Variable.

November 5. Lat. 34° 29′ S.; long. 25° 39′ W. Barometer, 29.77; air, 65°; water, 63°. Winds: N.NE. Fresh, with rain.

November 6. Lat. 37° 28′ S.; long. 23° 10′ W. Barometer, 29.43; air, 63°; water, 59°. Winds: N.NW. and W. Strong and squally, with hail and rain; a high, irregular sea.

November 7. Lat. 40° 10′ S.; long. 20° 05′ W. Barometer, 29.72; air, 55°; water, 55½°. Winds: W. Strong breezes and squally.

November 8. Lat. 42° 28′ S.; long. 15° 29′ W. Barometer, 29.92; air, 66°; water, 52°. Winds: NW. Fresh and clear weather.

November 9. Lat. 44° 21′ S.; long. 10° 25′ W. Barometer, 29.93; air, 51°; water, 45°. Winds: N.NE. Fresh breezes and passing clouds.

November 10. Lat. 45° 46′ S.; long. 5° 15′ W. Barometer, 29.54; air, 48°; water, 43°. Winds: N.NW. Strong.

November 11. Lat. 46° 49′ S.; long. 00° 28′ E. Barometer, 29.62; air, 51°; water, 43°. Winds: N.NW. Strong and foggy.

November 12. Lat. 46° 38′ S.; long. 8° 15′ E. Barometer, 29.61; air, 52°; water, 44°. Winds: N.NW. Strong and foggy. At 6 a. m. saw a small iceberg to the southward, another to the westward, and two to the northward. From the appearance of these icebergs, they seem to be fast melting away, indicating, perhaps, that they might not be found much further north; to avoid coming in contact with the one ahead, we were obliged to alter our course.

November 13. Lat. 46° 23′ S.; long. 14° 10′ E. Barometer, 29.75; air, 49°; water, 43°. Winds: NW. Fresh and cloudy.

November 14. Lat. 46° 43′ S.; long. 20° 32′ E. Barometer, 29.66; air, 52°; water, 44°. Winds: NW., N.NW., and W.SW. Strong.

November 15. Lat. 46° 36′ S.; long. 27° 06′ E. Barometer, 29.88; air, 42°; water, 42°. Winds: W.SW. and W. Fresh and unsteady.

November 16. Lat. 46° 49′ S.; long. 33° 06′ E. Barometer, 29.92; air, 44°; water, 44°. Winds: W.SW. Moderate.

November 17. Lat. 46° 55′ S.; long. 37° 07′ E. Barometer, 29.79; air, 50°; water, 43°. Winds: NW. by W. Moderate and cloudy, with occasional light squalls of rain and snow.

November 18. Lat. 46° 39′ S.; long. 44° 07′ E. Barometer, 29.76; air, 39°; water, 43°. Winds: W.SW. Fresh and passing clouds. At meridian made Grand island, (Prince Edward's group)—passed to the southward of it.

November 19. Lat. 46° 45′ S.; long. 49° 58′ E. Barometer, 29.60; air, 45°; water, 40°. Winds: NW. Moderate gales, with snow and sleet.

November 20. Lat. 46° 00′ S.; long. 56° 36′ E. Barometer, 29.19; air, 43°; water, 43°. Winds: NW.

November 21. Lat. 45° 20′ S.; long. 63° 25′ E. Barometer, 29.57; air, 47°; water, 46°. Winds: W.NW.

November 22. Lat. 45° 00′ S.; long. 68° 32′ E. Barometer, 29.97; air, 44°; water, 41°. Winds: NW. by W.

November 23. Lat. 45° 04′ S.; long. 71° 55′ E. Barometer, 29.47; air, 49°; water, 45°. Winds: N. to NW. by W. Light winds, and unsteady, cloudy weather; a high, irregular sea; passed occasional bunches of kelp.

November 24. Lat. 45° 30′ S.; long. 77° 33′ E. Barometer, 29.29; air, 49°; water, 50°. Winds: NW. by W. Fresh and cloudy, with rain.

November 25. Lat. 45° 22′ S.; long. 84° 00′ E. Barometer, 29.48: air, 54°; water, 52°. Winds: NW. Moderate gales and cloudy, with rain.

November 26. Lat. 45° 57′ S.; long. 90° 07′ E. Barometer, 29.40; air, 45°; water, 50°. Winds: W.NW. Strong and squally.

November 27. Lat. 44° 38′ S.; long. 95° 47′ E. Barometer, 29.57; air, 56°; water, 49°. Winds: W. and W.NW. Fresh and pleasant weather; passed kelp.

November 28. Lat. 44° 53′ S.; long. 101° 41′ E. Barometer, 29.76; air, 52°; water, 52°. Winds: W. to N. Strong breezes and squally.

November 29. Lat. 44° 31′ S.; long. 108° 03′ E. Barometer, 29.76; air, 53°; water, 53°. Winds: NW. Fresh; passed several bunches of kelp.

November 30. Lat. 44° 39′ S.; long 112° 18′ E. Barometer, 29.70; air, 59°; water, 52°. Winds: W.NW. Light and passing clouds; fine weather; passing bunches of kelp.

December 1. Lat. 44° 30′ S.; long. 118° 18′ E. Barometer, 29.46; air, 50; water, 52°. Winds: W.NW. to W.SW. Strong and squally.

December 2. Lat. 43° 52′ S.; long. 124° 40′ E. Barometer, 29.56; air, 54°; water, 53°. Winds: W.SW. to NW. Strong and squally.

December 3. Lat. 42° 45′ S.; long. 130° 39′ E. Barometer, 29.56; air, 59°; water, 54°. Winds: NW. Fresh and cloudy.

December 4. Lat. 41° 56′ S.; long. 134° 58′ E; Barometer, 29.73; air, 60°; water, 56°. Winds: W. to NW. Strong and squally.

December 5. Lat. 39° 30′ S.; long. 139° 41′ E. Barometer, 29.73; air, 64°; water, 58°. Winds: NW. to W. Strong, and fine weather.

December 6. Lat. ———; long. ———; Barometer, 29.98; air, 64°; water, 60°. Winds: W. and SW. Moderate and unsteady; at 3 a. m. made the land; at 6 a. m. made Cape Otway, bearing east, distant 9 miles; at 3 p. m. received a pilot for port Philip; 82 days from New York.

From the Line to the Prime Meridian.—November.

Name.	Date of crossing the equator.	Longitude of crossing the equator.	Longitude of crossing the parallels of— 5° S.	10° S.	15° S.	20° S.	25° S.	30° S.	35° S.	Latitude of crossing the meridian of Greenwich.	Days.
		° ′	° ′	° ′	° ′	° ′	° ′	° ′	° ′	° ′	
Ringleader	Nov. 14	36 10	34 40	33 00	31 20	30 00	27 40	24 00	18 40	44 00	24
Suffolk	21	25 00	29 00	31 00	31 10	30 20	27 00	18 40	13 00	39 20	24
Hound	11	31 40	33 00	33 00	28 30	24 10	22 40	22 30	19 00	37 50	18
Dutchess	5	31 40	32 50	33 20	33 20	32 20	31 30	30 00	27 50	43 20	27
Sabine	16	34 40	33 50	33 05	32 20	31 20	28 00	27 10	27 20	46 00	25
Colorado	7	26 20	31 10	33 20	32 50	21 20	15 20	15 00	0 30	36 00	21
Fire Fly	20	29 30	30 30	31 00	31 00	27 10	25 30	23 00	16 00	41 40	26
Nestorian	20	28 00	30 30	32 20	32 00	27 30	24 00	16 30	3 50	36 10	25
Cyclone	7	30 30	34 00	34 10	30 00	26 40	25 00	24 30	24 30	38 00	21
Escort	1	31 40	32 50	33 20	33 40	34 10	32 00	22 30	10 20	38 20	28
Queen of the East	21	25 40	28 30	29 40	30 20	29 20	26 20	21 10	2 50	36 50	20
Lucy Elizabeth	16	31 00	32 10	31 20	30 40	20 20	25 40	22 10	25 10	39 00	34
S. H. Waterman	13	32 10	32 05	31 40	28 50	26 00	23 10	20 00	10 15	40 20	19
N. B. Palmer	12	38 20	35 00	33 50	31 00	28 00	27 20	25 10	22 10	40 00	19
Hound	14	29 30	32 20	31 20	28 00	26 00	23 50	17 20	1 45 E.	34 30	18
Flying Dragon	27	36 00	35 00	32 00	27 10	23 00	18 40	15 30	9 00 W.	38 00	19
Scotia	3	16 30	20 30	23 00	25 30	24 00	23 50	18 30	14 20	38 50	21
Raven	4	32 40	34 40	34 40	34 00	32 00	26 00	25 30	26 30	41 10	26
Nightingale	25	30 14	31 40	31 50	27 00	21 00	13 40	12 20	11 00	39 40	17
Lucy Elizabeth	19	25 45	27 00	29 00	29 25	29 30	28 00	22 20	1 50	35 40	28
Valparaiso	10	27 40	31 00	31 20	30 00	28 00	23 20	21 10	10 20	39 20	24
Fleetwood	28	31 50	32 10	31 30	28 30	26 40	23 40	21 10	10 50	37 40	18
Annie Buckman	1	32 00	31 40	31 20	31 10	29 40	26 00	20 00	13 05	37 25	19
Medford	3	25 50	27 00	28 00	28 25	27 40	24 45	18 00	0 10	35 10	24
Douglass	16	29 20	31 00	31 30	30 30	27 10	24 00	15 30	4 20	35 40	20
Simoon	24	27 50	29 00	31 50	32 45	31 30	27 50	26 20	18 00	39 00	19
Maury	19	36 20	34 50	33 20	32 00	30 00	25 30	24 00	20 00	40 20	22
Celestial	14	30 20	30 05	30 20	29 10	26 50	24 20	20 00	8 10	36 20	15
Siri	1	29 40	32 30	34 40	35 15	35 15	34 30	33 10	31 30	41 30	29
Candace	8	29 45	30 35	30 40	30 00	27 00	24 00	28 00	25 00	42 20	23
Means of crossings east of 26°		23 46	26 24	28 08	28 58	28 12	25 59	19 46	6 26	37 10	23.4
West of 26°		31 23	32 21	32 23	30 50	27 55	24 55	22 05	15 42	39 20	22.2

Abstract log of the *Ship "Robert Patten,"* (George S. Paine, captain,) from St. John's, New Brunswick, to Port Adelaide, Australia; 46 days out.

"November 14, 1856. Lat. 4° 34′ S.; long. 34° 00′ W. Barometer, 29.84; air, 88°; water, 82°. Winds: SE. by E. and SE. Fresh breezes and fine weather. At 4 a. m. tacked to the NE. by E.; Point Natal bearing SW., distant 10 miles; stood on this tack the remainder of the 24 hours; gained 65 miles of longitude and lost 41 miles of latitude.

November 15. Lat. 6° 08′ S.; long. 34° 26′ W. Barometer, 29.84; air, 84°; water, 82°. Winds: SE. to E.NE. Fresh gales and fine weather; middle and latter part, light breezes and hazy.

November 16. Lat. 7° 18′ S.; long. 34° 30′ W. Barometer, 29.80; air, 84°; water, 83°. Winds: E.SE. Light breezes and pleasant weather. This is the fourth day since I made the land twenty-five miles to leeward of Cape St. Roque; have found no difficulty whatever in working up.

November 17. Lat. 8° 45′ S.; long. 34° 12′ W. Barometer, 29.84; air, 84°; water, 83°. Winds: E. Very light; more so than I ever knew before.

November 18. Lat. 10° 40′ S.; long. 33° 28′ W. Barometer, 29.84; air, 84°; water, 83°. Winds: E.NE. Small breeze and fine weather.

November 19. Lat. 12° 22′ S.; long. 33° 06′ W. Barometer, 29.88; air, 83°; water, 83°. Winds: E. to E. by S. Very light, with clear weather; a heavy SW. swell.

November 20. Lat. 14° 22′ S.; long. 33° 07′ W. Barometer, 29.94; air, 83°; water, 82°. Winds: E. by S. to SE. First part, light airs and pleasant; latter part, fresh trades and clear weather; a very heavy SW. swell.

November 21. Lat. 16° 24′ S.; long. 32° 58′ W. Barometer, 29.95; air, 82°; water, 82°. Winds: E.SE. Fresh trades and fine weather.

November 22. Lat. 18° 21′ S.; long. 33° 10′ W. Barometer, 29.90; air, 79°; water, 79°. Winds: SE. by E. Moderate and squally.

November 23. Lat. 20° 15′ S.; long. 32° 58′ W. Barometer, 29.91; air, 80°; water, 79°. Winds: E. by S. Light and pleasant.

November 24. Lat. 22° 08′ S.; long. 32° 30′ W. Barometer, 29.95; air, 79°; water, 77°. Winds: E. by S. Light and baffling.

November 25. Lat. 23° 50′ S.; long. 32° 08′ W. Barometer, 29.95; air, 77°; water, 74°. Winds: E. Light and calm.

November 26. Lat. 25° 53′ S.; long. 31° 30′ W. Barometer, 29.88; air, 78°; water, 74°. Winds: E. to N.NE. Light and pleasant weather.

November 27. Lat. 27° 24′ S.; long. 30° 10′ W. Barometer, 29.81; air, 77°; water, 73°. Winds: NE. to NW. by N. First part, moderate gales, with rain showers; latter part, light breezes and pleasant.

November 28. Lat. 27° 14′ S.; long. 28° 45′ W. Barometer, 29.88; air, 75°; water, 73°. Winds: NW. to S.SE. Light and baffling.

November 29. Lat. 28° 08′ S.; long. 28° 20′ W. Barometer, 29.85; air, 77°; water, 74°. Winds: SE. to N.NW. Light and pleasant weather.

November 30. Lat. 29° 38′ S.; long. 26° 56′ W. Barometer, 29.70; air, 75°; water, 74°. Winds: N.NW. Light and cloudy; a SW. swell.

December 1. Lat. 31° 40′ S.; long. 24° 45′ W. Barometer, 29.45; air, 68°; water, 68°. Winds: W.SW. Fresh and cloudy, with rain; albatross and whale about.

December 2. Lat. 33° 28′ S.; long. 22° 00′ W. Barometer, 29.52; air, 60°; water, 64°. Winds: W. Fresh gales, with rain squalls.

December 3. Lat. 34° 35′ S.; long. 18° 52′ W. Barometer, 29.80; air, 60°; water, 63°. Winds: SW. Fresh gales and squally; large flocks of cape pigeons and albatross about.

December 4. Lat. 34° 38′ S.; long. 16° 34′ W. Barometer, 29.95; air, 60°; water, 62°. Winds: S. First part, fresh gales and passing clouds; latter part, light airs and calms.

December 5. Lat. 35° 45′ S.; long. 14° 50′ W. Barometer, 29.85; air, 63°; water, 60°. Winds: NE. by E. First part, baffling and calm; latter part, fresh, with cloudy weather.

December 6. Lat. 37° 30′ S.; long. 11° 55′ W. Barometer, 29.88; air, 63°; water, 60°. Winds: NE. Fresh and cloudy. At 4 a. m. made the island of Tristan de Cunha, bearing E.SE., distant 20 miles; passed between it and Inaccessible island; found the wind very flawey, and at times dead calm; would not recommend the passage with a N. or NE. wind; saw several whales in the passage, much kelp, and strong tide rips.

December 7. Lat. 39° 04′ S.; long. 8° 45′ W. Barometer, 29.87; air, 62°; water, 63°. Winds: NE. Fresh; thick, rainy weather.

December 8. Lat. 39° 52′ S.; long. 6° 10′ W. Barometer, 29.80; air, 56°; water, 58°. Winds: NE. to SW. Fresh gales, and thick, rainy weather; ends, light breezes and pleasant.

December 9. Lat. 40° 23′ S.; long. 2° 54′ W. Barometer, 30.00; air, 59°; water, 57°. Winds: W.SW. to S.SW. Moderate breezes and pleasant; strong tide rips.

December 10. Lat. 40° 40′ S.; long. 1° 00′ W. Barometer, 30.06; air, 57°; water, 56°. Winds: W.NW. to NW. Light breezes and pleasant.

December 11. Lat. 41° 04′ S.; long. 1° 20′ E. Barometer, 30.13; air, 60°; water, 61°. Winds: NW. Very light winds and clear, pleasant weather.

December 12. Lat. 41° 30′ S.; long. 4° 14′ E. Barometer, 30.10; air, 62°; water, 58°. Winds: NW. to N.NW. Light breezes and fine weather.

December 13. Lat. 41° 56′ S.; long. 7° 10′ E. Barometer, 29.84; air, 60°; water, 58°. Winds: N. by W. to N.NE. Small breezes and pleasant.

December 14. Lat. 42° 30′ S.; long. 11° 12′ E. Barometer, 29.64; air, 57°; water, 57°. Winds: N.NE. to W.NW. Fresh gales and misty weather.

December 15. Lat. 43° 34′ S.; long. 15° 20′ E. Barometer, 29.72; air, 56°; water, 57°. Winds: W. to S. Strong breezes and passing clouds. Passed through forty miles of discolored water.

December 16. Lat. 42° 44′ S.; long. 18° 35′ E. Barometer, 29.12; air, 56°; water, 57°. Winds: SW. to NW. First part, light, baffling airs and calms; latter part, fresh gales and cloudy.

December 17. Lat. 43° 34′ S.; long. 22° 20′ E. Barometer, 29.10; air, 52°; water, 53°. Winds: W.NW. Fresh gales and thick weather, with rain. A high sea.

December 18. Lat. 44° 02′ S.; long. 26° 00′ E. Barometer, 29.37; air, 41°; water, 48°. Winds: W.NW to W.SW. Fresh gales and hail squalls.

December 19. Lat. 44° 12′ S.; long. 29° 15′ E. Barometer, 29.74; air, 48°; water, 47°. Winds: W.SW. Small breezes and pleasant.

December 20. Lat. 44° 30′ S.; long. 32° 55′ E. Barometer, 29.65; air, 52°; water, 48°. Winds: N.NW. Light, baffling airs and pleasant. Latter part, fresh gales, with rain.

December 21. Lat. 45° 10′ S.; long. 36° 00′ E. Barometer, 29.63; air, 48°; water, 48°. Winds: W. to W.SW. Moderate gales and misty weather.

December 22. Lat. 45° 30′ S.; long. 39° 45′ E. Barometer, 29.64; air, 50°; water, 48°. Winds: W.SW. to W.NW. Moderate and pleasant.

December 23. Lat. 45° 50′ S.; long. 43° 50′ E. Barometer, 29.42; air, 46°; water, 47°. Winds: NW. Moderate gales and squally, with rain.

December 24. Lat. 46° 00′ S.; long. 48° 00′ E. Barometer, 29.50; air, 48°; water, 46°. Winds: W. to N.NW. Fresh breezes and pleasant.

December 25. Lat. 45° 50′ S.; long. 52° 04′ E. Barometer, 29.58; air, 46°; water, 45°. Winds: W.NW. Fresh gales and squally. At 2 a. m. made the island Des Apôtres, bearing S. by E., distant 12 miles. By my observations (which were good) I find the position of this island to be 18 miles NW. by W. from where it is placed on the English chart. I make the latitude of the island 45° 58′ S., and longitude 50° 20′ E.

At 9 a. m. saw Possession island, bearing south; distant about 20 miles. At 10 a. m.

was struck with a hard squall, which carried away the main top-gallant mast; also the main topmast head, close to the hounds.

December 26. Lat. 45° 48′ S.; long. 56° 18′ E. Barometer, 29.80; air, 45°; water, 45°. Winds: W. to SW. Moderate gales and cloudy.

December 27. Lat. 46° 00′ S.; long. 59° 45′ E. Barometer, 29.60; air, 50°; water, 46°. Winds: NW. to N.NE. Moderate breezes and pleasant weather.

December 28. Lat. 46° 32′ S.; long. 64° 20′ E. Barometer, 29.35; air, 52°; water, 47°. Winds: N. to NE. Fresh gales and cloudy.

December 29. Lat. 46° 52′ S.; long. 68° 20′ E. Barometer, 29.10; air, 54°; water, 48°. Winds: NE. to N. by E. Moderate and strong, with thick weather.

December 30. Lat. 46° 58′ S.; long. 72° 36′ E. Barometer, 29.78; air, 50°; water, 48°. Winds: W.NW. Moderate gales and thick weather.

December 31. Lat. 47° 02′ S.; long. 76° 35′ E. Barometer, 29.82; air, 52°; water, 49°. Winds: W.NW. to N. Moderate and pleasant.

January 1, 1857. Lat. 47° 10′ S.; long. 81° 00′ E. Barometer, 29.35; air, 44°; water, 47°. Winds: N. Moderate gales and thick weather.

January 2. Lat. 46° 58′ S.; long. 85° 43′ E. Barometer, 29.90; air, 48°; water, 46°. Winds: N. to N.NW. Fresh, with thick weather; ends, clear and pleasant. Kelp seen.

January 3. Lat. 46° 48′ S.; long. 89° 45′ E. Barometer, 29.80; air, 48°; water, 48°. Winds: W.NW. Moderate gales and passing clouds. Kelp and albatross.

January 4. Lat. 46° 36′ S.; long. 93° 45′ E. Barometer, 29.76; air, 52°; water, 49°. Winds: W. by N. to NW. Moderate gales and cloudy.

January 5. Lat. 46° 50′ S.; long. 98° 20′ E. Barometer, 29.20; air, 50°; water, 48°. Winds: N.NW. Fresh gales and cloudy. Kelp seen.

January 6. Lat. 46° 25′ S.; long. 102° 35′ E. Barometer, 29.54; air, 48°; water, 47°. Winds: W. Fresh gales and high squalls.

January 7. Lat. 46° 05′ S.; long. 105° 30′ E. Barometer, 29.46; air, 52°; water, 48°. Winds: W. by N. Light and pleasant.

January 8. Lat. 45° 50′ S.; long. 109° 35′ E. Barometer, 29.30; air, 48°; water, 49°. Winds: W.NW. First part, light breezes; latter part, fresh gales and thick weather. Carried away the fore topmast at the hounds; enabled to carry the topsail with a reef in it. No sail left now above the topsails. "Well, less work for Jack."

January 9. Lat. 45° 30′ S.; long. 113° 58′ E. Barometer, 29.30; air, 54°; water, 49°. Winds: N.NW. Fresh gales and thick, drizzling weather. Obliged to double reef the topsails, owing to the crippled state of the spars.

January 10. Lat. 45° 20′ S.; long. 120° 30′ E. Barometer, 29.60; air, 54°; water, 50°. Winds: W. to NW. Begins, fresh gales and thick weather; ends, small breezes and cloudy.

January 11. Lat. 44° 58′ S.; long. 120° 30′ E. Barometer, 29.60; air, 52°; water, 50°. Winds: W.NW. to SW. Light and cloudy. Fidded a new fore topmast.

January 12. Lat. 43° 42′ S.; long. 122° 30′ E. Barometer, 29.72; air, 52°; water, 50°. Winds: SW. Very light and pleasant. Sent up the fore top-gallant mast and yard, and set the sails. Kelp in sight.

January 13. Lat. 42° 05′ S.; long. 125° 00′ E. Barometer, 29.68; air, 54°; water, 51°. Winds: SW. to W.NW. Light and cloudy. Ends, fresh gales and squally.

January 14. Lat. 40° 03′ S.; long. 128° 00′ E. Barometer, 29.53; air, 57°; water, 52°. Winds: NW. Fresh gales and rain squalls.

January 15. Lat. 38° 23′ S.; long. 130° 55′ E. Barometer, 29.25; air, 55°; water, 54°. Winds: W. to SW. Begins with fresh gales and squally weather.

January 16. Lat. 36° 40′ S.; long. 133° 50′ E. Barometer, 29.50; air, 57°; water, 56°. Winds: Fresh gales and hard squalls.

January 17. Lat. 35° 34′ S.; long. 136° 15′ E. Barometer, 29.70; air, 60°; water, 60°. Winds: SW. Begins with fresh breezes and passing clouds; latter part, light breezes. At 9 a. m. made Neptune island, E.NE., distant 20 miles.

January 18. Lat. —; long. —. Barometer, 29.75; air, 70°; water, 74°. Winds: S. Pleasant breezes and fine weather. At 1 p. m. Kangaroo island, bearing SW., distant 20 miles. At 4 p. m. made the light-ship; at 5 p. m. took a pilot, and at 7 p. m. anchored off Port Adelaide. Thus ends a pleasant passage of 111 days from St. John's. Whole distance sailed 13,763 miles, averaging 124 miles per day. Not bad for a vessel that can neither be coaxed nor driven faster than 8 knots per hour."

Abstract log of the *Ship "Ringleader,"* (Richard Mathews, captain,) from Boston to Melbourne, Australia; 33 days out.

"November 20. Lat. 8° 54′ S.; long. 32° 40′ W. Barometer, 29.80; air, 83°; water, 80°. All this day brisk breezes. At 3 p. m. sent my boat on shore at Pernambuco to leave my first officer with the United States consul. Standing off and on through the night two and three hour tacks under easy sail; find along shore 1½ knot southerly current. At 6 a. m. my boat came off; had made all necessary arrangements for my mate; made all sail, and bore away on my course for the first time since leaving Boston.

November 21. Lat. 11° 42′ S.; long. 32° 40′ W. Barometer, 29.70; air, 83°; water, 80°. Winds: E. All day strong trades; middle part, cloudy and head sea.

November 22. Lat. 15° 18′ S.; long. 31° 25′ W. Barometer, 29.90; air, 80°; water, 80°. Winds: E. by S. First and middle parts, fresh and cloudy; latter part, light and fine weather.

November 23. Lat. 18° 43′ S.; long. 30° 40′ W. Barometer, 30.00; air, 78°; water, 77°. Winds: E. by S. All day brisk trades; fine weather, with passing clouds.

November 24. Lat. 21° 42′ S.; long. 29° 45′ W. Barometer, 30.00; air, 77°; water, 75°. Winds: E. All day brisk trades; middle part, squally and some rain.

November 25. Lat. 24° 45′ S.; long. 27° 50′ W. Barometer, 30.05; air, 76°; water, 73°. Winds: E. All day brisk breezes, and clear, smooth sea.

November 26. Lat. 27° 52′ S.; long. 25° 40′ W. Barometer, 30.00; air, 71°; water, 69°. Winds: NE. All day brisk and pleasant; passed a barque bound SE.

November 27. Lat. 30° 52′ S.; long. 23° 40′ W. Barometer, 29.85; air, 69°; water, 68°. Winds: E. NE. Comes in brisk; middle part, brisk and light rain, sun out now and then; all day long swell from SW; latter part, brisk breezes.

November 28. Lat. 32° 30′ S.; long. 21° 30′ W. Barometer, 29.70; air, 66°; water, 67°. Winds: N.NE. to S.SE. Comes in brisk breezes; middle part, light and hazy; at 6 a. m. thick fog, the wind changing suddenly to the S. and cleared off; took in light sails.

November 29. Lat. 32° 24′ S.; long. 18° 20′ W. Barometer, 29.96; air, 64°; water, 65°. Winds: S. by E.SE. First and middle parts, brisk; latter, moderate; all day clear.

November 30. Lat. 34° 33′ S.; long. 18° 50′ W. Barometer, 29.95; air, 62°; water, 63°.

Winds: SE. by S. First and middle parts, light; latter, strong and passing clouds; second edition of the SE. trades; one albatross and a number of sea hens around.

December 1. Lat. 37° 14′ S.; long. 18° 15′ W. Barometer, 30.20; air, 63°; water, 60°. Winds: E.SE. All day light and clear; fine weather; barometer high.

December 2. Lat. 38° 47′ S.; long. 16° 50′ W. Barometer, 30.30; air, 63°; water, 59°. Winds: E. to N.NE. All day clear, fine weather; smooth sea.

December 3. Lat. 40° 45′ S.; long. 14° 55′ W. Barometer, 30.20; air, 58°; water, 57°. Winds: NE. First and middle parts, light; latter, brisk; clear and smooth sea.

December 4. Lat. 43° 15′ S.; long. 10° 30′ W. Barometer, 29.80; air, 49°; water, 46°. Winds: N. and N.NW. All day brisk, and thick foggy weather; some kelp; all sail set.

December 5. Lat. 44° 15′ S.; long. 5° 15′ W. Barometer, 29.50; air, 40°; water, 44°. Winds: NW. to S.SE. Comes in fresh, foggy, rainy weather; middle part, heavy gale; under double reefs, and bad sea on; latter part, fresh and overcast; albatross around.

December 6. Lat. 43° 48′ S.; long. 1° 20′ W. Barometer, 30.10; air, 42°; water, 44°. Winds: S. and NE. Comes in fresh; middle and latter parts, light.

December 7. Lat. 45° 10′ S.; long. 1° 40° E. Barometer, 30.10; air, 45°; water, 45°. Winds: E. to N.NW. First part, light.; at 2 p. m. tacked to the S.; middle and latter parts, brisk; first appearance of Cape pigeons.

December 8. Lat. 47° 05′ S.; long. 7° 40′ E. Barometer, 29.85; air, 46°; water, 41°. Winds: N.NE. to NW. Comes in brisk; middle part, fresh; in light sails; latter part, strong gales and foggy; passed some kelp.

December 9. Lat. 47° 20′ S.; long. 12° 40′ E. Barometer, 29.90; air, 47°; water, 40°. Winds: W. to NW. All day light and clear.

December 10. Lat. 47° 32′ S.; long. 18° 10′ E. Barometer, 29.45; air, 39°; water, 39°. Winds: NW. to W.NW. Comes in brisk and hazy weather. All sail set; saw a large iceberg south of us, supposed to be 300 feet high; took in all light sails and double reefed the topsails; set a good lookout for ice during the night; courses in ship still going 11 knots; middle part, heavy gales, snow, and hail, squally. At 10 a. m. saw and passed about five miles to the north of us a number of icebergs smaller than the first; also large bunches of kelp, supposed to be detached from the icebergs; under close reefs, with a good lookout. It appears we are far enough north; I don't think it safe to go further at present.

December 11. Lat. 46° 52′ S.; long. 23° 00′ E. Barometer, 29.80; air, 41°; water, 40°. Winds: W. to NW. by W. Comes in violent gale and heavy, bad sea, shipping much water. At 2 p. m. shipped a sea in the quarter boat, which broke the davits and lost the quarter boat; snow squalls; air and water indicating ice near; scudding under close reefed fore and main topsails. Middle part, light; did not make sail as I feared the ice. At daylight made all sail. Latter part, light and squally. No ice in sight.

December 12. Lat. 47° 55′ S.; long. 28° 10′ E. Barometer, 29.20; air, 48°; water, 40°. Winds: NW. to N.NW. Comes in light and clear; at 10 p. m. wind hauling to the northward; middle, strong breezes and rainy; at 8 a. m., low glass and wind increasing; latter part, strong breezes and rainy.

December 13. Lat. 48° 6′ S.; long. 34° 0′ E. Barometer, 29.30; air, 49°; water, 42°. Winds: W.NW. Comes in heavy gales, rain and sleet; under close reefs. Middle part, violent gales and tremendous sea; latter part moderate; under easy sail. Passed some kelp.

December 14. Lat. 49° 00′ S.; long. 40° 15′ E. Barometer, 29.70; air, 43°; water, 37°. Winds: W.NW. Commences strong gales, with heavy squalls, hail and snow until latter part when it settled down to steady gales and passing clouds.

December 15. Lat. 49° 50′ S.; long. 46° 30′ E. Barometer, 29.20; air, 42°; water, 37°. Winds: NW. by W. Comes in brisk and hail squalls; air and water indicate ice. Middle part, fresh breezes and thick rainy weather; latter part, the same. Glass falling.

December 16. Lat. 50° 30′ S.; long. 52° 10′ E. Barometer, 29.05; air, 42°; water, 37°. Winds: W. by N. All day heavy gale and passing squalls of snow and hail.

December 17. Lat. 50° 31′ S.; long. 58° 50′ E. Barometer, 29.30; air, 41°; water, 36°. Winds: W. First and middle parts, heavy gales, with snow and hail squalls; latter part brisk and clear, with light snow squalls passing.

December 18. Lat. 51° 10′ S.; long. 64° 00′ E. Barometer, 28.00; air, 40°; water, 36°. Winds: W., NW., and NE. by E. Comes in brisk breeze aud clear; middle part, fresh breeze and snow; passed large bunches of kelp. Latter part, fresh and thick snow storm. Glass low indicating heavy gale of wind.

December 19. Lat. 51° 22′ S.; long. 67° 15′ E. Barometer, 28.90; air, 40°; water, 36°. Winds: W. to NW. Comes in moderate breezes and thick snow; barometer going down fast. At 4 p. m., barometer 28.50; at 6, 28.20; at 8, 28.00. Midnight, calm. At 2 a. m., sprung up gale from SW., when the barometer immediately went up as fast as it went down. Latter part, brisk gales and bad sea. Kelp and Cape pigeons around.

December 20. Lat. 52° 00′ S.; long. 71° 20′ E. Barometer, 28.70; air, 43°; water, 38°. Winds: NE. to W. Comes in brisk, irregular bad sea; middle part, thick snow storm and fresh breeze; latter part, heavy gales and stormy. Heading to the south.

December 21. Lat. 51° 30′ S.; long. 77° 00′ E. Barometer, 28.70; air, 40°; water, 36°. Winds: NW., NE. and W. All day heavy gales, snow squalls, and high sea. Water discolored; appears like soundings.

December 22. Lat. 51° 00′ S.; long. 82° 30′ E. Barometer, 29.50; air, 44°; water, 34°. Winds: N.NE., N.NW. First part, strong gales and bad sea; middle part, moderate and clear; latter part, light clear, and fine. Water greenish.

December 23. Lat. 50° 45′ S.; long. 86° 15′ E. Barometer, 29.95; air, 46°; water, 35°. Winds: NW. by W. Comes in light and hazy; wind inclining to the eastward. Middle part, light airs from south and variable; latter part, brisk and rainy. Water greenish.

December 24. Lat. 49° 44′ S.; long. 92° 20′ E. Barometer, 29.65; air, 48°; water, 40°. Winds: W.NW. All day brisk breezes and fine weather, with occasional squalls of hail. Water darker; little kelp.

December 25. Lat. 48° 57′ S.; long. 98° 45′ E. Barometer, ——; air, 48°; water, 40°. Winds: W.NW. Comes in brisk and clear; middle part, fresh and cloudy; latter, the same. Water dark. Plenty of birds from the Cape of Good Hope.

December 26. Lat. 47° 58′ S.; long. 104° 25′ E. Barometer, 29.20; air, 46°; water, 42°. Winds: W.NW. All day brisk breeze and squalls of snow and hail.

December 27. Lat. 46° 48′ S.; long. 111° 00′ E. Barometer, 29.50; air, 46°; water, 49°. Winds: W. to SW. All day strong brave winds and squally.

December 28. Lat. 45° 30′ S.; long. 117° 20′ E. Barometer, 29.60; air, 49°; water, 50°. Winds: SW. to SW. by S. All day strong and squally.

December 29. Lat. 44° 36′ S.; long. 123° 10′ E. Barometer, 29.80; air, 53°; water, 52°. Winds: SW. First and middle parts, brisk; latter, light and fine weather.

December 30. Lat. 43° 50′ S.; long. 126° 40′ E. Barometer, 29.90; air, 58°; water, 52°. Winds: W.SW. to NW. All day light breezes and fine; smooth sea.

December 31. Lat. 42° 55′ S.; long. 131° 00′ E. Barometer, 29.98; air, 58°; water, 54°. Winds: W.NW. All day light and fine weather; smooth sea.

January 1. Lat. 41° 32′ S.; long. 135° 05′ E. Barometer, 30.10; air, 64°; water, 57°. Winds: W. All day light and fine weather, as above.

January 2. Lat. 41° 02′ S.; long. 136° 40′ E. Barometer, 30.20; air, 64°; water, 58°. Winds: E.NE. to N. by E. First and middle parts, light and pleasant; latter, calm and cloudy.

January 3. Lat. 40° 54′ S.; long. 138° 15′ E. Barometer, 30.00; air, 66°; water, 58°. Winds: N.NE. Comes in calm; middle, light, variable, and clear; at midnight, tacked to the eastward; latter part, brisk breeze and smooth sea.

January 4. Lat, 40° 34′ S.; long. 141° 50′ E. Barometer, 29.70; air, 64°; water, 58°. Winds: N.NE. to W.SW. Comes in brisk and clear; middle part, variable and puffy; latter, light and fine weather. Water changed.

January 5. All day light; at 8 a. m. made Cape Otway; at 11 a. m. abreast of it; at 5 p. m. took a pilot off the heads and proceeded up towards Melbourne; at 9 p. m. came to anchor in Melbourne bay; 78 days from Boston.

From the line to the prime meridian.

Name.	Date of crossing the equator.	Longitude of crossing the equator.	Longitude of crossing the parallels of—							Latitude of crossing the meridian of Greenwich.	Days.
			5 S.	10 S.	15 S.	20 S.	25 S.	30 S.	35 S.		
		° ′	° ′	° ′	° ′	° ′	° ′	° ′	° ′	° ′	
Albany	Dec. 30	26 20	29 00	29 30	29 00	27 50	23 00	16 00	6 10	37 00	28
Georgian	5	28 30	29 10	30 10	29 00	25 40	24 00	21 10	7 00	36 10	22
Franklin	14	26 30	29 00	29 20	30 30	28 40	24 40	20 40	11 10	38 00	23
Charlotte	2	26 00	28 30	31 00	31 30	30 40	28 50	25 50	22 40	40 00	21
Alasco	11	26 00	28 40	29 30	29 30	28 40	25 50	15 40	8 40 E.	33 50	21
Argo	4	24 20	27 00	28 20	29 40	29 40	25 00	14 30	11 00 W.	37 00	24
Boston	29	32 20	33 40	33 30	31 00	28 00	24 50	19 30	10 00	36 30	24
Architect	31	30 15	31 10	31 20	30 00	29 40	28 40	26 10	20 00	40 00	17
Zingari	15	31 50	33 00	34 20	33 20	31 50	29 50	28 50	25 10	47 00	27
Sabine	4	34 50	34 40	32 10	30 30	29 10	24 50	21 20	15 00	40 00	27
Granite State	14	25 30	28 40	30 00	28 30	29 00	28 50	27 00	22 30	47 00	23
Mondego	3	26 35	28 25	30 00	30 00	26 35	22 20	20 15	8 20	35 00	27
Horatio	31	29 50	33 00	34 40	34 00	33 50	33 40	21 40	9 10	41 00	28
James Perkins	11	27 44	31 00	31 50	31 30	31 10	27 10	15 40	9 30	35 45	34
Plymouth	4	28 50	30 50	32 00	32 50	31 00	30 20	21 00	2 00	36 00	23
Cyrus	29	21 40	24 40	25 30	25 40	24 40	21 20	19 50	8 30	38 40	28
Cyrus	17	31 10	32 40	33 50	34 40	34 10	32 10	25 00	19 30	38 15	33
William Chamberlain	28	34 30	35 15	33 40	31 00	29 50	27 30	21 00	6 00	37 00	19
Richard Alsop	10	30 50	33 00	33 40	33 15	32 40	29 00	23 30	17 00	36 45	26
Candace	19	30 30	32 15	32 00	31 50	30 40	28 00	22 30	17 00	38 40	19
Liverpool packet	8	27 50	31 00	34 00	33 40	32 50	31 40	27 00	25 40	37 10	23
Akbar	25	25 10	28 00	29 30	29 30	28 40	28 05	26 30	8 10	36 10	19
John	19	26 40	30 00	30 50	30 40	28 10	25 45	19 00	5 20	36 35	25
Derby	1	25 40	28 00	30 00	30 35	28 20	24 10	15 00	13 00	38 50	21
Means of crossing east of 26°		24 32	27 16	28 40	28 47	28 04	25 29	20 34	12 38	39 32	23
West of 26°		29 18	31 16	32 07	31 24	30 02	27 28	21 40	15 19	37 56	24.5

Abstract log of the *ship* "*Malay*," (J. W. Willcomb,) from Boston to Melbourne; 31 days out.

"December 30, 1855. Lat. 5° 37′ S.; long. 34° 11′ W. Barometer, 30.17; air, 81°; water, 80°. Winds: E.SE. Light and baffling, with light showers. I have rather a hard chance to clear the land unless I get out of this current, 26 miles, NW.

December 31. Lat. 6° 52′ S.; long. 34° 01′ W. Barometer, 30.21; air, 83°; water, 80°. Winds: E.SE. Light and baffling; tacked several times; current 16 miles, W.SW.

January 1, 1856. Lat. 8° 38′ S.; long. 33° 41′ W. Barometer, 30.19; air, 82°; water, 80°. Winds: E.SE. Light trades and fine weather.

January 2. Lat. 11° 33′ S.; long. 33° 17′ W. Barometer, 30.22; air, 82°; water, 80°. Winds: E.SE. and E. Fine trades and pleasant weather.

January 3. Lat. 15° 03′ S.; long. 33° 12′ W. Barometer, 30.27; air, 79°; water, 80°. Winds: E.SE. Fine trades and pleasant weather.

January 4. Lat. 18° 36′ S.; long. 33° 10′ W. Barometer, 30.34; air, 81°; water, 79°. Winds: E.SE. Moderate trades and fine weather.

January 5. Lat. 21° 31′ S.; long. 33° 24′ W. Barometer, 30.36; air, 78°; water, 77°. Winds: E.SE. Moderate trades.

January 6. Lat. 24° 04′ S.; long. 33° 17′ W. Barometer, 30.42; air, 79°; water, 76°. Winds: E.SE. Light and pleasant.

January 7. Lat. 25° 50′ S.; long. 33° 04′ W. Barometer, 30.39; air, 81°; water, 75°. Winds: E.SE., E., and N. Light breezes and fine weather.

January 8. Lat. 26° 32′ S.; long. 32° 49′ W. Barometer, 30.31; air, 81°; water, 76°. Winds: N.NW. Light and fine weather.

January 9. Lat. 28° 30′ S.; long. 31° 50′ W. Barometer, 30.21; air, 81°; water, 76°. Winds: N.NW. Fine breezes and hazy weather.

January 10. Lat. — —; long. — —. Barometer, 30.14; air, 69°; water, 70°. Winds: N.NW. and SW. First part, strong breezes and passing clouds, with light rain; latter part, clearing up, strong tide rips.

January 11. Lat. 32° 22′ S.; long. 27° 56′ W. Barometer, 30.32; air, 71°; water, 70°. Winds: S., calm, and N.NW. Light airs and passing clouds; heavy swell from the SW., with strong tide rips.

January 12. Lat. — —; long. — —. Barometer, 30.20; air, 70°; water, 68°. Winds: N.NW. Light airs and cloudy, SW. swell decreasing.

January 13. Lat. 34° 50′ S.; long. 26° 09′ W. Barometer, 30.18; air, 66°; water, 66°. Winds: SE. by E. Light breezes and cloudy weather, swell from the SW.; saw kelp; ends, fresh breezes and rainy.

January 14. Lat. — —; long. — —. Barometer, 30.19; air, 59°; water, 61°. Winds: SE. by S. Strong breezes and rainy weather; saw kelp; water discolored.

January 15. Lat. 40° 50′ S.; long. 27° 36° W. Barometer, 30.57; air, 60°; water, 61°. Winds: SE. Fine breezes and pleasant weather, water discolored.

January 16. Lat. 43° 24′ S.; long. — —. Barometer, 30.35; air, 57°; water, 56°. Winds: E. Fine breezes and foggy weather.

January 17. Lat. — —; long. — —. Barometer, 30.09; air, 59°; water, 54°. Winds: N.NE., NW., and W. Light breezes and thick, foggy weather.

January 18. Lat. 44° 51′ S.; long. 21° 17′ W. Barometer, 30.17; air, 58°; water, 52°. Winds: W.NW. Fine breezes and pleasant; ends, foggy.

January 19. Lat. — —; long. — —. Barometer, 30.07; air, 55°; water, 49°. Winds: N.NW. Fine breezes and foggy weather. We saw a large number of icebergs in this longitude, two degrees further north; hope I shall not get among it while this fog lasts.

January 20. Lat. — —; long. — —. Barometer, 29.97; air, 53°; water, 46°. Winds: NW. Strong breezes and foggy.

January 21. Lat. 45° 25′ S.; long. — —. Barometer, 29.93; air, 52°; water, 47°. Winds: W. by N. Commences foggy. At 9 a. m. commenced clearing up; at 10 discovered an iceberg, passed within two miles of it. Ends, strong breezes and cloudy.

January 22. Lat. — —; long. — —. Barometer, 30.00; air, 44°; water, 43°. Winds: W. Strong breezes and cloudy; ends, light airs.

January 23. Lat. — —; long. — —. Barometer, 29.68; air, 50°; water, 45°. Winds: W. Moderate breezes and cloudy; ends, strong gales.

January 24. Lat. 45° 18′ S.; long. — —. Barometer, 29.60; air, 44°; water, 43°. Winds: W. Fresh gales and cloudy; a heavy sea.

January 25. Lat. 45° 18′ S.; long. 13° 45′ E. Barometer, 29.78; air, 46°; water, 44°. Winds: W.NW. to N.NE. Commences, moderate gales and cloudy; ends, moderate and pleasant.

January 26. Lat. — —; long. — —. Barometer, 29.75; air, 42°; water, 47°. Winds: W. Commences, light breezes. At 2 a. m. a heavy gale, ship running before it under close reefed top-sail and reefed fore-sail. Ends, strong breezes and passing squalls; a heavy, confused sea.

January 27. Lat. 44° 24′ S.; long. 22° 33′ E. Barometer, 29.86; air, 46°; water, 49°. Winds: W. by N. Strong breezes and passing hail squalls. Ends, moderate breezes and passing clouds.

January 28. Lat. 44° 26′ S.; long. 26° 10′ E. Barometer, 29.39; air, 52°; water, 57°. Winds: N.NW. Light and moderate.

January 29. Lat. — —; long. — —. Barometer, 29.20; air, 47°; water, 45°. Winds: N.NW. Fresh gales and heavy squalls; sea high and confused; latter part, moderating.

January 30. Lat. 44° 27′ S.; long. 33° 34′ E. Barometer, 30.17; air, 47°; water, 47°. Winds: N.NW. and N. by E. Moderate breezes and cloudy; a rough sea.

January 31. Lat. 44° 29′ S.; long. 36° 09′ E. Barometer, 30.16; air, 50°; water, 43°. Winds: NE. by E. Light breezes and passing clouds.

February 1. Lat. 44° 41′ S.; long. 39° 47′ E. Barometer, 29.50; air, 49°; water, 43°. Winds: W.NW. First part, moderate breezes and passing clouds; latter part, moderate gales and passing snow, hail and rain squalls. Exchanged signals with the barque Louther, 67 days from Liverpool, bound to Melbourne.

February 2. Lat. 44° 37′ S.; long. 45° 39′ E. Barometer, 29.60; air, 47°; water, 43°. Winds: W.NW. and SW. by S. Moderate and fresh gales and passing hail squalls.

February 3. Lat. 44° 35′ S.; long. 50° 03′ E. Barometer, 30.30; air, 39°; water, 39°. Winds: SW. by S. Moderate gales and passing clouds; latter part, moderate breezes and fine weather; passed large quantities of kelp.

February 4. Lat. 44° 49′ S.; long. 54° 22′ E. Barometer, 30.16; air, 46°; water, 40°. Winds: NW. Fresh breezes and cloudy, with rain.

February 5. Lat. 45° 30′ S.; long. 60° 26′ E. Barometer, 29.64; air, 48°; water, 47°. Winds: NW. by W. Fresh gales and rainy.

February 6. Lat. 45° 34′ S.; long. 65° 03′ E. Barometer, 29.67; air, 54°; water, 47°. Winds: NW. and W. by S. Moderate breezes and passing clouds.

February 7. Lat. 45° 29′ S.; long. 69° 15′ E. Barometer, 30.02; air, 49°; water, 45°. Winds: W., W.SW., and SW. Light breezes and passing clouds, with occasional smart puffs.

February 8. Lat. 45° 45′ S.; long. 74° 38′ E. Barometer, 30.42; air, 41°; water, 40°. Winds: SW. Fine breezes and pleasant weather.

February 9. Lat. 46° 12′ S.; long. 78° 32′ E. Barometer, 30.53; air, 52°; water, 54°. Winds: N. by E., N., and NE. by N. Moderate breezes and passing clouds.

February 10. Lat. ——; long. ——. Barometer, 30.38; air, 52°; water, 51°. Winds: NE. by N., N., and N.NW. Strong breezes and foggy, with fine rain.

February 11. Lat. 46° 22′ S.; long. 90° 44′ E. Barometer, 30.22; air, 52°; water, 51°. Winds: NW., NW. by W., and W.NW. Fine breezes and passing clouds; have seen much kelp during the last two days.

February 12. Lat. ——; long. ——. Barometer, 30.17; air, 51°; water, 47°. Winds: W.NW. Moderate breezes and foggy.

February 13. Lat. ——; long. ——. Barometer, 30.00; air, 52°; water, 48°. Winds: W.NW. Fine breezes and foggy.

February 14. Lat. 45° 27′ S.; long. 104° 56′ E. Barometer, 30.05; air, 46°; water, 48°. Winds: SW. and S.SW. Moderate, and light breezes and passing clouds.

February 15. Lat. ——; long. ——. Barometer, 29.73; air, 50°; water, 49°. Winds: N.NE. and NW. Fine breezes, with rain.

February 16. Lat. 44° 53′ S.; long. 114° 15′ E. Barometer, 29.87; air, 54°; water, 52°. Winds: W. First part, fine breezes, with rain; latter part, passing clouds.

February 17. Lat. 44° 20′ S.; long. 119° 15′ E. Barometer, 29.96; air, 47°; water, 49°. Winds: W.SW. Strong breezes and passing clouds.

February 18. Lat. 43° 28′ S.; long. 124° 15′ E. Barometer, 30.00; air, 49°; water, 49°. Winds: W. Fresh breezes, in puffs and passing clouds.

February 19. Lat. 42° 34′ S.; long. 130° 02′ E. Barometer, 29.85; air, 55°; water, 55°. Winds: W. Fresh gales and passing clouds.

February 20. Lat. 41° 10′ S.; long. 134° 56′ E. Barometer, 29.92; air, 63°; water, 60°. Winds: W.SW. Fine breezes and cloudy.

February 21. Lat. 39° 38′ S.; long. 139° 08′ E. Barometer, 30.15; air, 56°; water, 56°. Winds: SW. and S. Moderate breezes and passing clouds.

February 22. Lat. 39° 03′ S.; long. 142° 00′ E. Barometer, 30.32; air, 64°; water, 59°. Winds: SE. by S., baffling, and SE. Light airs and fine weather.

February 23. Lat. 38° 45′ S.; long. 142° 45′ E. Barometer, 30.42; air, 63°; water, 61°. Winds: SE. Light airs and passing clouds. At 9 a. m. made the land to the westward of Cape Otway.

TO THE EAST INDIES.

All vessels that are bound from the North Atlantic to the Cape of Good Hope, or to any port east of the Cape, have to pursue the same route through the South Atlantic. Their masters should study the foregoing tables "From the Line to the Prime Meridian," for these

tables as well as the chapter on the South Atlantic treat of common ground. After crossing the calms of Capricorn and getting the "brave west winds" of the southern hemisphere, they begin to diverge from the great highway to Australia: Now they require special sailing directions.

First, the vessels bound to the Cape and the East Coast, as Natal, &c., turn off. The way for them is plain. They, after having crossed the belt of SE. trades of the Atlantic with the foretopmast studding sail set, have only to make the best of their way into port; for after having cleared the calm belt of Capricorn they are too near their destination to run around adverse winds, or dodge opposing currents, except, perhaps, the Natal and Mozambique bound vessels. The Mozambique current, *i. e.* that hot water current which, coming from the Red Sea, the Persian Gulf, and Arabian Sea, runs down through the Mozambique channel, is another gulf stream; it is said sometimes to attain a higher velocity than the celebrated Gulf Stream of the North Atlantic; and it is therefore well for vessels bound to the ports of South Eastern Africa to recollect this in order that if, in doubling the Cape, they are forced to the eastward, they may then run up their latitude east of this current and so cross over.

The next vessels to turn off from the great golden track are those that are bound to Madagascar and ports North, to Mauritius, the Red Sea, Persian Gulf, Bombay and the Malabar coast.

Presently those bound to Ceylon or into the Bay of Bengal will turn off, and finally, this great route comes to its last fork. Here the vessels that are bound for Java or through the Straits of Sunda, or through any of the passages to the east, for China, Japan, or the Amoor, bear up and steer to the northward.

Navigators thus bound will, before they come to any of these "forks in the road," have read, if they are from Europe, the Sailing Directions from the Lizard to the Line; or if from America, they will have studied the route to "the 'fair-way' off St. Roque" as well as so much of the route thence as relates to the South Atlantic; and while they are crossing the trades of the South Atlantic, they may, not without profit perhaps, glance through this chapter with the view of deciding their course on arriving at the turning-off place.

Let us first see what our co-operators, who are practical navigators and withal very excellent judges, have to say upon the various routes through the seas in which we now are.

Captain R. B. Gilkison, of the English ship Alma, has transmitted a paper on currents, from which the following is extracted:

"The subject of oceanic currents is of great interest to the navigator. Few who have made the homeward passage from India, will have forgotten the favorable current experienced on the edge of the Agullas bank. We have been set 100 miles to windward in 24 hours during a gale of westerly wind; and on every occasion we have made that passage have felt its favorable influence more or less.

"It is more difficult to find a reason for this strong set against the prevailing winds. When sailing with the trades, when steady, a current from six to twenty miles per day is often experienced, setting in same direction as the wind is going. The same is often experienced in running from meridian of Greenwich to Australia, in a high southern latitude, when wind is steady, slackening, or discontinuing, when wind is light or westerly. This is what we might expect. But the Cape current commences when the trades cease and the winds are variable. A ship homeward bound from Java Head will generally find a current from 10 to 24 miles per day in her favor, when trades are good, slackening when breeze is light, till after passing Madagascar, and in about latitude 30° to 34° S., longitude 32° E., when a strong current

sweeping to S.SW. is suddenly fallen in with, travelling along the coast at first, then along the edge of the bank, where it is strongest, at a rate varying from one to five knots per hour, till about latitude 21° in 22° E. when it seems to split and the strongest part then sweeps to southward, where it apparently amalgamates with the current of the Southern ocean, already mentioned, at a rate varying from one to two knots per hour, as mentioned by Horsburgh, and which we have repeatedly experienced in latitude 37° to 39° S. The remainder seems to go round the Cape, when the wind is favorable, and joins the "trade current," which sets to the northward in South Atlantic." (I have not been able to trace this northwardly set. M.)

"In the Northern Indian ocean and China sea I consider the currents more like a great tide ebbing and flowing once every year. During the NE. monsoon a current sets southward which at some places is very strong, (around Ceylon, or through the Straits of Banca or Gaspar, for example,) till it approaches the line, where, at this season, the westerly monsoon is very strong, blowing steadily from Seychelles to Papua, and causing a very strong current from one to three knots per hour to eastward as far as New Guinea, and how much further I know not. After March, when westerly monsoon slackens, calms intervene; when the current changes with SE. monsoon and sets to westward, but not so strongly as during the NW. monsoon."

"December 21, 1854. Latitude 37° 28′ S, and longitude 15° 25′ E.

"Unsteady winds and pleasant weather; wind veering and hauling several points and blowing in puffs. The sea has assumed a green color, and rolls up in turbulent heaps. Much to my surprise, at 12 m. I found that we have had 80 miles NW. ¼ N. current, incredible as it may seem, nevertheless it is *true*, for I have been careful in my observations.

"Returning home from India, I once had 120 miles westerly current in 24 hours, near the Cape.

"Course and distance per observation.—E.SE. ¼ E., 126 miles; by D. R., SE. by E. ¼ E., 201 miles."

"April 28, 1855. Latitude 11° 33′ N.; longitude 88° 30′ E.

"*High temperature.*—Commences calm; first part, light baffling airs and pleasant, though ——— hot; middle and latter parts, moderate breeze; sea very smooth. In trying the temperature of the water, I sunk the bucket (canvas) several feet below the surface two or three times with the same result; 88° is the highest I have ever known. Course—SW. ½ W., 52 miles."

Bottle paper.

"TUESDAY, *February* 3, 1857.

"Ship Panther, of Boston, from Calcutta, bound to Boston; 18 days out; all well. Weather clear and calm; strong current to NW. the last 24 hours. Latitude 11° 19′ S.; longitude 84° 21′ E.

"THOMAS S. BISHOP, *Commander.*"

"Picked up on the coast between Brava and Juba islands, East Coast of Africa, about the 1st of July, 1857, and forwarded from Zanzibar by W. Geo. Webb."

BARQUE "HOLLANDER," OF SALEM, AT SEA,
March 13, 1856; *latitude* 9° 0′ *S.; longitude* 104° *W.;* 104 *days out.*

DEAR SIR: At the risk of annoying you, by intruding upon your labors, I wish to have a little bit of a yarn with you. I have had a fair passage thus far, I think. I crossed in longitude

32°, 28 days, and had 33 to St. Roque, a little over the average for the month; 25 days thence to 50° S., just the average; 25 days from 50° S., east Cape Horn, to 50° S., west; average 16; but I had a hard chance. Am now 21 days from latitude 50° S., and hope to cross in four or five days, in longitude 110° to 112°, which will be average. But I don't think your tables of averages are hardly fair for us slow coaches, for most of your ships are out and out clippers. Now I am going to begin.

"On reading the seventh edition of your Sailing Directions, which you kindly sent me in November last, I see an account of the cruise of a bottle thrown overboard from ship "Medford," of Boston, in latitude 14° 15′ S., longitude 85° 41′ E., and picked up four months after, at Brava, east coast of Africa, latitude 1° 07′ N., longitude 44° 03′ E. You say that it had probably been up towards the mouth of the Red Sea and was drifting down in the Mozambique current. Now, with all due deference to you, I would ask if that bottle had not made a drift west, a little northerly, through the SE. trades, (at that season they would hardly extend so far north;) however, drifted, as I said above, to the north of Madagascar and the Comoro island toward the African coast, and then turned northward and landed at Brava. I made a voyage out to those parts last year, in the "Parodi," of which you have the log. The current runs to the northward, by Zanzibar, the whole year round. In the southerly monsoon it runs at the rate of two to three knots, from latitude 8° or 9° south, up to Socotra and the Arabian Gulf. In the NE. monsoon it runs up to about 2° N., and there meeting the northerly current, both turn off to the eastward and lose themselves in mid-ocean. The Zanzibar current comes from the eastern part of the Indian ocean, sweeping like the Gulf Stream, in latitude from 7° to 10° S., running westerly until it reaches about longitude 45° E.; then it forks, one part running northward with greater force the nearer the African coast is approached; the other part turns southerly, by Mozambique, round the Cape. In the southerly monsoon, if a ship bound to Zanzibar does not forelay well and fetch to windward of the south end of the island, she will have a job, for it is almost impossible to beat in round either end of the island. Some vessels have been obliged to stand to the eastward and work up again, taking a week or ten days. I had 60 miles current there in 20 hours, and just saved myself. This current does not run inside of Zanzibar island, but sweeps up outside of it and both sides of Pemba, which lies a little to the northeastward of it. On coming out of Zanzibar I ran down to the north end, and hauled up on a wind round it with a four-knot breeze. I soon met the current, and away we went, broadside on, towards Pemba. I hung on until three o'clock p. m., and found I should not get out; up helm and run down inside of Pemba, with a tremendous current with us, thus losing about 60 miles.

"Some of the above is my own experience, but most of it I have obtained from our old Salem captains, who are old traders there, and from whalemen, a great many of whom cruise about there for sperm whales. I hope that you won't think I mean to say it is so and no other way; but knowing that you are a comparative stranger out that way, I thought that you might find some hint to work upon. In the "Parodi" I was in the Gulf of Aden in January, February, April, and May, and I found nothing like a current from the Red Sea. I did find it a little the *calmest* hole that I ever got into though, and I have been in every hole and corner of the East Indies. The sea was alive with fish; I used to catch two or three hundred pilot fish in a day. I also saw that illuminated water you describe. I agree with Captain Kingman's,

of the "Shooting Star," description of it, word for word. I noticed that it disappeared when the moon rose. We saw it many nights.

"March 18. Equator; longitude 110° 30′ W. On the line 26 days from 50° S.; clipper passage.

"April 12. Anchored on the bar last night, 24 days from the line and 133 from Boston. Have steered for and placed myself on your positions since leaving Boston.

"I am bound to the East Indies from California, and am keeping an abstract for you, but there is one thing—the form and description of clouds; I can't come at them, no how. With many thanks for what you have done for us, I subscribe myself,

"Yours respectfully,

"N. H. MILLETT,
"*Salem, Massachusetts.*

"Lieutenant MAURY."

"*Ship Chamberlain*, January 23, 1855. Lat. 39° 21′ S.; long. 21° 28′ E

"During the last 24 hours I have been set to the westward 50 miles. I am convinced by this that the warm water is from the Indian ocean, and going to the westward in a broad stream some three degrees wide. While in latitude 39° 30′, with the temperature fluctuating some eight or ten degrees, I judge that I was on the southern edge. In passing to the westward, March, 1852, I find, by referring to my journal, that in longitude 20° E., latitude 35° 30′, I had the water 68°, air 62°, wind SW.; in longitude 23°, latitude 36° 30′, I had the water 74°, air 62°, current one knot west. These two observations would give the northern edge in longitude 20° and about 36° latitude, and the southern limit in latitude 39°, taking the course of the land east of the cape, with a cold and probably a counter current in shore. I shall now tack to the southward for cold water."—*(Log, ship Chamberlain, Isaac Jennings.)*

Captain Jennings, writing from Philadelphia, September 14, 1855, says:

"In comparing my passage out with the ship 'Wisconsin,' from New York, it gives the following results: The 'Wisconsin' left New York about ten days before I did Philadelphia, worked hard to get to the eastward, and crossed the line in about 30° longitude the same day that I did in longitude 34° 30′. She was kept all she could to the eastward through the SE. trades, and passed the Cape of Good Hope about eight days after I did. She did not go quite as far south nor east as I did, and arrived at the Sand Heads ten days after myself.

"The sailing qualities of the 'Wisconsin' are about the same as those of the 'Chamberlain,' When rains, fogs, &c., have been constant and steady for any length of time I have noted it, but passing showers of a few moments I have not recorded in the column of rains," &c.

Captain D. Lynch, of the *ship* "*Escort*," on a voyage from Liverpool to Calcutta, 1856, says:

"I notice a remark in your sailing directions about a spot in the Pacific where no birds or fish, &c., are ever seen. I crossed a part of the Indian ocean which must resemble it; from 25° S. to the equator, I scarcely saw a living thing out of the ship; no birds except one tropic bird, and no fish except half a dozen very small flying fish. The water appeared to be perfectly devoid of all animalculæ.

"My passage from the Channel to the Pilot Station was 95 days."

My indefatigable fellow laborers at the Meteorological Institute at Utrecht have gone into an elaborate investigation of the Agulhas current. To aid in this, they constructed a series of monthly thermal tables of that part of the ocean. These tables show at a glance where the sea

is warm and where not. They fully confirm the announcement, which had already been made in the previous editions of this work, viz: that the Agulhas current does not double the Cape of Good Hope, nor enter the South Atlantic as hydrographers have generally represented it to do.

"The thermometrical method," continues this fine paper, which may be found at length in the "Uitkomsten" of 1857, "is more worthy of confidence than the collection of current directions deduced from confused and guessing plans; for these, in fact, from the little care sometimes given to the guessing, come out very uncertain; while thereby also a second uncertainty comes in, namely, the local attraction, whose determination is yet very much behindhand. Whenever more care will be exercised in this, satisfactory results may be obtained.

"By this table the suspicion will be remarkably confirmed, that the Agulhas current, which flows by the Cape, moves southward, and does not, as was formerly supposed, turn around the west coast of Africa toward the north, and thence from the warm waters along the coast of Brazil. There is now no longer the least doubt that the former opinion was incorrect; for the low temperatures which are met with west of the Cape of Good Hope furnish an incontestable proof that the warm waters from the Agulhas current do not turn to the north even in February, (when they penetrate furthest westward,) do not come north of 32° or 33° south latitude, but, on the contrary, are turned more to the southward.

"The warm water which, in the southern summer months, flows in broad currents along the east and west coast of Madagascar, and afterwards along the southern point of Africa, is carried much further southward and westward of the Cape of Good Hope than in the southern winter months.

"Thence the warm stream increases sensibly in breadth and forms almost a small river, which turns in a more southerly direction to the Agulhas bank. The pressure being thus much less, the cold polar current has more opportunity for penetrating further into the warm stream, or to turn aside its course.

"From this penetration arise the branchings which we perceive making their appearance in the special chart for February and July. For if we imagine a cold stream coming from the pole, striking against the Agulhas bank in a NE. direction, we see this stream speedily coming to the surface, and we notice in places a sudden change of temperature in the sea water, while the direction of the current is determined by the manner of meeting of the warm equatorial with the cold polar stream.

"Sometimes ships, during half a day, will meet a strong current from SW. or W., and during the other half a strong NE. or E. current; and again, over the whole day no current whatever will be observed. We imagine these cold currents to be like wedges, which penetrate always into the warm Agulhas current, whereby it is sometimes checked in its course and sometimes turned entirely out of it. The first seems to impart to the water a rolling or boiling appearance, while from the second appear to arise those tangling currents of which so many notices are made in the journals; and the green, muddy, or brownish color of the sea water is commonly an indication of the warm current.

"From the special chart of July we see that the main current, coming against the Agulhas bank, divides into two branches: the one, which follows the direction of the coast, splits up very soon, by the entering of the polar current, into two parts, one of which goes west-northwestward and speedily mingles with the surrounding cold water, while the other goes south-southwestward, and is first absorbed by the polar current at the parallel of 39° south latitude.

The other main current, which already goes south-southwestward by Algoa bay, and is continually pressed by the polar current to take a more southerly direction, passes yet south of 39° south latitude; thence goes east-southeastward, and sometimes flows even as far as the parallel of 41° south latitude; thence forward to lose itself in the polar current, or rather to follow its easterly course.

"In the southern summer months a great amount of warm water flows along the coast of Madagascar to the S.SW. in a broad current, which then turns along the Agulhas, and has a branch in the direction of the coast, which has so much momentum that it can penetrate to 12° E. longitude, thus going westward of the Cape of Good Hope.

"The main current takes rather speedily a SW. direction, growing more southerly all the time, and takes an E.SE. direction at 42° S. latitude, whence the polar current between 36° and 39° E. longitude is pushed back to the parallel of 45° S. latitude, and even south of it.

"The warm current, mingling there with the polar water, regulates its direction, and is soon fed by another warm current which comes south from the east of Madagascar. By these the polar current is more and more set back, and the temperature of the water eastward of the meridian of 70° E. longitude is raised over a great surface, so that the atmosphere becomes thereby sensibly milder than on the same parallel west of this meridian. Without taking into account the warm current, the water east of 70° E. longitude would yet be nearly 4° Celcius warmer than on the same parallel in more westerly places."

Lieutenant Van Gogh, writing from the Dutch Meteorological Institute of Utrecht, June 12, 1857, says:

"For preparing masters and mates for examination it is now admitted that the general course of navigation extends to the instruction of the meteorological observations—the application of your Wind and Current Charts, and the requisite qualifications for keeping the abstract log. Besides the 250 Dutch captains now co-operating, thereby we have more security that in a future period the number will increase still.

"Your new Pilot Chart, No. 66–67, north Indian ocean, is an important improvement. Discussing some log-books from vessels bound to Akyab, for January, I find the NW. monsoon west of Sumatra limited by calm belts, as sketched in the enclosed diagram, (p. 685.) This monsoon proves to be the NE. monsoon veering round to NW. and W., when it is blowing towards the heated areas near Java.

"Your intentions to recast and improve all the track charts, when you shall have got through with the present series, in order to make them complete and general charts, will show in the most practical manner all the profit of your noble task. The navigator will use them both as charts and sailing directions at the same time.

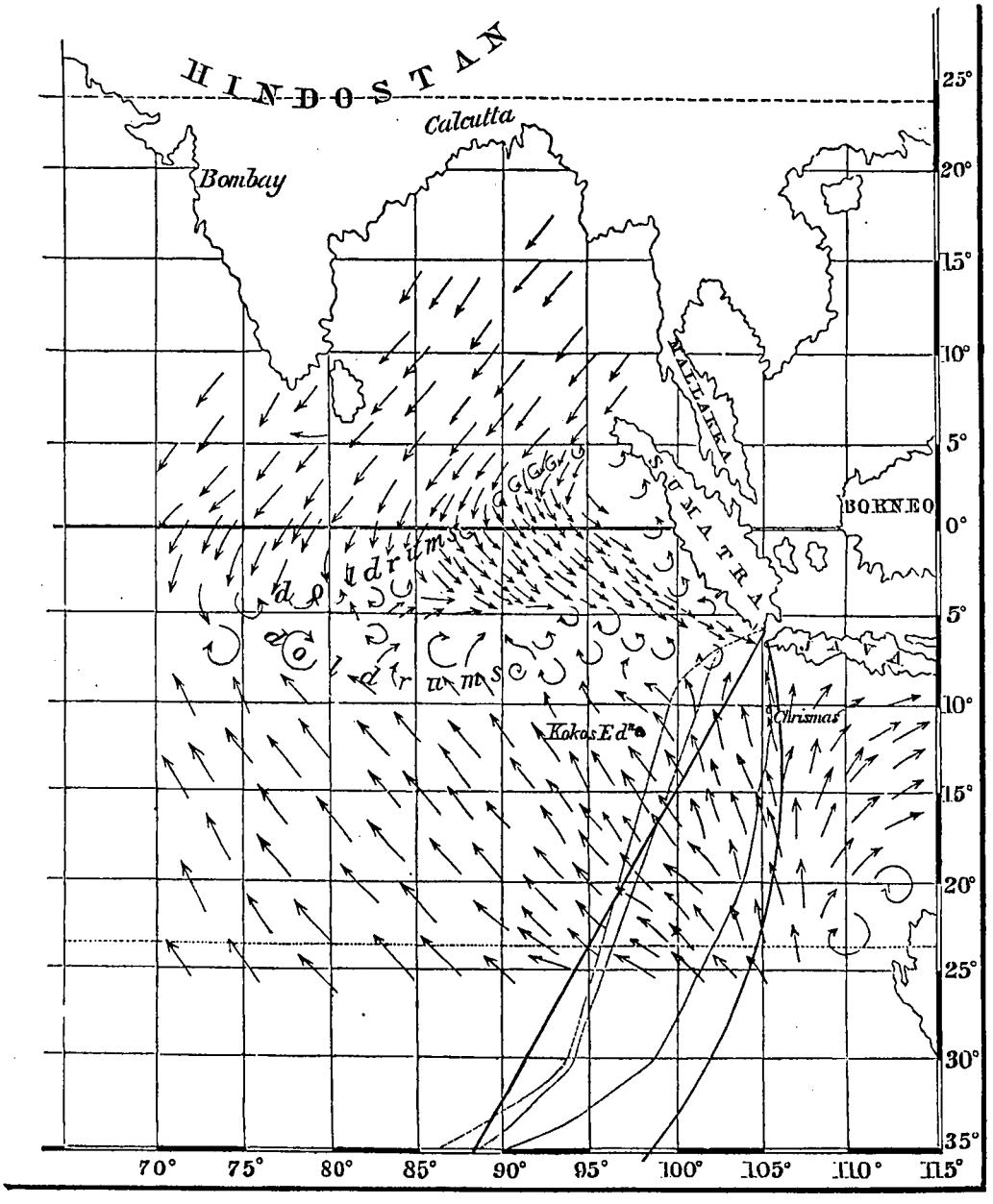
"By the American vessel North Sea, I forwarded to your address, in April last, a box containing 25 sheets of Maury's Passaatkaart; 25 sheets of No. 10, Series C, Dutch edition; 40 copies Uitkomsten van W. en Erd, edition of 1856; 50 copies Uitkomsten van W. en Erd, edition of 1857.

"In the last you will find a description of the Agulhas current and its influence on the atmosphere, as derived from the discussion of the Dutch log-books, and illustrated with charts and temperature table, by Lieutenant Andrau, who has accomplished the whole with much tact. Also, he has arranged many data concerning the winds, weather, barometer, &c., the application of which will be of practical use on the southerly tracks. Gathering all about the impediment of ice in this volume, I hope its contents will contribute to show our navigators

that the limits of this part of the route to Java and to Australia lies between that belt of westerly winds which have the warm waters of the Indian ocean on the left and the Polar ice on the right.

"Many Dutch vessels to Java of course deviate from the old track, so that the mean lies between the old and the new route, giving a gain of about eight days from the line to 80° longitude east, and eleven days from Lizard to Java Head.

"I hope the crossings from Java to Lizard, with preliminary sailing directions, will be published this year. Imitating your beautiful route tables, we are now searching the best route for every month for that part of the track from the line to Lizard, where it is questionable whether to go west or east of the Azores."*



* This question should be discussed with all the additional lights that the officers in England and France can shed with their logs.

Captain Libbey, in transmitting from Boston, September 6, 1855, the abstract log of ship Sabine, on a voyage from New York to Calcutta and back to Boston, says: "My passage to the equator was quite long, but fully satisfied me that 'one is not hopelessly to leeward who is forced across the line in 35° or 36° W.' I was able to clear all land by 80 miles from that point, and in 16 days crossed the latitude of 40° S. I tried the Great Circle route and did very well by it. I compared my track with ships F. Dragon and Gem of the Ocean, and found that I was able to hold those clippers by being far south, making the passage from 18° E. to Calcutta in about the same number of days. The winds forcing me so far to leeward, (having nothing under my lee except the United States ship Vincennes,) I found your charts of much more use to me than formerly, although I then made a saving of 10 days by their use, (June, 1852.) My passage up the Bay of Bengal was short for the NE. monsoons, and made by standing on through all, hoping to get a westerly wind along the NW. shore, which I think may be depended on after the month of January. Other ships that made a long and short lay up were much longer."

Again, Captain Libbey, writing from Calcutta, October 22, 1856, says: "I took command of ship 'Orion' in January last, at Boston, (the ship being then new,) for a voyage from Boston to New Orleans, Liverpool, and Calcutta, and having made a fair passage from Liverpool to the line by following the directions given in the seventh edition of your most valuable work, I take pleasure in sending you the abstract log; my only regret being that I did not keep still further west when in 40° N. latitude, so as to have the trades more on my port side. We crossed the line in 24 days 4 hours, and passed the Cape in 54 days, making the passage to Sand Heads in 89 days; ship loaded to 21 feet with salt, and by no means a clipper. The Orion has beaten the entire fleet, some ships that sailed three weeks before us having not yet arrived; we took pilot September 21. By comparison with other ships, I find we beat most of them only to the line, they having made nearly the same run from the line to Sand Heads. The abstract which I now send will make no difference in regard to the general abstract; it will be there given again.

"August 15. When 53 days out, latitude 43° S., longitude 12° 45′ E., we fell in with James Bain's clipper ship Saldanha from Liverpool, 70 days out. By hard driving we gained a little on her, and we parted by steering different courses; this difference in our passages was, no doubt, caused by her going east and getting becalmed north of the line. The S. was the Australia mail ship; I ran down my easting in 42° 43′ S., and had good wind; saw no ice.

"I hear great complaints of shipmasters being deceived, in running for Sand Heads, by the directions on charts being wrong. They are wrong; not one is right; no word is given to show that the western station only exists from March 15 to September 15, which is the case. A ship coming up the bay in the middle and latter parts of September should run direct for the eastern light, and keep the middle of the bay, as the winds in the last of the monsoon incline to the eastward in the head of the bay. And in running for Salvo Point a ship will have almost a dead beat up to the pilot station. To prove which I refer you to ship Sabine's log in 1852."

Captain Osgood, of the Oriental, speaking of the NE. monsoons for January in Bay of Bengal, says, in a letter accompanying his log: "You will notice in my outward passage up the bay in the month of January, I stood across until I made the land on the west side; although this is directly contrary to Horsburg's directions, I think it is much the best way, at this season of the year, and should always take this course any time after the middle of January; at about

this time the southerly current along the west coast begins to grow weak, and by standing well in shore you will get southerly and westerly winds which will soon take you up to the pilot station. After January you are apt to get very light winds and calms in the middle of the bay when there is a good SW. wind blowing along near the shore on west side, of course one must get well to the eastward in the southern part of the bay before getting the NE. winds.

Southeast trades in South Atlantic.—"This passage from the Cape to the equator I have made my track further to the southward than I ever have before, and in fact much further than any of the tracks on your charts; my idea was that it would be better to make more westing (than is usually made in coming from the Cape) while the winds were strongest, and, as a general thing, I think that the SE. trades, from 10° S. to the equator, are much stronger near the coast than they are far off towards St. Helena. I should like very much to know what you think of this course, as I think the track home from India can be improved as well as other tracks." [I think so too.] "I have had more or less southerly current nearly all through the SE. trades, much more than I had in the Josiah Quincy when I came along a little further to the northward where the current set more westerly. I have been very particular about the log, (every two hours,) and all the observations are taken with a good sextant, and have been particular about working them, &c. I use for a log chip a bag, the mouth of which presents the same surface as a large old fashion log chip, besides holding a considerable quantity of water, and instead of the old style peg I used one of my own invention that I have used some three years, and find to be much better, as it always requires the same force to draw it, and it cannot draw until that force is applied. I suppose any improvement in the log will be of service to your good cause, I annex a drawing of it."

Abstract log of the ship "*Panther*," (N. G. Weeks,) from Liverpool, England, to Calcutta.

"August 13, 1854. Lat. 21° 17′ N.; long. 27° 05′ W. Current, SW. by W. 6′. Barometer, 30.04; temperature of air, 77°; water, 75°. Winds, E.NE., NE., NE. Throughout these 24 hours brisk, strong trades; hazy, fine weather. Mr. Maury recommends ships from Europe to cross the equator in 25° W.; I am consequently running to lose the trades in 13° N. and 30° W., and to take the SW. monsoon, which I have always experienced in August, and which I expect will give me a good slant to cross the line in 25° W. The trades are unusually strong and steady, so that I expect to carry them to 11° N., on meridian of 30° W.; distance 185′ S.SW. Barometer falling rapidly; atmosphere becoming damp.

"August 14. Lat. 18° 27′ N.; long. 28° 23′ W. Current, SW. by W. 6′. Barometer, 30.01; temperature of air, 78°; water, 76°. Winds: NE. by E., NE. by E., NE. by E. Throughout these 24 hours charming, strong, steady trade-winds, inclining northwardly; hazy atmosphere; damp all night, with very little dew. Distance, by observation, 209′ S.SW. ¼ W.

"August 15. Lat. 15° 06′ N.; long. 29° 19′ W. Current, SW. 6′, Barometer, 29.94; temperature of air, 79°; water, 80°. Winds: NE. by N., NE. by NE. by N. First part, strong, steady trades, fine weather; no signs of the trades giving up. Middle part, breeze, not so steady, clouds making up from SW.; 2 a. m. to 2½ a. m., calm, after which the breeze commenced fresh and steady from same quarter. Latter part, breeze moderate and fitful, flying about from N. to E., now fresh and then nearly calm, with other unmistakable signs of decay. Distance, per observation, 193′ miles, south true.

"August 16. Lat. 14° 53′ N.; long. 29° 21′ W. Current, S. 9′. Barometer, 29.94; temperature of air, 82°; water, 82°. Winds: NE., NE., W. Commences with light breezes

from N. by E. to E.NE.; appearances of rain in the SW. At midnight, being in lat. 11° 26′ N., long. 29° 15 W., this splendid old wind, which had wafted us about 3,000 miles in 17 days, ceased to breathe.—(She is now in the doldrums.—M.)

"August 23. Lat. 2° 41′ N.; long. 20° 04′ W. Current, SE. by S. 1′. Barometer, 29.93; temperature of air, 79°; water, 80. Winds: S.SE., S.SE., S.SE. First part, steady trades and strong; 5 p. m. observed a change in the color and temperature of water and air—water, 78°; air, 77°. Middle part, strong, steady breezes, fine weather; the SW. monsoon has imperceptibly changed itself into the SE. trade wind. Latter, strong trades and fine; at 9. a. m. crossed the equator in long. 22° 02′ W., being 25 days 21 hours from Liverpool, which, *for the month*, may be called a remarkable passage. Have tacked ship but once since leaving the channel; have had only three hours' calm, and, for the most part, a 5 to 10 knot breeze. I have doubtless been the gainer by steering *well to the westward* of Cape Verde islands, so as to lose the trades in 29° 20′ W., which I should not have done had I not had the benefit of Lieutenant Maury's "Sailing Directions." I was once from August 7 to September 12 on the passage from St. Ubes to the equator, when I passed *to the eastward* of Cape Verde islands; find the current has changed to W.SW. 34′ true. Distance, by observation, 226′ SW. $\frac{7}{8}$ S. true. Distance, per log, Liverpool to equator, 4,184 miles.

"August 24. Lat. 00° 23′ S.; long. 22° 14′ W. Current, W.SW. 1.4. Barometer, 29.96; temperature of air, 78°; water, 75°. Winds: SE. by S., SE. by S., SE. by S. Throughout these 24 hours fresh trades and steady from SE. by S. Distance, per observation, 220′ S.SW. $\frac{3}{8}$ W. true.

"August 25. Lat. 3° 39′ S.; long. 23° 52′ W. Current, N. by W. 0.8. Barometer, 29.99; temperature of air, 78°; water, 76. Winds: SE. by S., SE. by S., SE. by S. Throughout these 24 hours strong, steady trade-winds, fine weather. Distance, per observation, 206′ miles S.SW $\frac{3}{4}$ W. line. Passed latitude of Cape St. Roque in 27 days 12 hours from Liverpool, in the month of August. [Excellently well done.—M.]

"October 15. Lat. 23° 11′ S.; long. 90° 02′. Current, E. 0.5. Barometer, 30.04; temperature of air, 65°; water, 69. Winds: S.SE., S.SE., S.SE. Commences with a light trade wind from S.SE.; and middle, strong trades and cloudy. Latter, strong, steady trade-wind from SE. by S. It is my opinion that ships have no occasion to run so far east as 90° when bound to Bengal, even in the NE. monsoon. When the winds of the Indian ocean and Bay of Bengal are *properly classified*, there will be a saving of 600 or 1,000 miles distance to outward bound vessels. Something like the "Great Circle" course might be steered from lat. 40° S. and the meridian of the Cape of Good Hope to 87° E. on the equator. Distance per observation, this day, 212 miles N. $\frac{1}{4}$ W."

Barque J. Godfrey, (N. B. Grant.)

"October 19, 1856. Lat. 1° 50′ S.; long. 164° 12′ E. Barometer, 30.03; temperature of air, 84°; of water, 87°. Wind: Calm.

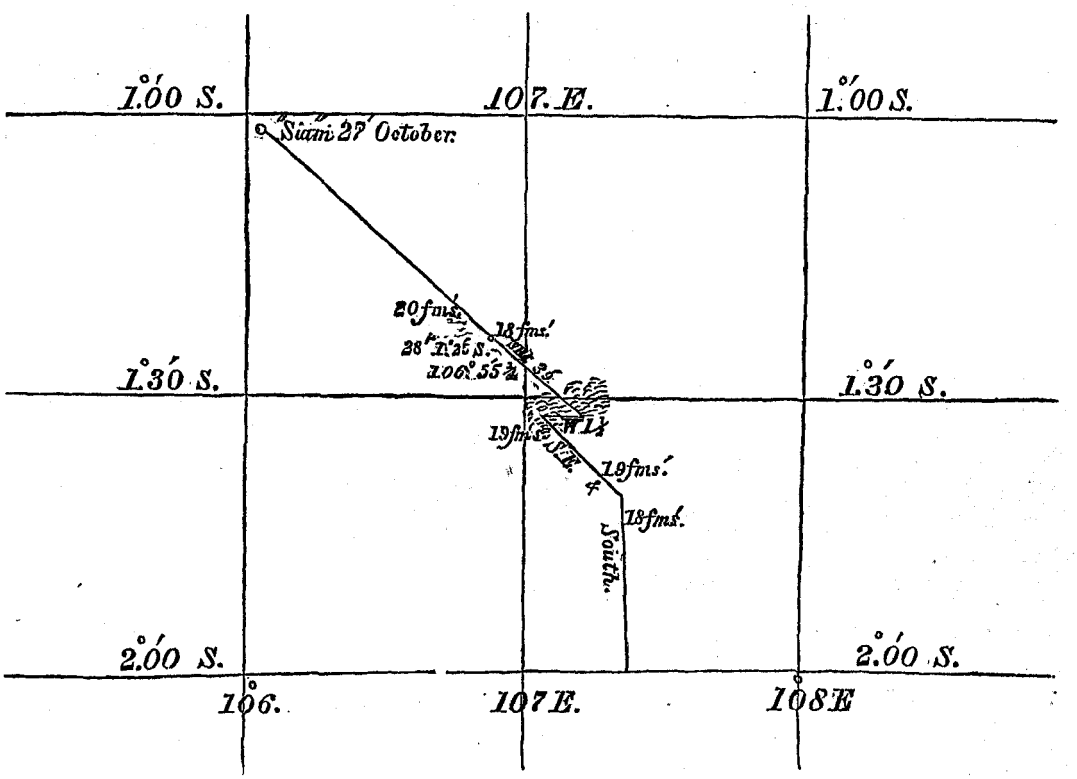
"Calm throughout, with a smoky atmosphere. Lowered the boat and tried the current. Used the same apparatus as that mentioned in the abstract log of ship 'Lady Arbella,' viz: A 'deep sea line' with a thirty-pound lead attached to anchor with, and for a log, light cotton twine attached to an ordinary log chip. With the lead down to 50 fathoms the log chip moved off W.NW. 25 feet per minute, $\frac{1}{4}$ mile per hour; at 70 fathoms, $\frac{2}{5}$ of a mile per hour, W. by N., 45 feet per minute; and at 90 fathoms the chip went west, $\frac{3}{5}$ of a mile per hour, 60 feet

per minute. It will be seen that the vessel has made 6 miles of northing and 18 miles of westing during the 24 hours. Light catspaws from the southward during the afternoon are sufficient to account for the difference of latitude, but any other motion through the water it has been impossible to detect or account for. Can it be that the whole volume of water to the depth of 50 or 60 fathoms is moving to the westward, but with an increased velocity near the surface? This experiment seems to indicate that such is the case, and if my reckoning is correct it is a further confirmation of the fact."

Log of the Ship "Siam," (Charles H. Williams,) from Boston to China, 1855.

"Sketch of the 'Catherine Shoal,' as laid down in Horsburgh's latest Directory and Charts in 1° 31′ S., and 107° 01′ E., showing breakers in one continuous line for three miles.

"My charts were very correct, and a number of good sights. I could not have possibly passed without seeing it.



"If the shoal exists, its position is in error; and if breakers, as reported, we could have seen them three or four miles; about ¾-knot tide to SE., and much drift stuff and patches of yellow scum about. [The wood-cut shows the "Siam's" track over this myth.]

"*Penang.*—Pulo Penang, called also Prince of Wales' Island, is high, uneven land, excepting the south and eastern side, where the town is built, which is low land, surrounded by an extensive mud flat, dry at low water.

"The fort and town is on the NE. end of the island, having 10 or 11 fathoms, within ⅛ of a mile of the fort, and extends across, within ¼ mile of the Queda shore.

"A mast with a yard across is stretched on the fort, where all ships are telegraphed. If

at the NW. and W., a flag at the north yardarm; if to the southward, a flag at the south yardarm; and when seen from the fort, an English jack is hoisted at the masthead. These flags are first made from the Government Hill, where there is an observatory 2,170 feet, and five and a quarter miles east of the fort. All ships are first seen and telegraphed from the Hill. Tide ebbs and flows six hours each way; runs three knots on spring, two knots on neaps.

"S. by E. tide is flood, and makes high water; N. by W. tide, ebb, low water.

"Cargo lighters are of 10 tons each, and, owing to the mud flats, can only be loaded at high water.

"A small gun-boat is stationed here.

"Penang is a healthy and pretty place. Everything remains green the year round, and is well drained. Nutmeg plantations are numerous, and on the hills coffee trees are planted and hung with berries. Many of the hills are owned by merchants, and all grow coffee; and the views from the hills are beautiful and air delightful; always a fresh breeze. At the Hill the grounds are laid out beautifully, the walks lined with all kinds of flowers, but the roads can only be travelled on horses.

"North channel is best for large ships to enter or depart, but with a draught of 14 or 15 feet; pilots are procured for the south channel, which is well buoyed out. Pilots are stationed at Pulo Jerajah Island. Malacca Straits are quite safe, only more tedious than difficult. Tide runs NW. by W., and SE. by E., to Tree Island, where the tide meets; and flood from E.NE., instead of NW. by W., from China sea.

"Cape Rachado, when first seen, appears as an island, cape being low, and has a hill on its end.

"A floating light-ship is moored on the north sands, 1 mile NW. of the buoy, on the 2½ fathom bank, showing a fixed light.

"Pisang is high, and Cocob quite low; the trees on it being of light green, is easily known.

"Tree Island is a mere sand bank; has five trees on it, and is surrounded by a reef.

"Coney Island is small, but high. A light-house is in course of erection on it, and nearly completed, and will be a great benefit to commerce. A ship should never anchor here, if possible to avoid it. It is all rocky bottom, and a five-knot tide, and a ship will be sure to lose an anchor, as was the case with me."

"*Remarks on Canton, &c.*—Hong Kong is generally barren and mountainous. The highest peak is near the NE. end of the island, and has an elevation of 2,000 feet. Settlements are on the north side of the island. Towards its east end, opposite Cowloon bay, the anchorage is good holding ground, with depth varying from 5 to 9 fathoms.

"Canton is one of the great emporiums of the East as a port of trade; is situated in the province of Quanton, in lat. 23° 07′ 10″ N., long. 114° 13′ E. It stands on the eastern bank of the Pekiang river; near its junction with the sea it is called Bocca Tigris. The town is surrounded by a thick wall, built partly of stone and partly of brick, and is divided into two parts by another wall running east and west. The northern part is called the old, and the southern part the new city.

"Foreign factories extend some distance along the bank of the river; are walled in for 100 yards, and are called hongs. In front is a beautiful garden, with fine walks, and in the centre a well built Episcopal church is erected after the European style. In the garden, after

5 p. m., congregate the merchants; commanders of ships meet and enjoy the cool of the evening.

"In front of the American, English, and other hongs, flagstaffs are erected, displaying the national ensign abreast of the consulates.

"For the space of four or five miles opposite Canton the river resembles an extensive floating city, and in these boats the Chinese live with their families.

"The Hall shoal, laid down on Horsburgh's latest charts in 1° 31′ S., 107° 01′ E. I have reason to doubt its existence, as, on my passage home, I crossed over its position as he gives it. On the 28th of October, at noon, I was in latitude 1° 25′ S., longitude 106° 55¼′ E., and with the wind S. by W. ½ W. I steered SE. ½ E. nine miles, crossing the shoal as laid down; I then tacked and stood W. one mile, sounding all the time 18 and 19 fathoms; this put me directly on the shoal. A lookout was kept from the fore royal yard, and neither breakers nor colored water was seen; the weather fine.

"November 4, in 5° 29′ S., 106° 17′ E., saw a water-spout of large dimensions close to us; the weather was fine in SE., E., S., and SW., but a black squall rising in N.NW., and as soon as the squall reached our zenith the spout formed three cable lengths from us, and moving

rapidly to S.SE. My first care was to clew all up. The column was apparently as large around as our mizenmast, say 24 inches in diameter. It kept bending and swaying in different directions, like a snake, and the column inclined 16°. It came from a heavy black cloud; under the column the sea rose three or four feet, tearing up the water and roaring like a cataract, bubbling up like the boiling of a pot. The time of its duration was 11 minutes; it appeared to go around, from right to left, at a rapid rate. A moment before it broke there was a

sudden noise like a gun, starting all hands, and followed immediately by a vivid flash of lightning and heavy clap of thunder; whether this had any connexion with the spout I am unable to say. As the tube was disappearing the bubbling was seen on the water until the tube was lost in the clouds.

"When the other disappeared it was so near the roar was distinctly heard, and had I not got sail in we should have run into it, as it was crossing our bows. The tube was white and transparent, and a foam around the end on the water.

"*Gale in the Indian ocean.*—March 20. Fine trades from E.NE., veering occasionally to NE. and N.NE., at times squally, and then clear, sultry feeling. All sail set. Barometer declining; watching it carefully.

"March 21. Wind at E., strong and hazy, veering to N.NE. to E.SE. Barometer declining to 29.65 and remained so. Quite a swell from the southward.

"March 22. Sharp squalls from SE. and a falling barometer, 29.60; lightning in the northward. Middle, squalls hard and rain; lightning in the northward and SE. 9 a. m. barometer down to 29.40; wind at S.SE. and baffling four points; prepared for a storm; got the ship snug; all sail in; hove to on the port tack.

"March 23. A heavy gale, very severe squalls; lightning all around, mostly at NE. and eastward; no thunder; steady rain in torrents; barometer falling to 29.20. 11 p. m. calm for 20 minutes, then a sudden shift from S.SE. to E.NE.; very heavy sea from S.SE., NE., and northward; sea increasing from northward; very wild look. Noon, barometer 29.15; no abatement; rained steadily all day; a mountainous sea and confused; no sail on the ship; terrific squalls, making the ship tremble, lying well down.

"March 24. At 1 p. m., calm for fifteen minutes; no steerage way, then a shift to North in a gust; hard, steady rain; terrific squalls; a bad look. 2 p. m., the barometer rose to 29.30; still no abatement; squalls longer and harder, if possible; sea all up in heaps, dashing against each other. At 6 p. m. it began to break away in the W. first and SW., and cleared up—the clouds in a solid body settling to eastward—and was clear until 9 p. m., then moderating fast; shut over thick with light rain squalls; barometer hanging at 29.20 until noon, then 29.30.

"March 25. Faint airs and calms all day, but an ugly swell from E.NE. and NW.; wind N.NW.; barometer very gradually rising still; light showers, and, as you will perceive by log, we have no trades after the gale, and the seasons were changing and the winds very light. On my arrival I found most all the passages to Calcutta were 140 to 160 days, and they must have had the same light winds further west, and their logs will tell if the gale was felt further to the west.

"*On the passage down the China sea.*—From my own experience I should say that a ship leaving China or Manila as early as September or October would shorten her passage to Anger by coming to the westward of the Anambus Islands, instead of the passage between the Natuna and Anamba, for there is a great deal of calms in the vicinity of the island, when to the westward you have more wind, and the current setting to the S.SW., until in 2° North, then sets SE. by S. 20 and 30 miles daily. I have tried both passages often, and prefer the western one. I spoke the American ship "Bostonian," 42 days from Manila, two Spanish, and one English ships; all from Manila, 38 or 40 days out; they took the inner passage and reported an abundance of calms and southerly winds."

Captain Doane, in transmitting the abstract log of ship Northern Light, from Boston to Manila, and back to Boston, in 1857, says: "I was forced to cross the line on my passage out

well to the westward, but found no difficulty in getting to the southward. Had very baffling winds over the southern route, (perhaps I was not far enough south.) Have made a few remarks on the route, but do not pretend to say they are correct; and suppose you expect to find some ludicrous remarks made among so many (sailors) as are sending you logs; they generally get a little fractious if they have baffling winds and long passages. I think the southern route is the right one, and shall try it again if I have an opportunity. Am anxious to see your opinion regarding the eastern passages and China Sea with the monsoon ahead, as I think there is a chance for improvement; and would call your attention to some shoals about the Java Sea and Straits of Macassar not laid down on any charts but those of the late Dutch survey, which I think but few American masters have. I have been through the Java Sea and Straits of Macassar twice without knowing they were there, and had Horsburgh's Charts, together with the latest Spanish survey. The dangers most in the way of ships are 4° 45′ S.; longitude 115° 50′ E., 2 fathoms, and the islands to the southward of Great Pulo as follows: A shoal in latitude 4° 31′ S.; longitude 115° 50′ E., 4 fathoms; one in latitude Saut are laid down too far east. Moresess Islands 10 miles too far east; Two Brothers 16 miles; Great Pulo Saut 14 miles; in the northern part of Macassar Strait a shoal in latitude 1° 06′ N.; longitude 120° 15′ E. I have called your attention to these dangers, as I think the Dutch charts are not kept for sale in the States, and I consider them by far the best charts of the Java Sea and eastern passages. I would take this opportunity to acknowledge my sincere thanks to you and all employed for the great benefit you have done us sailors as a class, and the community generally, by your valuable Charts and Sailing Directions, and shall contribute my mite as long as I follow the sea, and endeavor to have the best of instruments to observe with."

From the log of the Northern Light.

"March 23, 1857. Lat. 6° 22′ N.; long. 134° 01′ E. Barometer, 29.86; air, 83°; water, 82°. Winds: NW. Strong breezes and thick cloudy weather; all sail set; at 2 p. m. made Angour Island, (the southern island of the Pelew group,) bearing NE. by E. 14 miles distant; at 5 tacked to the SW. and took in the royals; at 10 p. m. tacked to the N.NW.; midnight gentle breezes and cloudy; ends with strong gales and a heavy head sea; took in the topgallant sails; ship pitching very bad.

"March 24. Lat. 7° 51′ N.; long. 133° 29′ E. Barometer, 29.75; air, 83°; water, 82°. Winds: W. by S. Commences heavy gales; at 1 p. m. double-reefed the topsails; a very heavy confused sea; midnight took in the courses and close-reefed the topsails; gale increasing with very heavy rain squalls every 15 minutes; ends, heavy gales and a very heavy confused sea, with heavy rain squalls.

"March 25. Lat. 8° 58′ N.; long. 133° 44′ E. Barometer, 29.50; air, 82°; water, 82°. Winds: SW. Commences heavy gales, and increasing with a heavy confused sea; at 1 p. m. took in the fore and mizen topsails; at 6 took in the main topsail; put a tarpaulin in the mizen rigging; from 6 to 12 it blew a perfect hurricane, with heavy rain and sharp lightning; in the morning more moderate; set the topsails and reefed foresails; ends, heavy gales and a heavy confused sea.

"March 26. Lat. 10° 37′ N.; long. 132° 51′ E. Barometer, 29.55; air, —°; water, —°. Winds: SE. Strong gales; at 2 p. m. increasing, took in the fore and mizen topsails and lay

the ship to; midnight heavy gales and heavy rain squalls; morning more moderate; set whole topsails and main topgallant sail; ends with brisk gales and cloudy weather; ship rolling almost yardarms in the water.

"March 27. Lat. 11° 10′ N.; long. 131° 34′ E. Barometer, 29.70 to 29.40; air, —°; water, —°. Commences strong gales and rainy weather; at 2 p. m. increasing, took in the main topgallant sails and double-reefed the topsails; at 4 close-reefed the topsails; at 6 p. m. blowing very heavy, with a heavy sea running; took in the topsails and brought the ship to the wind; midnight blowing a hurricane; ends the same, with heavy squalls, with rain.

"March 28. Lat. 11° 50′ N.; long. 129° 48′ E. Barometer, 29.38; air, —°; water, —°. Winds: E.SE. and SE. Commences heavy gales and heavy sea; ship under bare poles; middle and latter parts the same; a very bad sea and the ship straining badly.

"March 29. Lat. 12° 23′ N.; long. 128° 51′ E. Barometer, 29.20 and 29.10. Winds: S. by W., S.SW, and SW. Throughout these 24 hours a heavy typhoon, with a very bad sea coming from most all directions; ship straining badly, and making some water; at 10 p. m. it blew the main topgallant mast over the side; the sails were all snugly furled and the yards pointed to the wind; I never saw it blow harder; at 12, midnight, the barometer commenced rising; ends more moderate, but still blowing heavy; barometer, 29.40.

"March 30. Lat. 13° 15′ N.; long. 129° 14′ E. Barometer, 29.50; air, —°; water, —°. Commences strong gales and heavy sea; at 4 p. m. wore ship to the W.NW.; at midnight gentle breezes and cloudy, sea going down very slowly; morning gentle breezes and pleasant weather; ends the same; a long heavy swell from the NW.

"I hardly know what to think of the weather I have had for the last six days; I have been in a number of typhoons in the China Sea and off the Bashee Islands, but never saw one that would compare with this; I did not expect it this time of the year, and think it an uncommon occurrence."

Bottle paper.

"June 10, 1853. Barque Futta Sultan, Lat. 6° 10′ S.; Long. 90° 40′ 15″ E., (W. Johnson,) bound from Madras to the Mauritius with coolies." Picked up between May and September, 1856, at Brava, Lat. 1° 7′ S.; Long. 44° 3′ E., and forwarded through Captain Putnam by Mr. Webb, of Zanzibar. The drift in a straight line was about 3,000 miles.

Time and crossings from longitude 20° E. to Bombay, Zanzibar, and Mocha.

Vessels.	From—	To 20° E.	20°	Days.	25°	Days.	30°	Days.	35°	Days.	40°	Days.	45°	Days.	50°	Days.	55°	Days.	60°	Days.	65°	Days.	70°	To port.	Total.	To—
		Days.	°		°		°		°		°		°		°		°		°		°		°			
Scio	Montevideo, II	29¼	40 S.	1¼	40	1¼	40	1⅛	40	1⅛	40	1¼	40	2½	36	31	7 N.	10	13⅛ N.	2½	16¾ N.	2⅛	18 N.	1	85	Bombay.
Aetos	Liverpool, IV	51	37	¾	37	1	36¾	1	36¾	1½	36	1	35¾	1½	34⅛	1¾	32⅛ S.	5⅛	16 S.	7¼	2 N.	5⅛	14 N.	1⅛	78¾	Do.
Messenger	N. York, X	44	40⅛	1	40⅛	1	40⅛	1	40⅛	1¼	40½	1	40⅛	¾	40½	¾	39	2	35⅛	1¾	32	13⅛	3¼ S.	21⅛	89⅛	Do.
Jacob Bell	N. York, III	45¾	43¼	¾	43¼	1	43	1	42¾	1	42⅛	1¼	42	¾	40¾	1	39	1¼	36	3⅛	29	19	16¾	2	78¼	Do.
Louise	N. York, IX	57¾	41	1⅛	40⅛	1⅛	40¾	1¾	42	1¾	41¾	1	41⅛	1⅛	40⅛	1	39⅛	1⅛	36⅛	5	31⅛	13¾	5⅛ S.	16¾	104¾	Cochin.
Game Cock	N. York, V	66¾	38⅛	1¼	38	1⅛	37	1	36	1⅛	35	2¼	31⅛	1¾	33⅛	2	33¾	14	4⅛ N.	2	9⅛ N.	2	15¾ N.	1	97	Bombay.
Art Union	Boston	.....	38¼	1⅛	38	1⅛	38⅛	1¼	38¾	1¾	38¼	3⅛	36	2	35¼	22	¾ N.	7¾	5¾ N.	6¼	8 N.	5	14¼ N.	4	.....	Do.
Brewer	London, III	65	37⅛	1¼	37¼	1¼	36¼	3	33	3	27	9¾	7	2¼	2¾	2	1 N.	3	6¼ N.	2	10⅛ N.	3	18¼ N	1	97	Do.
Arabella	Boston, VII	73	38¾	2¼	40¼	1⅛	40¼	5⅛	39	1¾	39⅛	1	38¾	2	39	2¼	37¾ S.	1⅛	37¼ S.	1¼	37 S.	1	36¼ S.	47	140	Do.
Caribbean	Sunderland, VI	58	37⅛	1	38	1⅛	37¾	1	37⅛	1¼	35⅛	1	35⅛	2	31¾	11¼	1 N.	3¾	5¼ N.	3¼	13¼ N.	1¾	15¼ N	2	87¾	Do.
Margaret Mitchell	Greenock, I	.....	40	1	39¾	1¾	40	1¼	40	1¼	40	1¼	39⅛	1¼	38¼	1¼	36 S.	1¾	34⅛ S.	2⅛	33 S.	2	31 S	58	.....	Do.
David Brown	London, I	46⅛	39	1	39	¾	39	¾	39⅛	1	39⅛	1	39¼	1	38¾	1¾	34	1¼	31	2	25	38	14⅛ N.	3	98	Do.
John Gardner	Boston, I	67	39⅛	1¼	39⅛	1¾	40	¾	39⅛	1¼	38⅛	1	37¾	5	29¼	9	11	9⅛	3⅛	6⅛	5¾ N.	6	15⅛ N.	3	112	Do.
Queen's Hill	Liverpool, VIII	70	40	2	40⅛	1⅛	39	4	39	2⅛	39	2⅛	37	4	36¼	2	35¼	5	30¼	16	¼ N.	23	17 N.	2⅛	134⅛	Do.
Moffat	.....do	.....	36	1	36	2	38	1¼	37⅛	1¾	37	2	35⅛	2¼	34⅛	4¼	27	11⅛	⅛	5	9¼ N.	4	16 N.	2	.....	Do.
Pontiac	Boston, I	84	42¼	2	41¾	1	41¼	2	40	2	41	1⅛	41	1⅛	41	1⅛	39¼	1¼	38	2	35⅛ S.	2	31⅛ S.	38	138	Do.
Elizabeth	London, VIII	82	40⅛	1⅛	40	2⅛	38¾	1¾	39⅛	1¼	39¾	1	39¾	2	39⅛	1⅛	39¼	2⅛	38	2¼	37	1	36¼	70	169	Do.
Columbia	S. Shields, VIII	93	38	2	37⅛	1⅛	38¼	1⅛	37¼	2	36¾	1	37⅛	3¾	39	1¾	37⅛	3⅛	34	10⅛	26	16¼	3 ?	45	182	Do.
Pilgrim	Cardiff, II	89	37¼	2⅛	40	1⅛	40⅛	2	40⅛	3	35	2¼	34¾	2¾	31¾	2¾	31	8¾	20⅛	2⅛	15	14	16 N.	3	134	Do.
Charles	Liverpool, VI	58	38⅛	1	38⅛	1	38	2	37¾	1⅛	37¼	2¼	36¼	1⅛	34	1¾	31	15	8 N.	3	13 N.	2	17 N	1	90	Do.
Thos. Campbell	London, IV	65	38⅛	2	37¾	1¼	37	1⅛	37⅛	2¼	33⅛	1¾	32⅛	1¾	27⅛	11	¼ N.	3	5¾ N.	2¾	12 N.	2	16 N.	2	96	Do.
Do	Greenock, III	65⅛	38⅛	1⅛	37¾	1¼	37	1¼	34¾	2¾	27	15¼	8	3⅛	2⅛	3	2⅛ N.	2¾	7 N	2	11⅛ N.	3	17⅛ N	1	103	Do.
John Bull	Liverpool, V	70	38⅛	1¾	38⅛	2¾	39	1⅛	38	1⅛	36¾	2¾	35	1¾	34¾	1⅛	34⅛	2	33⅛ S.	5	23 S.	14	11¼ N.	9⅛	114	Do.
Persia	London, V	67	35⅛	2⅛	37	1¼	34⅛	2⅛	32⅛	9⅛	20	6⅛	9¼	3	⅛	3	4 N.	2⅛	8⅛ N	2¼	12 N.	1¾	16 N.	1	103	Do.
Boston	Boston, III	63	40	1¼	39¼	2	38¾	1⅛	37¾	1⅛	34¾	12¾	7	2¾	1	2¾	3⅛ N.	2	7 N.	1¾	9⅛ N.	2¼	15 N	1¼	95	Do.
Parodi	Providence, IX	68⅛	39⅛	2	38	2¾	38	2¼	37¾	4⅛	31¼	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	22¼	102	Zanzibar.
Lucia Maria	Salem, III	51	37¾	1	38	1	38	1	37¼	1⅛	36¼	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	13	69	Do.
Lewis	Salem, XI	68	36¾	1⅛	38	1¼	38	3¼	36¼	3	33	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	21	98	Do.
Do	.....do	61⅛	39	1	38¾	1¼	38	2¼	36⅛	3⅛	31⅛	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	25⅛	95	Do.
Sophronia	.....do	60⅛	39	1⅛	38	3⅛	36	4¼	29	3	25¼	9¼	15	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	13	95	Do.
Restitution	Gibraltar, I	59¼	39⅛	1¼	39¼	2⅛	38¾	1⅛	39	1¼	39¼	1⅛	38¾	2	37	3⅛	35	.....	.....	.....	.....	.....	.....	34	106	Mocha.
Do	Salem, V	74⅛	38	1⅛	37⅛	1⅛	37⅛	1	37⅛	4	37⅛	1⅛	37¼	2⅛	31	.....	.....	.....	.....	.....	.....	.....	.....	24⅛	111	Do.

TO CALCUTTA.

We have treated of the passage south and east, through the trade wind region of the South Atlantic, as fully as facts and data in our possession justify. The Calcutta-bound navigator has, of course, made himself familiar with the crossings, the winds, and the charts, from his port to the prime meridian in the South Atlantic.

Before going further, we present for his consideration the annexed table, in which the route from the crossing of the prime meridian off the Cape of Good Hope to Calcutta is divided out into sections, and the average miles "made good" per day along each section is stated.

The average distance "made good" from the equator through the SE. trades of the Atlantic to 36° S. is 109 miles. The best sections on the route thence are from 40° to 50° E., on an east course, and from 20° to 10° S. on a north course. On each one of these two sections the average distance is 160 miles a day. The worst sections are the two between 10° S. and 10° N. From 10° S. to the Line the daily average is 86 miles, and from the Line to 10° N. it is 98 miles.

Let the navigator project the new route for the month on his track chart, divide it off into sections, and then mark on each section the average miles "made good" per day. Now, if he will turn to the pilot charts for the route, and study them, he will be able to "pick his way" with decided advantage; for he will see by the average miles "made good per day" where the difficult sections lie, and he may find out by the tables, the Pilot and the Track Charts, where better winds may be found; then he can compute the detour to get to them, and calculate the time to be gained or lost by turning aside for them. The voyager for Mocha, Bombay, and western India may also study this table and the crossings to Calcutta with signal advantage. It gives the average number of miles "made good" per day, from the line in the Atlantic to 20° N. in the Indian ocean, on the way to Calcutta.

Average miles "made good" per day on the voyage to Calcutta.

Months.	FROM EQUATOR TO LONGITUDE—												FROM EQUATOR TO LATITUDE—										To port.	Number of vessels.
	0° E.		10° E.		20° E.		30° E.		40° E.		50° E.		30° S.		20° S.		10° S.		Line.		10° N.			
	Miles.	Lat.	Miles.	Lat.	Miles.	Lat.	Miles.	Lat.	Miles.	Lat.	Miles.	Lat.	Miles.	Long.	Miles.	Long.	Miles.	Long.	Miles.	Long.	Miles.	Long.	Miles.	
		°		°		°		°		°		°		°		°		°		°		°		
January	110	S.37¼	141	S.38¾	135	39⅛	117	40¼	168	40¼	152	39¾	166	E.82⅛	118	85¼	114	85⅛	91	88¾	57	86¾	91	9
February	110	37	132	38	166	39¼	149	38¾	164	38⅛	159	38¾	129	77	151	80¼	133	81¾	86	84⅛	63	83¼	117	10
March	110	37⅛	131	38	136	38¾	131	38¾	119	39¼	192	39¼	114	78¾	131	81⅛	160	82	78	84	98	84	118	9
April	104	36⅛	157	38⅛	129	39	131	39¼	148	39¼	148	39¼	140	77	140	79	163	79¾	111	81¼	136	83	151	8
May	98	35¼	121	36¼	111	38¼	141	39	164	38¼	167	37¾	124	78¼	121	82¼	171	82¼	108	83	111	83¼	124	6
June	93	36¼	165	38	157	38⅛	154	39	161	38	159	37	166	78	145	80¼	188	81¼	118	82	121	83¼	160	6
July	115	36¾	142	37¾	155	38⅛	154	38¾	172	38¼	155	37¾	169	76¾	153	80¼	203	82	109	83¾	158	84¼	118	20
August	111	36	135	37⅛	156	38	160	38⅛	160	38	178	39	158	80¼	143	83¼	203	84¾	119	86	117	87⅛	96	17
September	112	36⅛	142	38¼	150	39	128	39	139	39	160	39¾	157	83	133	85⅛	180	87⅛	106	88⅛	90	89¾	71	13
October	108	35¼	104	37¾	129	38⅛	119	38¾	160	38⅛	153	38⅛	146	84¼	132	86	164	87¼	91	90	86	90⅛	49	11
November	122	37	120	38⅛	117	39¼	128	39¼	139	39¾	153	39¼	142	82¼	142	84¼	129	85⅛	67	90¾	62	89¾	81	9
December	121	38	179	39¾	138	40¼	139	40⅛	159	40¼	160	40¾	122	82¾	140	83¼	123	84⅛	72	90	75	86¾	80	12
General average	109	36.1	139	38	139	38.8	138	39.2	154	38.9	162	38.9	147	80.1	137	82.6	161	83.7	91	86	98	86	105	130

The distance from the equator in the Atlantic to the equator in the Indian ocean is, in round numbers, by the mean route of the above table, 8,500. But to cross the prime meridian in 40°, and to go thence to the equator in the Indian ocean *via* great circle, the distance is 8,700 miles; and it probably may be followed with profit, as will appear from these reasons: from 30° on the line in the Atlantic a vessel can reach the prime meridian in lat. 40° S. sooner than she can in latitude 36° S.; from long. 0° and lat. 40° S. to intersection of present route in lat. 30°, Indian ocean, the distance is about 100 miles less than it is by the route proposed.

For nearly 4,000 miles after crossing the prime meridian, the distance by the route pursued lies through the very worst region for winds. It is along the old Admiralty route to Australia, (see pp. 590 and 593.) The distance by great circle from 40° on the prime meridian to where present track crosses 30° S., is about 100 miles nearer, and the route lies through a region of much better winds. Calcutta and Ceylon-bound vessels are recommended, to take this route: that is, to cross long. 0° about lat. 40°; to take the great circle thence, so as to be as far south as 45°—7°; when on the meridian of 40°—45° E., to pass near the island of Amsterdam; recrossing 40°, between the meridian of 70° and 75° E. By this route several days may be gained. Fully to appreciate the advantages of this route, the Calcutta or Ceylon-bound navigator should read the chapters (pp. 580 and 584) on the route to Australia, and study the tables of crossings, (pp. 596–8) there given.

Any navigator may generally make runs to exceed the average daily distance of the tables now presented, who will run down through the SE. trades of the Atlantic, with foretopmast studding-sail set; not caring to cross the prime meridian to the north of lat. 40°, and then not recrossing this parallel until he has passed the meridian of 70° or 75° E.

By this course he will cross and recross the calm belt of Capricorn nearly at right angles; by this course he will have the "brave west winds" of the extra-tropical south following him for a clean sweep of 3,000 or 4,000 miles; by this course his "vertex" will be about the parallel of 45° S., between the meridians of 35° and 40° E.; and by this course he will save time.

The most difficult sections, or, rather, the most uncertain as to the time required to pass them, are: from long. 0° to 10° E.; from lat. 20° to 10° S.; from the line to 10° N.; and thence to port. (Tables, p. 701 *et seq.*) At least, these are the sections along which the extremes between the monthly averages of the miles "made good" are the greatest, these extreme differences being (p. 697) severally 75, 89, 99, and 109 miles. The sections that give the most uniform monthly averages are the three between 20° and 50° E. and the one between 30° and 20° S.; these extreme differences are severally 43, 46, 49, and 33 miles.—(p. 697.)

The tables of crossings at p. 701 *et seq.* will be found very instructive and amply suggestive.

Before giving them I quote an extract from the log of the accomplished Toynbee:

From the abstract log of the English ship "Gloriana," Captain Henry Toynbee, from London to Madras, 1857:

"This voyage has been most tedious on account of the number of calms we have experienced. Off the Cape of Good Hope, in May, we had a bad westerly gale and a tremendous sea on the edge of the Agulhas bank, and the wind afterwards was most trying, in being constantly foul with a contrary current.

"We were from the 14th to the 23d of May beating from Cape Agulhas to Table bay, when, just as we arrived at the entrance of the bay, a furious southeaster opposed us. I think that great service would be rendered to seamen if a good wind chart were made for each month

for each square of one degree between 33° and 40° S. and 30° and 15° E.* My impression is, that such a chart would prove that at some seasons there is a better track for homeward bounders (especially those not touching at Table bay) than that which leads them to remain in the fearful sea on the edge of the Agulhas bank. I would also give a careful chart of the currents in this part, on the same scale, during each month, as for several days we experienced a southerly current on the western edge of the bank when I expected it would be to the northward.

I have before remarked on the variations in the temperature of the surface sea water in the highest southern latitudes to which we go. This voyage supplies other instances: On Saturday, November 14, 1857, lat. 42° 30½′ S., long. 20° 38′ E., at 9 a. m. it was 55°.4; at noon, 49°.9; at 3 p. m., 54°.0. November 15, 1857, lat. 42° 15′ S., long. 24° 06′ E., at noon it was 61°. November 16, in nearly the same latitude, 50°. From this time, though in the same latitude, it decreased until November 20, lat. 42° 25′ S., long. 45° 57′ E., when it was 48°.5. November 21, lat. 41° 30′ S., long. 51° 01′ E., thus, nearly one degree further north, it was down to 44°.5; this day it was tried three times. November 23, 1857, in lat. 39° 52′ S., long. 39° 12′ E., it was up again to 58°.6.

"These remarkable irregularities have not (so far as I am aware) been explained, and the surface currents do not seem to account for them. Perhaps they are the cause of the foggy and damp weather which is found in those latitudes.

"*Column* 21.—March 17 and 18, 1858. The specific gravity was down to 1023, with a strong current to the NE., which I suppose brought the fresh or rather brackish water from the mouths of the numerous small rivers south of Pondichery.

Natural History.—"During our passage out I have recorded in this log the names of the different kinds of creatures found in the sea water, so far as I know them, but did not think it necessary to continue it; suffice it to say, that each day, when the speed of the ship was not too great, the net was towed, and that nearly always microscopic shells of different shapes and in great abundance were found; their colors and delicacy were very striking; careful sketches have been made of those which were new to us, and in many instances the inhabitants also have been sketched. The general prevalence of some is worthy of remark: for instance, Atlantidæ, varying in color and shape are found in all the seas we have visited, or rather in which light winds have enabled us to tow the net. The Pteropoda-criseis is also very common, varying from straight to curved, and from having a round to an oval transverse section, but generally of a delicate pink color, though some are yellow and others variegated. This Pteropod seems to be as common in the day as in the night. The Hyalea we have not found so abundant, but have some beautiful drawings and specimens of them. A Pteropod, which I have called bivalve, has also been found very frequently; the first of this kind that were taken were in the bay of Bengal, and were of a beautiful amber tint, but most of the others of the same shape were transparent and pink. Two shells, evidently Pteropods, looking as if encased in glass, have been found both on the same night. Turret-shaped shells have been found with wing feet like those of a Pteropod, again shells shaped like the Pteropoda-criseis have been found with ciliated arms instead of the wing feet.

"The most remarkable instance of any part of the sea being inhabited by only one kind of shell was on the 14th of July, 1858, in lat. 40° 46′ N., long. 31° 05′ W. Here a small yellowish

* The Meteorological Institute of Holland has done this.

Pectin-shaped shell was found in great abundance; it seemed to contain granular particles, and showed no signs of life; even when I cracked several of them there was no voluntary motion apparent; this was not the case with those we found in warmer latitudes, where the inhabitants were very active; they have been sketched. There were only two or three other kinds of shells found, and they were very scarce.

"Besides shells, all the microscopic inhabitants of the sea which we have found have (so far as we were able) been classed, sketches have been made of many of them, and we have a large number of sketches under the head of various, to which we were unable to give names or classes. Before starting I provided myself with a homœopathic medicine chest, and have brought home 160 bottles of specimens in spirits of wine and water. Many of the soft creatures which one might have been inclined to think would dissolve or decompose are well preserved, especially the Annelidæ, while nearly all the crustaceans have retained their form, and some their colors.

"The Diphydæ are well preserved, as are some of the Planariæ, and the Doliolum and Salpæ show their delicate internal structures well. The shells, of course, are well preserved, though some have lost their beautiful coloring. Indeed, in some the protruded inhabitant is perfect also. There are other substances which look like eggs which have preserved well, though I quite failed in an attempt to hatch them by keeping then in salt water.

"Sagittæ are very abundant, and many, together with what looks like a shed skin, have been bottled.

"The Podopthalmiæ vary much in the shape of their extraordinary eyes. But one with eggs has been found, which has bottled well.

"The Gammaridæ are among the most numerous of the inhabitants of the sea. The last that I found was busy feeding on a small Medusa, much in the same way that a crab feeds itself, and now both eater and the eaten are in the same bottle.

"It is my intention to make our researches on this subject more generally known by a special paper on them, but the amount of amusement and instruction to be derived from this source ought not to be overlooked, especially in a calm, when the inhabitants of a sailing ship are very much in want of something to divert the *ennui* of their helpless state; besides, who knows how soon sailing ships may be driven off the sea by steamers? Then the fine nets cannot be towed, and any further research respecting these minute inhabitants of the deep sea would receive a great check."

It is Mrs. Toynbee, to whose skillful hands we are indebted for the beautiful drawings of the insects of the sea, plates XX, XXVI, vol. I. The idea of this was suggested to her by the log of the Garrick, Captain Foster, a fac-simile of which was published in the 7th edition.

In a recent letter received from the Gloriana, Mrs. Toynbee, after alluding to the fine opportunities afforded during the calms of an outward voyage for catching the animalculæ of the sea, mentions that the captain has succeeded so well in preserving them that several "stay-at-home" naturalists have found them quite in a fit state for dissection under the microscope. Naturalists, after examining one of the Toynbee drawings, vol. 1, and then looking at the aforesaid log of the Garrick will comprehend and fully appreciate the progress made in this field of incidental but very interesting research.

Time and Crossings from Longitude 0° to Calcutta.

Name of vessels.	From—	Date of crossing.	FROM EQUATOR TO— Latitude of crossing longitude of— 0°. Days.	Lat.	10° E. Days.	Lat.	20° E. Days.	Lat.	30° E. Days.	Lat.	40° E. Days.	Lat.	50° E. Days.	Lat.	Longitude of crossing at parallels of— 30° S. Days.	Long.	20° S. Days.	Long.	10° S. Days.	Long.	Line. Days.	Long	10° N. Days.	Long.	Days to port	Total days.
				S.		S.		S.		S.		S.		S.		E.		E.		E.		E.		E.		
Capitol	Liverpool	Jan. 3, 1847	18¼	38°	3¼	38½°	3¼	39½°	4	40½°	3	42°	3	41°	17	88°	6	89°	4	85°	8	89°	9	89°	12	91
Granite State	Boston	7, 1856	22	46¾	1½	48½	2½	48¼	2	48½	2	48¼	2½	47½	13	78	4	82	4	86	7	93	10	91½	9	79½
Brooklyn	Liverpool	9, 1847	25	37¾	3	38	4	38½	5	39¾	3½	40	2½	39½	12½	86½	5	89¾	4	88½	8	89¼	13	84	8	93½
Piscataqua	Boston	10, 1854	29¾	36	5½	38	2¾	38½	2½	39	2½	39½	4	38½	21	82¼	4	84½	4	84¾	5¼	85	14½	80½	1½	97¼
Arcole	New York	14, 1850	24	33¾	3	36	3	37	3	37	2	36¾	3	35¾	22	78¾	4	85	9	87	6	89¾	7½	88	8½	95
James Perkins	Boston	14, 1839	34	35¾	3	37¼	3	38	4	38	3	38	3	38½	13	83	5	83	8	83½	8	86¾	8	83½	8	100
Wm. Chamberlain	Philadelphia	15, 1855	19	37	2½	37¾	3½	39½	4½	40½	2½	40¼	2	40	12	84	6	90¼	2¼	90½	4¾	93	7¼	92	9¾	76
Isaiah Crowell	Philadelphia	15, 1855	28	34½	5	36½	5	37½	6	38½	3	38¾	4	37¾	13	81	8	79¼	7	80	8	85	16	86	10½	113½
Malay	Europe	25, 1825	25	37½	3	40¾	3½	40	3½	39	5	39	2	41½	13½	82½	5	85	5½	85½	8	92¾	.....	.....	.....	.....
Mean crossing			25	37¼	3.3	38¾	3.4	39½	3.9	40¼	2.7	40¼	3	39¾	15.4	82½	5.2	85¼	5.3	85½	6.9	88¾	10.6	86¾	8.4	93.1
Mean of two best			20.5	41¾	2	43	3	44	3.3	44½	2.2	44¼	2 3	43¾	12°5	81	5	86	3.1	88¼	5.9	93	8.6	91¾	9.3	77.7
Average miles made good per day			.....	110.5	.....	141.5	.....	135.5	.....	116.6	.....	168.5	.....	151.7	.....	166.2	.....	117.6	.....	114.5	.....	91	.....	57.4	90.5	.....
Eugene	Boston	Feb. 10, 1838	26	38	3½	38¼	3½	39	3¼	39½	2¾	39¼	2½	39	17	83½	3½	84¾	4	84¾	7	85¾	13	85¾	5	91
Stornoway	Liverpool	16, 1854	23¼	33¼	2½	37	2½	37	2¾	38½	3	37	2½	36	9¼	74	3¼	78	4½	77	4½	82	16¾	83¼	7¾	77
Geneva	Bordeaux	17, 1849	27	38½	3	39½	2½	39½	2	39	3	37	3	38	9	74	4½	80¾	6	80	8½	83	6	83½	5	79½
Niobe	New York	22, 1855	24½	39	2½	40¼	2	40	3	40¼	2½	40	3	41¼	9½	80	3½	81¼	3½	82¾	6½	83½	12½	81½	5	78
Brothers	Boston	22, 1832	30	35	9½	36	3	37¼	3½	37½	3½	37½	3	37½	17	77	5	81¾	4	84	9	88	8	86¼	9	104½
Valparaiso	New York	24, 1855	21	39	3	39	2½	39½	2¼	39½	3	40	2½	40	9	80½	3½	81½	3½	82½	7¼	84¾	11¾	81¾	5¾	75¼
Hornet	London	25, 1857	24	37	2	37¼	4	37	4	38½	3	40	3	41½	4¾	71	3½	74¾	3¾	81	5	83	11	83¼	7½	75½
Dashaway	Bath, Me	25, 1855	22½	37¾	2½	37¾	2	38¼	3	37¾	3	40¼	3½	38½	6½	69½	3	73¼	5¾	78	7¼	84½	10¾	82¾	9	78¾
Wm. Frothingham	London	26, 1855	24½	38	3	39	3	40	3	40	2½	38½	2¾	39¾	10¾	81	5½	82½	7	84	8¾	86	6½	85¼	5¾	83
Pequot	Boston	27, 1854	28	33½	3¾	36	3	38½	3¼	37	2	36	3	36½	14¼	81	5¾	83¾	4	83½	8	84½	7	83¼	7¾	90¾
Mean crossing			25.1	37	3.5	38	2.8	39¼	3.1	38¾	2.8	38½	2.9	38¾	10.7	77	4.1	80¼	4.6	81¾	7.2	84½	9.7	83¼	6.8	83.3
Mean of three best			22	36¼	2.5	37¾	3	37¾	3	39	3	39	2.7	39	7.8	75	3.4	78	3.9	80	5.6	83¼	11.2	82¾	7.1	75.9
Average miles made good per day			.....	109.6	.....	132	.....	166	.....	149.3	.....	164	.....	158.6	.....	129.4	.....	151.2	.....	132.6	.....	86	.....	63	117	.....

Time and Crossings from Longitude 0° to Calcutta.

Name of vessels.	From--	Date of crossing.	FROM EQUATOR TO—																						Days to port	Total days.
			LATITUDE OF CROSSING LONGITUDE OF—												LONGITUDE OF CROSSING THE PARALLELS OF—											
			0°.		10° E.		20° E.		30° E		40° E.		50° E.		30° S.		20° S.		10° S.		Line.		10° N.			
			Days.	Lat.	Days.	Lat.	Days.	Lat.	Days.	Lat.	Days.	Lat.	Days.	Lat.	Days.	Long	Days.	Long.	Days.	Long.	Days.	Long.	Days.	Long.		
Mary	Lisbon	Mar. 3, 1801	34¾	37°	2¼	39°	3	40°	3	40¾°	7⅛	40¼°	1½	41°	18	84°	4	85½°	4	88°	13	87¾°	8	85¾°	8	107
Reward	Salem	4, 1803	30	37	3	37	3	37	6	38¼	4	38	3	38	16½	80½	3½	82½	4	82	9	86¼	7	84¼	18	107
Lucknow	New York	4, 1855	25	37½	2⅛	38½	3	39⅛	2⅛	39¾	2¼	40¼	3	39½	8½	77	4¾	79¾	4¾	80½	9	81½	9	83½	4	79¼
H. Sprague	Boston	19, 1845	32	34¼	5	35	6¼	39¼	3½	39¾	3¾	39	3	39	12½	83	4	84	4	83¼	6½	85¼	6	81	5½	92
New Jersey	Boston	19, 1842	26	35¾	3	37½	3	37	3	37	3	39½	2½	39	13½	79	7	82	4	81¾	7	83	5	83¾	3	80
Gertrude	New York	19, 1855	21½	36	6	37½	3	38½	4	37¼	3	38¾	2½	38¼	17	83¾	6½	86½	4	84½	10	83¼	4	84¾	4	85½
Hindostan	Boston	23, 1857	24	38	3	40	3	40½	3	39	6	41	2	39¾	14	78½	4¼	79½	3	80¾	7	84½	3	85	5	77¼
Euterpe	New York	23, 1855	23¼	38½	1¾	38½	2	40	3¼	39	2½	40	2	40	5	68¼	4	74¼	2½	77½	4½	78½	6	83¼	4½	66¼
Wm. Frothingham	London	25, 1854	23½	35	4¾	37¼	3¼	38	3	38¼	2¾	39	2¼	38¾	10½	74½	4	80½	3½	82	4¼	85¾	8¼	86	8	78
Mean crossing			27.2	37½	3.5	38	3.3	38¾	3.5	38¾	3.9	39¼	2.4	39¼	12.9	78¾	47	81½	3.8	82	7.8	84	6.1	84	6.7	85.8
Mean of three best			25.3	37	3.2	38½	2.7	39½	3.1	39	3.7	40	2.1	39½	9.8	73¼	4.1	78	3.1	80	5.2	83	5.7	84¼	5.8	73.8
Average miles made good per day			.....	110.3	.....	131.4	.....	136.4	.....	131.4	.....	118.7	.....	191.7	.....	113.6	.....	130.8	.....	160	.....	78.5	.....	98.4	118	.....
Jesaide	Boston	April 1, 1848	23	34½	3¼	36½	2¾	38½	5	38	3	39¾	3	39¼	12	80	4	78¼	4	78	3½	80¼	3½	82	6	73
Art Union	do	7, 1857	25½	37	3½	38½	2	39	3	38	3½	38½	3½	38½	11	75½	4	79½	3½	80¼	7¾	81¼	4¾	86	4	76
Minerva	Lisbon	14, 1804	24	36	3	38	4¾	38½	3¼	38½	2½	37½	3¼	37½	9¼	79	6¼	82½	3¾	82	9	83	4	84	7	79¼
Geneva	Boston	14, 1857	24½	34	4	39	3	40	2¾	40½	3	39½	3	39¼	7¾	76	4½	80¼	4¼	81	5¾	82	4	81½	5	71½
Caravan	Salem	25, 1812	28¼	36¾	2¾	39½	3	39½	3	40	3	39	3½	39¼	11¼	78½	5	81½	3¼	83	6	86¼	5	84	2½	76½
Hippogriffe*	Boston	27, 1854	27	38½	3½	40	4	41¼	6	42½	3	42¼	3½	43½	10	80	3½	81¼	3¾	81	3¾	82	5	80½	5	78
Hector	Leghorn	28, 1806	30	38¼	2½	38¼	4	39	2½	39¼	2½	40	2½	39½	10	73¼	3½	75	4	77¼	4	80½	5½	83	8¼	79½
H. Kilham	Boston	29, 1839	28¼	37½	1¾	38¼	5	39¼	2½	38½	4	37½	2½	37¼	8½	72½	3¼	74¾	3¼	75½	5	78	5	82½	4½	73½
Mean crossing			26.3	36½	3	38½	3.6	39	3.5	39¼	3.1	39¼	3.1	39¼	10	77	4.3	79	3.7	79¾	5.5	81½	4.5	83	5.3	75.9
Mean of three best			25.2	35¼	3	38	3 6	38½	3.4	39	3.3	39	2.8	38½	9.4	76	3.9	77¾	3.9	78	4.7	80	4.2	82	5.2	72.6
Average miles made good per day			.....	103.8	.....	156.7	.....	128.6	.....	131.4	.....	147.7	.....	147.7	.....	139.5	.....	139.6	.....	163	.....	111.3	.....	135.6	151	.....

Name of vessels.	From--	Date of crossing.	0°. Days.	0°. Lat.	10° E. Days.	10° E. Lat.	20° E. Days.	20° E. Lat.	30° E Days.	30° E Lat.	40° E. Days.	40° E. Lat.	50° E. Days.	50° E. Lat.	30° S. Days.	30° S. Long	20° S. Days.	20° S. Long.	10° S. Days.	10° S. Long.	Line. Days.	Line. Long.	10° N. Days.	10° N. Long.	Days to port	Total days.
Essex‡	Cape de Verdes	May 8, 1802	33	37	5½	39	3¼	38	3¼	37¾	3	38¼	4	38¼	14	79½	7½	79½	5½	78¼	7½	77¾	11	81§	10½	108
Queen of the East	London	11, 1855	18¼	36	4	37	3¾	38¼	3¼	38½	3¼	38¼	2	38	15	84	3¾	85½	2¾	85¼	6¾	86½	3½	85¾	5	71¼
Rienzi	Boston	14, 1850	30	32¼	3½	36	3½	39	4½	39½	3¼	38½	3	37¼	11	75	8¼	82½	3	81	4	86¾	4½	81½	5	83½
North Bend	do	24, 1848	24½	34¾	3½	35½	3½	37	3	37	3	36¾	3	38	10	78½	4	82½	3¾	81	5¼	82	4½	81¾	9½	77½
Scargo	do	28, 1848	28	36	3	37	3	39	2	39¾	2½	38¾	3	38	6	69¼	4¾	77½	3¼	81¼	4	83½	5	85	5	69½
Sophia	do	31, 1843	27½	35¾	4½	34	9	38	4	40	2	39	2	37	14	83½	3	86½	3	86	6	87	4	86½	3	82
Mean crossing			26.9	35¼	4	36¼	4.3	38¼	3.3	39	2.8	38¼	2.8	37¾	11.7	78¼	5.2	82¼	3.5	82¼	5.6	83	5.4	83¼	6.4	81.9
Mean of three best			23.5	35½	3.5	36½	3.4	37½	2.7	38	2.9	38	2.7	38	10.3	77¼	4.1	81¾	3.5	82¼	5.3	84	4.3	84	6.5	72.7
Average miles made good per day			.....	98.5	.....	121 2	.....	110.5	.....	141	.....	164.2	.....	166.7	.....	123.7	.....	120.7	.....	171.4	.....	107.7	.....	111.5	124.2	.....
Grand Turk‖	Salem	June 1, 1792	42½	35¼	14	36	7½	35¾	4½	37	5	37¾	4	37½	12	72	6	79¼	5	85½	5	86½	7	83	6	118½
Sophia	Boston	5, 1842	28	37¼	4	37¾	2½	38¼	3	38¾	2	38½	2	38	10	78	4	82	3	82¾	5	82	4	84½	4	71½
Sarah	do	6, 1846	34	37¼	3	38	4	38½	3	38¼	3	38½	3	38	12	82	4	83	4	82¾	5½	81¾	6½	84	5½	87½
W. Allston	do	16, 1848	27	37¼	2	38	2¾	38½	3½	39	2¾	38½	3	37¾	10	83½	6¼	83¼	3	84½	4¼	84½	4	84	4	71½
Judge Shaw	do	24, 1855	30½	34¼	3½	36½	3½	38¼	2½	37½	3½	35½	5½	34¼	12½	77½	3¾	79	3¼	79½	5½	82	7	80¼	5	86
Union	do	25, 1857	27	39	2½	39½	2½	39¼	2	39	2	38¾	2	39	7¼	77¼	2¾	80¾	2½	81¼	4	82	3½	84	5	63
F. Ware	Liverpool	30, 1854	28½	35½	2½	38	2¾	38½	5	42	4	39	3	37	7	70	4½	74½	3½	77½	6¼	79½	4¾	83	6¼	78
Mean crossing			29.1	36¼	2.9	38	3	38½	3	39	2.9	38	3	37	9	78	4.2	80¼	3.2	81¼	5.1	82	5	83¼	5	75.4
Mean of three best			27.3	37¾	2.8	38¼	2.6	38¾	2.5	39	2.2	38½	2.3	38¼	9.1	79½	4.3	82	2.8	82¾	4.4	82¾	3.9	84	4.4	68.6
Average miles made good per day			.....	92.7	.....	165.5	.....	156.7	.....	154.2	.....	161	.....	159.2	.....	166	.....	145	.....	188.5	.....	118.2	.....	121	160	.....
Herbert	Boston	July 3, 1855	19	35¼	3	36	4	39	2	39¾	3	39½	4	40¾	8	81	3	84	2	83¾	6	86¼	3	86½	4	61
Sabine	do	5, 1852	28	36	3	37¼	4½	38½	3	37¼	5	34½	2½	36	6	67½	3½	73½	2¾	76¼	3¾	80	4¼	83¾	5¾	72
Union	do	9, 1853	21½	36	2¼	37¼	2½	38	3¼	38½	3	39	2	39	7	78¼	3	82½	2½	82¾	3	83¾	4½	84	5	59½
Hoogley	do	11, 1829	25	36¾	3	38½	3½	39½	3½	38¼	2½	38½	2½	38¼	7½	75	4¼	79	3¼	81¼	6	83½	3¼	86	4¾	69
Golden Rule	Liverpool	16, 1855	24½	32	3	35½	3½	37¼	3	37¾	2	38¼	2½	36¼	6½	67	3½	68	3½	72	4	78	4¼	84	3¾	64
Milton	Boston	17, 1849	25	37	3½	39	2½	39¼	3¾	39¼	2¼	38	4	38½	11	79	3¼	81¼	3½	83	7¾	83	3¾	81½	7¼	70½
Fortitude	do	17, 1845	22	36½	2½	37½	3	39¼	2½	38	2½	37	2½	34½	8¾	75	4½	78½	2¾	80¾	9	83	4	81½	7	71
Fortitude	do	17, 1835	22	36¼	2¾	37½	2¾	39¼	2½	38	2½	38	3	34½	8½	75	5¾	78½	2¾	80¾	9	83	4	81½	6	71½
Asia	do	17, 1849	37	35¾	6	38	3½	37¾	4	38¼	3	38¼	3	38¼	11¼	83	4¾	84	4	85¼	7	86¼	4	85	19	106½
Arab	do	18, 1843	19½	34½	4	34½	2¾	35¾	4¼	37½	2½	37¼	3¼	37½	7¾	73¾	5¼	81	6	83½	5	84	4	86	11½	75¾
Palmyra	Liverpool	18, 1845	21½	36	3¼	36¾	4	36½	2½	38	4	40	5	39	7	75½	3¼	81¾	2½	83¾	4	85¼	2¾	85	7	66¾
Panther	London	19, 1856	22¼	38	2¼	40	3	40¼	2½	40½	2	40	3	38¼	6	73	3	80	2¼	82¼	5	84¼	5¾	84½	7	64
E. Norris	Liverpool	20, 1855	28	40	3	40½	2	39¾	2	39½	3	37	2	37¼	8½	70	4	74	3	79½	5½	82	3	84¾	6	70
Ganges	New Orleans	20, 1855	22¾	41	3	40½	2	40½	2¼	41	2½	40½	2	40¾	6	79	7	83	2½	83	5	83¼	4	85¾	3¾	62¾
Juniata	Liverpool	25, 1854	24½	35	4	37½	2	38	5	33½	3	37½	4¼	37¼	6¾	74	4	81	3	82½	4	84½	3½	83½	3½	67½

* Deep and crank. A strong gale. ‡ Light and very crank. § Gale and strong current; ship so light and crank was *obliged to keep in shore.*

‖ Disabled in longitude 10°; not included in summary. Lost topmast in a gale 10° east longitude.

Time and Crossings from Longitude 0° to Calcutta.

Name of vessels.	From—	Date of crossing.	FROM EQUATOR TO— Latitude of crossing longitude of— 0°. Days.	0°. Lat.	10° E. Days.	10° E. Lat.	20° E. Days.	20° E. Lat.	30° E. Days.	30° E. Lat.	40° E. Days.	40° E. Lat.	50° E. Days.	50° E. Lat.	Longitude of crossing the parallels of— 30° S. Days.	30° S. Long.	20° S. Days.	20° S. Long	10° S. Days.	10° S. Long.	Line. Days.	Line. Long.	10° N. Days.	10° N. Long.	Days to port	Total days.
Dorchester	Boston	July 28, 1843	23	S. 35¾°	6	S. 37¼°	5	S. 38¼°	2½	S. 38½°	1½	S. 38½°	4	S. 38¾°	12	E. 84 °	5	E. 83½°	3¾	E. 85¾°	7¾	E. 84¼°	4½	E. 85½°	10	85
Hippogriffe	London	30, 1855	26¼	37¾	3	38½	2¾	39	3	39	3¾	39	4¼	39¼	10½	81	4	84	3	83½	5¾	82¾	4½	80¾	6	76¾
Akbar	Boston	30, 1847	22¾	38	2	38½	2¼	38¾	3	39	3¼	39½	2	38¾	8¼	76	3½	81½	2¼	83	6¾	84	3	88	5	64
North Bend	...do	31, 1846	26	37½	4½	37¾	2½	38	4	38¼	2	37¾	2½	37¼	8	76¾	4	79¼	3	80½	4	83	4	82	8	72½
Free Trade	New York	31, 1855	21	38	3	38	2	39	2½	39	1½	39	3	37¼	7¾	82¼	3	87½	2	88¼	4	87¼	3	84½	4	56¾
Mean crossing			24	36¾	3.3	37¾	3	38½	3	38¾	2.7	38¼	3	37¾	8.1	76¾	4.1	80¼	3	82	5.6	83½	3.8	84¼	6.7	70.3
Mean of seven best			22.3	37	2.6	38	2.7	39	2.7	39¼	2.5	39¼	2.6	39	7.1	76½	3.6	81	2.6	82	4.8	83¾	4	85¼	4.6	62.1
Average miles made good per day			.....	114.7	.....	142.4	.....	155.4	.....	154	.....	171.7	.....	155.4	.....	169	....	153	.....	202.7	.....	108.5	.....	158.4	117.6	.....
Albany	New York	Aug. 2, 1851	28	37½	3	39	3	39	2½	38½	2¾	38¾	2¼	39	10	81½	5½	83¼	2½	84½	5½	84¼	3¼	85	3¾	72
Emerald	Boston	4, 1827	21	37	2½	37½	2½	37	2½	37	2½	39½	2	39½	9¼	80¾	3	81¾	3¾	83	4¾	82¾	4	84¼	3¼	60¼
Colchis	Greenock	6, 1847	25	34¾	3¼	35	5	38½	2½	39	4½	39	3	38	8¼	78	5	82¼	3¼	84¼	3¾	85½	3¾	86½	6¼	73½
Alipore	London	8, 1851	25	36½	3	38	3	39	2½	38	2½	38¼	2½	37½	7	77¼	5¼	80	4½	82	4¾	83¾	4	86¼	7	71
Mount Vernon	Boston	9, 1834	25	35	3	36¼	2¼	37½	6	38	3¾	38	4	40¼	10	78	6	83	4	84¼	6¼	85½	4¾	88	7	82
Cohota	....do	11, 1847	17½	38½	2	38½	2½	38¼	2	39	3	39¼	2	39¼	7	76	4¼	81½	2¾	83½	4	83½	3¾	83½	3	53¾
Emerald	....do	11, 1828	21	37	6	40½	2	41	2½	40½	2½	40	2	39½	13½	83¼	3¼	83¼	2½	85	7¼	85¼	4½	86½	6	73
Norwester	....do	11, 1855	19¼	33¾	2¾	37	3	28¾	1¾	39	2	39	1¾	39¼	6¼	78½	3	80¾	2	81¼	5¾	84	4½	86	3½	55½
Orion	Liverpool	12, 1856	25	42¼	2¾	42	1¼	42½	2	42¼	3	41½	2	40	9	78¼	4	82	2½	82¼	5	84½	3	86¼	4½	64
Lucia	Orkneys	17, 1802	31½	37½	4	36½	3½	36½	4½	36½	2	35¼	3½	36½	14¾	84	5	86¼	4¼	88¼	6	91¾	10	94½	20	110
Caravan	Cape de Verdes	21, 1805	26	35¾	3½	36¼	2¾	37¼	3	36½	3	38¼	3	38½	10½	75½	4¾	82	3¾	85¼	5	86	4¼	87	7	75½
George	Salem	21, 1824	23	36	2½	36½	2½	37	3	37½	3	36	3	37	9½	77	4	83	2¾	84½	5¾	86	3½	86	8½	71
Mars	Boston	22, 1829	28	35¼	6	37½	3	38¾	3	38½	2½	38¾	2½	38¼	13	85¾	3½	86¼	3½	86½	3½	87	6¾	87¾	8¼	82½
Escort	Liverpool	23, 1856	23¾	37	2¼	40	2	39½	3	39	3	38½	2¼	38½	10	85½	4¾	83	3	86	4	91	9	90½	5	72
Sea Eagle	Boston	28, 1855	33	34¼	4	35	3	37¼	3½	39¼	2¼	39¾	3	41¼	8¼	82½	5¼	85¼	3	87¼	4	89¼	6	91	13	88¼
George	Salem	28, 1825	20	34½	4	36½	3	37¼	4	38	4	36¼	3	37¼	9	80½	3½	82½	3	83¾	4¾	84	8	86½	14¾	81
Numa	Sinoe	30, 1849	22	35¼	5½	38¾	2½	39	2	39¼	3	38	2½	39	11	86¾	4	88	2¾	88¼	7¾	89¼	4½	91½	12	79½
Mean crossing			24.4	36	3.5	37½	3	38	2.9	38½	2.9	38	2.6	39	9.7	80¼	4.3	83¼	3	84¾	5.1	86	5.2	87½	7.8	74.4
Mean of five best			22.3	38	2.9	38¼	2.3	38¾	2.4	38¾	2.8	39	2.3	38½	8.3	77¾	4.1	81½	3.1	83	4.7	82	3.6	85¼	5.2	64
Average miles made good per day			.....	111	.....	134.7	.....	155.7	.....	160.3	.....	160.3	.....	178.4	.....	158.2	.....	143.4	.....	202.7	.....	118.8	.....	117	96.5	.....
George	Salem	Sept. 2, 1828	24½	36	3½	37	2¾	37¼	2½	37	2¾	37½	3½	38	13½	85½	6	86¾	3¼	88	3¾	90½	4	91¾	12	82
Do	....do	3, 1826	20	34½	4	36½	3	37¼	4	38	4	36¼	3	37¼	9	80½	3½	82½	3	83¾	4¾	84	8	86½	14	80¼
Do	....do	3, 1820	18½	36	3½	36½	2½	37½	2	37¾	5¼	36½	3	38½	11	84¼	5	86½	3	88	4	89	6	89¼	12	75¾
Orion	Liverpool	4, 1857	36	43	2½	43½	2½	43½	4	41	2	41	2	41	7½	73½	6½	76	4	79¼	5	84¾	4½	87½	10½	87
Indian	Boston	6, 1857	19¼	37	3	37¾	4¾	39¾	1½	39¾	2¾	39½	2¾	38¾	10¾	83¼	3	85¼	3	86¼	8	87½	4¾	88¼	4¼	67¾
Patriot	Liverpool	11, 1821	33	38¾	3	40¼	5	39½	6	39¼	4	40¼	4	40	17	86¼	4½	87	4½	88	6	92	4	91¾	12	103
Isabella	... do	11, 1849	23¾	35¼	3¼	37½	3¾	37¼	6¼	37¾	3	40	3	37	14¼	85	3¾	85¾	3	86	7½	88	7	90¼	10½	89
Cato	Boston	15, 1841	28½	38	3	38¾	3½	37¾	3½	37¾	2½	38	3½	37½	11	86	4½	90	3¾	91	4¾	90¾	10	92½	15	93½
Panther	New York	15, 1854	22¼	33¾	6¼	41	2½	42½	3	43	3	43½	2¾	43	10¼	87½	2¾	90	2¾	88¾	4½	87	5½	89¾	8½	74
Heraclide	Boston	19, 1833	23½	37	2¾	39	2¾	39	2¾	39	4	39	3¼	38½	9	85	5¼	88	3¾	89	4	89¾	9	88½	13	83
Hurricane	London	22, 1855	17½	31¾	2¾	35½	2¼	37	5¾	39½	2	39	1½	38¾	8½	83¼	5½	87¾	2¼	87	4	87¾	3¼	91¾	5½	59¾
Valparaiso	New York	26, 1838	21	36½	2¼	38½	2¼	39¼	3½	39	4½	39¾	2½	40	9	83	6	86	4½	87½	9	89¼	11	89½	7½	83
Gentoo	Boston	29, 1843	29½	37¾	3¾	37½	3	38¼	2¼	38	2½	37¾	3	37½	8½	74½	8½	81	3½	85	9	87¾	10	90	15	93½
Mean crossing			24.4	36½	3.3	38¼	3.1	39	3.6	39	3.3	39	2.9	39¾	10.7	83	4.6	85½	3.4	87¼	5.7	88½	6.7	89¾	10.7	82.4
Mean of four best			19.4	36	3.9	37¾	3	39	3	40	3.2	39½	2.5	39¾	10.1	84½	4.1	87¼	2.7	87¼	5.1	88	4.8	89	7.5	69.3
Average miles made good per day			.....	111.5	.....	142.4	.....	150	.....	127.7	.....	139.4	.....	159.6	.....	156.5	.....	132.6	.....	180	.....	105.7	.....	90.3	70.5	.....
Aqueduct	Liverpool	Oct. 1, 1847	23	35¾	4½	38¼	8	39½	3	38¾	5	39½	2	39½	16	89	4¼	90	3	87¾	5¾	91	7¼	92	10	91¾
Trimountain	....do	3, 1856	28	36¾	5	38½	3	39½	4	39¾	3¾	40	2	40	10	83¾	4	88	3¼	90	5	91½	5	90¾	6¾	78¾
Whiton	Boston	5, 1848	21	38	3½	39¾	5½	39	5	39¼	3	39¼	2	37¾	11	83	4¾	87¾	3½	87	6¾	89¼	4	90	19½	99½
Corvo	....do	6, 1830	25	36	4	37	3	37	9	39¼	3	38¼	3	39	12	82	4½	83½	5½	85½	6	87¾	4½	89¾	16½	96
George	Salem	6, 1832	22	35¾	3¼	37	2½	37¾	3¼	38¼	2½	38	2½	38	17	88½	4	88	5	89	7½	89	9	90¼	13	91½
A. Kaufman	Cadiz	10, 1854	29½	32	6½	35	4	38	4	38	4	36½	3	38	11	84¼	7	86	4	86	7½	88½	8½	91	14½	103½
Congress	Boston	10, 1836	25	35	3¼	37¾	2¾	39	2½	38¼	2¾	38	2½	38½	12¾	86	4½	88	3¾	89¾	11¼	91	8½	91½	14½	94
George	Salem	11, 1829	24	34¼	7	36½	2½	37¼	3¼	37¼	2¼	37½	2¾	37½	9	81¼	4½	85	3½	86¼	5	88¼	7	87½	9	79¾
Restitution	....do	18, 1816	27	36¾	3	38½	2½	39¼	3	39½	2½	39	2¾	39½	10¼	82¼	5	87½	4	89¼	9	94¾	8	92¾	33	110
Vision	Liverpool	25, 1855	28	34¼	4	37¾	3½	38½	3½	39½	2	39¼	2½	39½	12½	87	5¾	87½	3¼	87	7½	91	10½	89	20	103
Live Yankee	London	27, 1855	20	35	6	38	2½	39	2	39½	1½	39¼	2	38	7	81	3	84	2	84¼	4	89¼	5	92½	3¾	58¾
Mean crossing			24.8	35¼	4.6	37¾	3.6	38½	3.9	38¾	2.9	38½	3	38½	11.6	84¼	4.6	86	3.7	87¼	6.8	90	7	90½	15.5	91.5
Mean of three best			24	35¼	6	37½	2.6	38¾	3	38¾	2.5	39	2.2	38½	8.6	82	3.8	85¼	2.9	87	4.7	89¾	5.6	90¼	6.5	72.4
Average miles made good per day			.....	107.6	.....	104.3	.....	129	.....	119	.....	159.6	.....	153.4	.....	145.6	.....	132.3	.....	164	.....	91	.....	86	49	.....

Crossings from prime meridian to Calcutta.

Name of vessels.	From—	Date of crossing.	FROM EQUATOR TO—																						Days to port	Total days.
			LATITUDE OF CROSSING LONGITUDE OF—												LONGITUDE OF CROSSING THE PARALLELS OF—											
			0°.		10° E.		20° E.		30° E.		40° E.		50° E.		30° S.		20° S.		10° S.		Line.		10° N.			
			Days.	Lat.	Days.	Lat.	Days.	Lat.	Days.	Lat.	Days.	Lat.	Days.	Lat.	Days.	Long.	Days.	Long.	Days.	Long.	Days.	Long.	Days.	Long.		
				°		°		°		°				°		°		°		°		°		°		
A. Bucknam	Boston	Nov. 3, 1854	24	36	7	39¼	4	40	6½	40	3	38½	3½	37½	9¾	78½	4½	80	3½	82	9	89½	11	92	10	95½
Singapore	....do	10, 1851	22½	39	2¼	39½	3½	40¾	3	38	4½	40½	3½	40	10½	82	4	82½	4½	84¼	10	92	6	90¼	10	84¼
C. Read	Liverpool	11, 1853	23	35	4	34	7	37	5	39½	3	39	4	37½	12	80¼	3½	82	4½	86	7	90¼	12	89	8	93
Arno	Boston	17, 1848	25	39	3½	38	2½	37¾	2½	38¼	2½	39½	3	38¼	8	85½	7	87½	2¾	88¼	6¼	90¾	11	91	11	85
Moctesuma	New York	21, 1838	20	36½	2	37¾	4	39	5½	40½	3	41	2	39½	12¼	79½	4	79	6½	83	12	93	8	90	13	103¼
Grenada	Boston	24, 1854	21	39¾	5	42¼	4	40	2½	40	2½	40¼	3	40¾	14	87	3	86½	4	84¾	10	88	11	91¾	6½	92½
Medford	....do	27, 1852	24	35	3	38½	4	40¼	3¾	39½	2¾	40¼	2	40	12¼	82¼	6½	87	6	85½	10	90¼	9	89	12	95¼
Colorado	Liverpool	28, 1855	21	35½	4½	38½	2½	38¾	2	39	3	39¼	3	39¾	11½	84½	2¾	89	5¾	90	16	91	12	87¼	6	90
Cyclone	Boston	28, 1855	20¾	38	4	38½	2¼	39	1¾	39½	2	39½	2½	39½	12½	81¼	3	86½	3	86	10½	93	8	87	7½	77¾
Mean crossing			22.4	37	3.9	38½	4	39¼	3.6	39¼	2.9	39¾	3	39¼	11.4	82¼	4.3	84¼	4.7	85½	10 2	90¾	9.8	89¾	9 3	91.8
Mean of three best			22.7	39	3.2	39	2.7	39	3.4	39	3	39½	2.7	39¼	10.3	83	4.7	85½	3.4	86	8.9	92	8.3	89¼	9.5	82.3
Average miles made good per day			.....	122.3	.....	119.7	.....	116¾	.....	127.7	.....	138.6	.....	153.3	.....	142.5	.....	141.5	.....	128.7	.....	67	.....	61.6	81.2	.....
Sabine	Boston	Dec. 1, 1855	28	40	3	40¼	4	40¼	2¾	41¼	3½	42	3	42	20	83	8	81½	6	83¼	10	88½	8	82	3½	99½
Sheffield	....do	6, 1847	26	35¾	2¾	37¼	3¼	37½	3	38	4	39¼	4	37½	15¼	84	3¾	86	4	84½	9½	89½	8½	85	10	94
Arno	....do	7, 1847	23½	35½	1½	37	3¾	38	3¾	40	2½	40½	4	39½	13	85	4	88	3	87¼	8	91½	7	93	10½	84½
B. Dudley	....do	7, 1856	20¼	37	2½	37¾	4¼	37¼	3	41½	2½	43½	2¼	44	12¼	88	6¼	88	4	88	8¾	92½	10	89	15	91
Sabine	New York	11, 1854	25	46	2¼	47	1¾	48	2	47½	2¼	46	3	43¾	11	78	4	75½	5	79½	15	91	6½	87	7½	85¼
Fleetwood	Boston	13, 1855	26	37½	3¼	39¾	2	40¼	2½	40½	2¾	40¾	3	41	9¾	86	4	86¼	4	87¼	9¼	90½	8½	87¼	4½	79½
Bengal	Philadelphia	14, 1806	26	39½	2½	40¾	3	39½	2½	40	2¾	41½	2¾	42¼	14¾	83½	3¾	81	5¼	81	10½	90	11	92	10½	95¼
Fleetwood	Boston	16, 1854	18	37½	2¼	37¼	3¾	39	3	40	2½	40¼	2½	40½	15½	83½	3¾	86½	6½	86¾	6	89¼	8	81¼	9	80¾
Flying Dragon	New York	16, 1854	19	37½	2	37½	2¼	38¼	2¾	39½	2	41	2	41	16	82¾	3¼	86	3¾	87¼	7¾	91¾	5¾	85¼	8	74½
Francis	Salem	16, 1810	20	36½	2	37¾	4	39	5½	40½	3	41	2	39	12¼	79½	4	79	6½	83	12	93	8	90	13	92¼
Georgian	Philadelphia	18, 1831	22	36¼	3½	37½	2½	37¾	4	38½	3½	38¼	3	39¾	13	77¼	3½	78	6	80	9½	84½	8½	82½	6	85
Argo	Boston	27, 1843	23½	37	4	37½	5	38½	5	39	4	38	3	39½	12	83½	3	85½	4	86½	8	89½	10	88	17	98½
Mean crossing			23.1	38	2.6	39¾	3.3	40¼	3.3	40½	2.9	40¼	2.9	40¾	13.7	82¾	4.3	83¼	4.9	84½	9.5	90	8.3	86¾	9.5	88.3
Mean of best			21.	37½	2.5	38¼	2.7	39	2.7	40	2.7	40¾	2.5	40¾	13.6	84	3.7	86¼	4.7	87	7.7	90½	7.4	84½	7.1	78.3
Average miles made good per day			.....	120.7	.....	178.7	.....	137.7	.....	139.3	.....	158.6	.....	159.6	.....	122	.....	139.5	.....	123.4	.....	72.4	75.3	.....	80	.....

Summary of best Crossings from Longitude 0° to Calcutta.

Month.	Number of crossings.	FROM EQUATOR TO—																						Days to port.	Total days.
		LATITUDE OF CROSSING THE MERIDIANS OF—												LONGITUDE OF CROSSING THE PARALLELS OF—											
		0°.		10° E.		20° E.		30° E.		40° E.		50° E.		30° S.		20° S.		10° S.		Line.		10° N.			
		Days.	Lat.	Days.	Lat.	Days.	Lat.	Days.	Lat.	Days.	Lat.	Days.	Lat.	Days.	Long.	Days.	Long	Days.	Long.	Days.	Long.	Days.	Long.		
			°		°		°		°		°		°		°		°		°		°		°		
January	2	20.5	41¾	2	43	3	44	3.3	44½	2.2	44¼	2.3	43¾	12.5	81	5	86	3.1	88¼	5.9	93	8.6	91¾	9.3	77.7
February	3	22	36¼	2.5	37¾	3	37¾	3	39	3	39	2.7	39	7.8	75	3.4	78	3.9	80	5.6	83¼	11.2	82¾	7.1	75.9
March	3	25.3	37	3.2	38½	2.7	39½	3.1	39	3.7	40	2.1	39½	9.8	73¼	4.1	78	3.1	80	5.2	83	5.7	84¼	5.8	73.8
April	3	25.2	35¼	3	38	3.6	38¼	3.4	39	3.3	39	2.8	38½	9.4	76	3.9	77¾	3.9	78	4.7	80	4.2	82	5.2	72.6
May	3	23.5	35½	3.5	36½	3.4	37½	2.7	38	2.9	38	2.7	38	10.3	77¼	4.1	81¾	3.5	82¼	5.3	84	4.3	84	6.5	72.7
June	3	27.3	37¾	2.8	38¼	2.6	38¾	2.5	39	2.2	38½	2.3	38½	9.1	79½	4.3	82	2.8	82¾	4.4	82¾	3.9	84	4.4	68.6
July	7	22.3	37	2.6	38	2.7	39	2.7	39¼	2.5	39¼	2.6	39	7.1	76½	3.6	81	2.6	82	4.8	83¾	4	85¼	4.6	62.1
August	5	22.3	38	2.9	38¼	2.3	38¾	2.4	38¾	2.8	39	2.3	38½	8.3	77¾	4.1	81½	3.1	83	4.7	82	3.6	85¼	5.2	64
September	4	19.4	36	3.9	37¾	3	39	3	40	3.2	39½	2.5	39¾	10.1	84½	4.1	87¼	2.7	87½	5.1	88	4.8	89	7.5	69.3
October	3	24	35¼	6	37½	2.6	38¾	3	38¾	2.5	39	2.2	38½	8.6	82	3.8	85¼	2.9	87	4.7	89¾	5.6	90¼	6.5	72.4
November	3	22.7	39	3.2	39	2.7	39	3.4	39	3	39¼	2.7	39¼	10.3	83	4.7	85½	3.4	86	8.9	92	8.3	89¼	9.5	82.3
December	3	21	37½	2.5	38¼	2.7	39	2.7	40	2.7	40¾	2.5	40¾	13.6	84	3.7	86¼	4.7	87	7.7	90½	7.4	84½	7.1	78.3

Of the 130 vessels whose tracks from Longitude 0° to Calcutta have been tabulated by Lieut. Guthrie, the best run from the line in the Atlantic to port is 53¾ days. That was made by the Cohota after crossing the prime meridian in August. The July crossings afford the best average. These tables, however, are not derived from numbers sufficient to justify any elaborate discussion as to the best season for quick runs to Calcutta.

Apropos to what has already been said: I received, while the proof-sheet of this signature is undergoing revision, a letter from Captain Toynbee, who has, by his contributions to the good cause of the sea, made the "Gloriana" glorious; it is dated at Madras, January 13, 1859, and in it he gives an account of some remarkable currents and changes in the temperature of the ocean about 41° S. He came across those streaks in the water when he was running along the Great Circle sweep of the route to India, as it passes to the south of the Cape of Good Hope. They reminded him of the streaks of hot and cold water which have been discovered in the Gulf Stream, and "for which," says he, "you have given so satisfactory a cause, that I am inclined to think we came upon the warm current which comes down the east coast of Africa and expands itself in the Southern ocean, or rather our observations of currents would lead me to suppose that it recurves to the eastward, (after the manner of the Gulf Stream, which carries warm water towards Ireland,) probably caused by its tendency to move faster to the eastward, coming as it does from a lower to a higher latitude, helped also by the prevailing westerly winds; and that this warm water was being cooled after the fashion which you have explained. The effects of these streaks on the weather were so great that I could tell by the clear or hazy state of the atmosphere, and by its temperature as compared with the direction of the wind, if we were in a hot or cold vein of water. These extracts from our log will give the particulars: November 15, 1858. Lat. 40° 27′ S.; long. 14° 28′ E. Current, S. 82°, E. 27′. The temperature of the surface, at 9 a. m., 63°; at 3 p. m., 63°.5. The temperature of the air had risen from 51° on Sunday to 54°.7 on Monday, though, as the wind had drawn to the southward, (other circumstances remaining the same,) it ought to have been much colder. November 16. Lat 40° 44′ S.; long. 17° 29′ E. Current, S. 20°, E. 13′. Temperature of surface, at 6 and 9 a. m., 63°; at noon, 63°.7; at 3 p. m., 63°.5; and at 8 p. m., 52°.8, (this last was tried twice.) November 23. Lat. 40° 58½′ S.; long. 48° 55′ E. Current easting only 20′. Temperature of surface: 9 a. m., 48°.7; noon, 47°.1; 3 p. m., 46°.9; 8 p. m., 50°. November 25. Lat. 41° 36′ S.; long. 59° 30′ E. Temperature of surface: 6 a. m., 60°; 9 a. m., 58°.6; noon, 57°; 3 p. m., 55°.8; 8 p. m., 56°.3.

"The specific gravity was within a few tenths of 1.029 throughout the whole time, excepting on the 23d, when it was 1.0282; this, too, when the water was 12° colder than on the day previous. One might almost think that ice had something to do with it, especially as we were in that part of the sea where your 'Physical Geography of the Sea' leads us to expect an ice-bearing current. The weather was very thick, so that ice may have been near without its being seen.

"I may add, that from November 28 to December 1, in lat. 32° 3′ S., long. 77° 6′ E., we passed numbers of whales. They were generally seen in streaks of discolored water, which looked as if large quantities of blood had been thrown into the sea. I threw a net lined with bunting amongst some, when it was covered with a small red crustacean, very nearly resembling one explained by Baird in his 'Natural History of British Entomostraca,' where he quotes Roussel de Vanzime, who saw the same appearance between Cape Horn and Tristan d'Acunha, and calls the little creatures 'Cetochilus,' or whale's pasture. No other creature was found in the net with them. Probably this is not news to your whalers, for I saw one near this place last December; it would have been well for him had he been here this year. Our net produces microscopic shells, &c., in all parts of the sea which we have visited."

TO THE STRAITS OF SUNDA AND PORTS BEYOND.

In studying the routes of navigation out upon the high seas nothing has surprised me more than the fidelity with which navigators have followed in the wake of the early voyagers. In olden times, he who was the first to make any particular voyage came back and told the way he went; he could speak of no other way, for he knew of no other; then came the follower, who naturally would go the same way; and, finally, tradition led to the establishment of highways across the ocean by routes which mere chance had pointed out. Such routes were then adopted in the directories of the ocean, and at last became, in some instances, so well established, that if a shipmaster ventured to depart from them, as therein laid down, he departed at his peril and at imminent risk. If, by the departure, he should chance to have a long passage, he ran the risk of being turned out of his ship by owners; and if accident befell him by the way, even though he should make a good passage, underwriters were sure to have something to say about his being out of the *usual* track, and thus he was in danger of losing his insurance as well as his place.

More attempts seem, however, to have been made by navigators to find new routes to India and the East than to any other land beyond the seas. There is what was called the Eastern passage, which lies south of Australia; this now is seldom or never, and should be never, attempted, unless for very special reasons. Then there was the Boscawen Passage, the Middle Passage, the Inner Passage, the Passage to the Eastward of Madagascar, &c.: to China, there are as many other "Passages" as there are straits east of Sunda; but I need not describe nor discuss the routes through these narrow straits;—I need not describe them, because they are fully described by Horsburgh, and are usually projected on the charts of those seas; and I need not discuss them, because I have not the data which, after the masterly discussion of my Dutch colleagues, would justify any further discussion from me just now. I shall not therefore attempt to throw any light upon the routes to India or the East, after the voyager enters the monsoon region of the Indian Ocean. All that I feel myself justified at present in saying with regard to the route to India or China applies to it before the mariner enters those regions, and while it and the route to Java Head and the passages east are for the most part the same.

I will address myself therefore, for the present, only to that part of the route to Java Head which lies south of the calm belt of Capricorn, and which is included, for the most part, between the meridians of 20° or 30° W. in the South Atlantic, and 80° or 90° E. in the Indian Ocean.

A vessel bound through the Straits of Sunda, after crossing the equator generally holds her wind, hauling up to the eastward as the SE. trades of the Atlantic, will allow, until she gets into the calm belt of Capricorn. Here, though she may not find long continued calms, she finds nevertheless those light winds which are always found to prevail in that sort of debatable ground which is between any two systems of winds; this calm belt is between the SE. trades, on one side, and the variables or "brave west winds" of the southern hemisphere, on the other.

Having cleared the trades, the present practice of mariners is to edge off a little to the east of south until they gain the parallel of 35°–37°; crossing this, they haul up due east, between the parallels of 37° and 39° and run between them—the place of all others where the southern edge of the cyclones which traverse those parallels is most apt to be felt adversely—

from the prime meridian to longitude 80°–85° E. Now, if any one were seeking to find a route that passes through regions most beset with light and baffling winds, this is the route to which I should point. The idea of sailing 5,000 miles along the borders of the calm belt of Capricorn, as many East Indiamen do, when there is sea room for the Great Circle route with the "brave west winds" "following fast," is simply absurd. Having run along this "debatable ground" and reached the meridian of 80° or 85° E., another mistake is committed by crossing this calm belt in the Indian Ocean, again *obliquely*, which should never be done. These calm belts should always, whenever the land and dangers will admit, be crossed as directly on a meridian as the winds will allow; for the sooner you cross them, the sooner you will get winds that will drive you along.

Such is the course of the present route, as the Dutch crossings abundantly show, and which has been shortened for the Dutch and may be shortened for the Americans and all others, ten days or more, by all vessels that will follow this course:

(1) After crossing the parallel of St. Roque, stand through the SE. trades with a rap full and topmast studding sail, as if you were bound to Australia, not caring to make better than a S.SE. course good, until you lose the trades, clear the calms of Capricorn, and get the "brave west winds" on the polar side of them. Vessels that do this will generally clear the calms, and get the "brave west winds" by the time they reach latitude 35°–40°, finding themselves at this juncture somewhere between the meridians of 20° and 30° west. Now shape your course per Great Circle for the intersection of parallel of 40°, with the meridian of 80°–85° E., or any other near which it may be deemed advisable, with the changing seasons, to enter the region of SE. trades of the Indian Ocean.

The following route, from 30° W. 35° S. to the intersection of this parallel with 85° E., differs so little from the Great Circle that the difference becomes practically of no moment:

(2) Suppose you clear the calms of Capricorn in latitude 35°, longitude 30° W., now steer for the meridian of 10° E., at its intersection with the parallel of 48° or 50° south; then run on between these parallels to longitude 50°. From this point steer for the intersection of 85° E. and 35° S. The total distance to be run south of the parallel of 35° being 5,300 miles—the distance by the present route being 5,500—so here is one day's sail gained by the "short cut," and certainly better winds. (3) But suppose you have good luck in the South Atlantic, and can clear the calms of Capricorn in 20° W. instead of in 30° W., but in the same latitude, your course then is to aim to strike the parallel of 50° in 20° E., and then run along it as before to 50° E.; the distance south of 35° by this route being 4,900 miles.

But suppose the winds favor you still more, and you be in 10° W. before you reach the parallel of 35°. In this case you should run between the parallels of 45°–46° till you come to the meridian of 50° E.; you should so shape your course from 10° W. as to get between these parallels, near the meridian of 20° east. The distance south of 35°, by this route, is 4,400 miles; in other words, the distance from the usual place of crossing the parallel of St. Roque to Java Head, is—

By present route, 9,200 miles; by (1), 8,940 miles; by (2), 8,730 miles; by (3), 8,520 miles.

There is no part of the world where the master of a sailing vessel can turn his knowledge of the principles of Great Circle sailing to more advantage than he can when his course lies east in that great expanse of ocean on the polar side of the calm belt of Capricorn. Here, when his course has easting in it, the famous westerly winds of that region will drive him ahead with the force and velocity of steam power.

Suppose therefore a navigator, bound for the Straits of Sunda, should, instead of heading up east on crossing 35° S. near 30° W., after having crossed the equator near this meridian, proceed to 40° S. on it before heading up east, how much would his distance from the equator in the Atlantic to the crossing of 40° S. in longitude 85° E. be increased? Answer, 100 miles. His gain in time to offset this increase of distance would be a quicker run through the calms of Capricorn, by reason of going straight across them, and the further advantage of strong winds along the more southern route.

The best course under all circumstances is, as a rule, to do thus: Run from the equator in the Atlantic to the south as fast as you can, caring little for easting until you have cleared the calms of Capricorn and caught the "brave west winds" on the polar side of that belt, then shape you course so as to cross 20° E. between 47° and 52° S.; leave these parallels about the meridian of 60° E., and steer thence for the parallel of 40° S., near its intersection with 85° E. This description of the courses to be run and the points of intersection to be gained is given only for those navigators who may be unable to get out the true Great Circle routes and courses.

It is well to remark that most ice has been seen along this route between 20° and 40° E., and that much is to be gained by running down your easting as well to the south as ice and safety will permit. So impressed have I been with the gain to be made by running well to the south in this part of the ocean, that at page 745, 7th edition, it was said with regard to the route to Australia—

"In further proof that the route recommended in the *Sailing Directions* of the Admiralty is too far to the north, and as an illustration of the advantages of the route which I advise, I have prepared the following tables. It appears from them that there is no longer room for difference of opinion as to the advantages of going further south than 39°–40°. How much further, though, still remains to be decided. But so far as the facts before us go they justify the assertion that for every degree you go south of the admiralty route to Australia you gain three days on the average, until you reach the parallel of 45°–6°, for the averages of the table are not below this parallel; and I believe it will turn out that the best streak of wind, on the long run, is to be found between 45° and 50° S. It seems to be almost as steady, between these parallels, from the westward, as it is anywhere from the east, between the trade-wind parallels of 15° and 20°."

The average "vertex" of those that go south of 41° (page 598) is 45° 33′; the average "vertex" of those that go north of that parallel (page 596) is 39° 7′ S. The mean parallels upon which the latter run down their longitude is 38° 52′, and the former 43° 59′; for this difference of 5°, the average gain by those who take the more southern parallels is 14 days, which comes very near to an average of 3 days' gain on the voyage to Australia for every degree you go south of the Admiralty route. As far as 80° E. the Admiralty route to Australia and the old route to Sunda are the same. The average speed to Australia by the Admiralty route is 134 miles a day against 154 by the new route. So that the route "well to the south" has in its favor not only better winds but shorter degrees and longer daily runs.

If the winds were fair all the way, the nearest route to Java Head from the fair way off St. Roque would be *via* the Cape of Good Hope; indeed, the Great Circle from St. Roque to Java runs through the unexplored regions of Africa. But both the winds and the land render such a route in navigation impracticable; for the former generally compel the outward Indiaman, in spite of herself, to cross the meridian of 25° W. as far south as the parallel of 30°–33°

S.; and the Great Circle thence to Java Head passes some 8° or 10° south of the Cape of Good Hope. Moreover, the winds in the Indian ocean render a departure from the Great Circle again necessary. The winds are such, however, as to admit of all four of the routes on page 709. The route No. 3 is 600 miles shorter, and has better winds than the present route. But, after clearing the SE. trades of the Atlantic, the present route runs about 1,000 miles obliquely across the calms of Capricorn, where the average rate of sailing is not over 100 miles a day. Now, by going straight across these calms as by route (1) you will clear them generally in two days, and then get those "brave west winds" which will waft you along at the rate of 200 or 300 miles a day, according to the heels of the ship.

The navigator, therefore, will act most wisely who will wait, and let things as he may find them govern him as to where, after clearing the SE. trades, he will begin to shape his course for the Great Circle to the meridian of 85° E., or for the meridian near which he proposes to cross the calms of Capricorn in the Indian ocean. Suffice it to say he may begin to do it anywhere south of 30°, and between the meridians of 30° and 10° W., and reach Java Head several days sooner, on the average, than he would by continuing to follow the present route.

In attempting to follow these Great Circle routes, navigators should recollect that the greatest saving of distance, as compared with the rhumb-line route, is always along those arcs that lie nearly east and west, and are furthest from the equator; and that, so far as distance is concerned, he might as well be out of his way on one side of these arcs as the other. As illustrative of this route, I may refer to the track of a ship whose log I have, and with regard to which I will only say that, if she had stood on from lat. 28° to 35° S., (at that season,) in long. 20° W., and then shaped her course per Great Circle route, she would probably have done better; as it is, she crossed the meridians as follows: 0° in 36° 20′ S.; 20° E. in 38° 20′ S.; 40° E. in 38° 35′ S.; 60° E. in 38° 00′ S.; 70° E. in 38° 20′ S.; 80° E. in 36° 00′ S.; 90° E. in 33° 00′ S., which is a fair representation of the average June route of the Dutch.

"Arriving in lat. 28° 00′ S., long. 22° W., I projected," says her master, "on my chart the Great Circle course thence to Java Head, the vertex being in lat. 44° S. and long. about 25° E. I adhered to this course as far as practicable, having in view the favorable sailing points of the vessel, and being compelled to run her before some of the heavy seas of the high latitudes until reaching the parallel of 30° in long. about 69° E., when I deemed it prudent to keep to the eastward of the Great Circle course, and approach the meridian of Java Head further south, to forelay for the chance of there being considerable easting in the trades. I crossed the tropic in about 94° 30′ E. long., and fetched Java Head sailing upon an easy bow-line, (which is a good sailing point of the vessel, and, I believe, of most sharp vessels.) I will remark here that I could find nothing explicit in 'Horsburgh' regarding the direction of the wind in the SE. trades; but, after many unsatisfactory remarks, the whole is summed up on page 161, vol. 1, 5th edition, thus: 'When the sun has great north declination, it may not be absolutely requisite for ships which sail well to reach the meridian of their port so far southward, the trade-wind *then* blowing more from SE. and E.SE. in general than from E. and E.NE.' Accompanying my abstract is an abstract of the log of the ship Minstrel, of Boston, which vessel (commanded by my brother) pursued the admiralty route in running up her easting; and, although he crossed the equator in the Atlantic 12 days before me, yet I made Java Head the day before him, and there was not much difference in the sailing of the vessels. Where I

gained on him most was in the high latitudes. Although I made a fair passage by pursuing the circle course so far as the latitude of 35°, yet I would not again adhere to it further than the vertex; thence I would sail east, on or near that parallel, until reaching the longitude of 90° or thereabouts; then hauling north across the belt of variables to the southward of the trades, at right angles, and be upon the safe side, after reaching the trades, at any season of the year. A good passage could, perhaps, be made by sailing on a circle course from the Atlantic to a good position, relative with Java Head, in the Indian Ocean, say 95° E. and 33° S.; but the vertex would be far south of 53° or thereabout. And I should not feel justified in attempting to pursue such a route until we have some definite information relative to the existence of danger from ice, against which 'Horsburgh' cautions navigators. Commodore Ringgold, in his route towards Australia, in the Vincennes, went, I think, as far as 48° S., and, I believe, saw no ice.—(See Ice Table, p. 580.)

"With regard to the current we experienced in the China Sea, near the coast of Cochin China, I should think it almost unprecedented. On my last passage down I had nothing of the kind. May it not have been a rush of water out of the Gulf of Siam, caused by the very heavy rain with which the SW. monsoon was ushered in, and which was experienced in part by me on the passage up the sea; and would not observations of the thermometer and hydrometer have been valuable? There was an unusual quantity of rain in the early part of the monsoon. The current in the east coast of China is always running with more or less strength in the SW. monsoon to the NE., (unless disturbed by the passage of a cyclone.) But I never experienced anything like the current we had off Cape Varela, which prolonged our passage so greatly. There was a typhoon in the southern part of the China Sea, in the month of May this year; also one last year in the same month. I have never known them so early in the northern part of the sea. I would say here that I think a series of observations of the barometer, thermometer attached, and the force of the wind in connexion with each other in the Indian Ocean, in the hurricane months, would be of great value to the navigator sailing there at such times, and more especially those homeward bound from Java Head, in the SE. trades, as any deviation from the mean height of the mercury would at once show some obstruction to the surface wind. The general course of storms about there is nearly W.SW., I believe, (or parallel with the course of a vessel bound round the Cape,) until, reaching the meridian of Bourbon, Mauritius, and sometimes Madagascar, they curve abruptly south. Now, a vessel near the southern or southwestern disk of a cyclone, with the wind at SE. or E., with strong breezes and squally weather, a low barometer, or lower than the mean range for these months, and anxious to make a quick passage, (possibly racing,) would, perhaps, be loth to heave to for a few hours and wait for a rise in the barometer; the storm advancing in the meantime, (the average velocity of which is probably greater than that of a smart vessel,) would get ahead of the ship, possibly, near its point of curvature, and the ship still going along would be plunged headlong into the vortex in a very few hours. I hardly think it possible for even the smartest vessel to beat the storm and cross its path before it, and in time to be safe; under such circumstances the best and only safe course would be, in my opinion, to heave to, *head to the southward*, as soon as the barometer indicated bad weather, and watch for its rise. I have the most entire faith in the indications of a barometer within the tropics. 'It marks the passage of a storm with the regularity of a clock,' says Mr. Piddington. As an instance of most admirable man-

agement under such circumstances as the above, a pamphlet, written by Captain R. Methven, of the British ship Blenheim, is, I think, the best practical illustration that could be offered. In the China Sea, if bound northerly, it is probably safe to scud with the wind at SW., if tolerably certain of your position. With the wind at north, the best course would be, I think, to run to the southward *in time*, (say with the force of the wind at 7,) *whether bound north or south*. If bound south, run out of it; and if bound north, run to the southward till the wind veers westerly, then round to upon the port tack, wait for the rise of the barometer, and go back again with the southerly wind near the rear verge of the storm, supposing, of course, the condition and position of the ship permitted it. With the wind at NE., and no possibility of making a harbor, the only alternative, I think, would be to heave to, *under fore and aft canvas*, on the starboard tack, and prepare for the worst. The advance of the storm, I think, impels a body of water before it, causing a surface current to the westward, which it would be well to bear in mind."

Navigators, by taking the old route, are liable to meet with another difficulty, especially when they attempt to run down their longitude near the parallel of 35°–6° south. About this parallel is a famous place for circular storms—cyclones (p. 708.) They revolve with the sun, and the parallel of 35°–6° is frequently traversed by the southern edge of them. Consequently, as these storms travel east or west, the wind on the southern edge of them is generally from the eastward.

From the Abstract log of ship Lady Arabella, (N. B. Grant, captain.)

Winds and Currents between Singapore and Batavia: "On the afternoon of June 14 left Singapore for Batavia with a fine breeze from the westward, which carried us as far as the entrance of the Straits of Rhio, when it fell calm, with the tide setting out of the straits; was obliged to anchor. At 6 a. m. of the 15th, weighed with a light air from the southward, and fair tide into the straits. Had nothing but faint airs from the southward and calms until the evening of the 17th, at which time we passed out of the straits with a fresh breeze from S.SE. The tides we found to set through the straits to the northward at the rate of 3 to 4 knots per hour, for about 14 hours steady, followed by a 'slack' of about 2 hours, when the set would turn to southward for about 6 hours, 2 to 3 knots, followed by another two hours 'slack,' and then would commence the strong northerly set again. Whether these are the usual tides of the straits I am unable to say, but such I found them during the three days I was in getting through. On the 18th had a heavy squall from NW., with much rain, which lasted 4 hours. From that time until we reached the entrance of Macclesfield Straits (on the 28th) we had the wind between S. by E. and S. by W. for nearly all the time. Rain and squalls, accompanied with thunder and lightning, were frequent; and one on the 26th, from SW., blew heavy for two hours; but, for the most part, they were from the southward with but little wind. While working down past Lirgin island, close on shore, I found no current; but one day, taking the wind at S.SW., I stood off 60 miles and found the current setting to the northward about 12 miles a day. On the 24th, off Palo Toty, being becalmed, found a southerly current of about one-half knot; and, on the 25th, with the NE. part of Banca island bearing SE. 20 miles, found the current setting SW. one mile per hour, wind S.SE., but very light; but a brisk breeze springing up from south, tacked ship, and did not determine whether it was the effect of the tides or a regular current. In working down from the latitude of the north part of Banca to Gaspar Straits, nearly in the longitude of Gaspar island, I had the winds very light and

baffling, hauling from S.SE. to S.SW. and back, sometimes as often as three or four times an hour; at other times it would remain at south for four or five hours at a time, followed by a rain squall and intervals of calm. The current seemed to set due north about 14 miles per day. On the morning of the 28th, at 8 o'clock, the north end of Palo Leat bearing east 4 miles, with a fresh breeze from S.SE., attempted to beat through Macclesfield Straits; for the first two 'tacks' we gained a little, and got as far along as Discovery Rock, on which the sea broke all day; and, although the wind freshened to as much as we could carry topgallant sails to, yet at every tack after this we lost ground; and at 8 p. m., the wind falling off, anchored in 15 fathoms water, soft ground, about 5 miles west of where we were in the morning. After anchoring, found the current running due north 4 knots, and so continued until 6 a. m., 29th, when it slacked a little, but at no time was it less than 2½ knots. At 10 a. m. a breeze sprung up at S. by E., and, as the tide was gaining strength, weighed and stood over to eastward for Stobyn's Straits, fully convinced it was useless to attempt to beat through Mecclesfield at daylight. On the morning of the 30th, being in the north entrance of Clement's Straits, with the wind at east, stood to southward; and, although we had a strong current against us, yet as the wind freshened and held well to the eastward, we made rapid way to the southward, passed to eastward of Barn island, but not being able to weather Saddle island, kept away, and passed through the narrow passage between the reefs off Barn island and Low island into the south entrance of Macclesfield Straits, and by dark was clear off the south end of Vansittart's Shoals, with the wind light from SE. From that time until July 4, instead of the fine SE. breezes that I had heard so much of in the Java Sea at this time of the year, I found the same light baffling winds, mostly from S. by W., that so annoyed me in the China Sea. At noon, July 4, the North Watcher bearing W.SW., and the Armayden Lands just visible from the deck, it died away to a 'dead calm,' and up to this time of writing, 10 p. m. of the 6th, it so continues; and, as the current is setting N.NW. at the rate of ¾ knot per hour, we are at anchor in 11 fathoms of water, and whether we shall ever get to Batavia remains a question of some doubt.

"Batavia, July 8, 1853. Arrived here last evening, after a passage of 23 days from Singapore, a distance which I accomplished with very light winds 'going up' in 6 days, as will be seen by referring to the journal.

"October 14. Lat. 5° 55′ N.; long. 27° 32′ W. Baffling, faint airs; at 7 p. m. calm; lowered the boat and tried the current; used the deep sea line with a thirty pound lead attached for a weight; let it down 60 fathoms, and hove the log, which went off S. ½ E. by compass, ⅔ knot; raised the weight to 30 fathoms depth, and hove again; this time the log went south by compass, ½ knot per hour.

"After coming on board, threw a bottle overboard with date, latitude, and longitude, requesting the finder to forward the paper to Lieut. Maury.

"I am of the opinion there is an under current, setting northerly, somewhat below 20 fathoms, and that the surface current is very small, setting southeasterly.

"October 18. Lat. 8° 30′ N.; long. 28° 53′ W. Begins with a light air from SE., with a large swell from NE.; middle and latter parts, calm; lowered the boat and tried the current; used the same weight as that mentioned on the 14th; for a log line I used light cotton twine that would float on the surface, attached to an ordinary log chip, loaded just to sinking, with a cork attached to prevent it from sinking more than a few inches under water. With the lead down to 50 fathoms, the chip moved off NW. (mag.) at the rate of 50 feet per minute; at 60 fathoms

depth, the chip went in the same direction 67 feet per minute. Raised the lead to 20 fathoms and tried again. This time the chip went due west, (mag.) but so slow as to be hardly perceptible, (15 feet per minute.) The difference between my position by reckoning and observation for the 24 hours is 6 miles north and 3 miles west. I think the reckoning cannot be more than a mile wrong at most, it having been a dead calm for 17 hours out of the 24, and the breeze very light and steady for the other seven. My chronometer is a very accurate one, and I use a sextant for all solar observations. Hence, I infer an under current setting southeasterly, something more than 20 fathom beneaths the surface."

The Dutch crossings to the Straits of Sunda.

Lieutenant Van Gough, directeur der Afdeeling Zeevaart of the Royal Dutch Meteorological Institute, published in 1856 a volume of Sailing Directions,* in which were given the crossings and time of 50 vessels from the Lizard to the Straits of Sunda. To this admirable work I am indebted for much valuable information, and to illustrate the route to the Straits of Sunda still further, I borrow from it the mean monthly crossings and time from the prime meridian to the Straits of Sunda.

From these data Lieutenant May has computed the distance, and the average number of miles "made good" per day, from crossing to crossing.

The result of this very thorough investigation has been the shortening of the average passage from Holland to India, some ten days or two weeks. I agree with my Dutch colleagues that a more southerly doubling of the Cape of Good Hope will expedite, to a marked extent, the passage, under canvas, to India.

The best route to Calcutta and the best route to Sunda are one and the same, as far as the vicinity of the islands of Amsterdam and St. Paul; here they separate and the way to each is plain.—(See the remarks on the route to Calcutta.)

In consequence of the reduced force available for these researches, I have not been able to go into any minute or thorough investigation of the winds and currents on the way to ports beyond the Straits of Sunda; nor have I any very strong hopes of pointing out a way from Sunda to China, by which the average passage may be shortened more than a day or so, if as much.

From Sunda to Manilla, China, Japan, and the Amoor, the islands and shoals and narrow seas contract the route—there is not sea room along that part of the voyage for the navigator to run around adverse winds and currents. He must take them as he finds them; consequently, the Sailing Directions which it falls within the scope of this work to give for such seas may be summed up in the caution to look out for dangers, and take advantage of the winds and currents as they may happen to be.

* Uitkomsten van Wetenschap en Ervaring Aangaande Winden en Zeestroomingen in Sommige Geedelten van den Oceaan. Uitgegeven door het Koninklijk Nederlandsch Meteorologisch Instituut—2d Omgewerkte druk. Utrecht, 1856.

Average Dutch Runs and Crossings from Longitude 0° to Sunda.

Month.	LATITUDE OF CROSSING THE MERIDIANS OF—																	LONGITUDE OF CROSSING AT PARALLELS OF—						Total.	No. of ships.
	0°.	10° E.		20° E.		30° E.		40° E.		50° E.		60° E.		70° E.		80° E.		30 S.		20 S.		10 S.		Sunda.	
	Lat.		Lat.		Lat.		Lat.		Lat.		Lat.		Lat.		Lat.		Lat.		Long.		Long.		Long.		
January	36¾°	3.3d.	37⅛°	3.3d.	38¾°	3.5d.	39¾°	3.6d.	39⅛°	2.9d.	39¼°	2.7d.	39¼°	3.2d.	39 °	3.6d.	37⅛°	6.3d.	93 °	5.1d.	97⅛°	5d.	99¾°	4.2d.	46.7	27
Average daily distance	.....	145m.	.....	140m.	.....	131m.	.....	128m.	.....	159m	.....	170m.	.....	144m.	.....	132m.	.....	123m.	.....	126m.	.....	124m.	.....	102m.	.....	.....
February	37⅛	3d	38¼	3.5d.	39	3.3d.	39¼	3.2d.	39¼	3.1d.	39¼	3.1d.	39	2.9d.	38¾	3.3d.	37⅛	6.7d.	93¾	5.3d.	99	5.2d.	102¼	4.3d.	47.6	25
Average daily distance	.....	159m.	.....	133m	.....	139m.	.....	144m.	.....	148m.	.....	148m.	.....	159m.	.....	140m.	.....	121m.	.....	124m.	.....	122m.	.....	74m.	.....	.....
March	36¼	3.3d.	37¾	4.5d.	38⅛	3.7d.	39	3.5d.	39¾	3.2d.	39¼	3.2d.	39	2.9d.	39	3.3d.	37	8.2d.	97¼	4.6d.	101¼	5.4d.	104	3.9d.	49.7	32
Average daily distance	.....	147m.	.....	104m.	.....	125m	.....	132m.	.....	144m	.....	144m.	.....	159m.	.....	145m.	.....	113m.	.....	137m	.....	116m.	.....	67m	.....	.....
April	36⅛	3.3d.	38	3.9d.	38⅛	3.9d.	39	3.3d.	39	3.1d.	38¾	2.9d.	38¾	3.1d.	38	3.4d.	36¼	7.4d.	98¼	5d.	102¾	4.1d.	105	2.7d.	46.1	26
Average daily distance	.....	145m.	.....	120m	.....	119m.	.....	140m.	.....	148m.	.....	159m.	.....	150m.	.....	143m.	.....	130m.	.....	128m.	.....	151m.	.....	92m.	.....	.....
May	36	3.4d.	37⅛	3.4d	38	3.3d.	38⅛	3d.	39	2.9d.	38⅛	2.9d.	38¾	3d.	38¼	2.8d.	37¾	6.5d.	94⅛	4.9d.	103⅛	4.3d.	105¼	2d.	42.4	21
Average daily distance	.....	141m	.....	138m.	.....	142m.	.....	154m.	.....	159m.	.....	159m	.....	153m.	.....	166m.	.....	129m.	.....	156m.	.....	143m	.....	124m	.....	.....
June	36¼	3.3d.	37⅛	3.3d.	38⅛	3.3d.	38⅛	3.2d.	38¼	3.2d.	38⅛	3.3d.	38⅛	2.8d.	37⅛	2.8d.	37	7.2d.	99	4.7d.	103¾	3.8d.	105¼	1.8d.	42.7	52
Average daily distance	.....	145m.	.....	140m.	.....	139m.	.....	146m.	.....	146m	.....	139m.	.....	167m.	.....	169m.	.....	139m.	.....	138m	.....	161m.	.....	138m.	.....	.....
July	36	3.7d	37¾	3.3d.	38¼	3.5d.	38	2 9d.	39	3d.	38⅛	2.8d.	38¼	2.7d.	37¾	3d.	35¾	6.2d.	98⅛	4.9d.	103¾	3.5d.	105¼	1.7d.	41.2	38
Average daily distance	.....	131m.	.....	145m	.....	134m.	.....	161m	.....	154m.	.....	167m.	.....	172m.	.....	164m.	.....	155m.	.....	135m.	.....	175m.	.....	146m.	.....	.....
August	36	3.5d.	37¾	3.5d.	38¼	3.3d.	38⅛	3d.	38¾	2.7d.	39	2.9d.	38¼	2.8d.	38	3.3d.	37	6.0d.	97¼	5.3d.	103⅛	3.5d.	105⅛	1.5d.	41.3	42
Average daily distance	.....	[illegible]9m.	.....	145m.	.....	142m	.....	153m	.....	170m.	.....	164m.	.....	167m.	.....	145m.	.....	154m.	.....	128m.	.....	177m.	.....	165m.	.....	.....
September	36	3.3d.	37⅛	3.4d.	38¼	3.7d.	88⅛	3.4d.	38¼	3d.	38¾	2.8d.	38¾	2.8d.	38⅛	2.8d.	37⅛	5.7d.	97⅛	5d.	103	3.6d.	105¼	1.8d.	41.3	60
Average daily distance	.....	145m.	.....	140m.	.....	126m.	.....	137m.	.....	154m.	.....	159m	.....	159m.	.....	168m.	.....	167m.	.....	133m.	.....	172m.	.....	138m.	.....	.....
October	36⅛	3.7d.	38	3.2d.	38¼	3.3d.	38¾	3.3d.	39	2.9d.	38¾	2.9d.	39	2.7d.	39	2.9d.	37⅛	6.2d.	96⅛	4.7d.	101⅛	3.6d.	104¼	2.2d.	41.6	31
Average daily distance	.....	142m.	.....	146m	.....	139m	.....	140m	.....	159m.	.....	159m.	.....	171m	.....	164m.	.....	148m	.....	138m.	.....	175m.	.....	118m.	.....	.....
November	36¾	3.7d.	37¾	3.6d.	38⅛	3.3d.	38¾	2.7d.	38¾	2.6d.	39	2.6d.	39	2.9d.	38¾	2.9d.	38	6.5d.	95¾	4.1d.	99¾	3.9d.	102⅛	3.9d.	42.7	35
Average daily distance	.....	128m.	.....	130m.	.....	139m.	.....	170m	.....	188m.	.....	188m	.....	159m.	.....	162m.	.....	145m.	.....	151m.	.....	162m.	.....	79m.	.....	.....
December	37	3.2d.	38	3.4d.	38¾	3.1d.	39	3.1d.	39	3d.	39¼	3.2d.	39⅛	3.3d.	39	3.5d.	37¼	6.1d.	93¼	4.2d.	97¾	4 2d.	100¾	4.6d.	44 9	32
Average daily distance	.....	150m.	.....	138m.	.....	149m.	.....	149m.	.....	154m.	.....	144m.	.....	140m.	.....	136m	.....	126m.	.....	152m.	.....	150m.	.....	83m.	.....	.....

Vide.—"Uitkomsten van Wetenschap en Ervaring Aangaande Winden en Zeestroomingen, in sommige gedeelten van den Oceaan:" Uitgegeven door het Koninklijk Nederlandsch Meteorologisch Instituut. 2d Omgewerkte druk. Bookdrukkery: Kemink en soon te Utrecht, 1856.

NOTE.—The column between columns "*Lat.*" contains the days (*d*) and the daily distance (*m*) from crossing to crossing.

TO CALIFORNIA AND THE NORTHWEST COAST.

Navigators bound as above should, if from the United States, study the route to the "fair-way off St. Roque," p. 143; if from Europe they should study the route "from the Lizard to the line," p. 368. The "fair way off St. Roque" is assumed to be in 7° S.

After passing over the ground covered by these two chapters, the two routes then come together and the course is thence the same for both the American and the European.

The chapter on the barometric anomalies off Cape Horn, p. 446, should be looked into, while the chapter "From the fair-way off St. Roque to Cape Horn," p. 459, with the crossings from 50° S. in the Atlantic to 50° S. in the Pacific should be well mastered.

Having done this and reached 50° S. in the Pacific, we gain another turning off place, or fork in the road. Crossing this parallel, the South American bound traders part company with the California fleet; whether bound for Valparaiso, or the "*Intermedios*," for Callao or Guayaquil, they now leave the great northwestern trail to make the best of their way, each to her port of destination. With flowing sheets, and fair winds, their course for the rest of the way is plain. Not a word in addition to what the Pilot Charts contain can be said to make the way plainer to them, except the oft-repeated caution to go straight across the calm belt of Capricorn, turning neither to the east nor west until it is crossed, and until the navigator finds himself fairly within the trade-wind region beyond.

The Valparaiso bound vessel should hug the shore close enough to make the land to the southward of her port; those for Callao, &c., keeping straight on.

The California bound vessels should aim to enter the SE. trade-wind region of the Pacific as far to the west, provided they keep on the eastern side say of 118° W., as they well can; they should not fight with head winds to make westing, nor should they turn much from the direct course when the winds are fair. But when winds are dead ahead, stand off to the westward, especially if you be south of the trade-wind region. Having crossed the parallel of 35° S., and taken the trades, the navigator, with the wind quartering and all sails drawing, should now make the best of his way to the equator, aiming to cross it between 105° and 120° according to the season of the year, and the directions and the tables hereinafter given.

I wish here to call the attention of navigators to the winds they are to expect between the parallel of 50° S., in the Pacific and the equator, especially as it regards their reliability.

In the table of Cape Horn Crossings (p. 459) are given the times from the fair way off St. Roque (latitude 7° S.) to the parallel of 50° S., in the Atlantic. The distance between the two parallels there is about 2,900 miles, the average time 30 days, and the mean daily run is about 100 miles.

The distance from 50° S., in the Pacific, to the usual crossing-place on the line—California track—is about 3,300 miles, the average time 27.7 days, and the mean daily run 132 miles.

The winds between 50° S. and the equator are much more strong, steady, and reliable, as the barometer would lead us to expect, on the Pacific, than they are on the Atlantic side of the continent; the ratio between them in these respects is greater than 2,900 to 3,300, for it is easier to make 3,300 miles with them in one ocean than it is 2,900 in the other.

An examination of the mean monthly passages from crossing to crossing will also show a greater regularity, implying thereby more stable winds. The greatest monthly average on the east side is 31.1 days in August; on the west 27.9 in May—extreme difference, 3.2 days; the

greatest monthly average on the west side being 27.9 days; the least 22.2 days; the extreme difference is 5.7 days. But a comparison of the tables for a moment only will show with how much more regularity as to time the passages are made on the one side than they are on the other.

Independent of the information that has been elicited by the investigations connected with the Wind and Current Charts, but little was known by navigators as to the winds and currents on the California route, after doubling Cape Horn.

Navigators knew, indeed, that on that route they had to cross the belt both of the SE. and of the NE. trade-winds. But in what longitude to cross them; between what meridians are these trade-winds most constant, steady, and fresh; and between what meridians is it less difficult to cross the belt of equatorial calms which separate these two systems of trade-winds; and when, at what distance from the coast, are the light airs and calms of the horse latitudes, which are found on the polar borders of the SE. as well as of the NE. trades, less vexatious? These are some of the questions to which definite answers had to be given before it could be asserted with confidence that this or that is certainly the best route to California.

The Pilot Charts, the Track Charts, and proper attention to the tables I am about to give, will tell this to all who consult them diligently.

Having exhausted my materials for Pilot Charts of this route, I have, with the assistance of Lieutenants George Minor, Robert H. Wyman, and Dulany A. Forrest, overhauled the whole series of log-books in my possession, for California passages. From them are derived the tables of Calfiornia Crossings in this chapter, (p. 721) giving the name of the vessel, the year, the number of days' passage from the place of departure in the North Atlantic to the equator in the Pacific, the place and month of crossing the equator, and the number of days thence to California. The crossings on the equator, and of various parallels of latitude, with other statistics, are also given.

Between the equator and 10° or 12° N., according to the season of the year, the California bound navigator may expect to lose the SE. and to get the NE. trade-winds.

He will find these last nearest the equator in January, February, and March; but in July, August, and September he will sometimes find himself to the north of the parallel of 15° N. before he gets fairly into the NE. trades. And sometimes, especially in summer and fall, he will not get them at all unless he keeps well out to the west. Having them, he should steer a good rap full at least, aiming, of course, to cross the parallel of 20° N., in about 125° W., or rather not to the east of that, particularly from June to November. His course, after crossing 20° N., is necessarily to the northward and westward until he loses the NE. trades. He should aim to reach the latitude of his port without going to the west of 130° W., if he can help it, or without approaching nearer than 250 or 300 miles to the land until he passes out of the belt of the NE. trades and gets into the variables, the prevailing direction of which is westerly.

"Where shall we take the SE. and lose the NE. trades on the passage to California?" is an important question for the navigator to have answered, who is striving for a short passage on the west coast of South America. From the parallel of Cape Horn up to the belt of light winds and calms, through which you generally pass before getting into the SE. trades, the prevailing winds are westerly winds, having nothing more frequently than southing in them.

Between the northwest coast and the meridian of 130° W., from 30° to 40° N., the prevailing direction of the wind in summer and fall is from the northward and westward, whereas, to the west of 130°, and between the same parallels, the NE. trades are the prevailing winds of these two seasons. There is a marked difference in the direction of

the winds on the opposite sides of the meridian of 130° W. in the North Pacific. The cause of this difference has been completely unmasked by the researches connected with these charts. The agent which produces it has its seat in the arid plains of New Mexico, Northern Texas, and the regions round about. At this season of the year the prevailing winds in the western part of the Gulf of Mexico are from the southward and eastward; that is, towards the great centre of rarefaction. At this season of the year, too, the prevailing winds in the Pacific, off the coasts of Central America, are from the southward, and also towards the same centre of heated plains and ascending columns of air; and we have seen that off the coasts of California, between the parallels of 35° and 40° N., the prevailing winds of this season are from the northward and westward; also towards this great inland "blow hole." In it is seated a monsoon agent, whose influence is felt for more than a thousand miles out to sea, drawing back the NE. trades of the Pacific, and converting them into a southwardly monsoon for half the year; deflecting the NE. trades of the Gulf of Mexico, and converting them into a southeasterly monsoon during the same season, and so influencing the prevailing SW. winds off our Northwest Pacific coast that they, too, are almost made to blow a northwesterly monsoon.

Therefore, vessels bound to San Francisco should not, unless forced by adverse winds, go any further beyond the meridian of 130° W. than they can help.

Supposing that vessels generally will be able to reach 30° N. without crossing the meridian of 130° W., the distance per great circle from Cape Horn to its point of intersection with that parallel is about 6,000 miles.

And supposing, moreover, that California bound vessels will generally, after doubling Cape Horn, be able to cross the parallel of 50° S., between the meridians of 80° and 100° W., their shortest distance in *miles* thence to 30° N., at its intersection with the meridian of 130° W., would be to cross 40° S. in about 100° W.; 30° S. in about 104°; 20° S. in about 109°; the equator in 117° W.; and 30° N., about 130° W., (126° if you can.) By crossing the line 10° further to the east or 10° further to the west of 117°, the great circle distance from Cape Horn to the intersection of 30° N. with 130° W., will be increased only about 150 miles.

Navigators appear to think that the turning point on a California voyage is the place of crossing the equator in the Pacific. But the crossing which may give the shortest run thence to California may not be the crossing which it is most easy to make from the United States or Europe; and it is my wish to give, in these Sailing Directions, the routes which, on the average, will afford the shortest passages to vessels that have doubled Cape Horn, and are bound direct to California.

First, therefore, let us see which crossings of the equator in the Pacific give the shortest runs, on the average, thence to San Francisco; then let us find out which of these crossings it is most easy to reach from Cape Horn; and then, by comparing the two, we may be able to lay down the best route from Cape Horn to California.

There are 87 crossings between 115° and 120° W. They give the shortest average time to San Francisco; their average, however, is only 16 hours (0.6 day) less than the average from the crossing between 110° and 115°, and the average to the latter crossing from 50° S. is 8 hours (0.3 day) shorter than the average to the former crossing. Hence we conclude, from the following comparative statement, which is derived from a total of 441 passages *from* the Line, and of 448 *to* the Line, that the average passage from 50° S. to San Francisco is 53.5 days *via* the crossing between 115° and 120° W., and 53.8 days *via* the crossing between 110° and 115°.

Comparative statement showing the average passages by various crossings.

From 50° S. to the equator, and thence to San Francisco.				
No. of passages.	Days from 50°	Equator between—	Days from 0°	No. of passages.
7	31.9	Coast and 100° W.	40.7	8
34	27.4	100° and 105° W	31.4	30
71	28.0	105° and 110° W	28.6	87
220	27.0	110° and 115° W	26.8	220
103	27.3	115° and 120° W	26.2	87
13	30.3	120° and 125° W	28.6	9

From this table it appears that, in the long run, the crossing between 115° and 120° gives the best average; but it is not so much frequented as the crossing between 110° and 115°. Let us turn to other tables, which show the times and crossings as given in the 7th edition, and the times and crossings since. The latter were compiled by Lieutenant Dulany A. Forrest; the former by Lieutenants Minor, Wyman, *et al.*

Crossings in the Pacific, from 50° S. to the Equator.

Name of vessel.	Date of crossing parallel of 50° S.	LONGITUDE OF CROSSING THE PARALLELS OF—					Long. of crossing the equator.	Date of crossing the equator.	Days from 50° S. to the equator.	Days from equator to San Francisco.
		50° S.	40° S.	35° S.	30° S.	25° S.				
		Long. W. ° ′	Long. W. ° ′	Long. W. ° ′	Long. W. ° ′	Long. W. ° ′	Long. W. ° ′			
Hazard	Jan. 28, 1851	77 00	81 00	83 00	84 00	86 00	109 00	Feb. 21, 1851	24	24
Helena	28, 1851	78 00	83 00	87 00	91 00	94 00	110 00	19, 1851	22	21
Russell	8, 1850	83 00	83 00	84 00	85 00	89 00	110 00	7, 1850	30	37
Cygnet	27, 1850	84 00	83 00	79 00	81 00	87 00	111 00	26, 1850	30	29
R. C. Winthrop	31, 1851	82 00	86 00	87 00	90 00	92 00	110 00	Mar. 3, 1851	31	29
Potomac	31, 1851	80 00	79 00	79 00	83 00	88 00	111 00	3, 1851	31	32
Swordfish	2, 1852	80 00	90 00	94 00	95 00	98 00	110 00	Jan. 21, 1852	19	20
Seaman	28, 1851	79 00	83 00	88 00	92 00	97 00	118 00	Feb. 20, 1851	23	18
Acasta	31, 1851	82 00	86 00	87 00	91 00	92 00	121 00	Mar. 10, 1851	38	28
Trade-Wind	13, 1853	81 00	87 00	95 00	96 00	99 00	112 00	Feb. 7, 1853	25	16
Contest	19, 1853	81 00	82 00	84 00	88 00	91 00	111 00	9, 1853	21	16
Tingqua	27, 1853	80 00	80 00	83 00	85 00	84 00	106 00	19, 1853	23	27
Gray Feather	26, 1853	79 00	81 00	84 00	89 00	89 00	110 00	18, 1853	23	25
Realm	2, 1853	83 00	85 00	84 00	88 00	92 00	113 00	7, 1853	36	36
Capitol	4, 1853	81 00	77 00	75 00	73 00	77 00	113 00	7, 1853	34	20
Golden Gate	29, 1853	79 00	79 00	80 00	81 00	82 00	104 00	24, 1853	26	24
Telegraph	25, 1853	81 00	83 00	85 00	88 00	90 00	110 00	17, 1853	23	21
Samoset	10, 1851	78 00	81 00	82 00	86 00	86 00	108 00	18, 1851	39	27
Ann Maria	Dec. 24, 1853	83 00	82 00	83 00	87 00	92 00	110 00	Jan. 20, 1854	26	23
Cyclone	14, 1854	82 00	85 00	87 00	94 00	99 00	115 00	Feb. 5, 1854	21	20
Samuel Lawrence	Dec. 31, 1853	78 00	80 00	86 00	90 00	95 00	111 00	Jan. 26, 1854	26	25
Golden City	26, 1853	79 00	80 00	84 00	89 00	95 00	114 00	18, 1854	24	20
Eagle	7, 1854	82 00	82 00	87 00	95 00	98 00	112 00	28, 1854	21	19
Arthur	9, 1854	80 00	83 00	88 00	89 00	93 00	112 00	Feb. 9, 1854	31	30
Means per 7th edition	.....	80 35	82 06	84 45	88 00	90 35	110 57	.....	27	24.4
Samuel Appleton	Jan. 3, 1854	82 00	87 00	89 00	95 00	99 00	110 00	Jan. 29, 1854	26	22
Hussar	1, 1854	83 00	84 00	85 00	85 00	92 00	112 00	26, 1854	25	27
Phantom	6, 1855	81 00	80 00	84 00	88 00	91 00	113 00	30, 1855	24	23
Lotus	7, 1855	82 00	79 00	82 00	85 00	90 00	115 00	Feb. 2, 1855	26	25
Bald Eagle	3, 1855	82 00	86 00	89 00	91 00	96 00	111 00	Jan. 24, 1855	21	29
Southern Cross	7, 1855	83 00	83 00	85 00	88 00	90 00	112 00	30, 1855	23	22
Cleopatra	23, 1855	82 00	80 00	82 00	86 00	92 00	109 00	Feb. 14, 1855	22	18
Brewster	29, 1856	80 00	80 00	81 00	84 00	89 00	111 00	27, 1856	29	26
Anglo Saxon	23, 1856	81 00	83 00	89 00	89 00	94 00	111 00	18, 1856	26	26
Comet	6, 1856	83 00	83 00	87 00	91 00	97 00	118 00	2, 1856	23	23
Ocean Express	30, 1856	72 00	82 00	86 00	86 00	91 00	114 00	Mar. 3, 1856	33	22
Mary	14, 1856	82 00	81 00	81 00	84 00	90 00	114 00	Feb. 6, 1856	23	32
Rival	30, 1856	79 00	82 00	85 00	86 00	89 00	110 00	Mar. 4, 1856	34	27
Octavius	16, 1856	79 00	80 00	81 00	85 00	91 00	115 00	Feb. 12, 1856	27	27
Golden Racer	1, 1856	79 00	83 00	84 00	89 00	94 00	113 00	19, 1856	26	22
Gladiator	22, 1856	81 00	84 00	84 00	87 00	90 00	108 00	23, 1856	33	33
Sancho Panza	13, 1856	79 00	79 00	79 00	80 00	87 00	115 00	7, 1856	25	30
Great Republic	27, 1857	85 00	93 00	97 00	98 00	101 00	118 00	17, 1857	21	19
Electric	23, 1855	81 00	81 00	82 00	87 00	91 00	110 00	12, 1855	20	19
Means	.....	80 50	82 38	84 50	87 35	92 19	112 35	.....	25.6	24.8
Daily average distance "made good," in miles									130	94

Crossings in the Pacific, from 50° S. to the Equator—Continued.

Name of vessel.	Date of crossing parallel of 50° S.	Longitude of crossing the parallels of— 50° S.	40° S.	35° S.	30° S.	25° S.	Long of crossing the equator.	Date of crossing the equator.	Days from 50° S. to the equator.	Days from equator to San Francisco.
		Long. W. ° ′	Long. W. ° ′	Long. W. ° ′	Long. W. ° ′	Long. W. ° ′	Long. W. ° ′			
Whiton*	Feb. 16, 1847	80 00	77 00	79 00	80 00	82 00	93 00	Mar. 13, 1847	25	42
George Brown	13, 1851	80 00	86 00	88 00	89 00	91 00	105 00	14, 1851	29	22
Whiton	11, 1849	84 00	76 00	74 00	78 00	87 00	109 00	15, 1849	32	28
Samuel Appleton	26, 1851	79 00	83 00	88 00	90 00	93 00	109 00	23, 1851	25	18
Uriel*	28, 1851	78 00	82 00	85 00	86 00	90 00	110 00	30, 1851	30	34
Surprise	8, 1851	79 00	82 00	83 00	86 00	88 00	110 00	3, 1851	23	17
Hannibal	23, 1850	95 00	84 00	89 00	93 00	98 00	115 00	22, 1850	27	29
Southerner	27, 1851	80 00	85 00	90 00	87 00	88 00	117 00	30, 1851	31	28
Newton	4, 1851	81 00	80 00	79 00	79 00	85 00	117 00	10, 1851	34	26
Canton	28, 1850	85 00	88 00	89 00	94 00	97 00	118 00	28, 1850	28	29
Lucia Field	5, 1851	78 00	83 00	87 00	91 00	95 00	119 00	19, 1851	42	31
Europe	17, 1852	80 00	78 00	76 00	77 00	81 00	100 00	17, 1852	28	35
Lantao	23, 1851	81 00	84 00	88 00	92 00	94 00	118 00	21, 1851	26	20
A. F. Jenness*	25, 1853	80 00	76 00	73 00	73 00	78 00	100 00	Apr. 12, 1853	46	54
Kentucky	17, 1853	83 00	96 00	103 00	107 00	110 00	113 00	Mar. 26, 1853	37	25
Golden West	24, 1853	81 00	77 00	79 00	84 00	89 00	107 00	24, 1853	28	23
John Bertram	17, 1852	84 00	89 00	94 00	95 00	96 00	110 00	8, 1852	20	18
Danube	18, 1853	80 00	82 00	83 00	86 00	91 00	110 00	23, 1853	33	26
Anna Kimball	19, 1853	79 00	83 00	83 00	88 00	92 00	114 00	22, 1853	31	22
Cygnet	6, 1853	85 00	84 00	83 00	88 00	91 00	109 00	8, 1853	30	30
Thos. Church*	18, 1853	78 00	79 00	76 00	79 00	81 00	111 00	36, 1853	48	46
Winged Racer	13, 1853	82 00	81 00	84 00	89 00	93 00	106 00	7, 1853	22	21
Flying Childers	19, 1853	81 00	83 00	83 00	86 00	92 00	117 00	19, 1853	28	22
Living Age	8, 1853	79 00	81 00	82 00	87 00	92 00	112 00	12, 1853	32	20
Bald Eagle	23, 1853	85 00	95 00	99 00	97 00	100 00	111 00	23, 1853	28	19
F. W. Brune	1, 1853	90 00	95 00	96 00	98 00	100 00	107 00	2, 1853	29	29
Storm	20, 1853	79 00	82 00	83 00	88 00	91 00	110 00	17, 1853	25	28
Alboni	1, 1853	85 00	94 00	96 00	98 00	102 00	114 00	Feb. 27, 1853	26	30
Sartelle*	10, 1852	80 00	74 00	80 00	81 00	84 00	107 00	Mar. 10, 1852	28	39
Roman	24, 1853	85 00	91 00	91 00	93 00	98 00	110 32	23, 1853	26	25
Eagle Wing	19, 1854	78 00	77 00	79 00	83 00	85 00	113 00	12, 1854	21	23
Telegraph	10, 1854	78 00	77 00	77 00	74 00	79 00	106 00	23, 1854	25	24
Means per 7th edition	.....	82 08	79 34	80 19	84 48	91 07	110 12	.....	27.2	24.9
Syrene	Feb. 18, 1854	84 00	83 00	87 00	94 00	99 00	110 00	Mar. 10, 1854	20	21
John Haven	28, 1854	77 00	82 00	93 00	94 00	93 00	115 00	Apr. 8, 1854	39	25
Aurora	26, 1854	82 00	85 00	89 00	94 00	99 00	114 00	Mar. 24, 1854	26	17
Dashing Wave	8, 1854	78 00	75 00	73 00	75 00	80 00	110 00	1, 1854	26	22
Clara	9, 1855	85 00	85 00	85 00	86 00	90 00	111 00	12, 1855	31	30
Channing	22, 1855	79 00	81 00	87 00	92 00	96 00	114 00	19, 1855	25	24
Aurora	9, 1855	80 00	83 00	81 00	83 00	89 00	110 00	11, 1855	30	22
Governor Morton	15, 1855	84 00	88 00	85 00	85 00	90 00	113 00	12, 1855	25	20
Tornado	6, 1855	84 00	82 00	80 00	79 00	82 00	113 00	12, 1855	34	29
Telegraph	27, 1855	84 00	86 00	90 00	92 00	96 00	109 00	19, 1855	20	20
Western Continent	20, 1855	77 00	79 00	83 00	88 00	93 00	116 00	19, 1855	27	22
Electric Spark	20, 1856	84 00	86 00	88 00	88 00	91 00	113 00	14, 1856	23	25
Fair Wind	16, 1856	80 00	83 00	83 00	84 00	86 00	110 00	16, 1856	29	26
Tornado	5, 1856	80 00	84 00	88 00	90 00	91 00	115 00	4, 1856	28	22
Victory	9, 1856	78 00	81 00	84 00	86 00	91 00	111 00	8, 1856	28	23
Hollander	21, 1856	80 00	81 00	83 00	87 00	91 00	110 00	18, 1856	26	24
Isaac Jeanes	21, 1856	80 00	83 00	84 00	86 00	92 00	113 00	17, 1856	25	25
Antelope	1, 1856	82 00	83 00	85 00	85 00	89 00	110 00	Feb. 27, 1856	26	16
Corinne	8, 1856	83 00	89 00	90 00	94 00	99 00	117 00	Mar. 7, 1856	28	24
Means	.....	81 06	82 35	85 09	87 25	91 25	112 19	.....	27.1	23
Average number miles daily									126	102

* Not included in the average.

Crossings in the Pacific, from 50° S. to the Equator—Continued.

Name of vessel.	Date of crossing parallel of 50° S.	Longitude of crossing the parallels of— 50° S.	40° S.	35° S.	30° S.	25° S.	Long. of crossing the equator.	Date of crossing the equator.	Days from 50° S. to the equator.	Days from equator to San Francisco.
		Long. W. ° ′	Long. W. ° ′	Long. W. ° ′	Long. W. ° ′	Long. W. ° ′	Long. W. ° ′			
Hurricane	Mar. 4, 1852	81 00	80 00	82 00	85 00	88 00	103 00	Mar. 22, 1852	18	24
Great Britain	25, 1852	79 00	81 00	74 00	74 00	78 00	104 00	Apr. 28, 1852	34	30
Sartelle	2, 1850	79 00	80 00	80 00	82 00	85 00	109 00	Mar. 28, 1850	26	34
Howard	5, 1852	80 00	80 00	80 00	83 00	88 00	110 00	29, 1852	24	25
Wisconsin	27, 1852	84 00	83 00	78 00	78 00	82 00	106 00	Apr. 22, 1852	26	30
Hermann	27, 1850	81 00	76 00	76 00	82 00	87 00	109 00	May 11, 1850	45	37
Daniel	26, 1851	77 00	78 00	77 00	82 00	87 00	113 00	Apr. 28, 1851	33	33
Isette	5, 1850	84 00	87 00	88 00	90 00	92 00	110 00	May 10, 1850	66	37
Stag Hound	30, 1851	79 00	77 00	74 00	75 00	81 00	113 00	4, 1851	34	21
Isabelita Hyne	26, 1851	83 00	81 00	83 00	84 00	88 00	116 00	Apr. 23, 1851	28	24
Maria	14, 1851	78 00	77 00	78 00	82 00	85 00	117 00	16, 1851	33	32
Samuel Russell	17, 1850	84 00	83 00	82 00	81 00	84 00	119 00	15, 1850	29	20
Esther May	31, 1853	81 00	91 00	93 00	99 00	105 00	113 00	28, 1853	28	33
John Holland	15, 1853	79 00	84 00	83 00	82 00	84 00	102 00	16, 1853	32	24
Rattler	18, 1853	82 00	90 00	90 00	94 00	97 00	114 00	16, 1853	29	23
Golden Eagle	30, 1853	79 00	90 00	97 00	98 00	103 00	113 00	20, 1853	21	19
Eagle	8, 1853	87 00	92 00	100 00	103 00	104 00	116 00	8, 1853	31	22
Tornado	13, 1853	84 00	91 00	99 00	96 00	98 00	118 00	10, 1853	28	22
John Stuart	14, 1853	82 00	94 00	99 00	102 00	103 00	112 00	10, 1853	27	24
Celestial	18, 1853	82 00	83 00	84 00	86 00	91 00	109 00	15, 1853	28	23
Phantom	13, 1853	84 00	94 00	101 00	105 00	106 00	113 00	6, 1853	24	15
Walter (schr.)	11, 1853	81 00	83 00	87 00	89 00	94 00	108 00	9, 1853	29	25
Susquehanna	29, 1851	78 00	80 00	83 00	86 00	90 00	113 00	May 1, 1851	33	30
Elsinore	30, 1851	81 00	85 00	94 00	91 00	89 00	108 00	7, 1851	38	31
Courser	9, 1852	79 00	80 00	83 00	87 00	92 00	105 00	Mar. 28, 1852	19	31
Flying Cloud	17, 1854	80 00	88 00	89 00	91 00	94 00	110 00	Apr. 6, 1854	20	15
Game Cock	9, 1854	79 00	82 00	80 00	79 00	82 00	109 00	5, 1854	26	16
Herald of Morning	22, 1854	82 00	100 00	103 00	98 00	111 00	119 00	16, 1854	24	20
Archer	18, 1854	79 00	88 00	91 00	93 00	97 00	112 00	7, 1854	20	22
North Carolina	11, 1854	79 00	79 00	81 00	79 00	77 00	95 00	15, 1854	35	42
Means per 7th edition	.....	80 42	80 41	85 42	89 22	93 00	110 06	.....	28.8	26.1
Harriet	Mar. 11, 1854	82 00	81 00	85 00	88 00	87 00	112 00	Apr. 12, 1854	32	24
Coringa	7, 1854	82 00	85 00	82 00	79 00	84 00	114 00	9, 1854	32	25
Game Cock	10, 1854	80 00	82 00	80 00	78 00	82 00	110 00	5, 1854	27	16
E. F. Willets	20, 1855	81 00	83 00	87 00	89 00	94 00	116 00	12, 1855	23	28
Greenfield	20, 1855	84 00	88 00	91 00	92 00	97 00	116 00	11, 1855	22	24
Boston Light	1, 1855	79 00	88 00	90 00	91 00	93 00	118 00	Mar. 22, 1855	21	19
Mountain Wave	18, 1855	88 00	85 00	88 00	94 00	99 00	114 00	Apr. 12, 1855	25	31
Neptune's Car	15, 1855	83 00	88 00	91 00	94 00	101 00	112 00	3, 1855	19	22
Sparkling Wave	2, 1855	79 00	86 00	87 00	88 00	92 00	111 00	Mar. 23, 1855	21	20
Sultan	31, 1856	82 00	82 00	85 00	86 00	86 00	114 00	Apr. 24, 1856	25	26
Star of the Union	20, 1856	82 00	82 00	81 00	82 00	84 00	111 00	12, 1856	23	30
Phantom	15, 1856	83 00	93 00	97 00	93 00	93 00	114 00	8, 1856	24	20
Sultan	31, 1856	82 00	82 00	85 00	86 00	87 00	114 00	24, 1856	25	26
Adelaide	10, 1856	83 00	88 00	88 00	89 00	96 00	113 00	Mar. 31, 1856	21	29
Osborn Howes	11, 1856	87 00	94 00	99 00	106 00	109 00	115 00	Apr. 4, 1856	24	25
Elizabeth Kimball	12, 1856	88 00	93 00	97 00	102 00	106 00	115 00	4, 1856	23	26
Means	.....	82 34	86 15	88 19	89 49	93 07	113 45	.....	24.1	24.4
Average number of miles made good daily									141	97

Crossings in the Pacific, from 50° S. to the Equator—Continued.

Name of vessel.	Date of crossing parallel of 50° S.	Longitude of crossing the parallels of—					Long. of crossing the equator.	Date of crossing the equator.	Days from 50° S. to the equator.	Days from equator to San Francisco.
		50° S.	40° S.	35° S.	30° S.	25° S.				
		Long. W. ° ′	Long. W. ° ′	Long. W. ° ′	Long. W. ° ′	Long. W. ° ′	Long. W. ° ′			
Ocean Bird	April 17, 1849	81 00	76 00	78 00	79 00	78 00	99 00	May 23, 1849	36	38
Anonyma	25, 1849	78 00	78 00	82 00	86 00	87 00	103 00	23, 1849	28	34
Aurora	18, 1849	81 00	79 00	73 00	75 00	75 00	110 00	30, 1849	42	31
Newcastle*	28, 1849	79 00	78 00	74 00	77 00	80 00	109 00	June 11, 1849	44	54
F. Depau	4, 1850	78 00	77 00	73 00	74 00	81 00	113 00	May 20, 1850	46	27
Diadem	7, 1850	81 00	74 00	74 00	89 00	82 00	116 00	22, 1850	45	36
Tornado	24, 1852	83 00	80 00	81 00	85 00	88 00	108 00	18, 1852	24	44
Kate Hays	24, 1852	79 00	76 00	74 00	78 00	82 00	109 00	June 3, 1852	40	32
Sea Serpent	13, 1853	81 00	87 00	85 00	85 00	88 00	102 00	May 5, 1853	22	27
A. Cheseborough	1, 1853	78 00	85 00	88 00	91 00	95 00	114 00	April 26, 1853	25	32
Simoom	12, 1853	88 00	97 00	94 00	91 00	92 00	106 00	May 5, 1853	23	27
Aldebaran	1, 1853	85 00	90 00	92 00	98 00	103 00	110 00	April 27, 1853	26	35
Lucknow	2, 1853	88 00	99 00	108 00	105 00	103 00	118 00	May 6, 1853	34	28
Star of the Union	14, 1853	84 00	93 00	87 00	86 00	88 00	106 00	5, 1853	21	27
Astrea	17, 1853	84 00	89 00	93 00	96 00	99 00	114 00	19, 1853	32	37
Golden Rover	15, 1853	86 00	93 00	92 00	90 00	91 00	109 00	7, 1853	22	33
Amelia	1, 1853	81 00	83 00	87 00	96 00	107 00	116 00	April 28, 1853	27	26
Swordfish	15, 1853	88 00	91 00	84 00	84 00	89 00	114 00	May 7, 1853	22	24
Governor Morton	17, 1853	84 00	87 00	89 00	93 00	96 00	109 00	15, 1853	28	26
Huguenot	Mar. 29, 1853	81 00	87 00	92 00	96 00	98 00	113 00	April 19, 1853	20	26
Seaman's Bride	7, 1854	88 00	101 00	96 00	97 00	98 00	117 00	May 2, 1854	25	21
Polynesian	19, 1854	82 00	88 00	88 00	93 00	95 00	110 00	18, 1854	29	29
M. Howes	7, 1854	86 00	92 00	90 00	90 00	88 00	114 00	8, 1854	31	33
Means per 7th edition	.....	81 49	81 49	87 00	90 08	97 03	110 16	.....	29.4	30
John Gilpin	April 5, 1854	84 00	93 00	96 00	93 00	94 00	119 00	April 30, 1854	25	23
Tinqua	20, 1854	94 00	94 00	90 00	85 00	90 00	112 00	May 17, 1854	27	26
Cœur De Lion	18, 1854	84 00	85 00	81 00	82 00	87 00	113 00	20, 1854	32	26
Atalanta	23, 1855	82 00	86 00	92 00	93 00	93 00	107 00	24, 1855	31	36
Dashing Wave	22, 1855	82 00	79 00	76 00	78 00	82 00	110 00	19, 1855	27	31
Phœnix	4, 1855	79 00	86 00	88 00	87 00	89 00	114 00	4, 1855	30	31
Samuel Russell	22, 1855	81 00	83 00	86 00	90 00	96 00	109 00	17, 1855	25	27
Jenny Ford	8, 1855	89 00	92 00	90 00	92 00	93 00	114 00	3, 1855	25	31
Sweepstakes	17, 1856	82 00	83 00	84 00	88 00	91 00	110 00	4, 1856	17	21
Derby	3, 1856	85 00	98 00	102 00	106 00	109 00	118 00	April 28, 1855	20	28
Don Quixote	9, 1856	79 00	88 00	92 00	95 00	98 00	109 00	28, 1855	19	32
Santa Cruz	22, 1857	83 00	93 00	97 00	102 00	98 00	109 00	May 28, 1857	36	30
Means	.....	83 40	88 20	89 30	90 55	93 20	112 00	.....	26.1	28.5
Average number of miles made good daily									125	84

* Not included in the average.

Crossings in the Pacific, from 50° S. to the Equator—Continued.

Name of vessel.	Date of crossing parallel of 50° S.	Longitude of crossing the parallels of— 50° S.	40° S.	35° S.	30° S.	25° S.	Long. of crossing the equator.	Date of crossing the equator.	Days from 50° S. to the equator.	Days from equator to San Francisco.
		Long. W. ° ′	Long. W. ° ′	Long. W. ° ′	Long. W. ° ′	Long. W. ° ′	Long. W. ° ′			
Sweden	May 29, 1849	80 00	88 00	89 00	90 00	84 00	102 00	June 26, 1849	28	38
Sherwood	30, 1851	81 00	86 00	89 00	91 00	97 00	109 00	25, 1851	26	40
Ino	24, 1851	78 00	81 00	82 00	79 00	82 00	109 00	19, 1851	26	34
Edgar	29, 1850	78 00	77 00	73 00	73 00	78 00	108 00	July 2, 1850	34	39
Henry Pratt	1, 1850	79 00	80 00	78 00	79 00	84 00	110 00	June 7, 1850	37	41
Archibald Gracie	7, 1850	83 00	86 00	85 00	85 00	87 00	111 00	11, 1850	35	36
Delia	6, 1851	87 00	91 00	87 00	84 00	85 00	114 00	10, 1851	35	34
Arcole	5, 1851	84 00	98 00	99 00	100 00	102 00	117 00	May 31, 1850	26	30
Kensington	3, 1850	81 00	88 00	88 00	89 00	90 00	123 00	June 24, 1851	52	39
Sea Serpent	8, 1852	79 00	78 00	79 00	76 00	76 00	102 00	6, 1852	29	24
Stag Hound	9, 1852	82 00	88 00	88 00	85 00	81 00	100 00	1, 1852	23	32
Michael Angelo	31, 1852	86 00	85 00	83 00	82 00	86 00	102 00	27, 1852	27	35
Rose Standish	19, 1850	78 00	81 00	80 00	81 00	87 00	113 00	20, 1850	32	44
Ariana	23, 1853	84 00	82 00	83 00	82 00	84 00	117 00	July 1, 1853	39	40
Forrest	9, 1849	82 00	84 00	84 00	83 00	82 00	104 00	June 6, 1849	28	30
Wallace	10, 1852	81 00	84 00	84 00	82 00	82 00	112 00	13, 1852	34	38
Eastern State	10, 1852	84 00	82 00	80 00	80 00	85 00	101 00	8, 1852	29	34
Stephen Lurman	24, 1852	84 00	83 00	88 00	88 30	89 00	112 00	19, 1852	26	34*
Morgan Dix	10, 1850	79 00	80 00	83 00	82 00	83 00	110 00	13, 1850	34	37
Gov. Morton	21, 1852	81 00	87 00	89 00	87 00	85 00	102 00	12, 1852	22	32
Vandalia	1, 1850	83 00	86 00	87 00	87 00	88 00	108 00	2, 1850	32	34
Stag Hound	1, 1853	78 00	78 00	79 00	79 00	79 00	116 00	5, 1853	35	26
Surprise	20, 1853	84 00	85 00	88 00	91 00	99 00	111 00	7, 1853	18	32
Empress of the Seas	20, 1853	85 00	84 00	85 00	86 00	91 00	116 00	10, 1853	21	32
Houqua	24, 1853	83 00	86 00	91 00	98 00	101 00	115 00	21, 1853	28	24
Paragon	21, 1853	80 00	83 00	88 00	87 00	86 00	113 00	18, 1853	37	42
Parthian	26, 1853	81 00	83 00	84 00	82 00	88 00	110 00	25, 1853	30	28
Climax	27, 1853	79 00	80 00	81 00	81 00	86 00	107 00	24, 1853	28	27
Sirocco	13, 1853	80 00	77 00	75 00	78 00	81 00	111 00	11, 1853	29	29
New York	4, 1853	80 00	86 00	87 00	86 00	85 00	107 00	3, 1853	30	35
Archer	18, 1853	84 00	92 00	93 00	95 00	99 00	115 00	8, 1853	21	37
Roscoe	24, 1853	82 00	80 00	82 00	80 00	82 00	110 00	27, 1853	34	27
Herculean	6, 1853	80 00	85 00	85 00	83 00	83 00	109 00	8, 1853	33	45
Robert Harding	24, 1853	77 00	81 00	83 00	80 00	90 00	116 00	28, 1853	35	39
Seaman's Bride	24, 1853	81 00	83 00	83 00	88 00	92 00	115 00	19, 1853	26	29
Lantao	26, 1853	79 00	80 00	81 00	80 00	76 00	106 00	23, 1853	28	30
Hampton	24, 1853	79 00	80 00	79 00	77 00	76 00	102 00	29, 1853	36	40
Hugh Birckhead	20, 1853	79 00	78 00	78 00	81 00	86 00	109 00	17, 1853	28	33
C. L. Bevan	3, 1853	78 00	82 00	84 00	85 00	87 00	103 00	2, 1853	30	46
Storm King	26, 1853	79 00	79 00	79 00	76 00	77 00	106 00	July 3, 1853	37	24
Santiago	26, 1853	80 00	80 00	82 00	82 00	88 00	113 00	June 26, 1853	30	32
Cynthia	8, 1854	84 00	86 00	91 00	89 00	91 00	110 00	8, 1854	31	53
R. B. Forbes	24, 1854	86 00	87 00	86 00	89 00	92 00	114 00	25, 1854	31	31
Means per 7th edition	.....	81 38	84 47	86 39	88 13	90 34	109 54	.....	30.4	31.6
Hope	May 25, 1854	81 00	84 00	83 00	81 00	80 00	109 00	July 9, 1854	45	36
Swordfish	25, 1854	81 00	87 00	84 00	86 00	89 00	110 00	June 19, 1854	25	33
Starlight	21, 1854	79 00	90 00	94 00	96 00	98 00	112 00	9, 1854	19	32
Golden Eagle	24, 1854	79 00	93 00	106 00	107 00	106 00	113 00	20, 1854	27	32
Geffrard	25, 1854	83 00	85 00	84 00	86 00	89 00	107 00	21, 1854	27	35
Fleet Wings	19, 1854	86 00	96 00	99 00	101 00	100 00	115 00	11, 1854	22	31
Panama	10, 1855	84 00	87 00	86 00	87 00	93 00	110 00	3, 1855	24	25
Lotus	3, 1856	83 00	90 00	92 00	92 00	94 00	110 00	May 28, 1856	25	38
Sierra Nevada	22, 1856	81 00	86 00	78 00	79 00	86 00	110 00	June 23, 1856	32	22
Goddess	2, 1856	84 00	93 00	97 00	96 00	98 00	117 00	3, 1856	32	34
Syrene	26, 1856	80 00	86 00	84 00	86 00	87 00	112 00	25, 1856	30	29
White Swallow	2, 1856	82 00	93 00	97 00	97 00	97 00	111 00	May 29, 1856	27	36
Means	.....	81 55	89 10	90 20	91 10	93 05	111 20	.....	27.9	31.9
Average number of miles made good daily									120	74

* San Diego.

Crossings in the Pacific, from 50° S. to the Equator—Continued.

Name of vessel.	Date of crossing parallel of 50° S.	Longitude of crossing the parallels of— 50° S.	40° S.	35° S.	30° S.	25° S.	Long. of crossing the equator.	Date of crossing the equator.	Days from 50° S. to the equator.	Days from equator to San Francisco.
		Long. W. ° ′	Long. W. ° ′	Long. W. ° ′	Long, W. ° ′	Long. W. ° ′	Long. W. ° ′			
Gazelle	June 7, 1849	80 00	80 00	80 00	82 00	84 00	106 00	July 9, 1849	32	30
Clarissa Perkins	24, 1849	78 00	82 00	81 00	81 00	83 00	114 00	30, 1849	36	43
Venice	6, 1850	80 00	80 00	79 00	80 00	80 00	115 00	14, 1850	38	30
Sarah and Eliza	26, 1849	82 00	81 00	76 00	76 00	85 00	114 00	Aug. 12, 1849	47	36
Raduga	26, 1851	81 30	80 00	78 00	78 00	76 00	118 00	July 28, 1851	32	25
Sheridan	1, 1850	80 00	84 00	90 00	92 00	90 00	118 00	2, 1850	31	28
Tartar	29, 1851	82 00	85 00	86 00	91 00	95 00	122 00	24, 1851	25	30
T. B. Wales	3, 1852	81 00	83 00	83 00	85 00	90 00	103 00	3, 1852	30	33
Louisa Bliss	1, 1850	79 00	75 00	72 00	74 00	77 00	99 00	8, 1850	37	52
Empire	5, 1852	78 00	88 00	93 00	95 00	99 00	102 00	8, 1852	33	36
Cohota	23, 1850	84 00	89 00	91 00	96 00	95 00	110 00	19, 1850	26	23
Horsburgh	4, 1852	79 00	77 00	77 00	80 00	84 00	98 00	June 29, 1852	25	35
North American	26, 1852	80 00	76 00	74 00	76 00	79 00	101 00	July 28, 1852	32	33
R. C. Winthrop	9, 1852	78 00	82 00	86 00	91 00	93 00	104 00	12, 1852	33	33
Abbott	15, 1852	81 00	78 00	78 00	80 00	84 00	112 00	22, 1853	37	40
Competitor	2, 1853	79 00	89 00	94 00	96 00	99 00	112 00	June 23, 1853	21	26
Hornet	28, 1853	79 00	87 00	92 00	95 00	102 00	113 00	July 23, 1853	25	20
St. Lawrence	1, 1853	79 00	86 00	91 00	92 00	98 00	116 00	June 25, 1853	24	41
White Squall	8, 1852	78 00	79 00	79 00	80 00	82 00	100 00	July 2, 1852	24	26
Harriet Hoxie	4, 1852	77 30	78 00	72 00	76 00	84 00	103 00	6, 1852	32	28
Sarah Boyd	6, 1850	78 00	80 00	80 00	83 00	85 00	115 00	15, 1850	39	32
John Land	29, 1853	86 00	93 00	95 00	102 00	103 00	113 00	25, 1853	26	31
Flying Eagle	6, 1853	82 00	94 00	99 00	101 00	106 00	114 00	7, 1853	31	34
Eliza Thornton*	May 29, 1853	79 00	84 00	84 30	87 00	90 00	117 00	9, 1853	41	42
Benj. Howard	1, 1853	81 00	89 00	95 00	99 00	105 00	120 00	6, 1853	34	34
Cleopatra	30, 1853	86 00	89 00	87 00	82 00	87 00	122 00	Aug. 3, 1853	34	27
Surprise	5, 1853	82 00	94 00	95 00	93 00	90 00	112 00	June 30, 1854	25	32
Means per 7th edition	.....	80 32	84 11	86 34	89 06	92 09	110 36	.....	31	32.2
Surprise	June 5, 1854	81 00	92 00	95 00	93 00	90 00	112 00	June 30, 1854	25	32
Golden Gate	5, 1854	87 00	90 00	92 00	89 00	85 00	103 00	July 2, 1854	27	29
Cœur De Lion	8, 1855	85 00	87 00	83 00	86 00	89 00	114 00	1, 1855	23	31
War Hawk	7, 1855	81 00	88 00	89 00	88 00	88 00	114 00	3, 1855	26	29
Eagle	3, 1855	82 00	87 00	90 00	94 00	96 00	111 00	June 21, 1855	18	24
Game Cock	28, 1855	80 00	85 00	86 00	85 00	85 00	110 00	July 28, 1855	30	27
Shooting Star	1, 1855	84 00	90 00	93 00	94 00	98 00	113 00	June 1, 1855	20	23
Swordfish	2, 1855	84 00	86 00	91 00	93 00	96 00	116 00	21, 1855	19	28
Mary L. Sutton	12, 1856	85 00	91 00	90 00	92 00	96 00	112 00	28, 1856	16	27
Alarm	1, 1856	85 00	88 00	90 00	87 00	92 00	113 00	July 8, 1856	20	39
Ellen Foster	4, 1855	79 00	88 00	89 00	90 00	91 00	113 00	June 25, 1855	21	37
Means	.....	83 00	88 20	89 49	90 05	91 27	111 54	.....	22.2	29.6
Average number of miles made good daily									153	79

* Via St. Catherine's; not included in the average.

Crossings in the Pacific, from 50° S. to the Equator—Continued.

Name of vessel.	Date of crossing parallels of 50° S.	Longitude of crossing the parallels of— 50° S.	40° S.	35° S.	30° S.	25° S.	Long. of crossing the equator.	Date of crossing the equator.	Days from 50° S. to the equator.	Days from equator to San Francisco.
		Long. W. ° ′	Long. W. ° ′	Long. W. ° ′	Long. W. ° ′	Long. W. ° ′	Long. W. ° ′			
St. Patrick	July 19, 1850	81 00	90 00	92 00	93 00	95 00	115 00	Aug. 14, 1850	26	30
Isaac Allerton	17, 1850	81 00	93 00	96 00	97 00	99 00	111 00	13, 1850	27	34
Caroline	15, 1850	81 00	82 00	86 00	88 00	93 00	113 00	11, 1850	27	34
N. B. Palmer	10, 1851	86 00	88 00	89 00	91 00	93 00	114 00	2, 1851	22	19
Witch of the Wave	27, 1851	83 00	85 00	86 00	87 00	88 00	115 00	18, 1851	22	32
Finland	2, 1850	89 00	104 00	106 00	108 00	114 00	117 00	6, 1850	35	42
Flying Cloud	26, 1851	81 00	90 00	94 00	96 00	101 00	124 00	12, 1851	17	19
Staffordshire	8, 1852	79 00	85 00	86 00	87 00	94 00	110 00	25, 1852	48	18
Victory	2, 1853	84 00	90 00	88 00	83 00	90 00	113 00	2, 1853	31	32
N. B. Palmer*	30, 1852	79 00	78 00	73 00	73 00	81 00	111 00	Sept. 7, 1852	39	22
Channing	5, 1853	.....	85 00	86 00	88 00	91 00	115 00	Aug. 9, 1853	34	35
Oxnard	5, 1853	79 00	84 00	85 00	89 00	93 00	116 00	8, 1853	33	34
J. H. Shepherd	June 30, 1853	85 00	94 00	93 00	98 00	102 00	114 00	1, 1853	32	43
Amazon	5, 1853	86 00	92 00	95 00	97 00	100 00	121 00	4, 1853	35	42
Levanter	30, 1853	81 00	95 00	94 00	95 00	105 00	117 00	26, 1853	27	32
Linwood	12, 1853	83 00	88 00	85 00	90 00	97 00	117 00	9, 1853	28	26
Mary Annah	3, 1853	83 00	87 00	82 00	88 00	93 00	116 00	9, 1853	38	38
Highflyer	9, 1853	82 00	87 00	87 00	90 00	95 00	117 00	4, 1853	27	29
White Squall	22, 1853	81 00	80 00	79 00	81 00	82 00	110 00	13, 1853	22	22
Celestial Empire	15, 1853	79 00	81 00	83 00	88 00	94 00	117 00	21, 1853	36	31
Means per 7th edition	.....	81 06	87 54	88 25	90 20	95 00	115 10	.....	29.4	30.1
Hurricane	July 19, 1854	80 00	91 00	92 00	96 00	98 00	117 00	Aug. 12, 1854	24	22
Robin Hood	11, 1854	83 00	87 00	88 00	91 00	95 00	112 00	5, 1854	25	35
Starr King	2, 1854	86 00	89 00	85 00	84 00	88 00	114 00	July 22, 1854	20	24
Stag Hound	3, 1854	85 00	85 00	85 00	87 00	91 00	115 00	23, 1854	20	22
Sea Serpent	16, 1855	82 00	85 00	86 00	88 00	94 00	113 00	Aug. 6, 1855	22	29
Golden Eagle	15, 1855	82 00	88 00	87 00	92 00	96 00	114 00	4, 1855	20	20
Flying Dutchman	27, 1856	78 00	82 00	85 00	84 00	89 00	112 00	23, 1856	27	26
Means	.....	82 16	86 43	86 51	88 51	93 00	113 51	.....	22.5	25.4
Average number of miles made good daily									148	93

* Touched at Valparaiso.

Crossings in the Pacific, from 50° S. to the Equator—Continued.

Name of vessel.	Date of crossing parallel of 50° S.	Longitude of crossing the parallels of—					Long. of crossing the equator.	Date of crossing the equator.	Days from 50° S. to the equator.	Days from equator to San Francisco.
		50° S.	40° S.	35° S.	30° S.	25° S.				
		Long. W. ° ′	Long. W. ° ′	Long. W. ° ′	Long. W. ° ′	Long. W. ° ′	Long. W. ° ′			
Chatham	Aug. 22, 1849	78 00	78 00	78 00	80 00	81 00	99 00	Sept. 22, 1849	31	39
Templeton	11, 1850	84 00	87 00	86 00	90 00	91 00	113 00	10, 1850	30	27
Lady Arabella	5, 1850	83 00	83 00	81 00	86 00	93 00	113 00	4, 1850	30	33
Virginia	5, 1850	84 00	90 00	93 00	96 00	100 00	113 00	2, 1850	28	33
Copeland	16, 1852	87 00	87 00	88 00	89 00	91 00	104 00	7, 1852	22	39
Carioca	10, 1852	84 00	85 00	87 00	86 00	88 00	101 00	6, 1852	27	41
Union	10, 1852	84 00	85 00	85 30	87 00	88 00	101 00	Aug. 31, 1852	21	28
Southerner	5, 1852	79 00	78 00	75 00	75 00	79 00	111 00	Sept. 15, 1852	41	34
Witch of the Wave	28, 1852	83 00	82 00	80 00	79 00	86 00	114 00	21, 1852	24	27
Eliza Mallory	11, 1852	82 00	85 00	84 00	86 00	88 00	108 00	10, 1852	30	37
Samoset	11, 1852	83 00	82 00	83 00	87 00	91 00	107 00	5, 1852	25	42
Union	11, 1852	86 00	85 00	85 00	87 00	89 00	101 00	Aug. 31, 1852	20	28
Messenger	3, 1852	83 00	87 00	82 00	79 00	80 00	103 00	29, 1852	26	34
Flying Dutchman	20, 1853	86 00	91 00	93 00	99 00	101 00	119 00	Sept. 8, 1853	19	28
Greenwich	31, 1853	80 00	85 00	90 00	98 00	105 00	116 00	16, 1853	26	27
Young America	11, 1853	83 00	85 00	93 00	98 00	100 00	116 00	7, 1853	18	22
Atalanta	3, 1853	80 00	91 00	89 00	91 00	96 00	115 00	Aug. 28, 1853	25	40
E. C. Sronton	19, 1853	81 00	89 00	92 00	98 00	101 00	112 00	Sept. 17, 1853	30	39
Harrisburg	19, 1853	79 00	86 00	89 00	95 00	96 00	112 00	20, 1853	32	39
Belle of the West	16, 1853	82 00	84 00	89 00	93 00	98 00	112 00	5, 1853	19	24
Anglo-Saxon	20, 1853	88 00	91 00	96 00	97 00	99 00	121 00	18, 1853	29	23
West Wind	1, 1853	78 00	91 00	91 00	91 00	92 00	112 00	24, 1853	24	34
Cyane	17, 1853	81 00	85 00	92 00	97 00	101 00	116 00	12, 1853	26	32
Avondale	7, 1853	86 00	90 00	91 00	92 00	96 00	112 00	Aug. 30, 1853	23	29
Reindeer	18, 1853	80 00	80 00	79 00	80 00	87 00	113 00	Sept. 17, 1854	30	38
Golden State	10, 1853	80 00	84 00	84 00	87 00	91 00	112 00	4, 1854	25	24
Means per 7th edition	.....	82 25	85 41	86 46	89 20	92 19	110 37	.....	26.2	32.4
Golden State	Aug. 11, 1854	80 00	84 00	83 00	86 00	91 00	112 00	Sept. 4, 1854	25	24
Galeta	11, 1854	78 00	86 00	88 00	91 00	95 00	114 00	4, 1854	24	23
Nor Wester	24, 1854	84 00	90 00	87 00	86 00	89 00	115 00	18, 1854	25	26
Bay State	26, 1854	85 00	86 00	85 00	88 00	91 00	114 00	Oct. 3, 1854	38	35
Alboni	17, 1855	81 00	87 00	87 00	85 00	89 00	112 00	Sept. 13, 1855	26	36
Challenger	16, 1855	85 00	88 00	89 00	92 00	94 00	109 00	11, 1855	26	31
Competitor	14, 1855	86 00	89 00	91 00	95 00	97 00	116 00	13, 1855	30	31
Fleet Wing	24, 1855	84 00	84 00	88 00	86 00	89 00	113 00	29, 1855	36	32
Snap Dragon	17, 1855	81 00	86 00	88 00	90 00	95 00	119 00	14, 1855	28	31
Endeavor	6, 1856	82 00	79 00	77 00	78 00	82 00	110 00	Aug. 28, 1856	22	27
Santa Claus	2, 1856	86 00	88 00	86 00	85 00	90 00	115 00	26, 1856	24	26
Means	.....	82 54	86 05	86 16	87 27	91 05	113 32	.....	27.6	29.2
Average number of miles made good daily									121	81

Crossings in the Pacific, from 50° S. to the Equator—Continued.

Name of vessel.	Date of crossing parallel of 50° S.	Longitude of crossing the parallels of—					Long. of crossing the equator.	Date of crossing the equator.	Days from 50° S. to the equator.	Days from equator to San Francisco.
		50° S.	40° S.	35° S.	30° S.	25° S.				
		Long. W. ° ′	Long. W. ° ′	Long. W. ° ′	Long. W. ° ′	Long. W. ° ′	Long. W. ° ′			
Angelique	Sept. 25, 1849	79 00	79 00	74 00	75 00	78 00	99 00	Oct. 29, 1849	34	44
Mermaid	2, 1851	80 00	85 00	87 00	88 00	91 00	106 00	Sept. 21, 1851	19	27
Telegraph	27, 1851	81 00	82 00	82 00	81 00	84 00	110 00	Oct. 22, 1851	25	23
Celestial	24, 1850	84 00	90 00	90 00	91 00	96 00	115 00	Oct. 11, 1850	18	20
Thomas Perkins	29, 1849	79 00	78 00	77 00	80 00	86 00	111 00	25, 1849	26	26
Eagle	28, 1851	85 00	88 00	89 00	90 00	90 00	115 00	20, 1851	22	28
Carrington	13, 1850	83 00	88 00	88 00	88 00	90 00	115 00	5, 1850	22	26
Gertrude	16, 1850	83 00	90 00	93 00	95 00	100 00	116 00	8, 1850	22	30
Cohota	8, 1852	80 00	86 00	88 00	88 00	89 00	105 00	6, 1852	28	26
Albany	8, 1852	79 00	87 00	89 00	89 00	90 00	101 00	6, 1852	28	38
John Bertram	11, 1853	86 00	87 00	89 00	90 00	93 00	114 00	Sept. 29, 1853	18	24
Rubicon	4, 1853	80 00	85 00	80 00	80 00	83 00	114 00	12, 1853	37	32
Horsburgh	12, 1853	81 00	81 00	82 00	79 00	82 00	109 00	Oct. 7, 1853	24	34
Kate Hays	14, 1853	82 00	78 00	75 00	77 00	84 00	110 00	Nov. 6, 1853	35	21
Winfield Scott	22, 1853	81 00	82 00	85 00	91 00	96 00	115 00	Oct. 29, 1853	37	28
Windward	11, 1853	84 00	84 00	86 00	84 00	86 00	116 00	4, 1853	22	29
Whistler	24, 1853	81 00	82 00	86 00	91 00	93 00	109 00	31, 1853	37	24
F. P. Sage	15, 1853	83 00	86 00	90 00	94 00	96 00	116 00	18, 1853	31	34
Wild Duck	23, 1853	84 00	83 00	81 00	88 00	96 00	115 00	21, 1853	27	24
Sandusky	7, 1853	81 00	82 00	83 00	85 00	86 00	114 00	5, 1853	28	34
Sunbeam	22, 1853	80 00	80 00	83 00	91 00	93 00	115 00	Nov. 3, 1853	42	24
Means per 7th edition	.....	81 48	83 57	84 22	86 20	90 00	111 14	.....	27.7	28.4
Live Yankee, (barque)	Sept. 10, 1854	80 00	80 00	79 00	84 00	90 00	110 00	Oct. 8, 1854	25	29
Live Yankee, (ship)	10, 1854	82 00	94 00	98 00	99 00	100 00	114 00	Sept. 26, 1854	16	23
Oriole	15, 1854	79 00	88 00	92 00	98 00	98 00	112 00	Oct. 13, 1854	28	33
Grace Darling	13, 1854	80 00	84 00	85 00	88 00	93 00	114 00	1, 1854	24	29
Young America	5, 1854	79 00	89 00	94 00	92 00	92 00	111 00	2, 1854	27	17
Hornet	30, 1855	81 00	84 00	82 00	85 00	91 00	113 00	21, 1855	21	22
Hippogriffe	29, 1856	85 00	83 00	87 00	88 00	92 00	116 00	29, 1856	30	25
J. H. Roscoe	30, 1856	87 00	93 00	95 00	99 00	108 00	121 00	Nov. 3, 1856	34	25
Romance of the Sea	8, 1856	80 00	83 00	83 00	84 00	93 00	115 00	Oct. 2, 1856	24	22
Bald Eagle	23, 1856	77 00	85 00	82 00	81 00	86 00	111 00	23, 1856	30	23
Western Continent	15, 1856	80 00	78 00	74 00	75 00	81 00	113 00	20, 1856	35	26
Means	.....	80 54	85 32	86 27	88 27	93 05	112 42	.....	26.7	24.9
Average number of miles daily									126	94

Crossings in the Pacific, from 50° S. to the Equator—Continued.

Name of vessel.	Date of crossing parallel of 50° S.	Longitude of crossing the parallels of— 50° S.	40° S.	35° S.	30° S.	25° S.	Long. of crossing the equator.	Date of crossing the equator.	Days from 50° S. to the equator.	Days from equator to San Francisco.
		Long. W. ° ′	Long. W. ° ′	Long. W. ° ′	Long. W. ° ′	Long. W. ° ′	Long. W. ° ′			
Sea Witch	Oct. 5, 1851	79 00	84 00	86 00	85 00	86 00	101 00	Oct. 27, 1851	22	23
Boston	23, 1849	80 00	78 00	75 00	74 00	78 00	106 00	Nov. 27, 1849	31	40
Raven	5, 1851	79 00	81 00	84 00	85 00	85 00	112 00	Oct. 29, 1851	24	20
Talbot	13, 1850	82 00	82 00	83 00	85 00	88 00	115 00	Nov. 12, 1850	29	31
Valparaiso	1, 1851	84 00	83 00	86 00	86 00	91 00	115 00	2, 1851	32	30
Samuel Russell	27, 1852	82 00	83 00	83 00	83 00	85 00	101 00	17, 1852	21	21
Winged Arrow	15, 1852	83 00	81 00	85 00	90 00	93 00	115 00	4, 1852	20	23
Sea Witch	29, 1852	79 00	86 00	84 00	87 00	93 00	114 00	21, 1852	23	18
Typhoon	6, 1851	78 00	83 00	86 00	84 00	86 00	115 00	Oct. 31, 1851	25	18
Raven	13, 1852	80 00	82 00	81 00	85 00	88 00	105 00	Nov. 3, 1852	21	26
Seaman	19, 1852	77 00	78 00	78 00	79 00	84 00	109 00	13, 1852	25	26
Sovereign of the Seas	1, 1852	78 00	86 00	98 00	100 00	109 00	120 00	Oct. 28, 1852	27	17
Matilda	22, 1852	79 00	82 00	82 00	84 00	89 00	108 00	Nov. 27, 1852	36	25
Seaman	18, 1852	77 00	78 00	78 00	80 00	84 00	109 00	13, 1852	26	26
Defiance	15, 1852	83 00	79 00	83 00	86 00	89 00	105 00	7, 1852	23	25
Comet	21, 1853	84 00	86 00	87 00	89 00	90 00	116 00	15, 1853	25	25
Trade-Wind	24, 1853	85 00	93 00	93 00	90 00	91 00	115 00	16, 1853	23	24
Mandarin	22, 1853	83 00	86 00	87 00	84 00	86 00	112 00	19, 1853	27	22
Hurricane	21, 1853	83 00	78 00	80 00	81 00	84 00	114 00	18, 1853	27	22
North Wind	22, 1853	78 00	83 00	81 00	81 00	86 00	115 00	21, 1853	29	22
Witch of the Wave	24, 1853	87 00	94 00	97 00	96 00	95 00	115 00	14, 1853	21	26
Raven	25, 1853	83 00	88 00	87 00	87 00	90 00	109 00	16, 1853	22	25
Arab	26, 1853	84 00	86 00	85 00	87 00	92 00	114 00	24, 1853	28	42
Wisconsin	27, 1853	84 00	83 00	82 00	84 00	88 00	112 00	24, 1853	27	27
Hero*	Sept. 22, 1853	83 00	84 00	83 00	90 00	96 00	114 00	Oct. 27, 1853	34	29
Means per 7th edition	.....	81 19	83 27	84 37	84 45	88 45	111 20	.....	25.6	25.1
Rapid	Oct. 5, 1854	83 00	81 00	82 00	84 00	87 00	109 00	Nov. 1, 1854	27	24
Stingray	15, 1854	80 00	81 00	83 00	82 00	85 00	109 00	10, 1854	26	27
Victory	21, 1854	81 00	79 00	75 00	73 00	81 00	114 00	27, 1854	35	25
Wild Duck	28, 1854	90 00	96 00	98 00	101 00	103 00	112 00	19, 1854	22	29
Sirocco	6, 1855	85 00	90 00	92 00	92 00	95 00	111 00	Oct. 25, 1855	19	28
Flying Dragon	11, 1855	83 00	93 00	96 00	99 00	101 00	114 00	31, 1855	20	22
Grace Darling	16, 1855	81 00	79 00	79 00	84 00	92 00	113 00	Nov. 7, 1855	23	23
Almena	11, 1855	81 00	85 00	86 00	83 00	88 00	112 00	3, 1855	23	24
Wm. Sturgis	16, 1855	81 00	79 00	82 00	85 00	88 00	111 00	15, 1855	30	37
West Wind	6, 1855	80 00	84 00	85 00	85 00	88 00	110 00	28, 1855	22	25
Intrepid	6, 1856	85 00	80 00	80 00	83 00	88 00	115 00	5, 1856	30	20
Ocean Telegraph	6, 1854	88 00	85 00	84 00	83 00	85 00	110 00	1, 1854	26	20
Ocean Telegraph	25, 1855	80 00	82 00	83 00	85 00	90 00	111 00	13, 1855	19	23
Golden Eagle	15, 1856	78 00	81 00	85 00	87 00	91 00	110 00	10, 1856	26	20
Star of Hope	16, 1856	83 00	82 00	85 00	86 00	89 00	114 00	10, 1856	26	26
Means	.....	82 29	83 08	85 00	86 08	90 04	111 40	.....	24.2	24.8
Average number of miles daily									140	95

* Not included in the average.

Crossings in the Pacific, from 50° S. to the Equator—Continued.

Name of vessel.	Date of crossing parallel of 50° S.	Longitude of crossing the parallels of— 50° S.	40° S.	35° S.	30° S.	25° S.	Long. of crossing the equator.	Date of crossing the equator.	Days from 50° S. to the equator.	Days from equator to San Francisco.
		Long. W. ° ′	Long. W. ° ′	Long. W. ° ′	Long. W. ° ′	Long. W. ° ′	Long. W. ° ′			
Horton	Nov. 11, 1850	80 00	78 00	75 00	80 00	86 00	109 00	Dec. 23, 1850	42	33
Comet	28, 1851	84 00	90 00	89 00	92 00	94 00	117 00	28, 1851	30	16
Wessacumcon	16, 1852	83 00	81 00	84 00	86 00	88 00	100 00	16, 1852	30	27
Delegate	22, 1852	82 00	83 00	84 00	86 00	88 00	106 00	15, 1852	23	24
Raduga	12, 1852	80 00	82 00	80 00	76 00	79 00	108 00	9, 1852	27	26
Charles Mallory	24, 1852	89 00	85 00	85 00	85 00	87 00	108 00	17, 1852	23	24
Malay	26, 1852	87 00	88 00	87 00	86 00	87 00	106 00	16, 1852	20	25
Golden City	22, 1852	81 00	88 00	88 00	92 00	97 00	115 00	16, 1852	24	18
Arcole	13, 1852	79 00	78 00	76 00	74 00	78 00	96 00	8, 1852	25	25
John Wade	29, 1851	86 00	81 00	82 00	86 00	92 00	108 00	22, 1851	23	22
Senator	26, 1852	81 00	85 00	85 00	90 00	96 00	111 00	25, 1852	29	34
John Wade	22, 1852	83 00	89 00	90 00	91 00	94 00	110 00	15, 1852	23	23
Monsoon	13, 1852	80 00	82 00	80 00	76 00	81 00	104 00	6, 1852	23	25
Thos. W. Sears	24, 1852	86 00	84 00	83 00	84 00	87 00	113 00	21, 1852	27	23
John Wade	2, 1853	97 00	102 00	105 00	110 00	112 00	117 00	Nov. 27, 1853	24	24
Unknown	28, 1853	79 00	78 00	82 00	85 00	91 00	113 00	Dec. 19, 1853	20	21
Wizard	6, 1853	86 00	88 00	92 00	96 00	102 00	116 00	Nov. 27, 1853	21	22
Means per 7th edition	.....	83 21	84 49	87 32	86 11	90 31	109 14	.....	24.2	23.8
Hornet	Nov. 22, 1854	80 00	79 00	83 00	90 00	92 00	114 00	Dec. 20, 1854	28	19
Jane A. Falkenburg	19, 1854	77 00	81 00	80 00	86 00	91 00	110 00	16, 1854	27	15
Challenge	16, 1854	80 00	83 00	84 00	87 00	91 00	116 00	14, 1854	28	18
Flying Fish	27, 1854	80 00	77 00	74 00	79 00	84 00	113 00	22, 1854	25	17
Winged Arrow	16, 1855	81 00	90 00	95 00	104 00	105 00	119 00	15, 1855	29	19
Flying Fish	20, 1855	81 00	82 00	83 00	86 00	90 00	111 00	11, 1855	21	17
Defender	25, 1855	78 00	77 00	80 00	81 00	80 00	113 00	25, 1855	30	19
Bostonian	10, 1856	82 00	82 00	83 00	85 00	88 00	115 00	12, 1856	32	21
Cyclone	22, 1856	80 00	80 00	81 00	83 00	88 00	116 00	18, 1856	26	23
Ocean Telegraph	12, 1856	81 00	82 00	85 00	83 00	83 00	110 00	12, 1856	30	21
Means	.....	79 54	81 18	82 48	86 24	89 12	113 42	.....	27.6	18.9
Average number of miles daily									123	123

Crossings in the Pacific, from 50° S. to the Equator—Continued.

Name of vessel.	Date of crossing parallel of 50° S.	Longitude of crossing the parallels of—					Long. of crossing the equator.	Date of crossing the equator.	Days from 50° S. to the equator.	Days from equator to San Francisco.
		50° S.	40° S.	35° S.	30° S.	25° S.				
		Long. W. ° ′	Long. W. ° ′	Long. W. ° ′	Long. W. ° ′	Long. W. ° ′	Long. W. ° ′			
Golden Gate	Dec. 20, 1851	83 00	82 00	82 00	82 00	85 00	106 00	Jan. 12, 1852	23	23
John Jay	30, 1849	79 00	78 00	74 00	74 00	78 00	105 00	Feb. 6, 1850	37	37
Ambassador	19, 1849	78 00	78 00	81 00	85 00	87 00	113 00	26, 1850	38	32
Tigress	2, 1850	82 00	80 00	80 00	81 00	85 00	114 00	June 1, 1850	*	33
Flying Fish	31, 1851	79 00	79 00	83 00	89 00	93 00	120 00	Jan. 22, 1852	22	23
White Squall	1, 1850	81 00	80 00	79 00	82 00	83 00	118 00	Dec. 24, 1850	23	14
Westward Ho	20, 1852	79 00	82 00	82 00	86 00	92 00	122 00	Jan. 13, 1853	24	18
Comet	4, 1852	84 00	89 00	89 00	90 00	95 00	114 00	Dec. 27, 1852	23	20
Flying Dutchman	22, 1852	89 00	93 00	93 00	95 00	100 00	110 00	Jan. 10, 1853	19	16
Revere	4, 1852	84 00	87 00	86 00	87 00	92 00	109 00	2, 1853	29	27
Flying Fish	25, 1852	80 00	79 00	82 00	87 00	92 00	112 00	13, 1853	19	18
John Gilpin	26, 1852	84 00	80 00	82 00	87 00	91 00	116 00	15, 1853	20	15
Wild Pigeon	25, 1852	85 00	81 00	82 00	86 00	91 00	111 00	13, 1853	19	26
Adelaide	28, 1852	78 00	77 00	79 00	79 00	79 00	104 00	Feb. 5, 1853	39	35
Anstiss	28, 1852	79 00	79 00	80 00	82 00	86 00	110 00	Jan. 22, 1853	25	25
Westward Ho	21, 1852	82 00	82 00	82 00	86 00	91 00	120 00	12, 1853	23	19
Manchester	1, 1852	81 00	78 00	74 00	79 00	84 00	107 00	5, 1853	23	26
Franconian	25, 1852	83 00	79 00	81 00	83 00	88 00	113 00	20, 1853	26	26
Morning Light	22, 1853	83 00	82 00	83 00	84 00	90 00	113 00	17, 1854	25	23
Ringleader	24, 1853	80 00	81 00	83 00	83 00	85 00	110 00	15, 1854	21	25
Skylark	1, 1853	78 00	84 00	87 00	89 00	90 00	114 00	Dec. 25, 1853	25	21
N. B. Palmer	10, 1853	80 00	82 00	86 00	88 00	93 00	112 00	Jan. 1, 1854	22	26
Onward	7, 1853	80 00	82 00	85 00	87 00	95 00	113 00	4, 1854	28	21
Winged Arrow	2, 1853	78 00	83 00	86 00	87 00	93 00	118 00	Dec. 27, 1853	25	18
Bald Eagle	13, 1853	81 00	85 00	85 00	86 00	90 00	113 00	Jan. 4, 1854	22	21
Sam'l Russell	8, 1853	81 00	81 00	82 00	84 00	87 00	117 00	Dec. 31, 1853	23	20
Parthenon	14, 1853	81 00	81 00	81 00	84 00	91 00	113 00	Jan. 8, 1854	25	31
Eureka	24, 1853	86 00	83 00	84 00	84 00	87 00	110 00	15, 1854	22	21
Means per 7th edition	.....	81 21	81 40	82 36	84 40	89 02	112 45	.....	23.7	23.6
Sweepstakes	Dec. 31, 1854	83 00	87 00	87 00	87 00	88 00	107 00	Jan. 20, 1855	20	32
Eureka	24, 1853	86 00	83 00	83 00	84 00	86 00	110 00	15, 1854	22	20
Golden City	26, 1853	79 00	80 00	84 00	89 00	95 00	114 00	18, 1854	23	20
Wild Ranger	6, 1854	77 00	80 00	84 00	87 00	90 00	109 00	3, 1855	28	22
Wild Pigeon	11, 1854	80 00	82 00	86 00	88 00	89 00	110 00	10, 1855	30	19
Winged Arrow	30, 1854	84 00	96 00	96 00	99 00	103 00	119 00	18, 1855	19	20
Josiah Bradlee	30, 1855	80 00	86 00	85 00	86 00	90 00	114 00	Feb. 2, 1856	34	35
Mameluke	28, 1855	83 00	81 00	82 00	85 00	94 00	112 00	Jan. 25, 1856	28	24
Wings of the Morning	21, 1855	81 00	82 00	82 00	79 00	79 00	118 00	22, 1856	32	26
Ringleader	24, 1855	83 00	79 00	81 00	80 00	82 00	108 00	19, 1856	26	23
Scargo	3, 1856	78 00	76 00	77 00	80 00	85 00	110 00	3, 1857	31	34
Means	.....	81 16	82 54	84 16	85 49	89 11	111 54	.....	26.6	25
Average number of miles daily									126	94

Now let us examine these crossings by the month. From the United States to the line, and thence clear of St. Roque, tables of crossings (chap., p. 143) have been given. They show the average time to the parallel of St. Roque for each month, and the actual time by each ship.

The tables of Cape Horn crossings (chap., p. 459) show the time from the parallel of St. Roque; also for each ship arranged according to the month to the parallel of 50° south in the Atlantic; also the time occupied in the passage thence around Cape Horn to the same parallel in the Pacific.

The tables now under discussion (pp. 721–732) show the time from 50° south in the Pacific to the line, and thence to California; likewise for each vessel in detail, and for every month by the average.

Now, from the United States to the parallel of St. Roque, the average distance is about 4,500 miles, and the average time for January is 31 days, with a mean daily run of 133 miles for each vessel.

From St. Roque to the parallel of 50° south in the Atlantic, the average distance is 2,900 miles, and the average time in January is 25.4 days, with a mean daily run of 114 miles per vessel.

From the parallel of 50° south, in the Atlantic, around the Horn to the same parallel in the Pacific, the average distance is 1,400 miles; the average time for January is 17 days, with a mean daily distance of about 82 miles per vessel for that month.

From 50° south, in the Pacific, to the line, the average distance is 3,300 miles; the average time in January, 27 days, and the mean daily distance by straight lines from noon to noon is 130 miles per vessel.

From the line to San Francisco the average distance is about 2,300 miles; the average time in January is 24.8 days, and the mean daily distance made good is 94 miles.

Now, with this statement as to the distance from crossing to crossing, and the tables as to the time by vessels taken singly and in monthly groups, the navigator has always the means before him of knowing when he falls behind on this long journey, and when he head-reaches, where and how much. Neither will he have any difficulty in finding out which are the most tedious parts of the passage. I attach great practical importance to the bearing of the tables and Sailing Directions in this respect, because they are calculated to excite emulation and keep the ship always up to her metal.

The January crossings of 50° S. in the Pacific give February crossings for the line. The times, both north and south of the line, show a uniformity and an average that encourage hopes on the part of the navigator for a good run, at this season, up to The Heads of San Francisco. If he have already had a fair passage from his North Atlantic port to 50° S. in the Pacific, he may now calculate on a good passage. The difference between the shortest passage from that parallel to the line and the mean is eight days; between the longest and the mean, eleven days. This indicates the prevalence of steady winds in January.

For quick runs the Contest carries off the palm among the January crossings. She performed the run from 50° S. to San Francisco in the very excellent time of thirty-seven days. This run, however, *can* be made in thirty-five days, for the Swordfish went from 50° S. to the line in nineteen days, and both the Trade-Wind and the Contest went thence to California in the same month, each in sixteen days. But it is only now and then that a vessel will be able to strike a vein of wind and a run of luck which will carry her through with the speed that the passage of thirty-five days from 50° S. requires.

In February the A. F. Jenness comes along to spoil the averages again. She requires more than double the usual time from the line, and nearly twice as much time to it as vessels usually do. She has been far behind time all the way, and is therefore, I presume, an extraordinarily slow vessel. She had to be rejected from the averages of the passages from the United States to the line; again, from the Cape Horn averages. She is an exception, and, on this account, I again reject her from the averages here. So, also, the Thomas Church.

The John Bertram bears off the palm for this month by her run of thirty-eight days from 50° S. to The Heads. The Surprise, Telegraph, and the Winged Racer contended with her for the prize. But the Bertram seems to have won it by keeping well to the westward while south of the line, and so putting herself in the full strength of the SE. trades, and other winds, and where they are uninfluenced by the land.

The Telegraph, in '55, (3 years after,) followed in her wake. She was further to the westward than any one of the four, when she took the SE. trades. At the line their crossing was the same. From the line the Surprise, the Aurora, and the Antelope led the Bertram into San Francisco by one and two days.

The shortest passage, probable, from 50° S., in February, to San Francisco, under canvas, is thirty-six days. This is the shortest time in which, judging by our experience so far, it is possible for a ship ever to accomplish that part of the voyage; to make it in a shorter time is possible, but the chances for any given ship to do it are but small and few. But, generally, in this month, also, winds are fine and chances fair.

In March, the Isette requires time enough for two trips to the line from 50° S. She is an uncommon case, and Lieutenant Minor, who compiled the tables for the 7th edition, has rejected her from the means, as one of those vessels which these Sailing Directions can do very little towards helping along, for when they get into good winds they have not the capacity to profit much by them. There has, however, been a decided improvement since 1855 in the passages for this month: the gain from 50° S. to port is 6.4 days.

In April the Newcastle is the black sheep. Her performance, because it is out of rule, and an exception to that of ships generally, is also rejected from the means of the 7th edition.

In April there is seldom a succession of very good winds. In this month the average winds of the winter months prevail for a little more than half the time south of the line, and for about one-third north, but it is gratifying to notice the improvement in this month, also, since the last publication.

There are about a dozen fine ships in the April fleet; yet one-third of the whole number in January bear off, each one of them, the palm from the best one of these, except the Sweepstakes; not so much, as the Charts show, by reason of better heels as by reason of better winds.

"The probabilities are that many ships will pass this way in April before one is found to beat the Swordfish; for, though she had 46 days from 50° S. to 'The Heads,' there is but one, the Star of the Union, that led her to the line, and she only a day; and there is not one that came within hail of her thence to San Francisco. She made the whole run in 46 days; 45 is the probable minimum limit for this month. This was said a year ago; since then two ships, viz., the Huguenot and Seaman's Bride, have made the run in the same time," (page 671, 7th edition.) And now (1859) the Sweepstakes has beaten them all.

In May, though the average from 50° S. to the line is less than the average from the equator

to San Francisco, yet we are struck with the contrast which the individual cases afford as to the prevailing character of the winds in this month north and south of the equator.

On the north side the greatest difference between the mean and the extreme is with the maximum; on the south side it is with the minimum, showing that from 50° S. to the line a vessel is much more liable to meet with winds that will drive her a week or ten days ahead of her time, than she is with airs and calms that will keep her back even for 7 days. While north of the line she is much more liable to be beset by calms and airs that will keep her from 10 days to two weeks behind the average, than she is to meet with winds that will set her 5 days even ahead of the average.

The clever and observant mariner may gather from these tables of crossings much valuable information as to the character and strength of the winds he is to expect.

"It is hard to go quickly to San Francisco from the line at this season. The Sea Serpent, the Houqua, and the Storm King have all done it in twenty-four days; but they were respectively twenty-eight, twenty-nine, and thirty-seven days from 50° S. On this part of the route, though they did their best, they fell behind the Stag Hound, the George Morton, the Empress of the Sea, the Archer, *et al.*, and, more than all, the Surprise and the Star Light from a week to twenty days."* The Sierra Nevada has since made, in this month, the run from the line in twenty-two days.

"A vessel that shall make the run from 50° S. in May and June to The Heads of San Francisco in forty-two days will win laurels for her master."*

There is a general disposition in the public mind to judge of the prowess of a ship and the skill of her captain according to the length of her voyage and the quickness of her trip, without regard to the season when the run is made, or the prevailing character of the winds in those parts of the ocean through which the voyage lies. No rule can be more unfair to both ship and master. Take, for example, the table of crossings from the United States to the line in the Atlantic, pages 143, &c.

There, it will be observed, that the average passage to the line differs as much as 12 days, or 50 per cent., according as it may be made in this month or that; and the ship and master who in December make the run in 25 days do no better than they who in September may have accomplished it in 37 days.

In June the average from 50° S. in the Pacific to the line has, since the 7th edition, been reduced nine days, and the run thence to California two. A bad month is June from the equator north.

"In July begins the dawn of better times. There is the Flying Cloud's famous performance of seventeen days from 50° S. to the line, and nineteen thence to The Heads, to grace this month. The Staffordshire, in this month, too, had eighteen and the N. B. Palmer nineteen days each, also from the line."* Let us in 1859 adorn this enumeration with the handsome performance of the Star King, Stag Hound, and Golden Eagle.

August and September are both good months south of the line. See the clever tricks of the "Live Yankee" *to* and the "Young America" *from* the line, in September. But generally from the line up, in these months, the navigator finds his patience, quite as much as his skill, brought into requisition; still there has been improvement here also. The influence of the American plains and deserts begins now to make itself felt upon the NE. trade-winds, paralyzing

* Page 672, 7th edition.

them, or turning them back, and converting them into breezes that baffle and perplex. I have said much in other parts of this work as to the causes which, in these months, make the passage along here so vexatious.

In October the winds are decidedly better and more steady; both north and south of the equator they are alike.

There are the Sirocco and the Ocean Telegraph, with 19 days each; the Flying Dragon and the Winged Arrow, with 20; the Witch of the Wave, the Raven and the Samuel Russell, each with her 21 days, in this month, from 50° S.; and from the line north we have the Sovereign of the Seas with 17, and both the Typhoon and the Sea Witch, each with 18 days into port.

In November there is a sad falling off.

It was in December that the Comet crossed the line, in 117°, and made her beautiful run of 16 days from the line to The Heads. The Wild Pigeon, on two trips, the Flying Dutchman, the Flying Fish, on two trips, the John Gilpin, the Westward Ho, the White Squall, and the Comet, the Winged Arrow, the Golden City, the Eureka, on several trips, &c, and all celebrated ships, have made this month famous for quick runs.

I have grouped these crossings into sets for the purpose of showing what has been the average monthly gain or loss on this voyage since the publication of the previous edition of this work. With the lights cast by that edition upon the route to California, it appears that the average gain from 50° S. to San Francisco, by the 154 vessels that have returned logs of their voyage since the publication of the 7th edition, has been 1 day for January; 2 for February; 6.4 for March; 4.8 for April; 2.2 for May; 11.4 for June; 11.6 for July; 1.8 for August; 4.5 for September; 1.7 for October; 1.5 for November; against a loss of 4.3 for December. These figures, however, are not derived from numbers sufficiently large to give settled averages, though they indicate a decided and gratifying gain. The gain for May and June appears too great to be permanent. I judge them to be accidental.

Dividing the equator, in the Pacific, into crossings of 5°, the following table gives the time, via each, for every month. It shows, also, the time to it from the Atlantic ports, and thence to San Francisco. The California bound navigator will find it of service.

The names of vessels; their passage from Atlantic ports to the Line in the Pacific; the time and place of crossing the equator, with the passage thence to California, for each month.

Name of vessel.	Port last from.	To the equator in the Pacific.	Date of crossing the equator in the Pacific.	Longitude of crossing the equator.	From the equator to San Francisco.	AVERAGE PASSAGE. To the line from U. States.	From the line to California.	From the U. S. to California.
		Days.		° ′	*Days.*	*Days.*	*Days.*	*Days.*
Virginia	Cardiff	.....	Dec. 21, 1852	99 59W.	43	.....	43	.....
Whiton	New York	107	March 13, 1847	93 15	42	107	42	149
North Carolina	....do	135	April 15, 1854	95 00	42	135	42	177
Ocean Bird	....do	140	May 24, 1849	99 25	38	140	38	178
Stag Hound	...do	91	June 1, 1852	99 20	34			
Louisa Bliss	Beaufort, N. C.	153	8, 1850	100 00	52	113	40	153
Horsburgh	New York	96	29, 1852	98 30	33			
Chatham	Boston	130	Sept. 22, 1849	99 15	39	130	39	169
CROSSINGS BETWEEN 100° AND 105° W. LONGITUDE.								
Adelaide	New York	144	Feb. 5, 1853	104 06	34	112	29	141
Golden Gate	....do	80	24, 1853	104 37	24			
Europe	....do	114	March 17, 1852	100 00	35	112.5	28	140.5
George Brown	Philadelphia	111	14, 1851	104 45	22			
John Holland	New York	134	April 16, 1853	102 28	24	122	27	149
Great Britain	...do	110	28, 1852	104 30	30			
Sea Serpent	....do	82	May 5, 1853	102 03	26	82	30	112
Anonyma	Boston	.....	23, 1849	102 40	34			
Sea Serpent	New York.	88	June 5, 1852	101 12	25			
Governor Morton	....do	91	12, 1852	101 43	32			
Sweden	Boston	117	26, 1849	102 20	38	108.7	36	144.7
Michael Angelo	New York	113	27, 1852	102 09	36			
Hampton	....do	130	29, 1853	102 25	39			
C. L. Bevan	Philadelphia	113	2, 1853	103 00	46			
Thomas B. Wales	Boston	100	July 3, 1852	102 51	33			
White Squall	New York	84	3, 1852	100 26	26			
Empire	....do	97	8, 1852	102 01	35	96.6	32	128.6
R. C. Winthrop	Boston	108	12, 1852	104 07	33			
North America	New York	112	27, 1852	100 27	34			
Golden Gate	....do	91	2, 1854	103 17	30			
Messenger	....do	88	Aug. 29, 1852	102 32	34	89.5	31	120
Union	....do	91	31, 1852	101 10	28			
Carioca	Philadelphia	116	Sept. 6, 1852	100 56	41	117.5	40.5	157.5
Copeland	Boston	119	7, 1852	103 43	40			
Cohota	....do	110	Oct. 5, 1852	104 09	26			
Albany	New York	127	6, 1852	101 34	38	108	29	137
Sea Witch	....do	87	27, 1851	101 30	23			
Raven	....do	93	Nov. 2, 1852	104 32	29	95	25.5	120.5
Samuel Russell	....do	97	17, 1852	101 30	22			
Monsoon	Boston	100	Dec. 6, 1852	103 53	26	100	26	126
CROSSINGS BETWEEN 105° AND 110° W. LONGITUDE.								
Revere	New York	111	Jan. 3, 1852	109 30	26			
Wild Pigeon	....do	88	10, 1852	108 59	17			
Golden Gate	....do	90	12, 1852	106 00	23			
Manchester	....do	139	5, 1853	107 00	26			
Ringleader	Boston	85	15, 1853	110 00	25	100.7	24.8	125.5
Eureka	New York	102	15, 1853	110 00	21			
Wild Ranger	....do	102	3, 1855	109 10	22			
Ringleader	Boston	84	20, 1856	107 55	22			
Scargo	Cardiff, England	120	3, 1857	109 51	34			
Sweepstakes	New York	86	20, 1855	107 15	32			

The names of vessels; their passage from Atlantic ports to the Line in the Pacific, &c.—Continued.

CROSSINGS BETWEEN 105° AND 110° W. LONGITUDE.

Name of vessel.	Port last from.	To the equator in the Pacific.	Date of crossing the equator in the Pacific.	Longitude of crossing the equator.	From the equator to San Francisco.	Average passage. To the line from U. States.	Average passage. From the line to California.	Average passage. From the U. S. to California.
		Days.		° ′	*Days.*	*Days.*	*Days.*	*Days.*
John Jay	New Bedford	133	Feb. 6, 1850	105 10 W.	37			
Gray Feather	New York	100	17, 1852	109 27	26			
Tingqua	....do	87	19, 1852	106 25	28			
Hazard	....do	107	21, 1851	109 30	24			
Helena	... do	113	19, 1851	110 00	21	108.6	27.9	136.5
Russell	....do	128	7, 1850	110 00	37			
Cleopatra	....do	92	15, 1855	109 24	17			
Gladiator*	Baltimore	143	23, 1856	107 56	33			
F. W. Brune	New York	122	March 2, 1853	106 56	29			
Winged Racer	....do	85	7, 1853	106 24	23			
John Bertram	Boston	86	8, 1853	109 47	19			
Cygnet	....do	125	8, 1853	109 00	30			
Sartelle	New York	135	27, 1850	107 15	34			
Whiton	....do	112	15, 1848	109 05	28			
Samuel Appleton	....do	103	23, ——	109 30	18			
Golden West	Boston	101	24, 1853	107 04	23	105	26	131
Uriel	....do	86	30, 1851	109 45	34			
Benjamin Howard†	....do	95	29, 1852	110 00	25			
Telegraph	....do	91	23, 1854	106 00	24			
Saxonville	New York	131	31, 1853	109 24	35			
Telegraph	Boston	88	19, 1855	109 40	20			
Reindeer	....do	110	18, 1855	109 25	22			
Walter	New York	121	April 10, 1853	108 00	23			
Wisconsin	....do	94	22, 1852	106 00	30			
Hermann*	Philadelphia	158	11, 1850	108 00	37	103	23	126
Game Cock	New York	94	5, 1854	109 00	16			
Gray Feather	....do	108	May 1, 1851	109 45	28			
Star of the Union	....do	97	5, 1853	106 38	27			
Golden Racer	Boston	96	6, 1853	108 45	34			
Simoon	New York	107	6, 1853	106 41	26			
Governor Morton	....do	97	15, 1853	109 01	26			
Tornado	....do	84	17, 1852	107 07	44			
Polynesian	Philadelphia	105	18, 1854	110 00	29	94.4	30.3	124.7
Aurora*	Nantucket	140	30, 1849	110 00	31			
Sweepstakes	New York	73	4, 1856	109 50	21			
Atlanta	....do	90	24, 1854	107 03	37			
Samuel Russell	....do	89	17, 1855	109 40	27			
S. S. Bishop	Baltimore	92	29, 1854	107 13	21			
Kate Hays	New York	122	June 3, 1852	109 16	31			
New York	....do	103	3, 1853	107 30	35			
Herculean	....do	119	8, 1853	109 21	25			
H. Birkhead	Baltimore	111	17, 1853	109 00	31			
Lantao	New York	94	23, 1853	105 55	30			
Vandalia	....do	126	2, 1850	107 30	36			
Massonoma	....do	123	4, 1850	108 00	45			
Sherwood	Boston	106	25, 1851	108 45	40	110	34	144
Climax	....do	88	24, 1853	106 37	27			
Ina	New York	99	19, 1851	109 30	34			
Home	....do	109	10, 1850	110 00	39			
Roscoe	Baltimore	121	27, 1853	109 45	27			
Cynthia	New Orleans	128	8, 1854	110 00	53			
Gifford	London	94	21, 1854	107 13	35			
Sierra Nevada	New York	107	23, 1856	109 55	22			

* Not included in the average.

† Captain Shrieve to Lieutenant Maury: "I approve of the route laid down by you. I have had much experience at sea, as shipmaster, in all quarters of the globe, and heartily concur in your views respecting passages. I also believe the day is not far distant when passages to California will be made frequently in one hundred days. I have often been amazed in viewing tracks of different ships to this port, and those who have the longest passages have been broad off the *right track*. The Benjamin Howard is a medium clipper, seven hundred tons. You will notice I have beat the whole fleet that sailed about the time I did; experienced all sorts of weather on the passage; neither tore a sail nor lost a spar the whole passage."

The names of vessels; their passage from Atlantic ports to the Line in the Pacific, &c.—Continued.

CROSSINGS BETWEEN 105° AND 110° W. LONGITUDE.

Name of vessel.	Port last from.	To the equator in the Pacific.	Date of crossing the equator in the Pacific.	Longitude of crossing the equator.	From the equator to San Francisco.	Average passage. To the line from U. States.	Average passage. From the line to California.	Average passage. From the U. S. to California.
		Days.		° ′	*Days.*	*Days.*	*Days.*	*Days.*
Gazelle	New York	.....	July 9, 1849	105 30 W.	30			
Edgar	do	126	2, 1850	108 15	39			
Staffordshire	Boston	83	24, 1852	108 01	18			
Cohota	do	103	19, 1850	109 45	23	104.0	25.6	129.6
Storm King	do	111	3, 1853	106 30	24			
Messenger	New York	97	9, 1855	108 06	24			
Hope*	do	142	9, 1854	108 45	39			
Ellen Noys	Boston	111	Aug. 6, 1852	107 30	33			
Flying Cloud	New York	95	17, 1852	105 20	19	100.6	24.6	125.2
White Squall	Philadelphia	96	13, 1853	110 00	22			
Mermaid	do	.....	Sept. 21, 1853	105 45	27			
Eliza Mallory	New York	115	10, 1852	108 42	37			
Eureka*	do	141	15, 1851	108 20	25	107	29.7	136.7
Butler	do	.....	—, —	.....	....			
Challenger	Boston	100	11, 1855	109 00	31			
Telegraph	do	102	Oct. 22, —	109 30	23			
Horsburgh	do	128	7, 1853	109 00	34	112.3	27	139.3
Whistler	do	107	31, 1853	109 00	24			
Seaman	New York	102	Nov. 13, 1852	109 41	26			
Boston	Rio de Janeiro	81	27, 1849	106 00	40			
Kate Hays*	Philadelphia	156	6, 1853	110 00	21	91.5	29	120.5
Raven	New York	94	16, 1853	109 00	25			
Rapid	do	111	1, 1854	109 40	24			
Horton*	do	151	Dec. 23, 1850	109 50	33	101	15	116
J. A. Falkenburgh	Boston	101	16, 1854	109 30	15			

CROSSINGS BETWEEN 110° AND 115° WEST LONGITUDE.

Wild Pigeon	New York	104	Jan. 14, 1853	112 20	24			
Flying Fish	Richmond	74	13, 1853	112 00	18			
Anstiss	New York	116	22, 1853	110 00	25			
Swordfish	do	72	21, 1852	110 15	20			
Ambassador	do	127	16, 1849	112 35	32			
Celestial		84	23, 1852	113 30	23			
George Raymond	Boston	102	23, 1852	114 34	25			
Golden City	New York	87	18, 1854	114 00	20			
Ann Maria	do	131	20, 1854	110 00	23			
Samuel Laurena	Boston	99	26, 1854	111 00	25			
Eagle	New York	85	28, 1854	112 00	19			
N. B. Palmer	do	96	1, 1854	112 00	26			
Onward	do	130	4, 1854	113 00	21	102.9	23.5	126.4
Bald Eagle	do	93	4, 1854	113 00	21			
Parthenon	Boston	117	8, 1854	113 00	31			
Franconian	do	123	20, 1854	113 00	26			
Morning Light	Philadelphia	113	17, 1854	113 00	23			
Samuel Appleton	Norfolk, U. S	105	29, 1854	110 10	22			
Mameluke	Boston	114	26, 1856	112 30	24			
Eureka	New York	102	15, 1854	110 22	20			
Southern Cross	Boston	96	30, 1855	111 45	23			
Wild Pigeon	New York	113	10, 1855	110 12	18			
Hussar	do	106	27, 1855	112 00	27			
Bald Eagle	do	87	24, 1855	111 03	30			
Phantom	do	96	30, 1855	113 45	23			

* Not included in the average.

The names of vessels; their passage from Atlantic ports to the Line in the Pacific, &c.—Continued.

CROSSINGS BETWEEN 110° AND 115° WEST LONGITUDE.

Name of vessel.	Port last from.	To the equator in the Pacific.	Date of crossing the equator in the Pacific.	Longitude of crossing the equator.	From the equator to San Francisco.	AVERAGE PASSAGE. To the line from U. States.	From the line to California.	From the U. S. to California.
		Days.		° ′	*Days.*	*Days.*	*Days.*	*Days.*
Trade Wind	New York	85	Feb. 7, 1853	112 20 W.	16			
Capitol	Richmond	112	7, 1853	113 00	20			
Realm	New York	138	8, 1853	113 35	35			
Contest	do	84	9, 1853	111 06	16			
Telegraph	Boston	96	18, 1853	112 00	20			
Cygnet	New York	118	26, 1850	111 15	29			
Lawrence	do	134	28, 1850	113 45	26			
Alboni	do	99	28, 1853	113 44	28			
Cyclone	Boston	93	5, 1854	115 00	20	104	24	128
Arthur	New York	135	9, 1854	112 00	30			
Greenfield	Liverpool	90	18, 1856	110 05	22			
Morning Light	Philadelphia	100	22, 1855	111 08	20			
Anglo-Saxon	New York	94	19, 1856	111 10	34			
Electric	do	90	13, 1855	110 45	19			
Mary	do	119	6, 1856	114 25	31			
Antelope	do	81	26, 1856	110 24	16			
Brewster	do	100	29, 1856	113 58	26			
Surprise	do	80	Mar. 3, 1851	110 30	17			
Winthrop	Boston	116	3, 1851	110 30	29			
Potomac	Portland	133	3, 1851	111 20	32			
Living Age	New York	108	12, 1853	112 25	20			
Storm	do	87	17, 1853	110 32	23			
Ann Kimball	do	110	22, 1853	114 10	22			
Bald Eagle	do	88	23, 1853	111 15	19			
Danube	do	130	23, 1853	110 32	26			
Bathina	do	123	24, 1853	112 15	25			
Kentucky	Boston	122	26, 1853	113 08	25			
Hannibal	do	120	22, 1850	114 45	40			
Roman	New York	103	23, 1853	110 32	25			
Eagle Wing	Boston	82	12, 1854	113 00	23			
Sparkling Wave*	Montevideo	42	23, 1855	111 00	20			
Clara	Glasgow	123	13, 1855	111 30	30			
Electric Spark	Boston	82	15, 1856	113 50	24	106.7	24.4	131.1
Hollander	do	109	19, 1856	110 18	23			
Adelaide	New York	93	31, 1856	112 40	30			
Syren	do	110	10, 1854	110 27	21			
Isaac James	Philadelphia	105	18, 1856	114 41	24			
Morning Light	New York	92	23, 1855	111 02	....			
Aurora	Boston	110	24, 1854	113 52	17			
Victory	New York	129	8, 1856	111 54	24			
Tornado	do	106	12, 1855	113 00	29			
George Merton	do	83	12, 1855	112 55	21			
Rival	do	117	5, 1856	111 13	26			
Chanaing	do	112	19, 1855	113 49	24			
Aurora	do	98	11, 1855	110 24	23			
Ocean Express	do	111	4, 1855	114 40	22			
Fair Wind	do	114	18, 1856	110 42	24			
Phantom	Boston	90	April 6, 1853	113 32	14			
John Steward	New York	111	11, 1853	112 34	32			
Russell Glover	do	115	14, 1850	113 00	21			
Celestial	do	98	16, 1853	110 06	22			
Rattler	do	98	16, 1853	114 08	23			
Daniel	do	.....	28, 1851	113 15	33			
Alhesdrugh	do	104	26, 1853	113 36	32			
Aldebaran	Boston	123	27, 1852	110 05	35			
Sea Serpent	do	.....	22, 1851	114 15	25			
Esther May	do	112	28, 1853	113 00	33			

* Not included in the average.

The names of vessels; their passage from Atlantic ports to the Line in the Pacific, &c.—Continued.

CROSSINGS BETWEEN 110° AND 115° WEST LONGITUDE.

Name of vessel.	Port last from.	To the equator in the Pacific.	Date of crossing the equator in the Pacific.	Longitude of crossing the equator.	From the equator to San Francisco.	Average passage. To the line from U. States.	Average passage. From the line to California.	Average passage. From the U. S. to California.
		Days.		° ′	Days.	Days.	Days.	Days.
Flying Cloud	New York	74	April 6, 1854	110 00	15	103.1	25.3	128.4
Archer	....do	84	7, 1854	112 00	22			
Huguenot	....do	98	19, 1853	113 00	26			
Osborn Howes	....do	99	4, 1856	115 00	25			
Phantom	....do	81	8, 1856	113 52	20			
Sultan	....do	96	25, 1856	113 41	26			
Coringa	....do	127	10, 1854	114 52	24			
Star of the Union	....do	118	12, 1856	111 20	30			
Harriet	....do	137	13, 1854	112 27	23			
E. Kimbell	Boston	116	4, 1856	114 38	28			
Neptune's Car	New York	79	3, 1853	112 04	22			
Mountain Wave*	Rio de Janeiro	68	13, 1855	114 32	30			
Susquehanna	Philadelphia	108	May 1, 1851	113 25	29	109.6	30	139.6
F. Depau	New York	139	20, 1850	112 45	27			
Staghound	...do	93	4, 1851	113 30	21			
Massonoma	Boston	122	7, 1853	110 07	37			
Swordfish	New York	84	7, 1853	114 02	24			
M. Howes	Boston	115	8, 1854	114 00	33			
Cœur de Lion	....do	104	20, 1854	113 00	26			
Element	New York	139	3, 1853	113 20	31			
White Swallow	....do	98	29, 1856	111 33	37			
Tingqua	Philadelphia	96	18, 1854	113 30	25			
Jenny Ford	Boston	110	3, 1855	114 00	31			
Lotus	New York	108	29, 1856	110 50	38			
Surprise	....do	87	June 8, 1853	110 43	30	100	31.4	131.4
Paragon	....do	120	8, 1853	113 25	41			
Archibald Gracie	Boston	111	11, 1850	111 00	36			
Siraca	New York	117	12, 1853	111 30	28			
Delia	....do	128	10, 1851	114 00	34			
Morgan Dix	....do.	107	13, 1853	110 30	36			
Tigress	Salem	132	1, 1850	114 30	33			
Seaman's Bride	New York	92	19, 1853	114 55	24			
Rose Standish	....do	111	20, 1850	113 00	45			
Competitor	Boston	89	24, 1853	114 00	25			
Parthian	Richmond, Va.	94	25, 1853	111 20	28			
R. B. Forbes	New York	130	25, 1854	114 00	31			
Santiago	....do	104	26, 1853	113 00	32			
Surprise	....do	85	30, 1854	112 00	32			
Eagle	....do	96	21, 1855	111 35	24			
Mary L. Sutton	....do	83	29, 1856	112 11	27			
Ellen Foster	Boston	109	26, 1855	114 11	38			
Fleet Wing	....do	90	10, 1854	114 52	31			
Viking	....do	82	8, 1854	114 14	32			
Starlight	....do	85	9, 1854	111 46	32			
Shooting Star	New York	92	21, 1855	113 10	24			
R. B. Forbes	....do	106	25, 1854	114 24	31			
Panama	....do	86	3, 1855	110 28	26			
Golden Eagle	....do	90	20, 1854	113 51	33			
Swordfish	....do	78	20, 1854	111 20	32			
Flying Eagle	Boston	109	July 7, 1853	114 40	34	104.1	31.2	135.3
Hornet	New York	87	23, 1853	112 54	20			
John Land	Boston	94	25, 1853	114 47	31			
Venice	New York	107	14, 1850	114 45	30			
Abbot	Bordeaux	126	23, 1852	113 15	38			
Amity	Boston	132	15, 1850	115 00	31			
Star King	....do	94	23, 1854	114 50	23			

* Not included in the average.

The names of vessels; their passage from Atlantic ports to the Line in the Pacific, &c.—Continued.

CROSSINGS BETWEEN 110° AND 115° WEST LONGITUDE.

Name of vessel.	Port last from.	To the equator in the Pacific.	Date of crossing the equator in the Pacific.	Longitude of crossing the equator.	From the equator to San Francisco.	Average passage. To the line from U. States.	Average passage. From the line to California.	Average passage. From the U. S. to California.
		Days.		° ′	*Days.*	*Days.*	*Days.*	*Days.*
Morning Light	Philadelphia	109	July 9, 1856	113 43	35			
Surprise	New York	86	1, 1854	113 00	31			
Game Cock	....do	113	20, 1855	110 30	35			
Cœur de Lion	....do	88	2, 1855	114 00	35			
St. Patrick	....do	118	Aug. 14, 1850	110 45	34			
Isaac Allerton	....do	127	13, 1850	111 15	34			
Caroline	....do	127	11, 1850	113 30	36			
Sarah and Eliza*	....do	180	12, 1849	113 40	36			
N. B. Palmer	....do	88	2, 1851	114 00	19	106.2	31.5	137.7
Victory	....do	103	2, 1853	112 45	32			
Witch of the Wave	Boston	89	18, 1851	115 00	32			
Jas. H Shepherd	New York	.....	1, 1853	114 00	43			
Atalanta	....do	122	28, 1853	115 00	40			
Avondale	Baltimore	119	30, 1853	112 00	29			
Robin Hood	New York	104	7, 1855	114 54	26			
Golden Eagle	....do	85	4, 1855	113 39	21			
Flying Dutchman	....do	98	24, 1856	113 57	26			
Robin Hood	....do	94	8, 1854	113 11	33			
N. B. Palmer	....do	101	Sept. 6, 1852	113 49	24			
Templeton	Bucksport	126	10, 1850	112 30	27			
Southerner*	New York	141	16, 1852	112 10	33			
Lady Arabella	....do	138	4, 1850	113 00	33			
Virginia	....do	.....	2, 1850	114 00	33			
Witch of the Wave	Boston	90	Sept. 21, 1852	113 50	25			
Belle of the West	....do	104	5, 1853	112 00	24			
Rubicon	New York	135	12, 1853	114 00	32			
E. C. Scranton*	....do	141	17, 1853	112 00	39	112.3	30.1	142.4
Harrisburg	....do	123	20, 1853	112 00	39			
West Wind	Boston	99	24, 1853	112 00	34			
Reindeer	New York	123	17, 1854	113 00	38			
Golden State	....do	99	4, 1854	112 00	24			
John Bertram	Boston	91	29, 1853	114 00	24			
Fleet Wing	New York	116	29, 1855	113 24	33			
Alboni	....do	126	13, 1855	111 50	38			
Golden State	....do	101	4, 1856	112 03	24			
Thomas Perkins	....do	100	Oct. 25, 1849	110 45	26			
Columbia	Boston	133	12, 1850	111 45	35			
Jamestown	New York	103	20, 1852	.....	....			
Raven	Boston	85	29, 1851	112 00	20			
Typhoon	New York	87	30, 1851	114 41	19			
Eagle	....do	101	20, 1851	115 00	28			
Carrington	... do	103	5, 1850	115 00	26			
Celestial	....do	83	11, 1850	115 00	21			
Sandusky	....do	137	5, 1853	114 00	34			
Wild Duck	....do	108	21, 1853	115 00	24			
Hero	....do	127	27, 1853	114 00	29	104.3	25.6	129.9
Winfield Scott *	....do	140	29, 1853	115 00	28			
Romance of the Sea	....do	90	2, 1856	114 50	23			
Flying Dragoon	....do	91	31, 1855	114 40	22			
Young America	....do	92	2, 1854	111 50	17			
Sirocco	Philadelphia	97	25, 1855	110 57	28			
Hornet	New York	92	22, 1855	114 37	21			
West Wind	Boston	107	28, 1855	110 18	24			
Live Yankee	Philadelphia	128	9, 1854	110 00	30			
Grace Darling	Boston	111	8, 1854	114 00	28			
Arcole	New York	111	14, 1854	113 31	31			
Bay State *	Rio de Janeiro	82	3, 1854	113 44	37			

* Not included in the average.

The names of vessels; their passage from Atlantic ports to the Line in the Pacific, &c.—Continued.

CROSSINGS BETWEEN 110° AND 115° WEST LONGITUDE.

Name of vessel.	Port last from.	To the equator in the Pacific.	Date of crossing the equator in the Pacific.	Longitude of crossing the equator.	From the equator to San Francisco.	Average passage. To the line from U. States.	Average passage. From the line to California.	Average passage. From the U. S. to California.
		Days.		° ′	*Days.*	*Days.*	*Days.*	*Days.*
Talbot	New York	139	Nov. 12, 1850	115 00 W.	31			
Valparaiso	....do	138	2, 1851	115 00	30			
Winged Arrow	Boston	95	4, 1852	114 39	22			
Sea Witch	New York	91	22, 1852	114 10	17			
Kate Hays	Philadelphia	131	6, 1853	110 00	21			
Sunbeam	Boston	138	3, 1853	115 00	24			
Witch of the Wave	....do	91	14, 1853	115 00	26			
Trade-Wind	Philadelphia	91	16, 1853	115 00	24			
Mandarin	New York	101	19, 1853	112 00	22			
Hurricane	....do	102	18, 1853	114 00	22	111.8	26.2	138.0
North Wind	....do	116	21, 1853	115 00	22			
Arab *	Boston	140	24, 1853	114 00	42			
Wisconsin	New York	131	24, 1853	112 00	27			
Wm. Sturgis	Philadelphia	135	16, 1855	111 26	38			
Ocean Telegraph	New York	101	1, 1854	110 41	22			
Wild Duck	....do	98	19, 1854	111 57	30			
Almena	....do	114	4, 1855	113 42	23			
Stingray	....do	105	11, 1854	110 45	27			
Ocean Telegraph	....do	96	13, 1855	111 21	24			
John Wade	....do	94	Dec. 15, 1852	110 30	23			
Thomas W. Sears	....do	124	21, 1852	112 59	21			
Senator	....do	105	26, 1852	111 00	30			
Unknown	Boston	91	19, 1853	113 00	21	103	21.6	124.6
Skylark	New York	96	25, 1853	114 00	21			
Flying Fish	Boston	92	22, 1854	113 09	18			
Defender	....do	113	25, 1855	113 20	19			
Hornet	Philadelphia	109	20, 1854	114 00	20			

CROSSINGS BETWEEN 115° AND 120° WEST LONGITUDE.

John Gilpin	New York	78	Jan. 15, 1853	116 00	16			
Flying Fish	Boston	77	22, 1852	119 50	23	84.5	19.5	104
Westward Ho	New York	88	12, 1853	120 00	19			
Flying Arrow	Boston	95	18, 1855	119 08	20			
Seaman	New York	89	Feb. 20, 1850	118 00	18			
Lotus	Boston	99	3, 1854	115 44	24			
Sancho Panza	....do	117	7, 1856	115 14	29	95.2	22.6	117.8
Comet	New York	99	3, 1856	119 36	22			
Octavius*	....do	141	13, 1856	115 53	26			
Great Republic	....do	72	18, 1857	118 34	20			
Flying Childers	Boston	91	March 19, 1853	117 21	22			
Newton	....do	124	10, 1851	117 10	26			
Lucia Field	....do	120	19, 1851	119 15	31			
Lantao	New York	103	21, 1851	118 00	20			
Canton	....do	136	28, 1849	118 00	29	107.4	24.3	131.7
Southerner	....do	120	30, 1851	117 00	28			
Corinne	Boston	110	7, 1855	117 15	24			
Tornado	New York	89	5, 1856	116 00	22			
Western Continent	....do	98	19, 1856	116 18	22			
Boston Light	Boston	83	23, 1855	117 38	19			

* Not included in the average.

The names of vessels; their passage from Atlantic ports to the Line in the Pacific, &c.—Continued.

CROSSINGS BETWEEN 115° AND 120° WEST LONGITUDE.

Name of vessel.	Port last from.	To the equator in the Pacific.	Date of crossing the equator in the Pacific.	Longitude of crossing the equator.	From the equator to San Francisco.	Average passage. To the line from U. States.	Average passage. From the line to California.	Average passage. From the U. S. California.
		Days.		° ′	Days.	Days.	Days.	Days.
Eagle	New York	92	April 9, 1853	115 30 W.	21			
Tornado	....do	79	10, 1853	118 10	22			
Amelia	....do	111	29, 1853	116 41	23			
Isabelita Hyne	....do	101	23, 1851	116 00	24			
Maria	....do	111	16, 1851	117 00	32			
Samuel Russell	....do	90	15, 1850	118 30	20	96.2	24.2	120.4
Herald of the Morning	Boston	86	16, 1854	119 00	20			
Greenfield	New York	88	12, 1855	116 00	24			
Derby	Boston	91	24, 1856	118 37	27			
John Haven	New York	122	8, 1854	115 47	25			
John Gilpin	....do	91	30, 1854	119 19	23			
E. F. Willets	....do	90	12, 1855	116 05	28			
Lucknow	Boston	111	May 6, 1853	117 50	27			
Astrea	New York	138	20, 1853	115 49	35			
Diadem	... do	.....	22, 1850	116 00	36			
Arcole	Philadelphia	105	31, 1850	117 00	30	111.1	28.7	139.8
Wisconsin	New York	100	31, 1850	118 45	24			
Valparaiso	....do	114	31, 1850	119 00	28			
Seaman's Bride	....do	99	2, 1854	117 00	21			
Stag Hound	....do	95	June 5, 1853	116 03	26			
Archer	....do	108	8, 1853	115 08	37			
Houqua	....do	120	21, 1853	115 11	24			
Empress of the Sea	....do	89	10, 1853	115 30	32			
St. Lawrence*	....do	141	29, 1853	116 15	37			
Robert Harding	Boston	126	28, 1853	116 36	39	102.4	30.9	133.3
Houqua	New York	103	25, 1850	115 15	28			
Swordfish	....do	89	21, 1855	117 00	28			
Messenger	Philadelphia	94	16, 1854	115 32	31			
Goddess	Boston	98	4, 1856	117 37	33			
Sarah Boyd	Philadelphia	129	July 15, 1850	115 15	32			
Raduga	New York	116	28, 1851	118 00	25			
Sheridan	....do	103	2, 1850	118 30	28			
Hermann	....do	110	30, 1849	120 00	27			
Eliza Thornton*	New Bedford	145	9, 1853	116 53	42	110.3	28	138.3
Benj. Howard	New York	114	6, 1853	120 00	34			
War Hawk	Boston	98	4, 1855	116 11	29			
Shooting Star	New York	102	24, 1853	118 14	21			
Finland	Philadelphia	133	Aug. 6, 1850	117 15	42			
Channing	New York	124	9, 1853	115 25	35			
Oxnard	..do	116	8, 1853	115 40	34			
Levanter	....do	125	26, 1853	117 30	32			
Linwood	Baltimore	116	9, 1853	117 00	26	118	32.2	150.2
Mary Anna	New York	137	9, 1853	116 00	38			
Highflyer	....do	.....	4, 1853	117 00	29			
Celestial Empire	....do	114	21, 1853	117 00	31			
Hurricane	....do	77	12, 1854	117 30	23			
Flying Dutchman	....do	78	Sept. 8, 1853	119 00	28			
Young America	....do	88	7, 1853	116 00	22			
Cyane	Hampton Roads	109	12, 1853	116 00	32			
Greenwich	Boston	128	16, 1853	116 00	27	101.4	28	129.4
Snap Dragon	Philadelphia	102	14, 1855	118 35	30			
Competitor	Boston	108	14, 1855	116 00	31			
Northwester	New York	97	19, 1854	116 39	25			
Gertrude	....do	116	Oct. 8, 1850	116 00	30			
Sovereign of the Seas	....do	83	27, 1852	119 47	20			
Windward	....do	105	4, 1853	116 00	29	99	25.7	124.7
E. P. Sage*	....do	142	18, 1853	116 00	34			
Midnight	Boston	92	1, 1854	115 12	24			

* Not included in the average.

The names of vessels; their passage from Atlantic ports to the Line in the Pacific, &c.—Continued.

CROSSING BETWEEN 115° AND 120° WEST LONGITUDE.

Name of vessel.	Port last from.	To the equator in the Pacific.	Date of crossing the equator in the Pacific.	Longitude of crossing the equator.	From the equator to San Francisco.	Average passage. To the line from U. States.	Average passage. From the line to California.	Average passage. From the U. S. to California.
		Days.		° ′	Days.	Days.	Days.	Days.
Comet	New York	102	Nov. 15, 1853	116 00 W.	25	107.3	23.3	130.6
John Wade	Boston	95	27, 1853	117 00	24			
Sunbeam *	....do	140	3, 1853	115 34	24			
Intrepid	New York	125	5, 1856	115 11	21			
Comet	....do	88	Dec. 28, 1851	117 00	16	98	18.4	116.4
Winged Arrow	Boston	108	27, 1853	118 00	18			
Samuel Russell	New York	86	31, 1853	117 00	20			
Challenger	....do	100	14, 1854	116 07	19			
Winged Arrow	Boston	106	15, 1855	119 01	19			

CROSSING BETWEEN 120° AND 125° WEST LONGITUDE.

Westward Ho	Boston	89	Jan. 13, 1853	122 06	18	89	18	107
Acasta	Sag Harbor	171	Mar. 10, 1851	120 30	28	171	28	199
Kensington	New York	129	June 24, 1851	122 45	39	129	39	168
Tartar	Philadelphia	104	July 24, 1851	121 30	30	103.5	30.5	134
Uncle Toby	Boston	103	31, 1853	121 15	31			
Flying Cloud	New York	71	Aug. 12, 1851	124 00	19	97.3	29.6	126.6
Cleopatra	Boston	103	3, 1853	122 00	27			
Amazon	New York	118	4, 1853	121 00	42			
Anglo Saxon	....do	127	Sept. 18, 1853	121 00	23	127	23	150

CROSSING WEST OF 125° WEST LONGITUDE.

Tagus	New York	126	June 15, 1851	128 00	46	126	46	172

* Not included in the average.

Average length of best passages of California-bound vessels from the Atlantic ports of the United States to the equator in the Pacific, and from the equator in the Pacific to San Francisco—arranged according to the month and the longitude of crossing the equator.

Month of crossing the equator in the Pacific.	From United States to the equator in the Pacific.	No. of passages from which averages are determined.	Averages from the equator to California.	No. of passages from which averages are determined.	Place of crossing the equator in the Pacific, between—	Average from United States to California.	Average passage of the whole month from the United States.	Shortest passage from the United States for the month, by the—
	Days.		*Days.*		°	*Days.*	*Days.*	
January	103	6	25	6	105-110	128	123.6	
	103	17	23	17	110-115*	126	.....	*Swordfish, 91 days.
	88	3	19	3	115-120	107		
	89	1	18	1	120-125	107		
	101	10	25	10	105-110	126		
	103	25	24	25	110-115	127	124.5	
	85	4	20	4	115-120	105		
February	112	2	29	2	100-105	141		
	111	6	29	6	105-110	140	129.4	
	99	10	24	10	110-115	123		
	89	1	18	1	115-120	107		
	109	7	28	7	105-110	137		
	104	17	24	17	110-115	128		
	95	5	23	5	115-120*	118	128.5	*Great Republic, 92 days.
March	107	1	42	1	90- 95	149		
	112	2	28	2	100-105	140		
	108	11	26	11	105-110	134	137.2	
	107	13	25	13	110-115*	132	.....	*Surprise, 97 days.
	115	6	26	6	115-120	141		
	171	1	28	1	120-125	199		
	113	2	28	2	100-105	141		
	105	14	26	14	105-110	131		
	107	29	24	28	110-115	131	131.4	
	107	10	24	10	115-120	131		
April	135	1	42	1	95-100	177		
	122	2	27	3	100-105	149		
	113	4	27	4	105-110	140	130	
	100	13	25	13	110-115*	125	.....	*Flying Cloud, 89 days.
	97	7	23	7	115-120	120		
	103	3	23	3	105-110	126		
	103	20	25	21	110-115	128	125	
	96	12	24	12	115-120	120		
May	140	1	38	1	95-100	178		
	82	1	30	2	100-105	112	137.5	
	104	8	30	8	105-110*	134	.....	*Sweepstakes, 94 days.
	110	6	28	6	110-115	138		
	111	7	28	7	115-120	139		
	94	11	30	11	105-110	124		
	110	12	30	12	110-115	140	134	
	111	6	29	7	115-120	140		
June	113	3	40	3	95-100	153		
	108	6	36	6	100-105*	144	.....	*Mary L. Sutton, 110 days.
	123	14	39	14	105-110	162		
	106	14	32	14	110-115	138	148	
	112	7	32	7	115-120	144		
	129	1	39	1	120-125	168		
	109	6	36	6	100-105	145		
	110	15	34	15	105-110	144		
	100	25	31	25	110-115	131	136.3	
	102	9	31	9	115-120	133		
July	100	5	32	5	100-105	132		
	108	5	33	5	105-110*	141	138.6	*Staffordshire, 101 days.
	109	6	31	6	110-115	140		
	114	5	29	5	115-120	143		
	103	2	30	2	120-125	134		
	97	6	32	6	100-105	129		

Average length of best passages of California-bound vessels, &c.—Continued.

Month of crossing the equator in the Pacific.	From United States to the equator in the Pacific.	No. of passages from which averages are determined.	Averages from the equator to California.	No. of passages from which averages are determined.	Place of crossing the equator in the Pacific, between—	Average from United States to California.	Average passage of the whole month from the United States.	Shortest passage from the United States for the month, by the—
	Days.		*Days.*		°	*Days.*	*Days.*	
July—Continued....	104	6	26	6	105–110	130		
	104	11	31	11	110–115	135	133.5	
	110	7	28	7	115–120	133		
August	89	2	31	2	100–105	120		
	100	3	25	3	105–110	125		
	108	8	30	8	110–115	138		
	119	7	37	7	115–120	156	138.6	
	97	3	29	3	120–125*	126	.....	* Flying Cloud, 90 days.
	101	3	25	3	105–110	126		
	106	12	31	13	110–115	137		
	118	8	32	9	115–120	150	140	
September	130	1	39	1	95–100	169		
	117	2	40	2	100–105	157		
	128	3	30	3	105–110	158	143.9	
	112	11	29	11	110–115	141		
	100	4	27	4	115–120*	127	.....	* Flying Dutchman, 106 days.
	127	1	23	1	120–125	150		
	118	2	40	2	100–105	158		
	107	20	30	3	105–110	137		
	112	14	30	15	110–115	142	138.4	
	101	6	28	6	115–120	129		
October	108	3	29	3	100–105	137		
	112	3	27	3	105–110	139		
	108	12	26	12	110–115	134	133.8	
	101	4	26	4	115–120*	127	.....	* Sovereign of the Seas, 103 days.
	104	20	26	19	110–115	130	129	
	99	4	26	4	115–120	125		
November	95	2	25	2	100–105	120		
	108	4	28	4	105–110	136		
	113	12	24	12	110–115*	137	.....	* Sea Witch, 108 days.
	98	2	24	2	115–120	122	133.6	
	91	4	29	4	105–110	120		
	112	18	26	18	110–115	138		
	107	3	23	3	115–120	130	134	
December	100	1	26	1	100–105	126		
	102	5	23	5	110–115	125		
	94	3	18	3	115–120*	112	120.8	* Comet, 104 days.
	101	1	15	1	105–110	116		
	103	8	22	8	110–115	125		
	98	5	18	5	115–120	116	121	

Let us see what light the information contained in these tables will throw upon the best California route, as well as upon the best season of the year for that voyage.

The shortest monthly means are 104 and 116 days, and these are for the vessels that crossed the equator in the Pacific during the months of January and December. And to this crossing they had an average run of 96 and 98 days. Vessels that sail from the United States to California in all of September and October are the vessels which, upon an average, should have the fairest winds and make the best passages.

The crossings that have given the shortest passage to San Francisco for each month are marked, in the last table, pp. 746—7, with an asterisk, (*) and the name of the vessel quoted in the lastcolumn.

It is of some consequence, in deciding as to the best crossing place on the equator, that the navigator should have an idea as to the parallels near which he may expect to lose the SE. trades; for the equatorial limits of these winds change with the season.

In March you will occasionally carry them several degrees over into the northern hemisphere. But in this month they are generally near the verge of their extreme declination towards the south. When you lose them and get the NE. trades, keep away with a good rap full, never aiming to cross the parallel of 20° north to the east of long. 125° west. Unless the winds force you off, aim to be in shore of the meridian of 130° W. when you lose the NE. trades.

When you do lose them, if then you have to fight the calms and baffling winds of the horse latitudes, make the best of your way on a due north course, till you cross this belt of calms, or catch a good wind, or get into the variables beyond. I shall have more to say upon this subject at some other time.

In April you will carry these trades a little further north, and so on further and further until October, when the northern edge of them becomes stationary and commences to return south. It reaches its furthest parallel of southern declination in March or April.

It may be well here to make a general remark as to the influence of extensive arid plains which the navigator may find to the east of him as he sails, *in any part of the ocean*, across the belt of the NE. or SE. trade-winds.

In the summer and fall the influence of these winds is felt far out to sea. The monsoons of India are due to such an influence; so are the monsoons in the Atlantic, in the Gulf of Mexico, and in the Pacific off the coasts of Central America; and so, indeed, are all monsoons produced.

Why, then, not have a monsoon in the southeast trades of the Pacific, it may be asked, since South America and the Pampas of Buenos Ayres are to windward of them?

In the first place, the Andes stand up as a screen between them and those plains; and, in the next place, those plains are neither so very extensive nor so arid when we come to compare them with the vast deserts of Africa and Asia.

But, nevertheless, in order to keep away from the land, and clear of its influence, though feeble, upon the winds of the South Pacific, navigators should, when winds are fair and opportunities favorable, endeavor to make, while they are well to the south, westing enough to keep clear even of the slight influence that the land in South America exerts upon the winds along its west coast.

Therefore, after you have doubled Cape Horn, and gained an offing from the land, there is no necessity for running a thousand miles or more off from the South American coast, as from

the coasts of Central America you have to do, in order to get better winds. The chief advantage of making, while south of the parallel of 35° or 40° S., the meridian near which you intend to cross the equator is, that there the degrees of longitude are short, and therefore easy to run down, and that when you have made your westing down there you can spread the more canvas when you get the SE. trades, which you will then have on the quarter. If you put off making westing until you get these winds, you will then have to stand away to the northward and westward through them, which course will bring them aft, and therefore make them less favorable.

The Flying Cloud's track beautifully illustrates this view. On her celebrated passage she passed along the west of South America in the southern winter time, when the influence of the land there upon the winds is the least. She crossed the line in August, in 124°, far beyond the influence of the disturbing agents in North America.

This passage, however, of the Flying Cloud should be alluded to, not as a rule, but rather as an exception. Nevertheless, she does not so out-top all hope or reasonable expectations that other ships may not strive to surpass her. For, though she has set a good example, that example will yet be more than followed.

It appears from the summing up that the average passage to California, for all classes of ships that use the Charts and crossed the equator between 105° and 120° W., is, the year round, 130* days. When these investigations commenced, the average passage the year round, of all classes of ships from the Atlantic ports of the United States to California, was 180 days.

Indeed, it may now be considered as reduced to 128 days, for that is the average of the 87 vessels that crossed between the meridians of 115° and 120° W., which these investigations have shown to be the best crossing place. Indeed, the average of the 220 vessels that have crossed between 110° and 115° W., taken with the 87 that have crossed between 115° and 120°, makes the average rather less than 129 days. When I first took up this route for discussion, the average passage from the Atlantic ports of the United States, as well as from the ports of Europe, to California was as just said, upwards of 180 days. Here is a reduction of upwards of 50 days in the length of an important voyage, and that, too, by means the most simple. There is room here to hope for a still further reduction; for the average crossings (9) between 115° and 120° give, p. 745, an average of 150 days to California, whereas the average crossings (14) between 110° and 115° give an average of 137 days only. The 9 could have crossed at the latter as conveniently as at the former crossing place; had they have done so they would have reduced the general average several days.

There is no reason why every California-bound vessel that doubles Cape Horn should not take the equatorial crossing that gives the best averages.

The average passage of upwards of 300 vessels that have crossed between 110° and 120° is 128.9 days. There is no reason why all vessels should not cross the equator between these two meridians, and hence we may consider it as an established fact, that the average length of the sailing voyage from Europe or the Atlantic ports of the United States is less than 130 days.

The vessels that sail in the spring have, in the aggregate, an average passage ten days longer than those that sail at other seasons, the spring average being 137 against 127 days for the rest of the year. Vessels sailing in February and the spring from Europe or the United States *can*, if they will, master the information now spread out before them, and by so doing reduce this spring average about a week.

* Being a gain of three days since the 7th edition. And the passage of the 7th showed, also, a gain of three days upon the 6th.

The following table may be interesting. It gives the crossing places of the line in the Pacific, and the time from the United States, with the names of many of the vessels by which the shortest passage in each month was made.

Two hundred and eight crossings of the equator in the Pacific, being the shortest passages in each month.

Name of vessel.	To line in Pacific.	Place of crossing.	Line to California.	Total from U. S. to California.	Crossed the line in the month of—
	Days.	°	*Days.*	*Days.*	
Flying Fish	74	112 00 W.	18	92	January.
John Gilpin	78	116 00	16	94	Do.
Flying Fish	77	120 00	23	100	Do.
Swordfish	71	110 00	20	91	Do.
Celestial	84	113 00	23	107	Do.
Wild Pigeon	88	109 00	17	105	Do.
Golden Gate	90	106 00	23	113	Do.
Westward-Ho	89	122 00	18	107	Do.
Ringleader	85	110 00	25	110	Do.
Eagle	85	112 00	19	104	Do.
Ringleader	84	108 00	22	106	Do.
Sweepstakes	86	107 00	32	118	Do.
Golden City	87	114 00	20	107	Do.
Samuel Lawrence	99	111 00	25	124	Do.
Bald Eagle	93	113 00	21	114	Do.
Southern Cross	96	112 00	23	119	Do.
Bald Eagle	87	111 00	30	117	Do.
Phantom	96	114 00	23	119	Do.
Westward-Ho	88	120 00	19	107	Do.
Flying Arrow	95	119 00	20	115	Do.
Contest	84	111 00	16	100	February.
Trade-Wind	85	112 00	16	101	Do.
Seaman	89	118 00	18	107	Do.
Hazard	107	109 00	24	133	Do.
Helena	113	110 00	18	131	Do.
Cyclone	93	115 00	20	113	Do.
Tingua	87	106 00	28	115	Do.
Cleopatra	92	109 00	17	109	Do.
Telegraph	96	112 00	20	116	Do.
Alboni	99	114 00	28	127	Do.
Greenfield	90	110 00	22	112	Do.
Anglo Saxon	94	111 00	34	128	Do.
Electric	90	111 00	19	109	Do.
Antelope	81	110 00	16	97	Do.
Lotus	99	116 00	24	123	Do.
Comet	99	120 00	22	121	Do.
Great Republic	72	119 00	20	92	Do.
Bald Eagle	88	111 00	19	107	March.
Storm	87	110 00	23	110	Do.
Flying Childers	91	117 00	22	113	Do.
Surprise	80	110 00	17	97	Do.
Samuel Appleton	103	110 00	18	121	Do.
Telegraph	91	106 00	24	115	Do.
Eagle Wing	82	113 00	23	105	Do.
Winged Racer	85	106 00	23	108	Do.
John Bertram	86	110 00	19	105	Do.
Electric Spark	82	114 00	24	106	Do.
Adelaide	93	113 00	30	123	Do.
Morning Light	92	111 00	.....	.....	Do.
Governor Morton	83	113 00	21	104	Do.
Tornado	89	116 00	22	111	Do.
Western Continent	98	116 00	22	120	Do.
Boston Light	83	118 00	19	102	Do.
Tornado	79	118 00	22	101	April.
Eagle	92	115 00	21	113	Do.
Phantom	90	113 00	14	104	Do.
Celestial	98	110 00	22	120	Do.
Samuel Russell	90	118 00	20	110	Do.

Two hundred and eight crossings of the equator in the Pacific, &c.—Continued.

Name of vessel.	To line in Pacific.	Place of crossing.	Line to California.	Total from U. S. to California.	Crossed the line in the month of—
	Days.	° ′	*Days.*	*Days.*	
Russell Glover	115	113 00 W.	21	136	April.
Game Cock	94	109 00	16	110	Do.
Flying Cloud	74¼	110 00	15	89¼	Do.
Archer	84	112 00	22	106	Do.
Herald of the Morning	86	119 00	20	106	Do.
Wisconsin	94	106 00	30	124	Do.
Rattler	98	114 00	23	121	Do.
Daniel	.....	113 00	33	.....	Do.
Huguenot	98	113 00	26	124	Do.
Osborn Howes	99	115 00	25	124	Do.
Phantom	81	114 00	20	101	Do.
Sultan	96	114 00	26	122	Do.
Neptune's Car	79	112 00	22	101	Do.
Greenfield	88	116 00	24	112	Do.
Derby	91	118 00	27	118	Do.
John Gilpin	91	119 00	23	114	Do.
E. F. Willetts	90	116 00	28	118	Do.
Swordfish	84	114 00	24	108	May.
Stag Hound	93	114 00	21	114	Do.
Do	90	96 00	34	124	Do.
Tornado	84	107 00	44	128	Do.
Sea Serpent	82	102 00	26	108	Do.
Star of the Union	97	107 00	27	124	Do.
Golden Racer	96	109 00	34	130	Do.
Governor Morton	97	109 00	26	123	Do.
Sweepstakes	73	110 00	21	94	Do.
Atlanta	90	107 00	37	127	Do.
Samuel Russell	89	110 00	27	116	Do.
S. S. Bishop	92	107 00	21	113	Do.
White Swallow	98	112 00	37	135	Do.
Tingua	96	113 00	25	121	Do.
Seaman's Bride	99	117 00	21	120	Do.
Stag Hound	95	116 00	26	121	June.
Surprise	87	111 00	30	117	Do.
Competitor	89	114 00	25	114	Do.
Empress of the Seas	89	115 00	32	121	Do.
Seaman's Bride	92	115 00	29	121	Do.
Sea Serpent	88	101 00	25	113	Do.
Governor Morton	91	102 00	32	123	Do.
Surprise	85	112 00	32	117	Do.
Panama	86	110 00	26	112	Do.
Golden Eagle	90	114 00	33	123	Do.
Swordfish	78	111 00	32	110	Do.
Do	89	117 00	28	117	Do.
Messenger	94	115 00	31	125	Do.
Goddess	98	117 00	33	131	Do.
Lantoa	94	106 00	30	124	Do.
Gifford	94	107 00	35	129	Do.
Ina	99	109 00	34	133	Do.
Climax	88	106 00	27	115	Do.
Partheon	94	111 00	28	122	Do.
Eagle	98	111 00	24	120	Do.
Mary L. Sutton	83	112 00	27	110	Do.
Fleet Wing	90	115 00	31	121	Do.
Viking	82	114 00	32	114	Do.
Starlight	85	112 00	32	117	Do.
Shooting Star	92	113 00	24	116	Do.
Hornet	87	113 00	20	107	July.
John Land	94	115 00	31	125	Do.
Staffordshire	83	108 00	18	101	Do.
Cohota	103	110 00	23	126	Do.
Empire	97	102 00	35	132	Do.
Thomas B. Wales	100	103 00	33	133	Do.

Two hundred and eight crossings of the equator in the Pacific, &c.—Continued.

Name of vessel.	To line in Pacific.	Place of crossing.	Line to California.	Total from U. S. to California.	Crossed the line in the month of—
	Days.	° ′	*Days.*	*Days.*	
Shooting Star	102	118 00 W.	21	123	July.
White Squall	84	100 00	26	110	Do.
Golden Gate	91	103 00	30	121	Do.
Messenger	97	108 00	24	121	Do.
Star King	94	115 00	23	117	Do.
Surprise	86	113 00	31	117	Do.
Cœur de Leon	88	114 00	35	125	Do.
War Hawk	98	116 00	29	127	Do.
Flying Cloud	71	124 00	19	90	August.
N. B. Palmer	88	114 00	19	107	Do.
Union	91	101 00	28	119	Do.
White Squall	96	110 00	22	118	Do.
Cleopatra	103	122 00	27	130	Do.
Messenger	88	102 00	34	122	Do.
Flying Cloud	95	105 00	19	114	Do.
Witch of the Wave	89	115 00	32	121	Do.
Golden Eagle	85	113 00	21	106	Do.
Flying Dutchman	98	114 00	26	124	Do.
Robin Hood	94	113 00	33	127	Do.
Hurricane	77	117 00	23	100	Do.
N. B. Palmer	101	114 00	24	125	September.
Witch of the Wave	90	114 00	25	115	Do.
Templeton	123	112 00	27	150	Do.
Belle of the West	104	112 00	24	128	Do.
Golden State	99	112 00	24	123	Do.
John Bertram	91	114 00	24	115	Do.
Flying Dutchman	78	119 00	28	105	Do.
Young America	88	116 00	22	110	Do.
West Wind	99	112 00	34	133	Do.
Golden State	101	112 00	24	125	Do.
Norwester	97	116 00	25	122	Do.
Snap Dragon	*102*	*118 00*	*30*	*132*	*Do.*
Jamestown	103	.....	25	128	October.
Sovereign of the Seas	83	120 00	20	103	Do.
Raven	85	112 00	20	105	Do.
Celestial	83	115 00	21	104	Do.
Typhoon	87	115 00	19	106	Do.
Sea Witch	87	101 00	38	125	Do.
Telegraph	102	109 00	23	125	Do.
Thomas Perkins	100	111 00	26	126	Do.
Eagle	101	115 00	28	129	Do.
Carrington	103	115 00	26	129	Do.
Romance of the Sea	90	115 00	23	113	Do.
Flying Dragon	91	115 00	22	113	Do.
Young America	92	112 00	17	109	Do.
Sirocco	97	111 00	28	125	Do.
Hornet	92	114 00	21	113	Do.
Midnight	92	115 00	24	116	Do.
Sea Witch	91	114 00	17	108	November
Winged Arrow	95	115 00	22	117	Do.
Raven	93	105 00	29	122	Do.
Do.	94	109 00	25	119	Do.
Witch of the Wave	91	115 00	26	117	Do.
Trade-Wind	91	115 00	24	115	Do.
John Wade	95	117 00	24	119	Do.
Samuel Russell	97	101 00	22	119	Do.
Seaman	102	110 00	26	128	Do.
Boston	81	106 00	40	121	Do.
Mandarin	101	112 00	22	123	Do.
Hurricane	102	114 00	22	124	Do.
Ocean Telegraph	101	111 00	22	123	Do.
Wild Duck	98	112 00	30	128	Do.
Ocean Telegraph	96	112 00	24	120	Do.

Two hundred and eight crossings of the equator in the Pacific, &c.—Continued.

Name of vessel.	To line in Pacific.	Place of crossing.	Line to California.	Total from U. S. to California.	Crossed the line in the month of—
	Days.	° ′	*Days.*	*Days.*	
Comet	102	116 00	25	127	November.
John Wade	94	111 00	23	117	December.
Comet	88	117 00	16	104	Do.
White Squall	From Rio.	124 00	14	.....	Do.
Unknown	91	113 00	21	112	Do.
Skylark	96	114 00	21	117	Do.
Samuel Russell	86	117 00	20	106	Do.
Winged Arrow	108	118 00	18	126	Do.
Monsoon	100	104 00	26	126	Do.
J. A. Falkingburg	101	109 00	15	116	Do.
Flying Fish	92	113 00	18	110	Do.
Hornet	109	114 00	20	129	Do.
Challenger	100	116 00	19	119	Do.
Winged Arrow	106	119 00	19	125	Do.

There remains but one more view for us to take of the facts before us, in order to convince the most skeptical that the best equatorial crossing in the Pacific for the California-bound trader is between the meridians of 110° and 120°. That view is presented by the following statement, showing the per centum of vessels that have 20 days and less; the per centum of vessels that have 25 days and less; and the per centum of vessels that have 30 days and less, from 50° S. to the equator, and thence to San Francisco:

Equatorial crossings.

Per cent. of passages of—	BETWEEN—									
	Coast and 100°.		100° and 105°		105° and 110°.		110° and 115°.		115° and 120°.	
	To—	From—	To—	From—	To—	From—	To—	From—	To—	From—
Twenty days and less, per cent	0	0	6	0	8	6	12	17	8	18
Twenty-five days and less	29	14	32	21	38	32	45	48	43	47
Thirty days and less	29	14	77	48	75	64	76	70	75	77
Thirty-five days and less	71	29	94	79	85	85	93	88	91	91

Only the per centums for the three crossings between 105° and 120° are deduced from a sufficient number of passages to give a fair ratio. These per centums tally with the other tables in showing that the equatorial crossings between 110° and 115°, and between 115° and 120, are just about half way in time between 50° S. and San Francisco. Nearly half the vessels have 25 days and less both to and from these crossings, and three-fourths 30 days and less, while only one in ten (9 per cent.) of all that cross between 110° and 120° have more than 35 days, either from 50° S. to the Line or from the Line to San Francisco. The average distance "made good" to and from all crossings the year round is, from 50° S. to the equator, 133 miles a day, against 93 thence to San Francisco.

The average crossing place of 50° S. on the Pacific is about 82° W. Winds are sometimes, though not often, fair for making westing on the polar side of 50° S. When they are so, the skillful navigator will not fail to take advantage of them to gain a still more westerly crossing of this parallel.

In urging upon California-bound vessels the importance of making westing about the

parallel of 50° S., I do not mean that they should expose themselves to heavy weather, or contend against adverse circumstances, in order to get west on this part of the route. I simply mean that, if a vessel, after doubling the Cape, can steer a W.NW. course as well as a NW., or a NW. as well as a N.NW., or a N.NW. as well as a N. course, that she should on all such occasions give preference to the course that has most westing in it, provided she does not cross 50° S. to the westward of 100° or thereabouts; nor 30° S. to the westward of 115°; nor enter the SE. trade-wind region to the west of the last named meridian. This is the western route. It is so called because it requires you to keep as far west within certain limits as you well may without running broad off to make westing, or without fighting with head winds, or baffling winds, or calms, to get west.

The western route from Cape Horn to California is, as a rule, to be preferred by all vessels at all seasons.

The further from the land, the more regular and steady the wind, may be safely taken as a general rule.

There is much more land in the northern than in the southern hemisphere; and the action of the sun's rays in our summer time upon this excess of the land very materially interferes, as my researches abundantly prove, with the regular course of the NE. trades.

Where is there such a thing known as a regular monsoon in the southern hemisphere, except in the vicinity of arid lands? The monsoons of India and the China seas are due to this excess of land in our hemisphere. So are the African monsoons of the Atlantic, the monsoons of the Pacific, and those of the Gulf of Mexico. They are all produced by the action of the rays of the sun upon extensive deserts, or wide and arid plains in the northern hemisphere. There may be a monsoon south about New Holland and Madagascar; but there are deserts there.

In the interior of North America, between the parallels of 30° and 40° N., there is an immense region of country that is parched with drought during the summer and fall. The influence of this region is, as I have before remarked, felt by the winds of the Gulf of Mexico, by the winds of the intertropical regions of the Pacific beyond Central America, and by the winds out upon the high seas, off the coast of California and Oregon. These winds, for many miles out to sea, feel that influence, obey it, and assume the character more or less of monsoons during our summer and fall.

In the discovery of this fact we have the key to the California route from the equator up.

A vessel that crosses the equator in August or September, as far as 120° or 125° W., is some 1,500 miles from the continent, and about 2,500 miles from the centre of this disturbing agent. Being bound from the crossing to California, she has the belt of NE. trades to cross. These winds blow with much more regularity to the west of 120° than they do at this season in with the coast. Having, therefore to cross them, the vessel is enabled to do it by a course, on the average, between N.NW. and NW. This course brings her out of them as far west, it may be, as 145°, about the latitude of San Francisco. But this is the season when NW. and westerly winds most prevail in the region of the variables.

On account of the atmospherical disturbance situated in the interior of North America, as before explained, and in the latitude of San Francisco, or as high up as 40°, (for that will be found occasionally not too far for a vessel on the western route to go,) the degrees of longitude are not long, and with fair winds it will not take many days for her, when near the parallel of 40°, to run down 10° or 15° of longitude. The following table is conclusive upon this point:

Average monthly passages to San Francisco.

Date.	FROM EQUATORIAL CROSSINGS BETWEEN—									
	Coast and 100°.		100° and 105°.		105° and 110°.		110° and 115°.		115° and 120.	
	No.	Days.	No.	Days.	No.	Days.	No.	Days.	No.	Days.
January	.....	.....	.....	.....	10	24.8	25	23.5	4	19.5
February	.....	.....	2	29	8	27.9	17	24	6	22.6
March	.....	.....	2	28	14	26.0	30	24.4	10	24.3
April	.....	.....	2	27	4	26.5	22	25.3	12	24.2
May	.....	.....	2	30	12	30.3	12	30	7	28.7
June	.....	.....	6	36	15	34	25	31.4	9	30.9
July	.....	.....	6	32	7	27.5	11	31.2	8	29.6
August	.....	.....	2	31	3	24.6	14	31.5	9	32.2
September	.....	.....	2	40.5	4	29.7	17	30.1	7	28
October	.....	.....	3	29	3	27	22	25.6	5	27.4
November	.....	.....	2	25.5	5	29	18	26.2	4	23.3
December	.....	.....	1	26	2	24	8	21.6	5	18.4

According to all these California passages, and the results which they show, it appears that it is *possible* for a vessel under canvas to make a run from New York to San Francisco in eighty-five days; and it does not appear that the combination of circumstances which would enable a vessel to do this is by any means of frequent occurrence. If the Flying Cloud or the Sword Fish, after crossing the Line in the Pacific, had met with the winds which the White Squall had thence to San Francisco, she would have made the run in eighty-five days. Eighty-five days may be regarded, therefore, as the shortest combined passage, and as the minimum limit of *possible* passages from any one of the Atlantic ports of the United States. It is, therefore, we may infer, within the range of probability that the passage by ships, at their present rate of speed, may be made in eighty-five days from the eastern States to California; but it is scarcely probable, for it is barely within the range of possibility that it will ever be made in less time.

Mean monthly average passages from 50° S. to the equator, and from the equator to San Francisco, as determined by the passages prior to 1855, and given in the 7th edition of this work, compared with the mean of the passages made since, and now given in this edition.

Comparison of passages from 50° S. to the Line, and thence to San Francisco, before and since the publication of the seventh edition.

Month.	SEVENTH EDITION.			EIGHTH EDITION.			
	No. of passages.	Time from—		Time from—		No. of passages.	+ gain, − loss.
		50° S. to 0°.	0° to San Francisco.	50° S. to 0°.	0° to San Francisco.		
		Days.	*Days.*	*Days.*	*Days.*		*Days.*
January	24	27	24.4	25.6	24.8	19	+ 1.0
February	27	27.2	24.9	27.1	23.0	19	+ 2.0
March	30	28.8	26.1	24.1	24.4	16	+ 6.4
April	22	29.4	30.0	26.1	28.5	12	+ 4.8
May	43	30.4	31.6	27.9	31.9	12	+ 2.2
June	26	31.0	32.2	22.2	29.6	11	+11.4
July	20	29.4	30.1	22.5	25.4	7	+ 1.6
August	26	26.2	32.4	27.6	29.2	11	+ 1.8
September	21	27.7	28.4	26.7	24.9	11	+ 4.5
October	24	25.6	25.1	24.2	24.8	15	+ 1.7
November	17	24.2	23.8	27.6	18.9	10	+ 1.5
December	27	23.7	23.0	26.6	25.0	11	− 4.9

There was at page 688, of the seventh edition, a similar table of comparison for the sixth and seventh edition, which also revealed a similar gain between the publication of the sixth and seventh editions. It was then remarked :

"The showing of this tabular statement is very encouraging. It shows generally that as these routes, with the winds and the currents by the way, have become better understood, there is a shortening of passages. The total average gain from 50° S. to San Francisco, since the publication of the last edition, has been a day. The gain by the month has generally been marked, except for September; here the loss to the equator has been six days. The gain for January, February, March, and April, has been from five to ten days each. It is interesting to mark this improvement."

The Farallones, seven small islands about thirty miles from San Francisco, are in the fair-way to the harbor. They afford a fine landmark, and should be made by all inward-bound vessels. The course from the South Farallone to the mouth of the harbor is about N. 73° E., *true*, distance 27 miles; or by compass NE. by E. ¼ E. "The fort on the south point of the island of Alcatraces," is said to be the best course in.

Vessels upon approaching The Heads of San Francisco, especially in the winter months, are liable to be beset by fogs. I have reports of some vessels that have had fine runs all the way from the United States; and yet, when they got almost in sight of the port, have been enveloped with and delayed by fogs for many days.

The positions of the following named points or places along the coast of California have been determined by the Coast Survey. They differ somewhat from the Wind and Current Charts; I therefore quote them in this place:

San Clemente (SE. end of Island of San Clemente)	33° 00′ 00″ N., 118° 34′ 00″ W.
San Nicholas (SE. end of Island of San Nicholas)	33° 14′ 12″ N., 119° 25′ 00″ W.
San Luis Obispo (Bay of San Luis Obispo)	35° 10′ 37″ N., 120° 43′ 31″ W.
San Simeon (Bay of San Simeon)	35° 38′ 24″ N., 121° 10′ 22″ W.
Point Pinos (Bay of Monterey)	36° 37′ 59″ N., 122° 00′ 10″ W.
Prisoner's Harbor (Island of San Miguel)	34° 01′ 10″ N., 119° 40′ 00″ W.
Cuyler's Harbor (Island of San Miguel)	34° 00′ 00″ N., 120° 20′ 27″ W.

FROM THE SANDWICH ISLANDS TO CALIFORNIA.

From San Francisco to the islands, the way is plain; for, by running to the southward and westward from the offings of San Francisco, you get NE. trades, and carry them all the way.

In returning, the course is to the northward; so steer with a rap full, and as the winds will let you, lay up till they are found to be fair. On this voyage the navigator, as a rule, will always have to go to the northward of San Francisco to be sure of good winds, which are frequently found near the parallel of 38°, but sometimes, as from July to September inclusive, as far as 44–5°.

The islands, such as the Society and Sandwich, that stand far away from any large extent of land, have a very singular but marked effect upon the wind. They interfere with the trades very often, and turn them back; for westerly and equatorial winds are common at both these groups, in their winter time. Some hydrographers have taken those westerly winds of the Society Islands to be an extension of the monsoons of the Indian Ocean. Not so; they are local, and do not extend a great way either from the Sandwich or Society Islands.

That they are local about the former group, an examination of sheet No. 5, Pilot Chart North Pacific, will instantly show.

It is a curious thing, is this influence of islands in the trade-wind region upon the winds in the Pacific. Every navigator who has cruised in those parts of that ocean, has often turned with wonder and delight to admire the gorgeous piles of cumuli, heaped up and arranged in the most delicate and exquisitely beautiful masses that it is possible for fleecy matter to assume. Not only are these piles found capping the hills among the islands, but they are often seen to overhang the lowest islands, and even to stand above coral patches and hidden reefs, "a cloud by day," to serve as a beacon to the lonely mariner out there at sea, and to warn him of shoals and dangers which no lead nor seaman's eye has ever seen or sounded out.

These clouds, under favorable circumstances, may be seen gathering above the low coral island, and performing their office in preparing it for vegetation and fruitfulness in a very striking manner. As they are condensed into showers, one fancies that they are a sponge of the most exquisite and delicately elaborated material, and that he can see, as they "drop down their fatness," the invisible hand aloft that is pressing them and squeezing it out.

These winds at the Sandwich Islands often come from the south as well as the west; and on such occasions they afford vessels bound for any of the Pacific ports of North America, a fine opportunity of running to the northward, clearing the NE. trades, and getting the westerly winds of the variables beyond.

Captain Paty, as the following letter from Mr. Charles Wolcott Brooks, dated San Francisco, February 15, 1855, shows, has been one of the most successful navigators in the Sandwich Island and California trade:

"I take great pleasure (says he) in handing you, enclosed, copies of logs kept by Captain John Paty, between this city and Honolulu. Captain Paty has been running constantly on this route and between Honolulu and China, ever since 1837, and has, he informs me, been here every winter once, at least, since that time, and probably has more experience in this trade than any commander here. The logs I enclose, please find as follows:

"*San Francisco to Honolulu.*

"Clipper brig Zoe, September and October, 1853, 16 days; clipper brig Zoe, January and February, 1854, 20 days; clipper schooner Restless, April and May, 1854, 12 days; clipper schooner Restless, June, 1854, 11 days; clipper schooner Restless, October, 1854, 14 days.

"*Honolulu to San Francisco.*

"Clipper brig Zoe, October to November, 1853, 14 days; clipper brig Zoe, January, 1854, 13 days; clipper schooner Restless, April, 1854, 13 days; clipper schooner Restless, May and June, 1854, 16 days; clipper schooner Restless, July and August, 1854, 21 days; clipper barque Francis Palmer, February, 1855, 11 days.

"The abstract log of the Francis Palmer shows her passage to be remarkable, from the fact that it is the shortest ever made *upward.* Captain Paty feels confident that, with the Francis Palmer, he both can and will make the passage up in ten days. The United States ship St. Mary's, Captain Bailey, left Honolulu 28 hours before the Francis Palmer, and arrived here in the second best passage on record. The barque Francis Palmer beat her 27½ hours to the Heads, and 15 hours to the anchorage. The barques Hermione and Fanny Major, half

clippers, sailed a few days previous from Honolulu, and arrived in company in 14 days' passage. Other full model vessels were 21 days; but, I think, steered different courses. Most of the enclosed logs are on common writing-paper, as your agent being out of abstract logs, I was unable to procure any. I hope soon to be able to forward you a table of passages both up and down, complete since 1850.

"I have a few more logs to forward you, not yet completed. I am with Messrs. G. B. Post & Co., who are the oldest and leading house in the Sandwich Island trade. They own a line of clipper vessels running to Honolulu, leaving every eight or nine days, whose journals, if furnished to you, would, I am sure, be of great service in your valuable researches, and aid you in establishing the proper track for approaching our coast at all months of the year. Captain Paty differs with you a little, I believe, on this subject, and believes that the best way to approach our coast is from the northward. He hopes to have the pleasure of writing to you on the subject before long.

"I cannot but feel great interest in all researches in this, my favorite study, having kept the abstract log of two long voyages for your office, one of ship Singapore to Calcutta and back, and one around the world in the clipper ship John Gilpin, on her first voyage, and thoroughly studied your valuable Sailing Directions, a copy of which you kindly presented me a year ago, at Washington, when at the Observatory with my father and Mr. Sidney Brooks, of New York.

"My duties are constant, but I shall be happy at all times to render you any service in my power to help you in your great work. The track up requires the most skill in navigating; the track down is pretty generally understood. The average of passages up from Honolulu to San Francisco is, in length to the passage down, as 6 to 5. Therefore, *ten* days down is no better than *twelve* days up, and *vice versa*."

And again, in May:

"I have to acknowledge receipt of your valued favor, bearing date March 16. Enclosed please find abstract log of Captain John Paty, in barque Francis Palmer, from Honolulu to San Francisco, in March and April; also that of schooner Lady Jane, at the same time. The Francis Palmer's passage was unusually protracted by a long succession of northeasterly winds, which drove her at one time as far north as 43°. Captain Paty's policy, in keeping on the starboard tack, is to run until he strikes a northwester, which sends him booming into port generally in three or four days. He has on previous voyages, in the summer season, been as far north as 47° when eleven days out from Honolulu, and yet made the passage in sixteen and a half days. He has, as a general rule, found the sea, during the summer months, smoother well to the north than to the south of this port. At this time, however, he found no friendly northwester, as when he was so far north a good smart southeaster was brewing, which brought in a large fleet of clipper ships from the Atlantic, and placed him dead to leeward. It so happened, that had Captain Paty, the third day out from Honolulu, stood east, with the wind N.NE. as he had it, instead of standing NW. as he did, he undoubtedly would have struck the very southeaster which brought in the Lady Jane in twelve days, and proved so unfavorable to him. This, however, he knew nothing about, and as a southeaster is a great exception, while a northwester on this coast may almost be considered a rule, Captain Paty undoubtedly did right in standing to the northward.

"A green strip of water is often seen by most all the packets a couple of hundred miles off this shore, which, on approaching the coast, they cross, again entering dark blue water

before making the green water of the coast soundings. Captain Elias Hempstead informs me that he can depend upon it as much as on the Gulf Stream in the Atlantic.

"Captain Paty informs me that he heard two or three years ago that the United States ship Falmouth discovered a rock in the track of vessels bound from Honolulu to San Francisco, having on it from three to five fathoms, situated in 37° 22′ N. and in 137° 25′ W., which was soon after seen by an American vessel bound to Sydney, whose name had escaped him, and also seen by barque Emma, from China, in 1850 or 1851. For several voyages, Captain Paty ran for it without seeing it, but once he told me he passed it about ten o'clock in the morning, and noticed the water was discolored, being green. Several times in coming up he has tacked ship in the night to clear it. I have not seen any chart with it laid down, although it may be on some of the late ones. I know nothing further of its existence, except that shipmasters in the Honolulu trade generally believe it there, and aim to avoid it.

"In making the passage from here down to the Sandwich Islands, in December or January, when southerly winds are likely to prevail in the absence of the NE. trades, it is well, if possible, to make Oahu, bearing a little to the north of west, as you are then in a good position for running in with almost any wind, except a westerly one, which is seldom known. Vessels falling to leeward with a southerly wind often lose a week in beating up, as they sometimes blow very fresh from that quarter."

Best six passages from Sandwich Islands to San Francisco.

Name of vessel.	Months.	Crossings of latitudes.								Crossings of longitudes.					Days from 125° W. to port.	Total passage days to San Francisco.
		Days.	25° N.	Days.	30° N.	Days.	35° N.	Days.	Highest latitude.	135° W.	Days.	130° W.	Days.	125° W.		
			°		°		°			°		°		°		
U. S. S. Portsmouth	January	1	157¼	4	147	4	135⅛	....	In port	....	3	35¾	1	36¼	¼	14
Zoe	do	2	156	2	153	2	148	2	38° N. in 130° W.	37¼	1½	38	1	37	¼	14
Francis Palmer	February	1	152	2	147½	4	136	1	38° N. in 125° W.	35	1	37	½	38	½	11
Lady Jane	April	1	157	2½	150	4	134½	.....	In port	.....	1½	36½	2	37	1	12
Restless	April	2	152	3	151	4	138	2	In port	37	2	37½	1	37	1	14
Zoe	October	1	157	3	155	3	147	4	40° N. in 139° W.	40	2	39	1	38	1	15
Means		1.3	155¼	2.7	150½	3.5	136½	1.5		37¼	1.8	37¼	1.1	37¼	.7	13.3

These are the best passages, but they are all, except one, in winter and spring, when you may sail almost directly for your port. In summer and fall the polar edge of the trades is far north, and you must clear them. The best sailing directions from these Islands that can be given for California, Oregon, or Washington may be uttered in a single sentence. Run up with foretopmast studding sail, and make easting as the winds will allow, having an eye to the calms of Cancer.

Crossings from Sandwich Islands to San Francisco.

Name of vessel.	Month.	LONGITUDE OF CROSSING PARALLELS OF—										LATITUDE OF CROSSING MERIDIANS OF—												Days from longitude 125° to port.	Total passage.	Port arrived.
		22° N.	Days.	25° N.	Days.	30° N.	Days.	35° N.	Days.	40° N.	Days.	150° W.	Days.	145° W.	Days.	140° W.	Days.	135° W.	Days.	130° W.	Days.	125° W.	Days.			
		°		°		°		°		°		°		°		°		°		°		°			Days.	
Zoe	October	.....	....	157	1	155	3	147	3	139	3	.....	....	.....	....	.....	....	40	1	39	2	38	1	1	15	San Francisco.
Restless	April	.....	....	152	2	151	3	138	4	.....	....	.....	....	.....	....	.....	....	37	2	37½	2	37	1	1	14	Do.
Francis Palmer	February	156	1	152	1	147½	2	136	4	.....	....	.....	....	.....	....	.....	....	35	1	37	1	38	½	½	11	Do.
Restless	July	.....	....	157½	1	158	2	156½	2½	153	2	44	2½	41	3	41	3½	38	3	38	1½	38	1	½	22½	Do.
Restless	May	.....	....	159	2	160	2	160	1	155	3	41	1	41½	1	41	2	39	1	38	3	38	1	½	17½	Do.
Zoe	January	.....	....	156	2	153	2	148	2	.....	....	.....	....	36	2	38	1	37½	2	38	1½	37	1	½	14	Do.
Maryland,	November	159	1	159¼	1	157	3	146½	7	.....	....	.....	....	35	½	36	1	36½	1½	37	1½	37	1½	2	18	Do.
U. S. Frigate Constellation	September	156½	2	157¾	1	159	2	144½	5	.....	....	.....	....	.....	....	36	1	36	1	36¼	3	37	1	4	20	Monterey.
U. S. Frigate Savannah	October	159	1	159¼	1	156	6	149	3	.....	....	.....	....	36½	3	39	4½	38¼	1½	38	1½	37½	1½	2	25	Do.
U. S. Frigate Savannah	do	158¼	1½	158	1½	157	6	148	6	138	2	33	4	36¼	3	39½	4	40¼	1	39	2	38	1	2	21	Do.
U. S. Frigate United States	December	.....	....	159	2	154½	4	141½	3	.....	....	.....	....	.....	....	.....	....	36	2	36½	1	36¾	2	2	16	Do.
Baltimore	November	155¾	1	154	4	152	3	141½	3	.....	....	.....	....	.....	....	35½	1	36	1½	35½	2½	34	1	1	18	San Francisco.
Francis Palmer	April	.....	....	160	1	164½	3	165	4	166	2	42	5½	38½	1½	38¼	2	38	2	38	½	39¼	½	3	25	Do.
Lady Jane	do	.....	....	157	1	150	2½	134½	4	.....	....	.....	....	.....	....	.....	....	.....	....	36½	1½	37	2	1	12	Do.
U. S. Steamer Mississippi	December	158	1	151	3	142	3	129½	4	.....	....	.....	....	.....	....	.....	....	.....	....	.....	....	36	1	1	13	Do.
Oriental	November	156	1	156¾	1	152	4	139½	8	.....	....	.....	....	.....	....	.....	....	36¼	1	38	2	38	4	½	21½	Do.
Oriental	March	158	1	158½	1	159¼	3	161	3	126	15	.....	....	.....	....	.....	....	.....	....	.....	....	39	2	1	26	Do.
Oriental	June	158	1	158	1	156½	2	157	2	155	2	41½	3	41	2	40¾	2	40¾	2	40	1	38	1	1	20	Do.
Oriental	October	.....	....	154	2	150	3	133	7	.....	....	.....	....	.....	....	.....	....	.....	....	.....	....	38	3	1	16	Do.
U. S. Sloop Cyane	September	.....	....	159¼	2	159½	2	159	2	.....	....	37	3	37¼	1½	37¼	1	37	1½	37½	4	37	2	1	20	Monterey.
U. S. Frigate St. Lawrence	August	.....	....	157	2	158½	1	152	7	144	5	.....	....	.....	....	38¾	5	36	1½	37	2	38	2	1½	27	San Francisco.
Montreal	July	159	1	159½	1	159½	2	158¾	4	.....	....	39½	5	38	2	39	3	38	2	37½	2	38½	1	2	27	Do.
U. S. Sloop Cyane	March	.....	....	160	2	162	1	161½	3	156½	7	45¼	4	46	4	43¾	2	42	1	39¼	2	37	2	1	29	Monterey.
U. S. Sloop Portsmouth	January	158	½	157¼	1	147	4	135½	4	.....	....	.....	....	.....	....	.....	....	.....	....	35¾	3	36¼	1	½	14	San Francisco.
Means		157½	1.0	157	1.6	155¼	2.8	147½	4.0	149¼	4.9	41¼	3.5	39	2.0	38¾	2.2	37½	1.5	37½	1.9	37¼	1.5	1.3	19.5	

From abstract log of brig Zoe (JOHN PATY.) *From Honolulu to San Francisco*, 1853–'54.

Date.	Latitude.	Longitude.	WINDS. First part.	Middle part.	Latter part.	Remarks.
	° ′	° ′				
December 30	22 52	156 40	E.NE	E.NE	E.NE	Fresh breezes and pleasant.
31	24 57	155 50	E.NE	E NE	E NE	Fine breezes.
January 1	27 40	154 00	East	East	E.SE	Fresh breezes.
2	31 05	153 30	SE	SE. by S	SE. by S	Fresh breezes; heavy sea.
3	32 22	150 30	S.SE	S.SE	S.SE	Fresh breezes; first part, rain; latter, clear.
4	34 38	148 07	SW	SW	NW	Light breezes and pleasant.
5	34 20	147 55	North	North	North	Fresh breezes and cloudy.
6	36 05	143 50	NE	NE	East	Strong breezes.
7	37 44	139 50	E.SE	SE	E.SE	*Fresh gales; rough sea.*
8	37 40	136 30	S.SE	S.SW	S.SW	Fresh gales.
9	37 20	135 30	SW	W.SW	W.SW	Comes in light; middle and latter parts, calm.
10	38 05	133 30	West	Calm	Calm	Very light airs.
11	37 40	129 50	SE	SE	SW	Fine breeze; thick and foggy.
12	37 40	126 40	SW	SW	SW	Light breezes and foggy; at 5 a. m. sighted land.

NOTE.—The U. S. sloop Portsmouth sailed from Honolulu 24 hours before the Zoe, and arrived 24 hours before the Zoe, making the same time. The loss on the 6th of our fore-topgallant mast retarded our progress some, as we had no spar to replace it.

From log of barque Francis Palmer (JOHN PATY.) *From Honolulu to San Francisco*, 1855.

"THE QUICKEST PASSAGE ON RECORD."

Date.	Latitude at noon.	Longitude at noon.	Course.	Distance.	WINDS. First part.	Middle part.	Latter part.	Remarks.
	° ′	° ′	°					
Jan. 30	.....	.....	.....	.....	.....	NW	NW	Light breezes and pleasant.
31	22 07	156 07	N. 76 E.	106	NW	SW	W.SW	Do.
Feb. 1	25 31	152 07	N. 47 E.	302	SW	SW	SW. by W	Gentle breezes; ends strong do.; going 15 knots.
2	27 50	150 04	N. 46 E.	194	S.SW	NW	NW	Comes in fresh gales.
3	29 51	147 34	N. 47 E.	180	West	South	West	Comes in light; thick, with rain.
4	32 01	144 31	N. 50 E.	205	W.SW	W.SW	West	Brisk breezes; squally.
5	33 19	141 03	N. 66 E.	193	West	NW	N. by W	Ditto; at 4 p. m. baffling breezes, and squally.
6	34 10	139 16	N. 60 E.	102	N.NW	Calm	South	Light airs and pleasant.
7	35 42	135 55	N. 60 E	190	South	SW	NW	Comes in brisk breezes; moderate; ends light [and cloudy.
8	37 09	130 07	N. 72 E.	296	South	SE	South	Comes in light breezes and rainy; ends fresh.
9	38 12	124 04	N. 74 E.	252	South	South	South	Fresh gales and cloudy; at daylight on soundings.
10	.....	.....	.....	.....	SE. by E	S.SE	.....	Brisk breezes and thick weather.

NOTE.—Feb. 10. At 6h. 30m. p. m. shortened sail and wore ship, judging Point Lobos to bear E.NE., say 6 miles; weather being too thick to run in for The Heads, reefed the topsails and furled the courses, and *stood off shore under easy sail;* at 8 a. m. wore ship to the E.NE., and stood in shore again for one hour; at 4 a. m. wore ship to the S. and W., standing off shore *waiting for daybreak;* at sunrise, weather clearing up, made all sail, and stood in for The Heads; arrived at 7 a. m. and hauled in at Cunningham's Wharf, after a passage of *eleven days;* made the run from land to land in *nine days and two hours!*

From log of clipper schooner Restless (JOHN PATY.) *From Honolulu to San Francisco*, 1854.

Date.		Latitude.	Longitude.	WINDS. First part.	Middle part.	Latter part.	Remarks.
		° ′	° ′				
April	2	23 40	154 20	SW.	NW.	SE.	Gentle breezes and fine weather.
	3	25 55	151 51	SW.	West.	West	Do.
	4	26 55	151 51	NW.	N.NE.	N.NE.	Do.
	5	29 06	152 09	N.NE.	East	NE.	Do.
	6	30 56	150 30	S.SE.	Calm	Calm	Gentle breezes and fine weather; ends calm.
	7	30 47	146 20	Calm	North	North	Comes in calm; ends fresh, with rain.
	8	30 37	143 45	North.	NE.	NW.	Fresh breezes.
	9	31 08	143 00	SW.	W.NW.	W.NW.	Light breezes.
	10	33 40	141 07	Calm	W.NW.	SW.	Do.
	11	35 28	138 14	West	West	W.SW.	Do.
	12	36 51	134 37	SW. by W.	South	South	Gentle breezes and fair weather.
	13	37 16	131 36	SE. by S.	SE. by S.	SE. by S.	Gentle breezes.
	14	37 33	129 10	SE.	SE	SE	Moderate breezes.
	15	Arrived.	.....	North	North.	North.	Strong breezes; arrived at 2 p. m.

From log of clipper schooner Restless (JOHN PATY.) *From Honolulu to San Francisco*, 1854.

Date.		Latitude.	Longitude.	Bar.	WINDS First part.	Middle part	Latter part.	Remarks.
		° ′	° ′					
May	21	23 30	155 10	29.30	NE.	NE.	NE.	Strong wind and pleasant.
	22	26 00	159 20	29 35	NE	NE.	NE	Squally at midnight.
	23	28 46	160 11	29.40	NE	NE	NE. by E.	Fresh breezes and fair weather.
	24	31 41	160 19	29.50	NE. by E.	NE. by E.	NE. by E.	Do.
	25	34 51	160 11	29.60	NE by E.	NE. by E.	NE. by E.	Do.
	26	37 08	160 09	29.60	NE. by E.	NE. by E.	E.NE.	Gentle breezes and fair weather.
	27	39 05	158 10	29 60	East.	East.	SE	Comes in light; ends fresh.
	28	40 25	155 00	29.60	SE. by E	SE. by E.	SE. by E.	Fine breezes.
	29	41 19	150 51	29 60	E.SE.	S.SE.	S.SE.	Light breezes and fine weather.
	30	41 28	146 25	29.60	S.SE.	S.SE	S.SE.	Gentle breezes and fine weather.
	31	41 30	144 30	29.60	South.	Calm.	Calm	Do.
June	1	41 30	143 00	29.60	West.	West	Westerly	Light airs.
	2	41 00	140 45	29.60	West.	West.	West.	Do.
	3	39 16	136 50	29.60	West.	NE.	NE	Fresh breezes.
	4	38 40	132 00	29.40	N.NE.	N.NE.	N.NE.	Fresh breezes and pleasant.
	5	37 39	129 00	29.30	North.	North.	North.	Light breezes and clear weather.
	6	37 50	124 00	29.25	NW.	NW	W. by S.	Fine breezes; at 5 p. m. arrived; beat schr. Supply 13 days.

From log of clipper schooner Restless (JOHN PATY.) *From Honolulu to San Francisco*, 1854.

Date.		Latitude.	Longitude.	Bar.	WINDS.			Remarks.
					First part.	Middle part.	Latter part.	
		° ′	° ′					
July	15	25 42	157 30	.....	E NE	E.NE	E.NE	Gentle breezes and fine weather.
	16	28 31	157 07	.....	E. by N	NE. by E	E.NE	Do.
	17	31 25	158 05	29.25	E.NE	E.NE	E.NE	Do.
	18	34 08	157 20	29.30	NE	NE	East.	Gentle breezes; latter part, squally; rough sea.
	19	36 20	156 00	29.50	E. by N	East	E. by S	Squally weather.
	20	38 56	154 50	29.60	East	East	E.NE	Do.
	21	41 13	153 45	29.60	E by S	E.NE	E NE	Rough sea.
	22	43 15	153 45	29.65	East	East	East	Do.
	23	45 20	151 20	29.70	E. by N	E. by N	E.NE	Gentle breezes and pleasant.
	24	42 07	148 33	29.60	E. by N	E.NE	E.NE	Gentle breezes; latter part, fresh do.; rough sea.
	25	41 45	147 20	29.40	NE	E NE	E.NE	Gentle breezes and pleasant.
	26	42 50	147 22	29.50	NE	E.NE	E.NE	Light airs.
	27	42 20	146 00	29.45	NE	E.NE	E.NE	Do.
	28	41 07	144 00	29.45	NE	E.NE	NE	Do.
	29	41 30	142 53	29.50	NE. by E	NE. by E	NE. by E	Do.
	30	40 50	141 30	29 49	E NE	NE	NE	Do.
	31	40 49	140 16	29.50	NE	NE	NE	Light baffling winds and calms.
Aug.	1	40 30	138 30	29.50	NE	NE	NE	Do.
	2	40 30	137 30	29.45	Calm	Calm	NE	Do.
	3	37 34	136 20	29.40	North	NW	W.NW	Good breezes and pleasant.
	4	37 40	130 05	29.25	West	West	West	Strong breezes and pleasant.
	5	37 42	123 37	.....	WNW	NW	West	Strong breezes and clear.

From log of clipper brig Zoe (JOHN PATY.) *From Honolulu to San Francisco*, 1853.

Date.		Latitude	Longitude.	Bar.	WINDS.			Remarks.
					First part.	Middle part.	Latter part.	
		° ′	° ′					
Oct.	24	24 40	157 10	29.4	E.NE	E.NE	E.NE	Strong trade-wind and fine weather.
	25	26 57	157 00	29.4	E.NE	East	East	Do.
	26	29 13	156 10	29.4	E. by S	E by S	East	Good breezes and pleasant.
	27	30 43	154 10	29.5	E. by S	E SE	South	Do.
	28	32 12	152 42	29.5	S.SW	S.SW.	S.SW.	Do.
	29	34 17	150 10	29.6	S.SW.	S SW	S.SW.	Do.
	30	35 20	147 35	29 7	S.SW	South	S SE	Do.
	31	37 39	145 20	29.7	E.SE	SE by E	SE. by E	Do.
Nov.	1	39 24	142 16	29.6	E.SE	SE. by E	East	Do.
	2	40 24	139 05	29.5	E SE	SE	S.SE	Do.
	3	40 14	136 10	29.4	S.SE	S.SE	S. by E	Do.
	4	39 30	132 30	29.4	S. by E	South	SW.	Do.
	5	38 51	129 30	29.4	SW	W.NW	NW	Do.
	6	37 40	124 29	29.2	NW	NW. by W	NW	Arrived at San Francisco.

ROUTES BETWEEN THE NORTHWEST COAST AND ASIA.

This voyage is the counterpart of the route, going and coming, between the Capes of Virginia and the Straits of Gibraltar, with this difference, that the Pacific Ocean is much broader than the Atlantic, and that the winds are much better developed out upon the Pacific than they are in the Atlantic, and therefore the passage each way, between California and China, will be a more certain passage than that between the Capes of Virginia and the Straits.

"The distance between California and China or Japan being nearly double the distance between the United States and Europe, a vessel navigating those waters has a wider range in latitude than one trading across the Atlantic has in which to hunt good winds. All vessels going west from California will, almost of necessity, stand to the southward and westward for the NE. trades, and all vessels from China or Japan, coming this way, will first make for the variables, which they will find strong and good from the westward, between 35° and 40° in winter and spring; between 40° and 45° in summer and fall. Those mariners who understand the navigation between the Capes of Virginia and Europe will have no difficulty about the route, both going and coming, between California and China. The only difference is that in the latter voyage they can, without so much inconvenience, go further both to the north and the south for the sake of better winds.

"In summer and fall vessels bound to China or Japan need not go as far south for 'steady trades' as they do in winter and spring.

"In order to enter into an elaborate discussion of them according to the month the records of *many* journals must be first consulted, and when my corps of observers shall furnish these I shall, I hope, be ready for the task."—(7th ed., p. 694.)

This they have not done yet. For a thorough discussion of these routes a thousand abstracts are required. The work which I find to do increases very fast, and the hands to do it have decreased to such an extent that I find myself compelled to repeat here, without further discussion, directions given in the preceding edition of this work. My design was, in preparing the 8th edition, to enlarge and improve every chapter in the 7th edition, and to add others. Owing to the small corps of assistants available for this work I shall not be able fully to carry out this intention.

I propose, however, to take up route after route, and discuss it, with the assistance of tables of time and crossing, after the manner of the route p. 368, from the Lizard to the Line, *et al.*, and to publish the results in monograms.

The route to China or India for vessels coming out of the ports of British Columbia, or from the Straits of Fuca, the Columbia river, or California, is the same, and the sailing directions are brief and simple: Make the best of your way to the NE. trades, and run them down about the parallel of 18° or 20°. The Swordfish, bound from San Francisco to China, made the Sandwich Islands eight days out, averaging 232 miles a day. Thence her average day's run to Shanghai was 215 miles. She made the passage in 32 days 9 hours from San Francisco.—(See 7th ed., p. 694.) This passage was in June and July.

In September and October, 1854, the Surprise made the run to Shanghai in 55 days, after running down her longitude between 22° and 24°. Captain Ranlett wrote:

"SHANGHAI, *October* 4 *to* 19, 1854.

"Last year I crossed from San Francisco to this place in the Surprise, in the months of July and August, and had a good run of 38 days across. Your Wind and Current or Pilot Charts were not then out, I think, at least I had not seen them; I, for want of some such directions as you give, took my own course, and kept far to the north of Sandwich Islands, and had a tolerable good run all the way with much fine weather, while the Mystery and some others went further south in the old track, and had much wet and squally weather and longer passages generally. You have my abstract and some others for reference. This voyage I left nearly one month later, and, although I have your Wind and Current Charts of the Pacific, on this passage I kept north of all the tracks given, and have had very light winds all the way across;* in fact my sails have flapped against the masts all the way; you will see my tracks by abstract, which I forward you. I sailed, after leaving San Francisco, 5,580 miles, by log, without taking in a skysail or a royal studding-sail, the wind veering and hauling from E.SE. to E.NE. generally; weather fine as one could wish, and too hot to work in the sun much of the time. I passed over and near several spots where islands are laid down in my Charts; I saw none of them except Gardiner's Island, off NW. of the Sandwich Islands, in the neighborhood of the other mentioned islands. I saw many birds of various kinds, and have mentioned them in my abstract, as you request, and have also tried the temperature of the water, &c. My chronometers are very near correct, I find on my arrival. I passed between North and Sulphur Islands, two of the Volcano group, and send you a rough sketch of them. It may be of use to some one, as I have no guide for any of these islands, whether they are high or low, and some of them may be safely run for in the night, and others must not. I have seen all of this group, and they are in the track of vessels bound for Shanghai from San Francisco. The north and south ones may be run for any time, being high and bold; but the middle one is low to the eastward, and cannot be seen far in the night; the high hill is on the western side. I ran for Bungalow Island, which I find on my chart, and made it just as I should, within an hour. *It is there*, and no mistake. It is a long, moderately high island, and looks, in a view I took of it, much like a sperm whale; is tolerably long, looks green. At daylight, October 2, I found myself in the Passage almost becalmed, going through very well until 10 a. m., when the tide changed, and not having any wind I drifted away down towards Kakarooma, a splendid looking island, with long low points at every view of it, and high land in the interior. Saw no shoals off this island, except a high lot of rocks about five miles from the NW. point of the island, and about one-third of the way from this island to Ousima, or an island off the SW. side or end of Ousima. The sea breaks heavily all around this heap of rocks, and in places between it and the main island of Kakarooma, and although there is a wide passage between that and the shore I would not attempt it unless surveyed. The sides of the island of Kakarooma seem to be in a high state of cultivation, fields and rows of trees like hedges, and farms finely laid out, from the high land down to the sea shore; saw smoke ascending from many places, one after another, as if it were given for a signal that something strange was coming, and I have no doubt that our appearance was telegraphed all over these islands, on both sides of the Passage, as we saw from hill to hill, as far as we could land. But although near enough to see what we supposed was terraces of fine trees across the slopes in valleys, we did not see anything that looked like a house or habitation. White patches on the sides of the hills were

* You were too near the calms of the horse latitudes.—M.

at first taken for houses, but proved to be rocks of various colors, from black to very white, and some hillsides were so full of white boulder stones that they looked like a flock of white cattle or sheep. I saw the same last year, and, as they all remain the same, they cannot be animals.

"On the Ousima side we saw the plainest, having been nearer than the other; this coast is full of deep bays, large and small islands, and off all of the headlands and points there are large reefs and rocks, above and under water, and on which the sea breaks with considerable violence in a moderate time. There are apparently passages among them all, as the rocks rise high, and abruptly, and bluff on the most of the points. We saw no sign of any native vessels on either voyage, except a small sampan, similar to a Chinese bum boat, containing four dark and swarthy looking fellows. They came out from behind one of the islands in the morning, and passed near us, so near that they were somewhat afraid of us. A breeze struck us and them at the same time; they were standing over towards Kakarooma Island. There is a rip caused by tides, or meeting of two seas across the channel, and before we come to it, it looks very much like breakers, and if the weather should be rough I have no doubt it would be taken for breakers, for a reef extending entirely across the passage; in fact, Captain M. Michael, of the Montauk, says, in his description of these islands, page 1,158, *North Pacific Directory*, that there is no passage between the long low islands of the south and the high ones of the north. I do not know any one that has passed between these islands; you have an opportunity of knowing, and have perhaps received some communications about them which I should be glad to see in some of your books, and I hope any one who passes islands of this Pacific will describe them. Lisiansky is mentioned in the work named above, and very correctly described. I have seen it, and should not run for it in the night, as a ship could be lost on reefs so far off from the island that it could scarcely be seen from off deck in the day-time. I would say that on the NE. part of Kakarooma Island, probably by some called Crown Island, there is a *beach*, apparently sand beach, extending almost the entire length of the islands, while on the other side, on Ousima Island, the shore is high and bluff, and not a beach to be seen. Ousima I should think to be about 100 miles around it, and the other island as much as 80 miles in circumference; I guess this, of course; it may be more or less; this guess will give you an idea of the size of the small specks on the Charts. I could say more of these islands, but thinking probably you may have a much more correct account of them, I will close. I should like much to be of a party to survey them.

"I call these straits Surprise Straits, she having been through them twice.

"Found the Golden Gate in before me; she sailed 10 days after me, and with a strong NE. wind steered west, and had a strong breeze all the way across, excepting a few days. He saw a group of islands 25 miles west of Clove Island, not on any chart or in any book that he or I have. Captain Pope informs me that there is a survey of those islands I passed between, by the French. I suppose we shall have it soon. The Swordfish was 42 days from San Francisco to Hong Kong; sailed two days before me; I presume he went well south. I beat all the passages across last year, in the same track I took this year, and was beaten by all.

"I sent my abstract from California before I noticed the remark in your Directions to keep it entire until my return to the United States. A brig came in to-day dismasted in a typhoon off Sulphur Island that lasted 3 days. She was dismasted October 4, the day that I arrived, and I had very fine weather. This brig came across as I did in 22° to 24°, and had very light winds all the way until she took the storm."

Returning, the route is by Great Circle through the variables. The "vertex" of this circle crosses the meridian of 165° W. in about 50° N. lat.

The route from China to California is, in distance, from 800 to 1,200 miles shorter than the route through the NE. trades, *via* Sandwich Islands, &c., *from* California to China. It is well, especially in summer and fall, when the weather is mild, to bear this fact in mind.

The Great Circle from the free ports of China and Japan to the Pacific States and British Columbia may be followed by sailing vessels all the year, and with less inconvenience than attends vessels on the northern route between New York and Liverpool. The route in the Pacific is free from icebergs, and is not more foggy than in the Atlantic. As to the relative fury and frequency of the gales I cannot speak.

The following table of crossings, prepared by Lieutenant J. Young, affords the best commentary that I am prepared to give concerning this route. The average passage from Shanghai to San Francisco appears to be 42 days, and the mean "vertex," as per route of the table, p. 768, about 43° 30′, between the meridians of 160° and 150° W.

The average passage of the eight best is 47 days, and their mean "vertex" between 160° and 150° W., near the parallel of 42° 15′ N. The average of the rest from Hong Kong is 69 days. The mean "vertex" for them is near the parallel of 41° 54′; also, between the meridians of 160° and 150° W. This difference in time, however, cannot be ascribed to difference as to "vertex." Among the "slow coaches" there are two, the John Gray and the Mercury, whose passages are twice as long as the usual average. Striking them out, we have 58 days as the present average from Hong Kong to San Francisco. This may be reduced. The directions for the voyage from ports south of the Delaware, p. 18, will apply here, with this difference, that on the polar side of 40° the winds, except when they blow a gale, are probably more fresh from the west in the North Pacific than they are in the South Atlantic.

Vessels coming out of the Straits of Matsmai will find their "vertex" in about 50° on the meridian of 180°. All vessels from ports and "passages" between Matsmai and Canton will, if bound to California, find their "vertex" near the parallel of 46° at its intersection with the prime meridian, (180°.) They should not, if bound to San Francisco, re-cross this parallel before reaching 150° W. If bound to British Columbia, Washington, or Oregon, they will reach their "vertex" in west longitude, instead of on the meridian of 180°.

The *present average* passage from the ports of Asia to those of the Pacific States and British Columbia is *too long*. Study the Pilot Charts; study the routes to and fro across the North Atlantic. The remarks there made concerning winds, &c., will apply to the North Pacific, and enable clever navigators to establish rules and routes for themselves and so save time.

Table of Crossings from China to California, arranged according to the month.

Names of vessels.	Date of sailing	Whence.	From port to 130° E. longitude.	LATITUDE OF CROSSING THE MERIDIANS.											From 130° W. long. to port.	Total passage.
				130° E.	140° E.	150° E.	160° E.	170° E.	180° E.	170° W.	160° W.	150° W.	140° W.	130° W.		
			Days.	°	°	°	°	°	°	°	°	°	°	°	Days.	Days.
D. M. Hall	Jan. 2, 1856	Hong Kong	22	25	33	36	36	38	38	38	39	39	40	40	6	70
Panama	12, 1853	do	24	25	31	33	35	34	33	36	37	37	39	38	6	78
Abbott	14, 1853	do	14	22	25	30	34	38	37	37	39	39	39	39	4½	68
North Carolina	Feb. 1, 1853	do	20	27	30	35	36	38	39	39	39	34	33	34	3	67
Ann Welsh	20, 1852	do	15	26	29	32	34	37	38	41	41	40	40	38	3	49
Do	24, 1851	do	21	25	30	34	35	39	39	40	41	41	40	39	4½	60
Samuel Merritt	26, 1856	do	22	28	30	35	37	40	41	44	43	44	42	40	3	49
Pathfinder	Mar. 13, 1854	do	18	25	30	36	39	40	40	41	43	42	42	43	4	49
Olgo	22, 1853	do	31	26	31	36	39	40	40	40	40	39	39	39	3	68
Jamestown	April 10, 1833	do	13	28	31	35	38	40	41	41	41	38	38	37	4	47
Lydia	13, 1851	Shanghai	4	30	33	36	39	41	43	45	45	47	47	43	3	42
Stingray	17, 1855	Hong Kong	12	27	33	38	40	41	40	42	44	44	41	39	2	41
Palmetto	18, 1852	Shanghai	4	31	32	41	44	45	46	49	49	51	51	45	6	47
Heben	22, 1849	Hong Kong	9	25	28	33	37	39	40	40	40	40	40	40	3	51
Pathfinder	29, 1853	do	8	28	34	35	42	45	45	45	45	44	43	40	3	41
Sirocco	May 3, 1856	do	17	26	30	33	37	39	39	42	41	42	42	42	3	54
Caribbean	26, 1856	do	11	29	32	36	41	40	40	40	41	43	41	40	2½	51
Inca	28, 1855	do	21	29	30	33	35	41	41	40	42	41	37	36	5	87
Dragon	June 13, 1852	do	6	29	32	33	35	37	39	40	44	43	41	41	4	49
Live Yankee	29, 1855	do	10	27	35	41	41	39	40	42	42	42	38	37	4	57
Mercury	July 1, 1855	do	17	22	30	40	42	41	39	37	36	34	37	39	8	116
Comet	Aug. 3, 1856	do	16	29	32	39	43	44	45	44	44	42	41	40	4	62
Ann Welsh	29, 1850	do	3	26	31	37	37	38	40	41	40	39	39	38	4	57
Hurricane	Sept. 9, 1852	do	10	24	32	33	33	35	32	35	36	36	37	38	3½	41
Ann Welsh	13, 1851	do	13	28	31	34	36	36	37	39	40	40	39	38	8	58
Lydia	Oct. 2, 1851	Shanghai	3	30	33	34	35	37	37	37	36	40	39	38	2	40
Hussar	17, 1855	Hong Kong	20	26	31	33	36	36	37	36	40	39	39	39	3	62
John Gray	26, 1853	do	24	4	2	32	35	36	38	36	38	41	42	37	7	110
Dragon	Nov. 2, 1852	do	19	24	26	35	36	38	38	39	38	37	37	38	4	67
Palmetto	6, 1852	Shanghai	3	31	33	36	38	39	40	38	36	36	38	37	3	40
Cyane	Dec. 12, 1854	Hong Kong	16	26	29	34	36	35	39	40	40	41	43	40	3	67
Wanderer	16, 1855	do	29	26	29	31	33	34	37	37	39	39	40	38	3	77

ROUTES BETWEEN CALIFORNIA AND AUSTRALIA.

The Great Circle distance from South Australia to California is about 7,000 miles, and vessels in the direct trade between Australia and the Pacific coasts of North America may have the choice of routes going as well as coming; going, the distance to be sailed, on account of detour for the sake of winds, is about 7,500 miles; returning, that is, coming this way by the eastern route, the distance is eight or nine hundred miles greater. With the exception of the NE. trades on the passage from New South Wales or Victoria to California, the winds are fair, or may conveniently be made fair both ways. A good NE. course can be made through the SE. trades, and a N.NW. course, on the average, through the NE. trades. But these courses will not give easting enough for the California bound trader, and it therefore becomes a question for him to decide whether he will make up his easting in the variables south of SE. trades, or in the variables north of the NE. trades, for in both of those systems of variables westerly winds prevail.

In coming out of the Victoria ports go south of Van Dieman's Land, or through Bass' Straits, as you have the winds and find it expedient.

Being south of Van Dieman's Land makes it convenient to pass south of New Zealand if the wind be fair, as in the majority of cases it will be. Having passed south of New Zealand, steer for the parallel of 40° or 45° S., between the meridians of 150° and 140° W., thence for the equator between 120° and 130° W., crossing, by a north course, both the horse latitudes of the southern hemisphere and the equatorial doldrums; then run through the NE. trades as best you may, keeping a "rap full" and running up into the variables beyond the horse latitude calms of the northern hemisphere, if need be, to complete your easting and make your port.

If the winds be not fair for passing south of New Zealand try Cook's Straits in preference to passing to the north of New Ulster.

If you pass through Cook's Straits then stick her well to the eastward and take the eastern passage. On this passage you should run down your easting pretty well before you get far enough north to be bothered by the baffling winds of the horse latitudes south. If these come as low down as 38° or 40° S., stand north the moment you feel them till you get the SE. trades; then cross these and the NE. trades, both as obliquely to the eastward as they will permit, with foretopmast studding-sail set.

On this passage, you will have finally to run down your easting when you get into the variables beyond the NE. trades, and of course you will aim to reach the parallel of 38° or 40° N., or even a higher one north, to do this. How far you will go north depends somewhat upon the distance you may be west of California when you lose the NE. trades. If you be only a degree or two from the land, you will steer straight for your port without caring to get to the northward of it; but if you be ten or twenty degrees to the west of it, or even further, then of course the distance to be run makes it an object to turn out of your way and go north in search of good winds.

Therefore, the choice of routes on this voyage resolves itself into the answer to this question: Is it best to make easting between the parallels of 40° and 50° S., or about the parallel of 40° N.? If the former, then the eastern route is the route; if the latter, then the preference should be given to the western route.

I give preference to the eastern route, especially and decidedly when the winds at starting are favorable for the east course. I have no doubt but that, as a general rule, the winds by the eastern route, both variables and SE. trades, are much more steady and reliable than they are by the western route. Moreover, the distance from the Victoria ports, *via* south side of Van Dieman's Land and New Zealand, is not more than three or four hundred miles greater than it is by the most direct route that is practicable, and the chances of good winds by the eastern route will, in my opinion, amply make up for this increased distance.

It is proper for me to state here that I do not give these Australian sailing directions as directions that are founded on or derived from investigations into the routes actually pursued by vessels from Australia to California; but I give them as deductions drawn from the knowledge which I have acquired touching the general system of the winds and currents out upon the high seas.

The most difficult and uncertain parts of this passage will be in the time required to cross the three belts of calms, and to clear the winter fogs of California. But for these the eastern passage, from Victoria to California, would be one of the most certain passages in the world.

The distance from Victoria to California cannot be accomplished under canvas, by the

eastern route, much short of 8,700 miles. But driving captains, with clipper ships under them, may expect to average, one trip with another, along this route, not far from 200 miles per day. The clipper rate from Victoria to Cape Horn will probably be upwards of 200 miles a day; for I feel assured there is no part of the ocean in which the winds generally will admit of more heavy dragging and constant driving than they will in the extra-tropical regions generally of the South Pacific, say on the polar side of 43° S.

Returning from California to the gold fields of Australia, the route out of San Francisco should be down as soon as possible into the NE. trades, as though you were bound to China, India, or the Sandwich Islands, crossing the equator anywhere between the meridians of 140° and 150° W., according as you prefer to run down your westing principally in the NE. or SE. trades. I give the preference to the latter generally, because they are more steady, reliable, and certain than are their congeners of the northern hemisphere—at least, such is the rule. The distance by this route to Bass's Straits will be about 7,500 miles; and an increase upon this of the average distance to be sailed on the passage going, together with the distance returning, will not amount, as before stated, to more than six or eight hundred miles.

Aim to cross 30° S., on the passage from California to Australia, in the neighborhood of 170° E.

Thence the course is between Australia and New Zealand, direct for your port.

In these passages, as on the California routes generally, navigators have to cross the calms of Cancer and of Capricorn, as well as those of the equator; which last are found between the NE. and SE. trade-winds, but upon different parallels, according to the season of the year.

It may, therefore, be remarked here, once for all—and which remark navigators bound either from the United States or from Panama to California are requested to bear in mind—that the barometer will often enable the navigator to tell when he has crossed these belts of calms, and entered the trades.

In the belt of equatorial calms there is an ascending column of air. All the atmosphere which the NE. and SE. trades pour into this belt rises up and flows off by counter currents in the upper regions. Of course, then, the mean height of the barometer in the equatorial calms is less than its mean height in the trades on either side. This difference does not, probably, exceed one-tenth of an inch (0.1) inch. But close attention to the barometer in and about these calms will often enable the navigator to decide whether the winds he may have be really trade-winds or not; for after having been fighting these calms, if you get the wind from NE. or SE., as the case may be, and the barometer *rises*, then you may be sure that you have the trades.

I have frequently, in the course of this work, had occasion to allude to the equatorial calms, and the rains which accompany them. At this day it is not sufficient to tell the navigator that things are so. He depends more upon the lights of reason and the convictions of his understanding, less upon faith and the *ipse dixit* of philosophers than he used to do; and, therefore, when facts and phenomena are now stated to him, his first question generally is, for the explanation of them. I admire this spirit, and have frequently, in the pages of this work, turned aside to pay homage to it.—(See the illustration afforded by Dewey's *Meterological Journal at Para*, p. 467, 5th edition.)

Where the two trade-winds meet, they and the vapors which they bring ascend, and it is then "the rainy season."

The observations of Dewey on the land, as well as many others, show clearly enough that, as the belt of equatorial calms passes over you, the mean height of the barometer is less than it is in the extra-tropical latitudes generally, or than it is when the trade-winds prevail at the place where you may be.

There is no route on which close attention to the barometer, while crossing these calm belts, will be of more service to the navigator than on the California route from Panama.—(See that chapter, p. 773.)

In the calms of Cancer and of Capricorn there is a descending instead of an ascending current of air; therefore the barometer ranges higher, on the average, within those two calm belts than it does anywhere else. The difference, however, does not exceed the tenth of an inch (0.1.) Close attention to this instrument will often enable the navigator to decide, when he has crossed this belt and got into the region of trades, even before he gets the wind from the trade quarter. He determines this by the fall of the barometer, when he enters the trades from the calms of the "horse latitudes," but by its rise when he enters the trades from the equatorial calm belt.

The passage between Australia and California should be made ordinarily in from 45 to 50 days; the passage to the east being rather the shorter; of course, clipper ships will occasionally make the passage in 37 days. See the remarks about the Farallones, in the Sailing Directions for California from the United States, page 756.

The log of the clipper schooner Heloise illustrates the western route from Australia to California, very well. It is quoted on the next page.

Abstract of the schooner Heloise (ATKINS DYER.) *From New Castle, N. S. Wales, to San Francisco*, 1855.

Date.	Latitude at noon.	Longitude at noon.	Thermometer attached.	Barometer.	Hours of— Fog A. Rain B. Snow C. Hail D.	WINDS. First part.	Middle part.	Latter part.
	° ′	° ′	°					
Dec. 25, 1854	33 08 S.	152 20 E.	67	29.90	.....	NE. by N.	NE. by N.	N.NE.
26, 1854	34 09	155 16	68	30.00	.....	N.NE.	N. by E.	N.NE.
27, 1854	34 15	159 00	68	29.98	.....	N.NE.	N.NE	N.NE.
28, 1854	34 42	163 02	68	30.00	.....	N. by E.	N. by E.	N. by E.
29, 1854	34 36	166 18	68	30.05	.....	N. by E.	N.NE.	N.NE.
30, 1854	35 36	168 55	68	30.10	.....	N.NE.	N. by E.	N.
31, 1854	35 29	170 30	68	30.20	B.	W.SW.	SW.	SE.
Jan. 1, 1855	34 40	172 01	67	30.15	2 B.	SE.	E.SE.	E.SE.
2, 1855	33 53	173 06	68	30.00	.....	E.SE.	SE.	S.
3, 1855	31 48	175 20	68	29.78	.....	SE.	SE.	SE.
4, 1855	30 11	177 34	70	29.85	.....	E	E.	E.
5, 1855	28 00	179 51	71	29.80	.....	E. by N.	E. by N.	E.NE.
6, 1855	25 44	179 29 W.	73	29.80	.....	E.NE.	E. by S.	E. by S.
7, 1855	24 35	178 25	75	29.70	2 B.	Calm.	Calm.	Calm.
8, 1855	24 20	178 13	80	29.60	B	Calm.	E. by N.	E. by N.
9, 1855	24 18	177 57	80	29.50	3 B.	E.	E. by S.	E. by S.
10, 1855	25 01	178 00	78	29.20	3 B.	E. by S.	E. by S.	E. by S.
11, 1855	25 17	178 11	77	29.20	B	E.SE.	SE.	SE.
12, 1855	24 40	177 03	78	29.50	.....	E.SE.	SE.	E. by S.
13, 1855	23 02	175 51	78	29.60	.....	E. by S.	E. by S.	E.
14, 1855	19 58	172 40	80	29.78	.....	E.S.E	E.SE.	E.SE.
15, 1855	17 33	171 26	81	29.62	.....	E.S.E.	E.SE.	E SE.
16, 1855	14 33	169 00	82	29.58	2 B.	Calm.	N. by W.	N.NW.
17, 1855	13 52	167 01	83	29.52	2 B.	N.NW.	N. by W.	N.
18, 1855	12 40	165 29	83	29.50	B	N	N.NW.	NE. by N.
19, 1855	12 27	163 21	82	29.63	B	NE. by N.	NE. by N.	NE. by N.
20, 1855	9 53	165 01	83	29.70	2 B.	N	N	N. by E.
21, 1855	8 30	166 19	83	29.70	.....	NE.	NE.	NE.
22, 1855	5 30	167 41	83	29.67	.....	NE. by E.	NE. by E.	NE. by E.
23, 1855	3 11	168 40	83	29.65	.....	E.NE.	E.NE.	E.NE.
24, 1855	0 12 N.	169 23	83	29.65	.....	E.NE.	E.NE.	E.NE.
25, 1855	3 34	169 40	83	29.72	.....	E.NE.	E.NE.	E.NE.
26, 1855	6 44	169 19	83	29.72	6 B.	E	E.NE.	E.NE.
27, 1855	9 02	169 47	83	29.76	.....	NE. by E.	NE.	NE.
28, 1855	12 11	170 30	80	29.78	6 B.	NE.	NE.	NE.
29, 1855	14 25	171 58	80	29.76	.....	NE.	NE.	NE.
30, 1855	16 52	173 00	80	29.75	3 B.	NE.	NE.	NE.
31, 1855	18 39	172 34	79	29.70	.....	E.NE.	E	SE.
Feb. 1, 1855	20 48	171 40	78	29.64	B	SW.	W.	W.NW.
2, 1855	22 40	168 34	78	29.60	2 B.	W.NW.	NW.	NW.
3, 1855	24 03	165 15	76	29.58	.....	NW.	N.NW.	N.NW.
4, 1855	24 51	162 03	75	29.52	B	W.NW.	N.NW.	Calm.
5, 1855	25 28	160 58	73	29.81	.....	SW.	SW.	SW.
6, 1855	26 27	158 37	70	29.96	.....	W.SW.	W.NW.	W.NW.
7, 1855	28 00	155 18	68	29.86	B	W.NW.	W.	W.
8, 1855	29 28	151 15	65	29.80	4 B.	W.	Calm.	W.SW.
9, 1855	30 21	148 05	65	29.70	6 B.	W.SW.	NW.	NW.
10, 1855	31 10	145 56	61	29.70	2 B.	NW.	W.	SW.
11, 1855	31 57	143 12	60	29.78	B A.	S.SW.	S.	S.SE.
12, 1855	33 35	139 00	62	29.98	2 A	S.SE.	S.SE.	S.
13, 1855	35 07	134 48	63	29.98	3 A	S.	S.SW.	S.SW.
14, 1855	36 14	131 28	63	29.98	2 A.	SW	SW.	SW.
15, 1855	36 53	128 40	63	29.98	A	W.	NW.	N.
16, 1855	37 12	123 05	62	29.98	.....	NW.	.....	

This is a route that cannot be defined until we shall have accumulated large numbers of logs, then we shall be able to point out the calm streaks and the streaks of good wind with much more precision than it can now be done. The length of this passage depends almost exclusively upon the navigator's knowledge as to where these streaks are to be found at the various seasons of the year. The tables on the homeward route from India will be of service to him here. They may be found in the latter part of this volume.

PANAMA, CALIFORNIA AND THE NORTHWEST.

"The passage under canvas from Panama to California, as at present made, is one of the most tedious, uncertain, and vexatious that is known to navigators.

"The voyage from Valparaiso to California is a shorter one, in point of time, than is that from Panama, though the latter, as regards distance, is not half so long as the former.

"A brother officer of the navy, now no more, writing from San Francisco several years ago, said:

"'I learned on my arrival at Panama that great numbers of sailing vessels were in the habit of resorting thither for the purpose of taking passengers and freight to San Francisco; but to my surprise I heard that they seldom made the passage under 90 days, and often were 120 days on the way. There were then many vessels there, all ready to sail, and among them the clipper ship Hornet, none of which have yet arrived, though 53 days have intervened.

"'One of the clipper ships some time since made the passage in 45 days, by standing to the southward as if bound to Callao, and making all her westing in the SE. trades, south of the line. This is such a roundabout way of getting to San Francisco from Panama that there must be something wrong in the courses steered by the vessels which take the northern passage. It is well known that there is a strong westerly current running past the Galapagos Islands, which, by my own experience on one occasion, I found to be sixty miles in 24 hours. This current extends to the eastward almost to Point Malo, and westerly entirely across the Pacific, though not so strong as in the vicinity of the Galapagos. It strikes me that navigators, with proper instructions as to this current and the prevailing winds, ought always to make this passage in certainly not more than forty days.

"'Knowing that you had few,* if any, abstracts of this passage, I took the liberty of telling Captain Goodrich that these logs would be valuable to you, and suggested that he get as many of them together as possible, and send them to you.'

"That this voyage can, with a better knowledge of the winds and currents than navigators now possess, be shortened very considerably, I have no doubt.

"But, unfortunately, only a few of the vessels in the Panama trade send me abstracts of their logs.

"As soon as I can collect materials enough to justify a discussion of this passage, I will undertake it. In the meantime, drawing upon such slender sources of information as I chance to have, I venture the following suggestions as to the route from Panama to the northward and westward. I say *suggestions*, for my information is not sufficient to justify the application of the more positive term of Sailing Directions to the remarks I have to make.

"I have more than once, while preparing this work, called the attention of navigators to the system of monsoons off the Pacific coast of Central America. It is this system of monsoons and the calms, or equatorial doldrums, as they are called, which are always to be found

* I still have *very* few (1859.)

between the NE. and the SE. trade-winds, or between the monsoons and each of these two systems of winds, that contribute so much to the prolongation of the passage from Panama.

"Of course, where two winds meet from different quarters, every navigator knows he must have a belt of calms or light baffling airs; for a wind from the NE. and a wind from the SE. cannot blow each at the same time and place. Therefore, when two such winds meet, their line of meeting is marked by calms and baffling airs.

"Now, my investigations have been carried far enough to show that, at certain seasons of the year, a vessel bound from Panama to California must cross at least three, at some seasons four, such meetings of winds, or bands of calms, before she can enter the region of NE. trades. Hence the tedious passage.

"But, although the researches connected with these Charts have revealed this fact, the materials upon which they are founded are not sufficient to show with certainty the best way of avoiding these calm and baffling regions.

"In the absence of more especial information, and in view of the important interests to be subserved by a shortening of the passage from Panama to California and Oregon, I venture the following suggestions as to that passage. These suggestions are derived from the light which the experience of those Panama traders, whose logs I have, cast upon the subject. But this light is feeble, because the materials whence it is derived are meagre. Still, they amount to everal thousand observations carefully made; and in the aggregate they are worth more than the experience of any single navigator in that trade can possibly be. Nevertheless, I do not ask for them that degree of confidence to which the Sailing Directions given in this work are generally entitled. These suggestions, added to individual experience, will probably be found by navigators to be of some service.

"In the discussion of the winds as it is conducted for the Pilot Charts, Panama and its approaches are included between the parallels of 5° and 10° N. Between these parallels, and east of 85° west, it appears, from the observations which have been discussed, that the prevailing winds in November, December, January, May, June, and July are between NW. and SW. inclusive; that in December, January, February, and March they prevail about one-fifth of the time from the northward and eastward; that calms are least prevalent in the month of March, the prevailing wind for March being NW.; and for June SW., though NW. winds are also frequent in June; and that for the other months the observations are too few to give any indication as to the prevailing winds.

"Between the same two parallels, but to the west of 85°, and as far as 95°, the prevailing winds are in December, January, and February, NE.; in March and April they are variable, prevailing alternately from NE. and NW. In May, June, July, August, and September, they prevail from S. to SW., inclusive; in October, from SE. to SW., inclusive. In November they are inclined to variable, though from SE. by the way of S. to W.SW. is the favorite quarter.

"It is, moreover, indicated, that to the east of 80° the winds in December, January, and February, prevailing as they do from the northward and westward, are generally favorable for getting to the southward and westward, by steering S.SW. or SW.; that in May calms are frequent, and the prevailing points of the wind are decidedly W.SW., SW., and SE.; and in June, W., W.SW., SW., and NW.; but as the favorite point is west, and calms are not so frequent as in May, June appears to be a more propitious month than May for crossing the parallel of 5° N. by a southwardly course from Panama. Between 5° and 10° N., for the other

months, I have not observations enough to the east of 80° to justify me in any remarks as to the winds.

"Neither have I observations enough for January, February, or March to the east of 80°, and between 0° and 5° N., to authorize deductions; but for all the other months of the year they are abundant. They show that, to the east of 80°, between the equator and 5° N., the winds are steady between SE. by the south to west, and that calms are most frequent in this part of the ocean during the months of December and April. The points from which the winds most prevail are, in December, SW.; in April, S.SW. and SW.; in May, June, and July, SW.; in August, S.SW. and SW.; in September, SW.; in October and November, from SE. to W.SW.

"Between 80° and 85° west, from the equator to 5° N., the prevailing direction of the wind all the year is between SE. and west by the way of south; though from March to August, inclusive, it is most inclined to be variable. In December, March, and April, calms are most frequent.

"Between 85° and 90°, the prevailing quarter for the wind all the year from the equator to 5° N., is between SE. and SW. It is most variable from January to June, inclusive. In March and June the NE. trades are frequently found here; calms are most prevalent in March.

"Continuing west between the same parallels, the region from 90° to 95° west seems to be, of all, the most liable to calms the year round. From October to January, inclusive, they are not so frequent as in the other months, being less frequent in October. From SE. to S.SW. is the ruling quadrant for the winds here all the year; though from January to June, inclusive, they go from NE., around by the way of east, to west.

"To the west of 95° they are steady between SE. and S., except from January to May, inclusive. In January, February, and March, they often get as far north as NE., and in April and May, as far as E.NE.

"Now, then, after carefully studying this description of the wind, derived, it is true, from no great abundance of materials, I have to suggest the following routes for the consideration of navigators bound northwest from Panama:

"From the Bay of Panama make the best of your way south until you get between 5° N. and the equator.

"Being between these two parallels, it will be for the navigator to decide whether he will shape his course west, and keep between them until he crosses the meridian of 95° west, or whether he will cross the equator, and make his westing in south latitude, with the southeast trades on his quarter. The winds that he finds between 5° and the line should decide this question for him. If he can get west here with a good breeze he should crack on, and when his good wind leaves him, steer S. again.

"If the passage from Panama be attempted in January, February, March, April, May, or June, time will probably be saved by going south of the equator; for, at this half of the year, the northeast trades and the equatorial doldrums are often found between the equator and 5° N. Between the meridians of 80° and 85° west, in this part of the ocean, these winds and calms are found even in the months of July and August. Therefore, in coming out of Panama, and after crossing 5° N., in any season, make a SW. course, if the winds will allow. If the wind be SW., brace up on the starboard tack; but if it be S.SW., stand west, if it be a good working breeze. But if it be light and baffling, with rain, know that you are in the doldrums, and the quickest way to clear them is by making all you can on a due south course.

"Suppose that, after crossing 5° N., you have got to the west of 85° without having crossed the equator. Now, if the time of the year be in that half which embraces July and December, the prevailing winds will be between SE. and S., inclusive, and the course is west as long as there is a breeze; as soon as the breeze dies away, and you begin to fight the baffling airs, conclude that you are in the vicinity of the doldrums that are often found here either between the NE. and SE. trades, or between one of these trades and the system of southwardly monsoons that blow north of the line, and between the coast and the meridian of 95° west.

"These belts of doldrums lie east and west, and the shortest way to cross them is by a due north and south line; therefore let it be a rule, whenever the navigator finds himself in one of these calm belts, to make all the latitude possible, for by that means he will soonest clear it.

"Having crossed the meridian of 95°, stand away to the northward and westward with a free wind.

"West of longitude 100°, and between the parallels of 5° and 10° N., the winds, in the months of November and December, are variable between NE. and south, by way of east. In January, February, and March they are quite steady as NE. trades. In April they are variable. The doldrums are generally found between those parallels in this month. During the rest of the year the winds are all the time between SE. and SW.

"It will be well to cross the parallel of 10° N. at least as far west as the meridians of 105° or 110° W. Here, between the parallels 5° and 10° N., the winds in November are steady from S.SE. and S.; December, April, and May are the months for the doldrums in this part of the ocean.

"Having crossed the parallel of 10° N., between 105° and 110°, the navigator is then in the fair way to California.—(See Sailing Directions for California.)

"In making the west coasts of Mexico and the United States, the kelp is said to form an excellent landmark. This weed is very long and grows on the rocks at the bottom. When, therefore, in approaching the coast, you come across lines or swarths of tangled kelp, its being tangled or matted is a sign that it is adrift. It is afloat in deep water, and you may sail boldly through it without fear. But when you come across it tailing out straight, it is then fast to the rocks at the bottom, and it is dangerous to get among it.

"Vessels out of San Francisco intending to touch at Panama or any of the ports south should stand out well from the Mexican coast. Information as to the best route for these passages is wanting. But I should, with such information only as I at present have with regard to this navigation, feel disposed, were I bound from San Francisco to Panama, to steer straight for the line somewhere about 105° west, and stand on south until I could, with the SE. trades, run in on the starboard tack for the land."—(7th Ed., pp. 689–'93.)

I have not, since 1855, been able to digest the materials on hand touching this route, though they are not ample enough to be inviting. The most difficult part of all routes from Panama is the getting an offing. The following interesting papers contain all that I have to offer in addition to the foregoing:

From Captain Hoff, of the United States ship "John Adams."

VALPARAISO, *December* 26, 1857.

"During a protracted stay in the Bay of Panama, I made repeated inquiries as to the more successful routes generally taken by sailing vessels to and from that bay to California, and

also to the coast of Peru and Chili. Under an impression that it might prove of some slight interest to you, I forward two memorandums on this head, although being well satisfied that steamers must take the place, and are the only proper vessels for navigating in and about these seas. The one marked A I obtained from Captain Bloomfield, an experienced gentleman who has commanded sailing as well as steam packets for the last twenty-five years, to and from the coast of Chili, Peru, and Panama, and still employed in that service; and the one marked B I took down from Mr. Hull, sailing master of her Majesty's ship 'Havanah,' which I trust may also prove of sufficient interest for a perusal.

"In making the passage from Panama to Valparaiso in the 'John Adams,' (as you will perceive by the abstract log,) I left on the 3d of November last; worked down and sighted Point Mala. From here crossed the line on the 12th day, which is considered a very short passage at this season of the year.

"I followed Captain Bloomfield's sailing directions as nearly as the wind and weather would permit; and after crossing the line stood in for the land, finding strong currents setting to the NE., sighted the Island of Plata, tacked and took the outer passage, making the passage in 44 days, being but three days beyond that of the 'Monarch,' 74, which had been towed over the line by a screw steamer, after leaving Panama and taking the same route.

"I would state that the rainy season was still in full operation, and it is during such seasons that navigators for this route look on the passage to the line as one of the most tedious and perplexing experienced in the Pacific for sailing vessels; and thirty days is not considered out of the way, owing to calms, squalls, and torrents of rain which fall during this month and the two or three previous ones."

Memorandum marked A.

"Your own experience will have shown you that from December to April are the summer months or dry season; the northerly wind prevailing more or less during the major part of the time, it being the strongest about January and February, gradually taking off until about the middle of April, when the winter months are supposed to commence, from May to August, when rains, thunder, and lightning, with nearly daily thunder squalls intervene, causing the winds to be as changeable during the twenty-four hours as often as there are hours in the day.

"From August to December the weather becomes somewhat settled, and commencing lightly with a southerly wind, in October and November, I have seen it blow a moderate gale home to Panama anchorage, inasmuch as to cause the merchant vessels to have two anchors down. The sea also becomes somewhat rough, requiring more than ordinary care in landing in boats. It is accompanied sometimes with squalls and intermissions, but, generally speaking, with cloudy but dry weather. I have at times experienced some very clear nights and days during this season.

"In leaving Panama, it is easy to be done in either the summer or when the northerly winds prevail, or from August to December, when you generally have a southerly wind, which will enable either to sail or work out of the bay.

"The starboard, or western in-shore should be kept in board by a sailing vessel on leaving, and the eastern side inside the Pearl Islands on entering, except you are entering about the months of September, October, and November, when in all probability you would bring a strong southerly wind; but during the prevalence of the northerly and light winds, the eastern passage is beyond doubt to be preferred.

"If bound south, in passing Point Mala within three or four miles, the greatest object is to get to the westward in 81° or 81° 30′, in order to avoid the strong current, rains, and light winds which prevail nearly all the seasons of the year to the eastward of it, about the environs of 'Buena Ventura.' In passing Point Mala, either with a southerly or northerly wind, make your westing as soon as you can; and by getting into the longitude above named, it will enable you to reach the southerly winds sooner, either to enable you to make your westing up, if bound to the northward, to long. 110° to 114° W., or to work to the southward, taking advantage of every change, until the latitude of Plata is reached, when the shore can be approached to take advantage of the land winds, if taking the in-shore passage, or it will enable you to stand to the SW. if taking the off-shore passage.

"In working to the southward, after leaving Point Mala with a southerly wind, do not be tempted, when on the starboard tack, standing to the SE. and S.SE. too long, as the current about 140 miles to the south of Point Mala runs constantly to the eastward. On some occasions I have known it set—in fact, I have been set—35 miles in 24 hours, ascertained by good chronometer, and confirmed by making the land. Therefore it is always advisable to hold in your westing, even should you make northing in doing so, and comparatively little difficulty will be attended in reaching the southerly winds, which ranges to different latitudes during the 12 months; as a rule—

"From April, to 1° north; from May, to 2° north; from June, to 3° north; from July, to 5° north; from August, to 6° north; from September, to 7° 30′ north; from October, to Panama anchorage; from November, to 7° north; from December, to 5° north; from January, to 3° north; from February, to 2° north; from March, to 1° north.

"Therefore, after reaching the outer verge of the southerly wind, the next object, more particularly if bound to the westward, to be certain that you entered it far enough, so as to reap the whole benefit of its strength, which you will find to be equally as different in its position as the southerly wind is reaching its northern limit; but, generally speaking, when the northerly winds do not prevail from off Point Mala to its (southerly wind) limits, it prevails from SW. to NW.

"*Tides.*—To the north of Otoque the waters appear to be influenced by the ebbing and flooding; they certainly are to the south of them. There is a current (more perceptible from December to April) running to the southward to Point Mala, then trending away to the westward, which makes it advisable that Point Mala should be rounded or kept well on board with a southerly wind, so as to enable you to make your western up before reaching the influence of the easterly current to be met with about 40 miles to the south of Point Mala.

"I experienced so strong a current on one occasion off Point Mala that, after beating for several days off this Point with a northerly single-reefed topsail breeze, I was obliged to stand over inside of the Pearl Islands. I entered at 2 a. m. on Sunday morning, and at 4 p. m. on Monday was at anchor in Panama Roads, having passed to the eastward and northward of all the Pearl Islands with light and variable winds."

Memorandum marked B.

"Lieutenant Maury truly says that 'the passage, under canvas, from Panama to California, as at present made, is one of the most tedious, uncertain, and vexatious that is known to navigators.'

"The best way to avoid these difficulties seems to be by making southing on leaving

Panama; do not care about making westing, but push south; at this time of the year (July and August) you will probably meet the SE. trade well over the line in 4° or 5° N.; then run to the westward till you reach the meridian of 110° W.; you may then cross over to the NE. trade; keep well free. Ships generally make the best passages that have gone to the westward of 114°. On running in for the land make Punta de los Reyes.

"These remarks are written partly from Lieutenant Maury and partly from my own experience in these seas. In H. M. ship 'Herald' I made three passages, two from Panama and one from Port Burica, which is about 200 miles to the west; the first took us 32, the second 42, and the third 28 days; to get clear of the variables in these passages we pushed to the westward, keeping in about lat. 10° N. H. M. S. 'Brisk' was 84 days from this port to San Francisco, and in 1849 and 1850 ships were commonly 80 days.

"On the other hand, H. M. brig 'Swift,' by going to the southward, made the passage to Honolulu in 47 days, and one ship only made 45 days to California by adopting this plan.

"Again, the weather in the doldrums is most harassing—heavy rain, with squalls, thunder, and lightning; whereas by going south you have the fine SE. trades."

Lieutenant McCrea: "The route to Panama from the south is all plain sailing along the coast till you reach the Bay of Panama. I find a difference of opinion on the mode of reaching the anchorage, whether to go to the westward or eastward of the Pearl Islands; we took the eastern route, where we certainly had the known advantage of the westerly or rather northerly current, and were four days reaching the anchorage; others have gone to the westward, and have been one day and three weeks reaching the harbor. I would take the eastern passage as a rule, but would trust to luck if I entered the bay with a strong leading wind.

"Some sailing directions are necessary for the passage from Panama to the southward. My experience I offer you, together with that of Captain Bloomfield, an experienced seaman, and having made several passages during his many years of service on the coast, is of some value. We left Panama the 3d of November, 1857, and ran out of the bay and was clear on the 5th instant, by keeping the western shore close aboard, the current sweeping us out, assisted slightly only by the variable winds. I refer you to the abstract for the winds and weather. We took the in-shore passage of Captain Bloomfield, and reached Plata Island in 15 days from Panama, and did not go beyond longitude 83° W., and crossed the equator in longitude 82° 30′ W. After taking a fresh departure from Plata Island, we struck off from the coast with winds west and east of south, till we reached the latitude of 1° 08′ S., and longitude 84° 37′ W., when we took the steady SE. trades. We did not go beyond longitude 98° W., nor south of latitude 37° S., for the westerly trades. After reaching the above longitude I would not advise navigators to alter their course and steer for Valparaiso with the first westerly wind they get after leaving the SE. trades, but keep their westing and steer west of south for at least 24 hours, when, if the wind holds, and has any increase whatever, change the course gradually and run on the parallel and fetch well south of their port. I found the current on the coast of Chili sometimes as much as two knots an hour."—*(Lieutenant Edward Price McCrea, United States Navy.)*

The winds along the west coast of Central America are very baffling. Owing to this the passages to and fro between Panama and all the Central American and Mexican ports are of very uncertain duration for sailing vessels. The following excellent abstract, for which I am indebted to Captain Curry, R. N., is in the distance column eloquent upon this subject:

Her Britannic Majesty's ship Alarm, Captain Douglas Curry, from San Blas to Panama, June and July, 1857.

Date.	Dist. made good.	Latitude.	Longitude.	Currents.	WINDS. 9 A. M. Direction.	9 A. M. Force	3 P. M. Direction.	3 P. M. Force.	MIDNIGHT. Direction.	MIDNIGHT. Force.	Remarks.
	Miles.	° ′	° ′								
Friday, June 12*	.....	.....	.....	.....	N.NE	1	NW	3	W.NW	2	
Saturday, June 13	46	20 57 N.	105 50 W.	S. 18° E., 9½′ in 18 hours.	NE	2	NW	2	W.NW	2	
Sunday, June 14	48	20 28	106 31	.....	Variable	3	NW. by N.	2	NW	2	
Monday, June 15	88	19 28	107 40	S 56° W., 23′ in 48 hours.	N.NE	4	N.NW	3	N.NW.	4	
Tuesday, June 16	108	17 46	107 2	West, 6′	N.NE	5	E.NE	2	Calm	0	
Wednesday, June 17	29	17 18	107 7	.....	SE	1	South	3	S.SW	1	Passed near supposed position of Passion Rock without seeing anything.
Thursday June 18	47	16 54	106 26	.....	Variable	1	West	2	NW	2	
Friday, June 19	61	16 11	105 41	.....	N.NW	3	NE	1	Calm	0	
Saturday, June 20	45	15 49	105 2	.....	E NE	2 to 1	E.NE	4	SE	5	
Sunday, June 21	50	15 00	104 52	.....	Calm	0	Variable	0.1	Variable	1	
Monday, June 22	29	14 59	104 23	.....	Variable	2	NE	3	NE	4	
Tuesday, June 23	99	13 59	103 3	West 20′	NE	4	NE	4	East	6	
Wednesday, June 24	50	13 48	102 12	.....	E.SE	4 to 8	E.SE	7	E. by S	7	
Thursday, June 25	35	13 14	102 20	.....	E.SE	4.5	SE	3	South	1	
Friday, June 26	36	13 23	101 44	.....	E. by N	3	E.NE	2	East	3	
Saturday, June 27	44	12 39	101 50	.....	East	1	NE. by N	1	NE	3	
Sunday, June 28	86	11 44	100 43	.....	NE. by E.	3	NE	3.4	E.NE	1	
Monday, June 29	49	11 11	100 6	.....	Variable	2	East	1	Variable	3.4	
Tuesday, June 30	39	10 34	99 55	S. 41° W., 20′ in 24 hours.	Variable	2.5	Calm	0	SW	3	
Wednesday, July 1	63	10 22	98 52	.....	S.SW	5.7	S.SW	5	W.SW	5	
Thursday, July 2	174	10 1	95 58	.....	S.W	3.4	NW	5	West	4	
Friday, July 3	113	9 40	94 5	S. 59° W., 12′	West	4	W. by S.	3	West	4	
Saturday, July 4	125	9 25	91 59	East 10′	West	3	West	1	SW	1	
Sunday, July 5	45	9 44	91 18	East 12′	East	2	Variable	3	South	5	
Monday, July 6	97	9 36	89 48	East 16′	S. by E	1	Calm	0	Variable	1	
Tuesday, July 7	75	9 27	88 25	N. 43° E., 22′	NW	4	NE	4	Calm	0	
Wednesday, July 8	143	8 27	86 14	N. 31° E., 16′	SW	4	SW	5.8	South	4.5	
Thursday, July 9	101	8 0	84 35	N. 31° E., 16′	W. by S	3	West	4	S.W.	5	
Friday, July 10	115	7 14	82 50	.....	SW	4.6	W. ½ N.	3	S.SW	5	4 P. M. Montuosa NE. ½ N.
Saturday, July 11	105	6 28	81 14	S. 28° W., 13′	West	1	W.SW.	2	North	2	
Sunday, July 12	20	6 27	80 54	.....	East	1	Calm	0	W.NW	2	Daylight, land from N.NE. to N. by W.
Monday, July 13	55	7 1	80 10	West, 17′	W NW	3	NW	2	W.NW	2	Land in sight to the northward.
Tuesday, July 14	33	7 18	79 42	S. 12° W., 15′	W.NW	1	South	3	Calm	0	Land to the NW.
Wednesday, July 15	66	.....	79 38	West, 15′	Variable	1.2	SW	2	Variable	2.3	Running up the bay of Panama.
Thursday, July 16†	.....	.....	.....	.....	Variable	2	North	3	North	3	

* At 5h. 30m. P. M. sailed from San Blas for Panama.

† At 10h. 20m. A. M. anchored near Tabouguilla; at 2 P. M. shifted to Panama.

Her Britannic Majesty's ship Alarm, Captain Douglas Curry, from San Blas to Panama, June and July, 1858.

Date.	Distance made good.	Latitude.	Longitude.	Currents.	Barometer and Thermometer. 9 A. M. Bar.	9 A. M. Th.	3 P. M. Bar.	3 P. M. Th.	Midnight. Bar.	Midnight. Th.	Winds. 9 A. M. Direction.	9 A. M. Force.	3 P. M. Direction.	3 P. M. Force.	Midnight. Direction.	Midnight. Force.	Remarks.
	Miles	° ′	° ′			°		°		°							
Wednesday, June 9*	....	.....	.....	.....	29.92	79	29.90	82	29.87	82	SW.	0 to 1	W.NW..	2	NW.....	2 to 3	Aneroid bar, at 9 a. m ..... 30.100 Adie, marine ditto ..... 29.920 Difference ..... .180
Thursday, June 10	80	20 35 N.	106 20¼ W	.....	29.90	81	29.86	81	29.84	82	NW.....	3	NW.....	3	SE.....	3.4	
Friday, June 11	84	19 15	106 45	.....	29.85	82	29.85	82	29.85	81	E.SE.....	5.6	E.SE	5.6	SE.....	5	Kept in captain's cabin, exposed to a free current of air from stern ports; not compared with any standard.
Saturday, June 12	77	18 10	107 28	.....	29.91	83	29.90	83	29.91	83	Calm.....	0	Calm....	0	Calm ...	0	11th, 12th, and 13th a heavy southerly swell.
Sunday, June 13	27	17 49	107 11¼	.....	29.98	81	30.02	81	30.02	80	NW.....	2.3	NW.....	2.3	NW.....	3	
Monday, June 14	140	16 38	104 51¼	South, 17′ in 24 hours	29.92	81	29.92	82	29.92	82	NW.....	2.3	NW.....	3	W.NW..	3	Lightning over the land every night.
Tuesday, June 15	110	15 31	103 15	.....do.....	29.95	82	29.91	82	29.92	82	N.NW	3.4	N.NW...	3.4	N.NW...	3	
Wednesday, June 16	118	14 24	101 31	S. 28° E., 1′ 3 in 24 hours	29.93	82	29.87	83	29.91	83	N.NW.....	3	N.NW...	3	W.SW...	4	3 p. m., aneroid bar ..... 30.100 Do...marine common, by Adie... 29.930 .170
Thursday, June 17	62	13 50¼	100 37¼	.....	29.93	82	29.91	84	29.91	84	N.NE.....	1.2	E.NE....	1.2	Calm....	0	
Friday, June 18	58	13 22	99 45	.....	29.93	83	29.90	84	29.90	82	N.NW ...	3	N.....	4	Calm....	0	
Saturday, June 19	110	12 12	98 15	West, 26′ in 24 hours†	29.76	80	29.92	80	29.88	80	S.SW.....	6.7	S.SW....	5.7	S. by W.	3	Heavy rain; continues from 7 a. m. to 7 p. m.
Sunday, June 20	143	11 43	95 53	.....	29.91	80	29.91	81	29.90	81	S.....	7	S.SW....	4.6	SW.....	3.4	Do.....do.....5 p. m.
Monday, June 21	115	10 47	94 8	.....	29.90	81	29.90	79	29.89	80	N. to SE. by W	3.5	S.SW....	2.3	N. by E..	3	Do. do. do.
Tuesday, June 22	56	10 12	93 25	.....	29.90	81	29.87	82	29.85	80	Calm.....	0	Calm....	0	Calm....	0	Calm all day; weather fine.
Wednesday, June 23	9	10 19	93 20	.....	29.89	81	29.87	83	29.86	82	E.SE.....	0.1	NE.....	0.1	E.SE....	1	
Thursday, June 24	48	10 6	92 34	.....	29.88	82	29.89	83	29.88	81	SE	2.3	S.SE.....	2.3	SW. by S.	3.4	
Friday, June 25	147	9 2	90 19	.....	29.91	80	29.88	80	29.90	79	SW. by W.	5	W.SW...	3	S. by W.	4	Midnight, aneroid bar ..... 30.100 Do.....marine common, by Adie. 29.910 Difference ..... .190
Saturday, June 26	134	8 13	88 12	.....	29.88	79	29.88	80	29.91	80	W	3	W.....	3.4	W.SW...	3	
Sunday, June 27	119	7 10	86 10	.....	29.92	79	29.89	80	29.95	79	SW.	3.4	W.NW..	3	SW.....	1.2	
Monday, June 28	85	6 18	84 55	S. 32° E., 26′ in 48 hours	29.93	79	29.92	80	29.93	78	SW.	3	S.SW....	3.6	W	3.4	2 p.m., passed large tree floating, covered with barnacles.
Tuesday, June 29	147	6 21	82 13	.....	29.92	79	29.90	78	29.90	77	Variable...	4.5	W.....	1.4	SW.....	4	1 p. m., passed another large tree floating; 6 p. m., land to the N. by W.
Wednesday, June 30	111	6 12	80 36	South, 28′ in 28 hours	29.91	78	29.96	77	29.95	72	W.NW....	6.7	SW. by W	3	W.....	2.3	Heavy clouds over the land.
Thursday, July 1	72	7 7	79 49	.....	29.96	78	29.95	78	29.98	79	W.....	1.2	Calm....	0	N.NW...	1	Land about Point Mala in sight.
Friday, July 2	23	7 29	79 41	.....	29.95	79	29.95	81	29.93	81	N. by E....	3.4	Variable.	1.3	Variable.	1.3	A quantity of drift wood about.
Saturday, July 3	37	7 53	79 13	.....	29.91	81	29.91	82	29.90	80	N.	3.4	Variable.	3.4	SW.....	1.2	Do.
Sunday, July 4	50	8 43	79 17	East, 10′ in 24 hours	29.90	80	29.90	81	29.90	80	N.NW.....	4	E.SE....	1	NW.....	3.4	8 p. m., anchored in 25 fathoms.
Monday, July 5‡	....	.....	.....	.....	29.90	80	29.90	81	29.90	81	NW.	2	NW.....	3	NW.....	3.4	

* At 9.30 A. M. left San Blas, bound for Panama.

† Probably bad reckoning.

‡ At 7 P. M. anchored in Panama roadstead.

FROM CALIFORNIA TO CALLAO.

"The best route from California to Callao is an interesting subject to almost all vessels in the California trade, for many of them go in ballast from San Francisco to the Chincha Islands for guano. These islands also supply cargoes to many homeward-bound Australian traders. But from Australia the way is plain and the voyage sure; whereas from California it is difficult and tedious. It is of uncertain duration, and the best route is still undecided.

"Many very clever navigators give a decided preference to the eastern passage from California; but while they judge, for the most part, each by his own individual experience, I have the experience of them all to guide me in my judgment. I think it not at all unlikely that the opinion expressed by Captain Samuel Shreve, of the Cleopatra, may be found, on further investigation, to hold good for a part of the year. He says:

"'I would advise all captains leaving San Francisco for Callao in the months of August, September, and October, to take the inner passage; that is, being in the long. of 110° west, lat. 8° north, steer along the equator by the wind, passing either side, or between the Galapagos Islands, as the wind will permit. Had I taken this route *instead of crossing the SE. trades*, it would have shortened my passage one month, which has been proved by the 'West Wind' and several other ships the above months. I inquired of several disinterested captains as regards the passage to Callao; *all* advised crossing the SE. trades. It may do when the sun is *far north*. This passage is little understood as yet, and as the *guano* trade has become of so much importance, I feel in duty bound to throw in my mite for future navigators' benefit, and to aid you in your noble pursuit. I had no difficulty with my ship (steady trades) in beating from Callao to the Chincha Islands in three days. What difficulty can exist in beating from the equator to Callao? See what a glorious run I had round the Horn this time homeward. I turned the corners short. I had the SE. trade very light and far north until I reached 7° lat. See westerly currents, &c., and ships I spoke in my abstract enclosed.'

"Individual cases may be cited in favor of each route, but upon the whole, and with such lights as I have, I am inclined to give the preference to the western or off-shore route as the one which for most of the year and on the long run will give the shortest average passage, and which average, when the route comes to be properly understood and followed, will probably be brought down as low as 50–52 days the year round."—(7th Ed., p. 707.)

The present average by 69 vessels is 56 days for the western route against 61 as the average of 30 vessels that took the in-shore route. The shortest passages are by the Adelaide, in June, 1856, by the west passage, and by the Hornet, in September, 1852, by the in-shore route; each had 34 days. *The abstract logs do not show that navigators understand these routes as they should.* The inner route is the most uncertain, and though good runs may now and then be made by it, it is longest on the average. The run by the western passage ought not to average more than 52 days.

I quote from the 7th edition concerning this route, for data concerning it or the means of discussing them have not been increased to any considerable extent since that publication. But my own experience and subsequent reflection so far do not justify me in changing the opinions there expressed:

"Most vessels on this voyage make a mistake, especially in summer and fall, in the passage across the belt of NE. trades. Being anxious to get to the east, they edge along,

aiming to lose these winds in 90° or 100°, as the case may be. There they encounter the southwardly monsoons that are found at this season of the year between the system of trade winds in the Pacific off the American coast as they are along the African coast in the Atlantic. The vessels taking this course, and being so baffled, have now to make a sharp elbow and run off 8° or 10°, or even more degrees to the westward before they clear this belt of calms and monsoons and get the SE. trades. Of course the voyage is greatly prolonged by this.

"The route which, as at present advised, I would recommend, is, that navigators steer the same course from California that they would if bound to the United States, until they pass through the SE. trades and clear the calms of Capricorn. Therefore, I say to the Chincha-bound trader, when you get your offing from the 'Heads,' steer south, aiming to cross the line *not to the east* of 115°, for the rule is, the further east the harder it is to cross the equatorial doldrums in the Pacific, as well as it is in the Atlantic.

"When you get the SE. trades crack on with topmast studding-sail set until you get the 'brave west winds' on the polar side of the calms of Capricorn. Now turn sharp off from the route around Cape Horn, and run west until you bring your port to bear to the northward of NE., when you may 'stick her away.' Now, by this rule the Chincha-bound navigator may sometimes, before he gets these westerly winds, find himself as far south as 40° or 45°, and as far west as 120° or 125°. Let him not fear, but stand on until he gets the winds that will enable him to steer east, or until he intercepts the route from Australia to Callao, when he may, without fear of not fetching, take that.

"In the summer and fall of the northern hemisphere—June to November—the calm belt of Capricorn will be cleared generally on the equatorial side of the parallel of 30° south; at the other seasons, you will have frequently to go 6° or 8° further.

"On this voyage, navigators, as soon as they leave the SE. trades, are often tempted by puffs and 'spirts' of westerly winds to stand east; and thus time is lost by running east with a 4 or 5-knot breeze in the calm belt of Capricorn. They should stand south until they clear it, preferring, as a rule, to take the chances of better winds and the certainty—which is some compensation—of shorter degrees of longitude beyond.

"It is scarcely necessary to remark, that navigators, in order to understand these routes so as to profit by them *fully*, must first make themselves acquainted with all that has been said in previous parts of this work about atmospherical circulation, the trade-winds and monsoons at different seasons of the year, the limits of these bands of winds, and the influence of deserts and distant lands upon them. In other words, the navigator who has taken the Charts and Sailing Directions for his guide from Europe or Atlantic America to the Pacific, will necessarily have acquired the information which will enable him properly to understand and rightly to comprehend the Sailing Directions between California, China, Australia, and the various parts of the world mentioned in connexion with them. To go south, along the coast of Central America, is very much liko going south in the Atlantic along the coast of Africa. The conditions as to winds, calms, and rains are very much the same; consequently, I should regard it as tedious repetition to go over here, for this part of the route to Callao, all that I have said about the winds, &c., on the route to Rio.

"With the assistance of Lieutenants Minor and Young, I am enabled to present, for the satisfaction of those interested in the navigation between California and Peru, a table of crossings by the two routes. The eastern route is the shortest in distance, and therefore, as it

might be expected, the quickest runs are to be made now and then by the eastern route. Distance is generally in its favor, and a good run of luck in getting across the calm belts and in turning corners will enable a vessel now and then to go very quick. But when that run of luck is to occur no man can tell; and while the route well fulfils all the conditions of the shortest passage in individual cases, it also fulfils the conditions of the longest on the average.

"Captain Knapp, of the Hornet, had such a run of luck, and made the quickest passage that has been made. It will be difficult to make so good a one by the western route, (it has been done, 1859, by the Adelaide,) or to beat it by the eastern, (it has not been done, 1859.)

"I treat the routes on the average. Perhaps when log-books shall be received in sufficient numbers, the eastern route may prove the best at certain seasons; but now those who take the western route appear to have in their favor, the year round, an average of about nine per cent. of time. But it has not been at all understood or properly followed, and I think that the results to be obtained in the course of the next year or two, after these remarks meet the eye of navigators, will exhibit a more decided contrast than that between 58 and 63 days, for these are the averages shown by such data as I have, and are herewith exhibited."—(7th Ed., p. 713.)

The average of the passages since March is 52.5 days by the western route, and 57.4 days by the in-shore route. Four years ago it was said (p. 707) that the average western passage ought to be reduced so as not to exceed 52 days. This reduction has been reached within the fraction of a day, and that a little more experience will overcome this half day I have no doubt.

FROM CALIFORNIA TO CALLAO

Names of vessels, time to the equator, crossings south, and time to Callao, arranged according to the month.

Name of vessel.	From California to the equator.	Date of crossing the equator.	Longitude of crossing parallels of—							From equator to highest S. lat.	Latitude of crossing meridians of—									From California to Callao.
			0°.	10° S.	15° S.	20° S.	25° S.	30° S.	35° S.		125° W.	115° W.	110° W.	105° W.	100° W.	95° W.	90° W.	85° W.	80° W.	
WESTERN PASSAGES.	Days.		Long. W.	Long. W.	Long. W.	Long. W.	Long. W.	Long. W.	Long. W.	Days.	Lat. S.	Lat. S.	Lat. S.	Lat. S.	Lat. S.	Lat. S.	Lat. S.	Lat. S.	Lat. S.	Days.
Firebrand	32	Jan. 8, 1851	114.0	117.0	117.0	117.0	115.0	.....	.....	12	.....	.....	25.0	25.0	24.0	23.0	18.0	14.0	12.0	75
Hurricane	18	19, 1854	118.0	123.0	123.0	123.0	121.0	116.0	114.0	15	.....	.....	37.0	.....	.....	.....	.....	.....	.....	.....
Hero	20	7, 1854	114.0	119.0	119.0	121.0	115.0	110.0	105.0	13	22.0	25.0	31.0	35.0	35.0	34.0	30.0	22.0	17.0	55
North Wind	19	17, 1854	118.0	122.0	122.0	122.0	121.0	117.0	.....	17	.....	31.0	34.0	34.0	35.0	36.0	35.0	31.0	24.0	48
Sabine	21	1, 1854	116.0	120.0	122.0	121.0	120.0	112.0	.....	18	15.0	30.0	31.0	32.0	32.0	31.0	28.0	23.0	20.0	51
Winfield Scott	19	10, 1854	113.0	120.0	119.0	120.0	116.0	112.0	106.0	16	.....	26.0	33.0	36.0	35.0	35.0	34.0	26.0	17.0	47
Sunbeam	20	10, 1854	116.0	122.0	122.0	121.0	117.0	112.0	107.0	14	.....	27.0	33.0	34.0	33.0	29.0	28.0	21.0	15.0	56
Ocean Telegraph	21	1, 1855	119.0	122.0	122.0	122.0	122.0	123 0	99.0	19	.....	33.0	33.0	33.0	35.0	35.0	28.0	23.0	20.0	50
Means of western passages	21.2	.....	116	120.6	120.7	120.9	118.4	114.6	106.2	15.5	18.5	28.7	32.1	32.7	33.7	31.8	28.7	22.8	17.8	55
EASTERN PASSAGES.																				
E. C. Screnton	43	Jan. 5, 1854	93.0	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	79
Sandusky	40	9, 1854	94.0	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	84
Union	47	31, 1854	81.0	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	70
Means of eastern passages	43.3	.....	89.3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	77.7
WESTERN PASSAGES.																				
Arcole	27	Feb. 27, 1853	98.0	105.0	106.0	105.0	.....	.....	.....	11	.....	.....	.....	17.0	23.0	22.0	19.0	15.0	13.0	57
Comet	12	24, 1853	122.0	124.0	124.0	123.0	122.0	121.0	108.0	13	.....	.....	.....	43.0	.....	.....	.....	.....	.....	.....
Flying Dutchman	12	23, 1854	119.0	123.0	124.0	124.0	124.0	121.0	108.0	12	.....	.....	.....	40.0	.....	.....	.....	.....	.....	.....
Arab	21	7, 1854	115.0	116.0	116.0	116.0	115.0	110.0	102.0	20	.....	25.0	30.0	33.0	35.0	36.0	35.0	31.0	26.0	52
Boston	24	13, 1854	106.0	113.0	114.0	115.0	113.0	112.0	.....	15	.....	21.0	33.0	31.0	31.0	31.0	32.0	28.0	17.0	65
Wisconsin	17	5, 1854	121.0	125.0	123.0	122.0	120.0	116.0	94.0	25	.....	31.0	32.0	34.0	34.0	35.0	34.0	26.0	22.0	55
Victory	45	20, 1856	95.0	94.0	96.0	97.0	93.0	.....	.....	15	.....	.....	.....	.....	.....	25.0	25.0	22.0	18.0	74
Wild Ranger	17	25, 1855	107.0	111.0	113.0	113.0	114.0	114.0	102.0	17	.....	26.0	31.0	35.0	35.0	33.0	30.0	25.0	18.0	44
Arcole	43	9, 1855	101.0	105.0	106.0	102.0	101.0	.....	.....	21	.....	.....	.....	18.0	25.0	25.0	19.0	15.0	12.0	80
Means of western passages	24.2	.....	109.3	112.9	113.5	113	112.5	115.7	102.8	16.5	.....	25.7	31.5	31.4	30.5	29.5	27.7	23.1	18.0	61

Names of vessels, time to the equator, crossings, &c.—Continued.

Name of vessel.	From California to the equator.	Date of crossing the equator.	Longitude of crossing parallels of— 0°	10° S.	15° S.	20° S.	25° S.	30° S.	35° S.	From equator to highest S. lat.	Latitude of crossing meridians of— 125° W.	115° W.	110° W.	105° W.	100° W.	95° W.	90° W.	85° W.	80° W.	From California to Callao.
WESTERN PASSAGES.	Days.		Long.W.	Long.W.	Long.W.	Long.W.	Long.W.	Long.W.	Long.W.	Days.	Lat. S.	Lat. S.	Lat. S.	Lat. S.	Lat. S.	Lat. S.	Lat. S.	Lat. S.	Lat. S.	Days.
Boston	23	Mar. 23, 1850	113.0	116.0	117.0	117.0	119.0	113.0	.....	16	.....	28.0	30.0	30.0	28.0	25.0	22.0	21.0	17.0	63
Senator	17	7, 1853	109.0	114.0	114.0	114.0	113.0	.....	.....	15	.....	14.0	25.0	26.0	26.0	24.0	22.0	16.0	14.0	49
Wessacumcon	24	4, 1853	114.0	121.0	124.0	123.0	123.0	128.0	119.0	15	27.0	35.0	34.0	34.0	35.0	35.0	34.0	27.0	31.0	78
Bald Eagle	12	13, 1854	114.0	119.0	120.0	121.0	121.0	119.0	120.0	13	43.0	.....	.....	.....	.....	.....	.....	.....	.....	.....
Indianola	12	8, 1854	112.0	117.0	120.0	120.0	119.0	109.0	.....	23	.....	28.0	29.0	31.0	32.0	33.0	31.0	26.0	21.0	47
Morning Light	12	8, 1854	109.0	115.0	117.0	117.0	116.0	110.0	104.0	18	.....	27.0	30.0	34.0	33.0	33.0	33.0	33.0	32.0	46
Wing of the Morning	15	20, 1856	112.0	119.0	120.0	120.0	112.0	112.0	104.0	30	.....	26.0	31.0	34.0	39.0	37.0	35.0	33.0	32.0	67
Means of western passages	16.4	.....	111.8	117.3	118.8	118.8	118.3	115.1	111.7	18.5	35.0	26.3	29.8	31.5	32.1	31.1	29.5	26.0	24.5	58.3
WESTERN PASSAGES.																				
Salem	25	April 14, 1853	113.0	119.0	119.0	119.0	118.0	117.0	.....	15	.....	.....	32.0	32.0	32.0	31.0	31.0	28.0	20.0	53
Capitol	24	18, 1853	117.0	121.0	123.0	124.0	125.0	126.0	116.0	12	29.0	35.0	36.0	35.0	34.0	31.0	29.0	27.0	21.0	54
Samuel Lawrence	30	20, 1854	107.0	109.0	111.0	110.0	103.0	.....	.....	23	.....	.....	.....	23.0	26.0	27.0	27.0	25.0	20.0	61
Morning Light	23	2, 1854	110.0	113.0	115.0	115.0	112.0	.....	.....	12	.....	20.0	27.0	28.0	28.0	28.0	27.0	25.0	19.0	51
Means of western passages	25.5	.....	111.7	115.5	117.0	117.0	114.5	.....	.....	15.5	29.0	27.5	31.6	29.5	30.0	29.2	28.5	26.2	20.0	54.7
EASTERN PASSAGE.																				
Arthur	22	April 20, 1854	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	89
Means of eastern passage	22	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	89
WESTERN PASSAGES.																				
Manchester	26	May 30, 1853	123.0	125.0	125.0	125.0	107.0	.....	.....	15	17.0	21.0	21.0	26.0	28.0	28.0	27.0	26.0	19.0	61
Electric Spark	17	20, 1856	120.0	122.0	124.0	127.0	126.0	124.0	.....	19	29.0	32.0	32.0	32.0	32.0	32.0	31.0	27.0	20.0	49
Rival	24	10, 1856	116.0	116.0	115.0	114.0	106.0	.....	.....	14	.....	16.0	22.0	27.0	28.0	28.0	27.0	24.0	16.0	48
Reindeer	17	31, 1855	114.0	116.0	116.0	111.0	102.0	99.0	.....	19	.....	.....	20.0	22.0	28.0	33.0	32.0	29.0	21.0	45
Means of western passages	21	.....	118.2	119.7	120.0	119.2	110.2	111.5	.....	16.7	23.0	23.0	23.7	26.7	29.0	30.2	29.2	26.5	19.0	50.7
EASTERN PASSAGES.																				
Gray Feather	28	May 2, 1853	81.0	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	58
Helen McGaw	29	26, 1853	83.0	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	70
Realm	36	26, 1853	91.0	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	70
Tornado	28	17, 1856	81.0	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	46
Means of eastern passages	30.2	.....	84.0	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	61
WESTERN PASSAGES.																				
Golden Eagle	19	June 27, 1853	103.0	106.0	108.0	109.0	101.0	.....	.....	10	.....	.....	.....	24.0	25.0	27.0	27.0	26.0	18.0	43
Kentucky	26	7, 1853	103.0	107.0	107.0	110.0	106.0	.....	.....	16	.....	.....	22.0	26.0	27.0	27.0	26.0	23.0	17.0	58
Sultan	18	29, 1856	122.0	123.0	123.0	123.0	120.0	119.0	104.0	21	22.0	32.0	35.0	84.0	32.0	30.0	29.0	27.0	20.0	51
Element	27	26, 1853	104.0	110.0	112.0	114.0	106.0	.....	.....	29	.....	.....	24.0	26.0	27.0	27.0	25.0	21.0	15.0	56
Adelaide	21	24, 1856	97.0	104.0	108.0	110.0	110.0	107.0	93.0	14	.....	.....	25.0	31.0	33.0	35.0	34.0	34.0	32.0	34
Means of western passages	22.2	.....	105.8	108.0	111.6	115.2	108.6	113.0	98.5	18	22.0	32.0	26.0	28.2	28.8	29.2	28.2	26.2	20.4	48.4
EASTERN PASSAGES.																				
Danube	27	June 2, 1853	81.0	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	49
Hannah Thornton	35	1, 1853	82.0	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	77
Adelaide	32	16, 1853	84.0	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	61
E. F. Willets	29	22, 1855	80.0	87.0	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	62
Means of eastern passages	30.7	.....	81.7	87.0	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	62.2
WESTERN PASSAGES.																				
Golden Racer	27	July 20, 1853	98.0	107.0	108.0	109.0	111.0	103.0	.....	14	.....	.....	22.0	29.0	31.0	31.0	32.0	30.0	24.0	53
Esther May	24	10, 1853	111.0	114.0	117.0	117.0	116.0	114.0	101.0	14	.....	28.0	32.0	35.0	35.0	37.0	38.0	32.0	26.0	60
Huguenot	23	1, 1853	112.0	119.0	118.0	94.0	89.0	.....	.....	11	.....	18.0	21.0	20.0	20.0	20.0	24.0	24.0	16.0	48
Princess Alice	30	3, 1853	112.0	117.0	109.0	110.0	110.0	.....	.....	10	.....	14.0	21.0	28.0	28.0	29.0	27.0	24.0	18.0	74
Lucknow	24	19, 1853	103.0	109.0	110.0	110.0	111.0	103.0	86.0	14	.....	.....	28.0	31.0	32.0	32.0	33.0	35.0	25.0	51
Harriet	26	4, 1854	98.0	103.0	105.0	104.0	105.0	104.0	.....	14	.....	.....	.....	26.0	27.0	24.0	23.0	27.0	24.0	56
Means of western passages	25.6	.....	105.7	111.5	111.2	107.3	107.0	106.0	93.5	13	.....	20.0	25.8	28.1	28.8	29.0	29.5	28.7	22.1	57
EASTERN PASSAGES.																				
Lucy Elizabeth	30	July 26, 1853	98.0	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	37
Simoom	27	16, 1853	85.0	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	46
Alhesdrough	30	14, 1853	81.0	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	60
Means of eastern passages	29	.....	88.0	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	48
WESTERN PASSAGES.																				
Alert	30	Aug. 2, 1853	109.0	114.0	114.0	115.0	115.0	112.0	93.0	11	.....	27.0	32.0	32.0	32.0	33.0	35.0	33.0	28.0	66
Parthian	26	31, 1853	107.0	112.0	111.0	111.0	110.0	110.0	.....	12	.....	.....	29.0	28.0	29.0	31.0	24.0	20.0	17.0	58
New York	25	27, 1853	110.0	114.0	116.0	116.0	109.0	.....	.....	10	.....	21.0	26.0	26.0	27.0	28.0	28.0	27.0	25.0	56
Governor Morton	26	3, 1853	118.0	120.0	121.0	122.0	121.0	102.0	.....	11	.....	29.0	29.0	30.0	29.0	19.0	28.0	27.0	20.0	68
A. F. Jenness*	37	27, 1853	96.0	104.0	105.0	107.0	107.0	110.0	.....	18	.....	.....	30.0	30.0	33.0	34.0	33.0	33.0	28.0	84
Golden Eagle	21	27, 1854	111.0	115.0	114.0	113.0	109.0	.....	.....	13	.....	13.0	24.0	27.0	28.0	28.0	27.0	22.0	15.0	40
Viking	21	20, 1854	108.0	112.0	113.0	115.0	116.0	.....	.....	14	.....	25.0	26.0	28.0	28.0	28.0	27.0	23.0	14.0	46
Means of western passages	24.8	.....	108.4	113.0	113.4	114.1	112.4	108.5	93.0	12	.....	23.0	28.0	28.7	29.4	28.7	28.8	26.4	21.0	55.7

*Not included in the average.

Names of vessels, time to the equator, crossings, &c.—Continued.

Name of vessel.	From California to the equator.	Date of crossing the equator.	Longitude of crossing parallels of— 0°.	10° S.	15° S.	20° S.	25° S.	30° S.	35° S.	From equator to highest S. lat.	Latitude of crossing meridians of— 125° W.	115° W.	110° W.	105° W.	100° W.	95° W.	90° W.	85° W.	80° W.	From California to Callao.
EASTERN PASSAGE.	Days.		Long.W.	Long.W.	Long.W.	Long.W.	Long.W.	Long.W.	Long.W.	Days.	Lat. S.	Lat. S.	Lat. S.	Lat. S.	Lat. S.	Lat. S.	Lat. S.	Lat. S.	Lat. S.	Days.
Magnolia	33	Aug. 16, 1854	83.0	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	57
Means of eastern passage	33	.....	83.0	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	57
WESTERN PASSAGES.																				
Wallace†	30	Sept. 11, 1853	86.0	86.0	88.0	83.0	90.0	85.0	.....	21	.....	.....	.....	.....	.....	.....	26.0	30.0	29.0	75
Sirocco	26	2, 1853	103.0	108.0	109.0	108.0	112.0	114.0	106.0	13	.....	33.0	33.0	34.0	34.0	33.0	32.0	28.0	19.0	60
Empress of the Seas	24	16, 1853	115.0	119.0	120.0	121.0	120.0	120.0	.....	9	.....	33 0	33.0	32.0	31.0	29.0	29.0	23.0	18.0	48
Climax	21	2, 1853	108.0	115.0	116.0	117.0	119.0	120.0	115.0	14	.....	35.0	34.0	35.0	34.0	33.0	31.0	28.0	21.0	60
Roscoe	28	30, 1853	112.0	115.0	117.0	120.0	120.0	.....	.....	13	.....	28.0	29.0	29.0	27.0	26.0	24.0	20.0	14.0	61
Albers	27	26, 1853	104.0	107.0	108.0	106.0	105.0	.....	.....	27	.....	.....	.....	16.0	21.0	23.0	23.0	21.0	17.0	65
Sierra Nevada	27	10, 1856	117.0	120.0	121.0	122.0	125.0	125.0	.....	17	30.0	32.0	31.0	32.0	32.0	32.0	32.0	28.0	23.0	53
Sweden	22	25, 1854	118.0	121.0	121.0	119.0	98.0	.....	.....	22	.....	23.0	24.0	26.0	26.0	29.0	28.0	25.0	17.0	43
Means of western passages	25	.....	111.0	115.0	116.0	116.0	114.0	119.7	110.0	16.4	30.0	30.7	30.7	30.0	29.3	29.3	28.4	24.7	18.4	55.7
EASTERN PASSAGES.																				
Hornet	20	Sept. 24, 1853	82.0	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	34
C. L. Bevan	26	12, 1853	87.0	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	63
Cornelia	25	12, 1853	89.0	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	53
Star King	24	21, 1854	85.0	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	39
Means of eastern passages	23.4	.....	85.7	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	47.2
WESTERN PASSAGES.																				
Cleopatra	27	Oct. 23, 1853	117.0	123.0	125.0	128.0	127.0	124.0	122.0	17	30.0	41.0	39.0	39.0	40.0	39.0	38.0	33.0	31.0	71
Herculean	36	2, 1853	102.0	107.0	110.0	113.0	111.0	.....	.....	19	.....	.....	21.0	26.0	26.0	25.0	25.0	22.0	15.0	60
Means of western passages	31.5	.....	105.9	115.0	117.5	120.5	119.0	124.0	122.0	18	30.0	41.0	30.0	32.5	33.0	32.0	31.5	27.5	23.0	65.5
EASTERN PASSAGES.																				
Chenango	31	Oct. 12, 1850	81.0	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	59
Amazon	30	27, 1853	82.0	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	65
Robert Harding	32	2, 1853	80.0	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	56
Flying Eagle	23	1, 1853	81.0	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	44
ary Annah	25	27, 1853	85.0	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	61
Means of eastern passages	28.2	.....	81.8	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	57
WESTERN PASSAGES.																				
Louisa Bliss*	42	Nov. 4, 1850	80.0	98.0	101.0	104.0	104.0	101.0	.....	18	.....	.....	.....	27.0	31.0	33.0	32.0	32.0	31.0	87
Queen of Clippers	28	28, 1853	102.0	106.0	107.0	107.0	108.0	107.0	89.0	12	.....	.....	.....	32.0	33.0	34.0	35.0	30.0	24.0	58
Belle of the West	26	22, 1853	105.0	107.0	107.0	104.0	103.0	101.0	.....	17	.....	.....	.....	29.0	31.0	32.0	30.0	23.0	16.0	54
Mary Spring	25	3, 1853	108.0	112.0	112.0	112.0	112.0	102.0	.....	12	.....	.....	26.0	29.0	30.0	24.0	19.0	13.0	10.0	57
Atalanta	28	25, 1853	111.0	115.0	115.0	117.0	118.0	118.0	111.0	15	.....	32.0	35.0	35.0	34.0	34.0	33.0	32.0	23.0	53
Celestial Empire	30	13, 1853	103.0	108.0	109.0	108.0	105.0	.....	.....	13	.....	.....	.....	25.0	25.0	25.0	24.0	19.0	14.0	55
Means of western passages	27.4	.....	105.8	109.6	110.0	109.6	109.2	107.0	100.0	13.8	.....	32.0	30.5	30.0	30.6	29.8	28.2	23.4	17.4	55.4
EASTERN PASSAGES.																				
Levanter	29	Nov. 15, 1853	81.0	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	49
J. H. Shepherd	33	15, 1853	81.0	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	62
West Wind	30	15, 1853	82.0	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	51
Avondale	29	17, 1853	104.0	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	60
Morning Light	26	7, 1856	83.0	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	49
Means of eastern passages	29.4	.....	86.2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	54.2
WESTERN PASSAGES.																				
Wild Ranger	20	Dec. 2, 1853	107.0	111.0	110.0	110.0	109.0	203.0	.....	12	.....	.....	24.0	29.0	31.0	31.0	27.0	23.0	17.0	48
White Swallow	26	8, 1853	104.0	110.0	110.0	110.0	109.0	102.0	.....	13	.....	.....	.....	29.0	30.0	25.0	18.0	14.0	13.0	51
Western Star	21	27, 1853	104.0	112.0	113.0	114.0	113.0	110.0	107.0	15	.....	23.0	31.0	35.0	36.0	36.0	36.0	29.0	24.0	52
Reindeer	23	2, 1853	115.0	118.0	118.0	118.0	115.0	105.0	94.0	27	.....	26.0	28.0	30.0	30.0	34.0	36.0	33.0	27.0	69
Corinne	25	26, 1853	110.0	116.0	117.0	119.0	118.0	112.0	95.0	18	.....	28.0	32 0	34.0	35.0	35.0	31.0	24.0	19.0	61
Greenwich†	31	3, 1853	105.0	113.0	113.0	114.0	114.0	106.0	95.0	25	.....	22.0	29.0	31.0	31.0	34.0	35.0	32.0	28.0	71
Windward	23	16, 1853	113.0	117.0	116.0	117.0	117.0	109.0	.....	18	.....	28.0	30.0	32.0	22.0	22.0	16.0	13.0	.....	60
Bay State	23	23, 1854	120.0	121.0	121.0	122.0	125.0	127.0	128.0	16	37.0	35.0	34.0	32.0	31.0	32.0	26.0	23.0	18.0	64
Means of western passages	23	.....	110.4	115.0	115.0	115.7	115.1	124.0	106.0	17	37.0	28.0	29.8	31.6	30.7	30.7	27.1	22.7	19.6	57.8

† Old and leaky; not included in the average.

* Attempted the eastern passage first; not included in the average.

† Not included in the means.

FROM THE SANDWICH TO THE SOCIETY ISLANDS AND BACK.

From Honolulu to Tahiti.—"We left the former place September 12, 1856. We carried fresh trades to 8° 42′ N. and longitude 151° 51′ W., when we got variable winds, but took the southeast trades in latitude 5° 32′ N. and longitude 146° W., and arrived at our port October 4.

"Lieutenant EDWARD PRICE McCREA,
"*United States ship John Adams.*"

Run of the French corvette "L' Eurydice," Captain H. Pichon, from Tahiti to Honolulu.

Date.	Lat. at noon.	Long. at noon.	Currents.	Barometer.	Thermometer.	Winds.	Date.	Lat. at noon.	Long. at noon.	Currents.	Barometer.	Thermometer.	Winds.
1857.	° ′	° ′			°		1857.	° ′	° ′			°	
Jan. 8	17 21 S.	149 40 W.	.....	29.84	80	E.NE.....	Jan. 28	21 04 S.	154 17D.R.	8 miles, N. by E. ½ E	29 86	84	SE., S., N.
9	16 21	150 19	8 miles, NW. by W.....	29.92	84	N.NE.	29	21 24	157 00	7 miles, NE. by N. ½ N	29 80	63	Very variable.
10	14 00	150 54	9.5 miles, N. by W. ½ W....	29.69	82	E.NE.....	30	21 20	157 51	8.5 miles, S. by E. ¾ E	.....	.....	SW., NE.
11	12 03	150 48	4 miles, S. by W. ½ W	29.80	86	...do	Aug. 17	17 30	149 32 W.	....	29.88	82	
12	10 37	150 16	9 miles, S.SW. ¼ W.....	29.73	86	E.NE. and NE.....	18	15 34D.R.	148 04D.R.	.....	29.92	76	SSW., E.NE., SE.
13	9 36	152 00	14 miles, SW. ¾ W.....	29.76	84	N.NE	19	12 17	146 52	8.6 miles, W. by S. ¾ S	29.88	84	E.SE., variable.
14	10 15	149 53	15.5 miles, S. ¾ W.....	29.80	86	...do	20	9 27	146 05	10.2 miles, S. by W.....	29.76	84	E.SE., NE.
15	8 38	149 57	4 miles, SE. ½ E.....	29.80	90	E NE.....	21	6 36	145 24	9.9 miles, NE. by N. ½ N...	29.76	97	Do.
16	6 37	149 57	7 miles, W. by N	29.80	86	...do	22	3 41	145 35	23.5 miles, NW. ¾ W.....	29.84	95	E.NE., variable.
17	4 22	150 22	10 miles, NW. by W.....	29.76	86	...do	23	1 02	146 26	36 miles, W. ½ N	29.80	92	E.NE., NE.
18	1 48	150 48	19 miles, W. by N. ½ N.....	29.76	86	...do	24	1 21 N.	146 25	32 miles, W. ¾ N.....	29.73	89	E.NE., E.
19	0 24 N.	150 06	25 miles, S.SW. ½ W.....	29.73	82	E	25	3 49	146 53	79 miles, W. by N	29.73	83	E.SE., NE., variable.
20	2 56	149 28	21 miles, W. by S., ¾ S.....	29.76	82	E.SE	26	7 27	146 40	19 miles, NE. by N. ½ N.....	29.76	88	E.SE., SE.
21	5 48D.R.	149 31D.R.	....	29.73	77	...do	27	10 06	146 44	7 miles, E. by N. ¾ N	29.80	90	E.SE., variable.
22	7 41	149 50	20 miles, N. by E. ½ E.....	29.73	82	E.NE	28	10 33	147 36	12.8 miles, W.....	29.80	88	SE., N., N.NE.
23	9 57	150 14	14.5 miles, NE. by N.....	29.76	82	...do	29	12 07D.R.	149 11	.....	29.80	90	N.NW., N.NE.
24	12 17	149 50	16 miles, W.NW.....	29.78	82	...do	30	15 12	150 41	34 miles, NW. ½ W	29.84	86	NE., E.NE.
25	14 55	151 10	11.5 miles, W.....	29.78	81	E.....	31	17 08	152 19	17.8 miles, W.NW	29.88	90	NE., N.NE., E.
26	17 02	152 44	11 miles, SW. by W.....	29.84	84	...do	Sept. 1	19 44	154 27	18.8 miles, NW. by W. ½ W.	29.88	82	E.SE., E.NE., NE.
27	19 02	154 26	3 miles, S. by E. ½ E.....	29.84	84	SE.,S	2	21 20	157 12	16 miles, NW. by N.	29 88	84	E., E.NE.

Run of the French corvette "L'Eurydice," Captain H. Pichon, from Honolulu to Tahiti.

Date.	Lat. at noon.	Long. at noon.	Currents.	Barometer.	Thermometer.	Winds.	Date.	Lat. at noon.	Long. at noon.	Currents.	Barometer.	Thermometer.	Winds.
1857.	° ′	° ′			°		1857.	° ′	° ′			°	
July 6	21 12 N.	157 53 W.	.....	.....	.....	.....	July 20	6 05 N.	146 59 W.	36 miles. SE. by E	29.76	82	SE., variable.
7	19 53	156 58	11.5 miles, SE. ½ E.	29.96	86	E.NE.	21	5 42	147 00	19 miles, NW. ¼ W.	29.76	86	E.SE., variable.
8	19 26	156 35	8.4 miles, NE. ¾ N.	29.88	86	Very variable	22	3 51	146 59	17 miles, E. by S	29.73	86	E.SE.
9	17 40	155 47	11 miles, E. by N. ¾ N.	29.88	84	SE., NE.	23	1 19	147 14	13.5 miles, S.	29.73	88	E.
10	15 43	154 45	9 miles, SW. ½ W.	29.92	84	E.NE.	24	0 18 S.	147 47	14 miles, SW. by S. ½ S	29.69	86	E.SE.
11	13 59	153 25	13 miles, S. by E. ½ E.	29.88	86	NE.	25	3 17	147 52	16 miles, S.	29.69	88	Do.
12	12 16	152 17	10 miles, SW. by S. ½ S.	29.84	88	E.NE.	26	5 47	147 31	14 miles, SW. by S.	29.76	86	E., variable.
13	10 50	151 46	9 miles, S. by W. ½ W.	29.80	84	E., variable.	27	8 29	147 13	16 miles, SW. ½ S	29.80	86	Do.
14	9 18	151 19	8 miles, SW. ¼ W.	29.84	84	...do	28	10 34	146 39	17.5 miles, S.SW.	29.80	90	E.NE.
15	8 37	151 28	13 miles, W. ¾ S.	29.80	90	E.	29	12 29	146 38	16 miles, S.	29.84	90	E., variable.
16	7 53	150 51	7 miles, S. ¾ W.	29.80	84	Very variable	30	14 31	148 28	15.7 miles, SW. by S.	29.88	90	E.SE., SE.
17	7 53	149 48	29 miles, W. ¾ N.	29.80	81	SE., variable.	31	16 25	148 53	16 miles, W.SW.	29.96	82	SE.
18	7 10	149 01	16 miles, E. by S. ½ S.	29.80	90	E., variable	Oct. 1	.....	.....	.....	29.96	86	Do.
19	6 32	148 34	7 miles, W. by N.	29.76	82	E.NE	.....	.....	.....	.....	.....	.....	

The only thing which claims at present further remark upon this passage are the currents. The abstract log of "L'Eurydice" is very well kept; she was evidently navigated by an accomplished navigator. In August she experienced those remarkably strong currents between the two places which so forcibly impressed themselves upon my imagination while making the same voyage as a midshipman in September and October, 1829, on board the United States ship Vincennes. It will not escape attention that "L'Eurydice" invariably experienced the strongest currents as she passed from one system of trade-winds to the other. The current on August 25 is one of "mill tail" velocity. We can only account for this "river in the ocean" at such a place by ascribing it to the joint effect of the two systems of trade-winds. At least no other cause in explanation suggests itself to my mind.

FROM AUSTRALIA TO CALLAO.

The Chincha Islands, with their guano, offer a return cargo both to Australia and California traders. The way from the former is plain, for the navigator has fair winds and flowing sheets all the way.

The route from Australia to Callao is the same as the route from Australia to Cape Horn, until it passes south of 50°. The distance from Port Philip to Callao is 7,000 miles, and the run has been made in 34 days. On this voyage the *rules of the road* are simple.

From Melbourne make the best of your way for the intersection of the meridian of 170° E. with the parallel of 48°–50° S. Then follow this parallel to its intersection with 120° W. Arrived here, haul up for your port, taking care when you arrive at the belt of light winds which border the SE. trades to steer due north until you clear them and get the trades, keeping your port to the northward of NE.

The track of the Gem of the Sea affords a very good illustration of this route. She made a "crack" run.

Abstract log of the barque Gem of the Sea (A. BOWEN.) *From Port Philip to Callao.*

Date.	Latitude at noon.	Longitude at noon.	Currents (knots.)	Barometer.	Temp. of air at 9 a. m.	WINDS. First part.	Middle part.	Latter part.
1853.	° ′	° ′			°			
Sept. 25	38 30 S.	144 45 W.	E.NE., 1 mile...	30.0	54	SW.....	SW.....	SW.
26	39 36	146 45	E., ½ mile.....	29.9	54	SW.....	SW.....	NE.
27	40 02	148 30	.....	29.5	55	NE.....	N.....	N. by W.
28	42 00	152 45	.....	29.3	53	NW.....	W.....	W. by S.
29	44 10	156 44	.....	29.0	50	W. by S.	W. by S.....	W. by S.
30	46 40	160 10	.....	29.5	50	W. by S.....	W.SW.....	W. by S.
Oct. 1	48 56	164 10	.....	29.5	52	W.NW.....	W.NW.....	W. by N.
2	49 06 D.R.	168 10	.....	29.6	54	W.NW.....	W.NW.....	W.NW.
3	50 32 D.R.	173 20	.....	29.8	54	W.NW.....	NW. by N.....	NW. by N.
4	50 30 D.R.	178 20	.....	29.8	52	N.NW.....	N.NW.....	N. by W.
5	50 28	177 00	.....	29.9	53	N. by W.....	N. by W.....	N. by E.
6	50 19	168 00	.....	30.0	53	N.....	N.....	NW. by W.
7	50 16	162 00	.....	29.7	52	N.NW.....	NW.....	W.
8	50 20	157 00	.....	29.6	52	NW. by W.....	W.NW.....	N.NW.
9	50 24	152 00	.....	29.3	52	NW. by W.....	N.NW.....	N. by W.
10	50 20	146 07	.....	29.0	52	N.NW.....	N. by W.....	N. by W.
11	49 09	140 20	.....	28.4	50	N. by W.....	N. by W.....	W.SW.
12	47 22	137 20	.....	28.4	50	N. by W.....	W.NW.....	NW.
13	45 50	131 00	.....	29.0	52	W.SW.....	W.SW.....	NW.
14	44 35	125 15	.....	29.3	53	NW.....	NW.....	NW. by N.
15	43 07	119 15	.....	29.4	54	NW. by W.....	NW.....	W.NW.
16	40 44	115 50	.....	29.1	54	W.NW.....	W.NW.....	W.SW.
17	38 10	111 10	.....	29.4	54	W.SW.....	W.SW.....	SW. by S.
18	35 58	106 50	.....	29.6	56	W.SW.....	SW. by S.....	W. by S.
19	34 29	103 13	.....	29.8	58	W.SW.....	W.SW.....	N.NW.
20	33 02	99 58	.....	29.8	58	W. by S.....	W.NW.....	N. by W.
21	31 28	95 50	.....	30.0	60	N.NW.....	N.....	N. by W.
22	29 48	92 50	.....	30.0	68	N. by W.....	N. by W.....	N.
23	28 47	90 50	.....	30.0	70	N. by W.....	N.....	N.NE.
24	26 05	91 25	Obs. 90° 15′....	30.0	72	N.....	N. by E.....	NE.
25	25 34	No. obs.	.....	30.0	73	NW.....	E.NE.....	Calm.
26	25 05	90 10	.....	30.0	76	Calm.....	NW.....	N.NW.
27	23 34	87 30	.....	30.0	72	NW.....	N.NW.....	N. by W.
28	21 20	84 50	.....	29 9	68	NW. by N.....	N.NW.....	NW.
29	19 17	83 00	.....	29.8	66	N. by W.....	NW.....	
30	17 37	81 37	.....	29.8	66	N.NW.....	SE. by E.....	
31	15 00	79 50	.....	29.08	66	SE.....	E.....	
Nov. 1	12 30	78 00	.....	29.8	66	E.NE.....		

FROM THE SANDWICH AND SOCIETY ISLANDS TO CALLAO AND VALPARAISO.

The route both to Callao and Valparaiso is the same as the route to Cape Horn, until you get far enough east to fetch port through the SE. trades. A vessel bound to Callao should not stand north before she brings her port to bear to the northward of NE.

I again extract from Captain Pichon's excellent log of the French corvette "L'Eurydice" to illustrate this passage, with the remark that had that ship been running, as merchantmen do, for a quick passage, she would have made better time by running further to the south. From August 19 to 23 she had a "spirt" of northerly winds; then the SE. trades; then another "spirt" on the 30th, which lasted four days, to be followed again by a sporadic SE. trade. This is the debatable ground between the trades and the variables in which it is so difficult to make longitude and to which I have so frequently alluded. I would get on the polar side of 35° or 40° before I would heed these "spirts," and then I would not alter my course for them unless they were pretty fresh; nor would I care to cross the meridian of 135° or 130° until I was sure of the "brave west winds."

Run of the French corvette "L'Eurydice" (H. PICHON) *from Tahiti to Callao.*

Date.	Latitude at noon.	Longitude at noon.	Currents.	Barometer.	Therm.	Winds.	Date.	Latitude at noon.	Longitude at noon.	Currents.	Barometer.	Therm.	Winds.
1857.	° ′	° ′			°		1857.	° ′	° ′			°	
Aug. 11	17 31 S.	149 41 W.	.....	.....	.....	.....	Sept. 5	33 32 D.R	109 30 D.R	.....	30.16	68	SE., E.
12	18 47	149 59	8, W. by N. ½ N.	29.92	97	E., E.SE.	6	34 44	109 17	8.8, SE. by S. ½ S.	30.08	70	E., E.NE.
13	21 35	149 24	17, SW. by S. ½ S.	30.00	95	E, E.NE.	7	34 54	106 31	2.5, SE. by S. ½ S.	30.08	77	NE., NW.
14	23 29	149 01	4, SW. by W. ½ W.	29.96	86	E.	8	35 21	102 27	27, S. by E. ½ E.	30.24	77	N.NW.
15	25 42	149 58	15, W. by S.	.88	77	E.SE., E.NE.	9	35 13	98 19	41, E. by S. ½ S.	30.08	79	N.NW.
16	27 58	150 31	12, SW. ½ S.	.96	79	E., E.SE.	10	34 48	94 58	29, SE. ½ E.	30.20	86	N.NW.
17	27 47 D.R	150 52 D.R	.....	.88	64	E.NE.	11	34 07	93 03	21, E. by S. ¾ S.	30.24	84	W.NW.
18	30 22 D.R	151 01 D.R	.....	.60	70	E.NE.	12	33 31	91 58	8, E. by N. ¼ N.	30.20	79	SW.
19	31 24 D.R	149 32 D.R	.....	.41	72	N., N.NE.	13	33 15	91 27	4, NE. ½ N.	30.12	70	SW., NE.
20	32 31	146 28	49, SE. by S. ¾ S.	.45	75	N.NW.	14	33 57	90 22	13, S. by E.	30.00	73	N.NE.
21	32 22	143 18	27, SE. by S.	.88	75	NW.	15	34 54	88 18 D.R	18, S.	29.92	68	N.NE.
22	32 02	141 16	17, SE. by E.	30.12	80	N.NW.	16	34 48	86 01	16.5, S.	30.24	77	N.
23	31 49	140 48	8, N.	30.16	74	Fresh.	17	34 37	84 06	16.4, SE. by S. ½ S.	30.16	77	N., NW.
24	31 40	138 08	12, S. by E.	30 20	73	SE.	18	33 51	82 10	16.5, E.	30.16	66	N.NW., SW.
25	30 56	134 43	7, N.	30.36	74	S.SE.	19	33 36	81 28	11, NE. by N. ½ N.	30.16	72	SE., N.NE.
26	29 34	132 42 D.R	.....	30.36	73	E.SE.	20	31 11	80 20	3, SE. by E.	30.08	75	NE., NW.
27	28 37	131 12 D.R	.....	30.24	73	E.SE.	21	28 58	78 17	19, E. by N.	29.80	72	W.NW.
28	28 17	129 42	39, NE. by E. ½ E.	30.16	75	SE.	22	26 28	77 05	21, NE. by E.	30.00	70	W., S., SE.
29	28 25	129 08	2.7, SE. by S.	30.20	79	SE., S.	23	23 16	77 17	20.5, N. by W.	29.92	70	S.SE., NE.
30	29 05	128 16	10, SW. by S. ½ S.	30.04	77	N.NW.	24	20 02	76 35	14, NE. by N.	29.80	72	SE., E.SE.
31	30 49	124 08	26, S.SE.	29.76	77	N.NW.	25	17 30	76 54	12, NW. by N. ½ N.	29.76	75	SE., E.SE.
Sept. 1	32 03 D.R	120 23 D.R	.....	29.53	70	N.NW.	26	15 02	77 05	17, N.NW.	29.84	77	SE., E.SE.
2	33 34	116 44	44, SE. by S. ½ S.	.69	77	NW.	27	12 36	77 12	12, NW. ¼ W.	29.76	79	SE., variable.
3	34 04	113 23	16, E. ½ S.	.92	68	W., S.	28*	.....	.....	.....	.....	.....	.....
4	34 00	110 31	16, SE. by E. ½ E.	30.08	63	S.SE.							

* Anchored at Callao, at midnight.

N. B.—The chronometers ran very irregularly during this passage, placing us too far to the westward.

FROM CALLAO AND VALPARAISO TO INDIA.

I have advised a shipmaster who consulted me by letter as to this route to go by the way of Cape Horn, especially when the winds are favorable for an offing to Cape Horn bound vessels. The distance by the Cape to Calcutta is 10,500 miles; while the distance by the usual route west, or "running down the trades," as it is called, is 13,000, or 2,500 greater. The difference in time will be quite as great as this difference of distance would indicate. Indeed, in addition to distance, time is also in favor of the Cape Horn route, for the winds are stronger and quite as fair. Both distance and winds are still more in favor of Cape Horn, if Ceylon, Bombay, Mauritius, or any of the ports west, be the place of destination.

As one stands between the capes of the South Atlantic and looks north upon the chart, he sees a part of the ocean, in the shape of the letter A without the cross, which is untravelled, except by whalemen and sealers. The track to and around the Cape of Good Hope forms one side of the letter; the track to and fro around Cape Horn, the other. Between these two sides the ocean is a solitude. Among the many thousand merchant logs that are on file in the Observatory there is not one to show that any trader has ever performed the voyage from the offings of Cape Horn to the offings of the Cape of Good Hope.

I have a bottle paper which has traversed this space from west to east, and put the cross to this huge A in the ocean. It was thrown overboard by Captain Tobin, of the ship Ocean Chief, lat. 42° 40′ S., long. 42° 32′ W., January, 1857, and picked up at sea 350 days afterwards, by Captain Williams, of the Gideon Howland, in lat. 39° 50′ S., long. 36° 35′ E., p. 607, indicating a regular easterly drift of about 10 miles a day.

The remarks upon this route in former editions have called forth the following letter from Captain Feyen, dated March, 1857:

"In your most valuable Sailing Directions you express the wish to hear something about the passage from Cape Horn towards the Cape of Good Hope, and I am glad to be able to give you some little information as regards the route, having made a voyage from the Chinchas and Callao to Mauritius, in a Peruvian ship. We left Callao the 13th of November, 1854, and arrived the 13th of February, 1855, at Mauritius. What concerns the passage from Callao to Cape Horn was as usual. From Diego Ramirez steered for the Aurora Islands, which we did not see, passing, however, according to good observations, within sight of them. From 49° S. to 45° S., and 35° W. to 27° W., had, for three days running, soundings, and sometimes we passed over very shoal patches, with less than 25 fathoms. Had a cast of the lead twice a day. The first was 45 to 50 fathoms; the second day 50 to 60; and the third from 55 to 80 fathoms. All this time had an awkward, uncomfortable sea, which was at times almost dangerous for its short, breaking waves, which would fall on board with a tremendous force. The wind was, during this time, from the NW. to W.NW. The day we left these soundings fell in with a large iceberg, the largest I ever saw, and since then have been in the ice for three days, with a fresh breeze from the NW. and foggy weather. The ice ranged about from the SW. to the NE. and E.NE., and there is a remarkable current to the north and eastward. As you will see by the latitudes and longitudes on the margin, we steered a more northerly course than we should have done if the passage had been clear, as we intended to run her along to 52° E. on 45° S.

"Vessels bound from Valparaiso or Callao to the Indian Ocean should be very careful, and avoid going to the southward of 41° S., especially from October till April, in those longitudes,

to avoid the masses of ice which are drifting from there along to the eastward. It is my belief, further, that the passage from the SW. coast of America can be made in a comparative short space of time, as, to my knowledge, the English ship Morning Star made this passage from Callao to Mauritius in 45 days, and she is a full-built ship and not fast. Eight or nine vessels left with us from Callao for Mauritius, and they all have been in the ice—several for 5 and 6 days, and two Frenchmen had soundings pretty much agreeing with ours.

"I should think the Mauritius Observatory could give you the details of the several ships' logs, as they overhaul them there and take copies of what is interesting to them. I kept a private log, which I am very sorry not to have with me. Should you, however, have any question to ask which it is in my power to answer I shall be most happy to be agreeable to your wishes."

The way by the Cape Horn route to India is to proceed from Valparaiso as though you were homeward bound around the Cape, and then, with the "brave west winds" which prevail there, to run east with flowing sheets, passing between the isles of South Georgia and Sandwich Land, keeping a bright lookout for icebergs. The route thence crosses the prime meridian in about 54° lat., 20° E. in 50°, 35° E. in 40°, by which time the navigator will again find himself in the travelled thoroughfares, and will know how to proceed.

Distance from Valparaiso, *via* Cape Horn route,		Western, or usual route,
To Canton	11,500 miles.	10,800 miles.
To Shanghai	12,200 miles.	10,500 miles.
To Java Head	9,700 miles.	

In the southern summer the voyage from Valparaiso to Canton may, on account of the winds, be performed quite as quickly *via* Cape Horn as it may be by the route west. If the "brave west winds" will enable a ship by Cape Horn to average only 10 miles a day more during the voyage than she can in "running down the trades" west, time, which now is worth so much in navigation, would be somewhat in favor of the Cape Horn route even to Canton.

Vessels bound to Western India, or to Madagascar, or to East Africa, or the Mauritius, may also take the Cape Horn route with advantage.

FROM AUSTRALIA TO CHINA.

Vessels bound from the southern ports of Australia, in the season from September to April, may go west of New Holland; but at other seasons, and from Sydney and the east coast, it is better to go east.

Observations are very much wanted in all these parts of the sea, and owing to the want of them I am not prepared to issue any sailing directions for the various routes to and fro across the China seas, and its neighboring archipelagoes. I can only venture a suggestion here and there, which I hope will be regarded by navigators merely as suggestions for their consideration. Being in the dark as to the peculiarities of the winds and currents on this voyage, the following abstract log will perhaps afford navigators more and better light as to this route, and its winds, during the season when it was made, than they would be likely to derive from any information that it is in my power to give. Owing to the want of sea room on voyages like this, which pass through archipelagoes or close seas, other influences besides those of winds and currents supervene to limit discretion, consequently this route, like the route between China and the Straits of Sunda, is not open to much improvement by a study of the winds alone.

Abstract log of the ship Queen of the East (TRUMAN BARTLETT.) *From Sydney to Hong Kong.*

Date.	Latitude at noon.	Longitude at noon.	Currents, (knots.)	Bar.	THERMOM. 9 A. M.		WINDS.		
					Air.	Water.	First part.	Middle part.	Latter part.
1854.	° ′	° ′			°	°			
April 1	33 10 S.	156 20 E.	.....	30.3	68	74	SW.....	S.SW.....	South.
2	32 37	160 34	.....	30.2½	68	75½	South.....	S.SE	SE.
3	30 32	163 52	.....	30.3	69	75	SE. by E.	SE by E.....	SE. by E.
4	28 52	165 51	.....	30.3	69	75	E.SE.....	E.SE.....	E.SE.
5	27 16	167 12	.....	30.3	71	76	E.SE	E.SE.....	E.SE.
6	25 20	168 40	.....	30.1½	72	76	E. by S	East	E. by S.
7	23 22	169 30	....	30.0	77	78	E. by S.....	E. by S.....	E. by S.
8	21 23	170 56	.....	29.8½	78	78	E. by S.....	East	East.
9	17 28	171 12	.....	29.7	83	82	E. by S.....	E SE	E. by S.
10	13 33	170 58	36 miles, W.....	29.6½	85	85½	E by S.....	E. by S	E. by S.
11	10 44	170 40	24, W.....	29.6	88	86½	E. by S.....	East	East.
12	9 14	169 57	.....	29·6	88	87½	E.NE	E. by S	NE. by E.
13	6 44	168 45	.....	29.6	87	88	NE. by E	NE. by E.....	NE. by E.
14	5 00	167 00	15, W.....	29.5	86	88	NE.....	NE. by E	NE. by E.
15	4 04	165 40	24, W.....	29.6	87	89	E.NE.....	E.SE.....	E.SE.
16	3 10	164 40	.....	29.4	87	88	E.NE.....	E.SE.....	SE.
17	2 28	164 30	.....	29.5	88	90	NE.....	East	SE.
18	1 14	163 00	18, W.....	29.6	87	89½	SE	East	NE.
19	0 32	162 33	.....	29.6	90	89	Variable.....	Variable.....	Variable.
20	0 19 N.	161 45	20, W.....	29.5	86	89½	East.	E.NE..... .	NE.
21	0 55	161 20	.....	29.5	88	90	Calm.....	Calm	NE.
22	1 08	160 58	.....	29.5	88	89½	NE.....	Calm.....	Calm.
23	1 32	160 55	.....	29.6½	87	89	NE.....	NW	NE.
24	3 32	159 30	.....	29.6½	81	88	NE.....	E.NE.....	E.NE.
25	5 16	157 12	.....	29.6	82	87½	NE. by E	NE. by E.....	NE. by E.
26	8 06	155 00	.....	29.7	84	86½	NE. by E.....	NE.....	NE.
27	10 28	151 30	24, W.SW	29.7	83	85	NE.....	NE.....	NE.
28	12 09	148 35	24, W.SW.....	29.7	82	85	NE.....	NE.....	NE.
29	12 53	146 18	.....	29.7	85	85	NE.....	NE.....	NE.
30	13 04	144 50	.....	29.7	86	85	NE.....	NE.....	NE.
May 1	14 37	142 17	24, Westerly.....	29.7	86	85	NE.....	NE.....	NE.
2	14 30	140 04	None	29.7	86	86	N.NE.....	E.NE	E.NE.
3	15 30	138 03	12, Westerly.....	29.6	86	89	N.NE	N.NE.....	East.
4	15 54	136 40	12, W.SW	29.6½	86	88	N.NE	East.....	E.SE.
5	16 37	134 37	12, SW. by W.....	29.7	85	88	NE	NE.....	E.NE.
6	17 37	132 28	Little, if any.....	29.7	85	87	East.....	SE.....	NE.
7	18 13	131 07	.....	29.8	86	86	NE.....	East.....	NE.
8	18 25	129 13	24, E.SE	29.7	85	87	East.....	East.....	East.
9	18 37	127 53	38, E.SE..	29.7	86	88½	E.SE	East.....	E.SE.
10	19 00	126 40	15, E.SE.....	29.7	87	86½	E.SE	SE.....	SE.
11	19 43	125 10	None.....	29.7	86	85	SE.....	East.....	E.NE.
12	20 00	123 41	....	29.6½	86	85	SE.....	SE.....	S.SE.
13	20 10	120 30	.....	29.7	85	88	S.SE.....	S.SE.....	S.SE.
14	20 00	118 35	....	29.7	86	88	SE.	SE	SE.
15	20 24	115 54	.....	29.7	86	87½	SE.....	East.....	East.

FROM AUSTRALIA AROUND CAPE HORN.

"The homeward route recommended in the 5th edition of the *Australia Directory* of the Admiralty, already referred to, and published in 1855, is thus described at page 4 of that work:

"'Ships bound from Sydney to Europe or Hindostan, from the 1st of September to the 1st of April, may proceed by the southern route through Bass Strait, or round Tasmania, easterly winds being found to prevail along the south coast of Australia at that season, particularly in January, February, and March, when ships have made good passages to the westward, by keeping to the northward of 40° S., and have passed round Cape Leeuwin into the SE. trade-wind, which is then found to extend further south than during the winter months. In adopting the southern route, advantage must be taken of every favorable change of the wind, in order to make westing; and it is advisable not to approach too near the land, on account of the SW. gales, which are often experienced even in the summer, and the contrary currents, which run strongest in with the land. The prevalence of strong westerly gales renders the southern route very difficult, and, indeed, generally impracticable in the winter, although the passage has been performed at that season, by ships in good condition, which sailed well; but the northern route through Torres Strait is preferred in the winter months.'

"Here is a difference as wide as the poles, and as far as the east is from the west. These Sailing Directions which I am now writing are founded on, in fact they are the results of, the actual experience of navigators, and yet so great is the difference between them and the British Admiralty, the highest authority known in navigation.

"They recommend vessels bound to Europe or America, from Sydney, to steer to the southward. The Admiralty Directory says, go north.

"They advise vessels to go through Cook's Strait, or pass south altogether of New Zealand. The Directory of the Admiralty says, go north of New Holland, and pass through Torres Strait.

"They say, come east. The Admiralty says, go west.

"The same 'brave west winds' which take vessels so rapidly from the meridian of the Cape of Good Hope eastwardly, along the parallels of 50° to 60° towards Australia, will also bring them over eastwardly along the same parallels towards Cape Horn.

"The investigations which have been carried on at this office, concerning the winds of that part of the ocean, forbid me to recommend this Admiralty route to any homeward bound European or American vessel, under any circumstances whatever; always assuming that these Directions are intended for ships that are seaworthy, properly fitted and found. The average passage to Europe, by this admiralty route, is 120 days. Ships may occasionally find the easterly winds as low down south as the directions of the admiralty suggest; but it is the exception, not the rule, so to find them. In proof of this, I refer to the Pilot Charts of that part of the ocean, and shall quote other authorities.

"To establish this point, I take the first abstract that I lay my hands upon. That happens to be the Thomas Arbuthnot's—an English trader—from Sydney to London, *via* Cape Horn."

Abstract log of the Thomas Arbuthnot (G. H. HEATON.) *Sydney to London*, 1849.

Date.	Latitude at noon.	Longitude at noon.	Barometer.	THER. 9 A. M.		Winds—	Remarks.
				Air.	Water.		
	° ′	° ′		°	°		
April 23	41 07 S.	179 54 E.	29.95	64	62	East.....	Variable and clear.
24	44 10	177 31 W.	29.60	62	59	E. by N.....	Moderate and clear.
25	46 27	173 55	30.00	61	58	E. to N.....	Strong breezes and heavy rain.
26	47 42	171 24	30.10	58	54	N to N.NW.	Strong breezes and heavy rain.
27	49 04	171 04	30.20	58	56	East....	Moderate and clear; a heavy swell.
28	50 01	166 14	30.08	58	54	NE. to NW..	Steady, strong breezes, and clear.
29	50 14	160 40	29.70	55	53	W.NW. ...	Steady, strong breezes, and clear.
30	50 32	154 59	29.70	54	52	West.....	Steady, strong breezes, and clear.
May 1	50 49	150 22	29.80	53	51	West.....	Steady, strong breezes, and very cold.
2	50 47	145 02	29.70	54	49	West.....	Steady, strong breezes, and very cold.
3	51 24	139 48	29.60	53	48	West.....	Steady, hard gales, and very cold.
4	52 04	134 30	29.70	52	47	West.....	Steady, hard gales, and very cold.
5	52 19	128 35	29.75	50	46	West.....	Hard gales; very cold.
6	52 48	123 32	29.70	50	44	West.....	Hard gales; very cold.
7	53 11	117 50	30.05	50	44	NW. to W..	Hard gales; very cold, hazy, and damp.
8	53 40	112 48	30.08	50	44	W.SW. to SW.	Hard gales; very cold, hazy, and damp.
9	54 09	106 37	29.50	50	44	SW.....	Hard gales; much sea; much snow.
10	54 33	101 34	29.35	50	44	SW. to W...	Moderate breezes and clear.
11	56 06	96 23	29.50	45	44	SW. to S.....	Freshening gales, with a high sea.
12	55 21	92 06	29.20	43	40	S.SE. to W..	First part hard gales; ends moderating.
13	56 24	86 38	29.22	44	43	West.....	Steady, strong winds, heavy squalls, and rainy.
14	56 40	80 24	29.50	44	42	West.....	Steady, strong winds, heavy snow, and rain.
15	56 40	75 27	29.48	46	48	SW. to S.SE.	Variable, with light rain; ends increasing; snow.
16	56 52	69 10	29.35	40	40	South.....	Very heavy squalls; high sea.
17	56 52	65 20	29.17	42	38	SW. to S.SE.	Very heavy squalls; 2 p. m. saw Diego Ramirez island.
18	55 05	60 19	29.50	43	40	SE. to NW..	Heavy gales, with lots of snow.
19	53 21	55 24	29.35	42	42	SW. to S....	Heavy breezes; continual snow squalls.
20	51 15	51 17	29.50	42	42	SE. to S.....	Heavy breezes; continual snow squalls.
21	49 57	48 23	26.48	44	42	SW. to S	Moderate and clear.

"Now this is not a very fast ship, yet in forty days from Sydney she has doubled Cape Horn.

"She did not get into those 'brave winds' until April 27, lat. 49° S. From that time till May 17, when she was off the Horn, she ran with flowing sheets through these free winds of the west 106° of longitude in 20 days, which gives her the average rate of 5° 18′, say 200 miles per day.

"The barque Gem of the Sea, (A. Bower,) which took the Admiralty route to Australia, and missed the strength of these westerly winds, resolved to avail herself of them from Port Philip to Callao. She accordingly followed very nearly the Great Circle route, reaching the parallel of 50° S. in about longitude 169° E., and not recrossing it until 140° W., (9 days.) She arrived at Callao, November 1, 1853, after a very quick run of 37 days from Port Philip. Steam could not have done much better. She had westerly winds all the way until she reached the parallel of 19° S., longitude 83° W. It is unusual, however, to carry these westerly winds so far up into the region of SE. trades.

"Again, the distance home from Australia is very much the same by Cape Horn as it is by the Cape of Good Hope.

"It is obvious, therefore, that a vessel, running before these west winds, to Cape Horn, takes a route home, which as to time—the true measure of distance—is much nearer than it would be to steer west in the face of these winds. But the Admiralty Directory recommends

the navigator, it may be said, to go north, to get out of the region of these west winds; to go where the winds are easterly, and then steer west.

"In reply, it may be remarked that, by going towards the equator, you go away from the Great Circle, where the degrees are short, and the distance shortest, into parallels where the degrees are long, and the distance greatest; and then the easterly winds are not, for speed, equal to those from the 'bonny west,' further south.

"These winds are already beginning to be known so well to the Australian traders, that it is usual for them, I am told, when bound home by this route, to strike topgallant masts before leaving port. It is a voyage that tries ship and crew; but of all the voyages in the world, that part of it between the offings of Australia and Cape Horn is perhaps the most speedy for canvas.

"There it may outrun steam.

"I have deemed it proper thus to allude to what I consider faulty *Sailing Directions*, because that *Directory* is uttered by the highest authority known to navigators; and because it was necessary to point out wherefore, and wherein, I differ, that navigators may then be enabled the better to choose, each for himself, which of the two to follow. And I may add, that I have not yet heard of a single homeward bound vessel taking the Admiralty route from Australia. Certainly, none who are co-operating with me have returned an abstract log for that voyage."—(7th edition, pp. 802–5.)

I find nothing to alter in the above, by reason of what has fallen under my observation since it was written. It is plain sailing, and the run from Australia to Cape Horn is one upon which further discussion does not seem to promise a much further saving of time. Nevertheless, there are many highly interesting physical questions which, with the requisite number of observations along this route, further discussion might enable us to answer. With tables of crossings, time, and distance, as those from the Straits of Sunda to 20° E., we should have a standard of comparison as to strength of the "brave west winds" from the Cape of Good Hope to Australia, and those to Cape Horn.

FROM THE SANDWICH AND SOCIETY ISLANDS HOME.

The Society are on the wayside of the route around "the Horn" from the Sandwich Islands.

South of the calms of Capricorn the winds are the same all round the world. Taking them on the meridian of the Cape of Good Hope, and between the parallels of 45° and 50° south, a fast ship may run with them to the eastward, averaging upwards of 200 miles a day all the way round to Cape Horn.

Captain McKay, in his passage of 83 days, in the Sovereign of the Seas, from the Sandwich Islands to New York, carried the SE. trades down to the parallel of 45° south. There he found the baffling wind peculiar to the horse latitudes; after crossing the parallel of 48°, he cleared this belt and took the famous westerly winds which wafted him along so finely.

There is warm water, an Australian gulf stream, to be crossed or drifted along with, between Port Philip and Cape Horn. In the paper on the Gulf Stream, which is referred to at page 304, vol. I of this work, the existence of such a body of warm water was theoretically pointed out; it is marked on Plate XI, vol. 1, and the abstract log of the Sovereign of the Seas gives practical proof of its existence, as the following extract will show:

Date.	Lat. S.	Long. W.	Temp. air.	Temp. water.
	° ′	° ′	°	°
March 8	47 49	158 30	70	70
9	48 26	156 23	67	65
10	48 25	151 24	65	65
11	48 15	143 44	60	60
12	48 19	136 32	60	62
13	48 40	129 19	40	43
14	48 58	125 00	43	42

Here is a change of 19° in the temperature of the water in one day's run; and from the parallel of 47° 49′ to that of 48° 40′, though the difference of latitude is less than one degree, the difference in the temperature of the water is 27° !

I shall not now stop to go over what has already been said (page 207, vol I) about the source of this warm water and the genesis of this warm current; suffice it for our present purpose to say, it receives its warmth in the equatorial regions; but whether in the Indian Ocean or in the torrid zone of the Pacific it is immaterial for our present purpose. We know it comes from warmer latitudes than those in which the Sovereign of the Seas found it; and therefore it has southing, and if southing, probably also easting, in its course.

In like manner, the cold water into which this ship ran from the warm, we may, for like reasons, suppose to come from towards the polar regions, and to be bound probably to the coast of Peru, there to feed that remarkable current which was discovered by Humboldt, and which runs up as far as to the Gallipagos Islands, where it probably joins the equatorial current that flows west from the meridian of 100° W. in the torrid zone of the Pacific; and which, taking a sweep down towards the Society Islands, may complete the circuit, and so feed the warm current of which I have been speaking. Is this cold current in 45°, or 50°, or 55° south, an ice-bearing current?*—(*Vide* Plate XIV, Vol. I.)

Vessels bound around Cape Horn, from any of the inter-tropical islands of the Pacific, should run south through the trades with topmast studding-sails, make for the trade-like westerly winds of the South Pacific, and with them run down their easting for Cape Horn.

* Much has yet to be learned concerning the currents in the Pacific. While the proof of this sheet is in hand I receive the following letter from Captain Piper, dated Johnston's Islands, Pacific Ocean, December 22, 1858: "Having been appointed" says he "to the charge of these islands by the Pacific Guano Company, I have, during my brief residence here, noticed many things which I have thought might interest you to know.

"The first is: I have found lodged on the island one large Oregon pine tree, with roots attached, about 100 feet long and about five feet in diameter at the base; also one large redwood log, the growth of California, about three feet diameter; also one other Oregon pine tree, about three feet in diameter at base, with roots attached; also the greater portion of a sycamore tree, about a foot through.

"The Oregon pine doubtless came out of the Columbia; the redwood from the Mendocino, or Albion River Mills of California, as it was a saw log; the sycamore from the banks of the Sacramento, as I have seen none grow elsewhere on the coast. Samples of this wood I have sent to you by Captain Nelson, of the ship Harvey Birch, which I hope you will receive in due time."

Johnston's Islands are in lat. 17° N.; long. 169° 30′ W. These logs probably drifted down with the cold California current into the region of the NE. trades, and then by these winds and the sea were blown and drifted towards these islands. This would seem to indicate that the currents of the North Pacific run in a sort of circle, viz: North along the shores of China, as in the gulf stream of Japan; then east by the Aleutian Islands, as the drift-wood there abundantly shows; then along the NW. coast to the south, as the thermometer and wrecks show; and then, as indicated by these logs, to the east, and so back to China. We have in the midst of this vast pool another woody sea, where vast quantities of drift are brought together.

I shall quote the abstract log of the Sovereign of the Seas, McKay, on her celebrated run from Oahu to New York, in 1853.

This log will also serve still further to illustrate these Sailing Directions for the homeward passage from Australia.

The Sovereign of the Seas is one of the glorious fleet of a thousand sail that is voluntarily engaged in making observations for the Wind and Current Charts. She it is, it will be recollected, who, taking them for her guide, made the extraordinary run of one hundred and three days from New York to San Francisco, both crossing the equator in the Pacific and arriving in port on the day predicted.

Returning from the Sandwich Islands to New York in the remarkable short run of eighty-three days, she passed through a part of the Great South Sea, which up to that time had been seldom traversed by traders, at least I had the records of very few that had.

Little or nothing, except what conjecture suggested, was known as to the winds in this part of the ocean. The results of my investigations elsewhere, with regard to winds and the circulation of the atmosphere, had enabled me announce, as a theoretical deduction, that the winds in the "variables" of the South Pacific would probably be found to prevail from the westward with a trade-wind like regularity.

Between the parallels of 45° and 50° S. and from the meridian of the Cape of Good Hope eastward, around to that of Cape Horn, there is no land or other disturbing agent to intercept the wind in its regular circuits; here the winds, it was conjectured, would be found blowing from the west with greater force than from the east in the trade-wind regions; and, giving rise to that long rolling swell peculiar to those hyper-austral regions of the Pacific, they would enable ships steering east to make the most remarkable runs that have ever been accomplished under canvas.

The Sovereign of the Seas has afforded the most beautiful illustration as to the correctness of these theoretical deductions.

Leaving Oahu for New York, *via* Cape Horn, February 13, 1853, she stood to the southward through the belts, both of the northeast and the southeast trades, making a course good on the average through them, a little to the west of south. She finally got clear of them, March 6, after crossing the parallel of 45° S., upon the meridian of 164° W.

The 8th and 9th she was in the horse latitude weather of the southern hemisphere. So far her run had been good, but there was nothing remarkable in it.

Having crossed the parallel of 48° S., she found herself, on the 10th, fairly within the trade-like west winds of the Southern Ocean; and here commenced a succession of extraordinary days' runs that have been seldom equalled, rarely surpassed.

From March 9 to March 31, from the parallel of 48° S. in the Pacific to 35° S. in the Atlantic, during an interval of twenty-two days, that ship made 29° of latitude and 126° of longitude. Her shortest day's run during the interval, determined by calculation, from the position given in the log, being 150 knots. The wind all this time is not recorded but once with easting in it; it was steady and fresh from the westward.

In these twenty-two days that ship made five thousand three hundred and ninety-one nautical miles. The predicted triumph of canvas under these west winds over steam is already realized; for here is a ship under canvas, and with the winds alone as a propelling power, and with a crew, too, so short, the captain informs me, that she was but half manned, accomplishing, in twenty-two days, the enormous run of six thousand two hundred and forty-

five statute miles, (one-fourth the distance round the earth,) and making the daily average of two hundred and eighty-three statute miles and nine-tenths, (283.9.) During eleven of these days, consecutively, her daily average was three hundred and fifty-four statute miles; and during four days, also consecutively, she averaged as high as three hundred and ninety-eight and three-quarters statute miles.

This abstract log will also illustrate very well the homeward passage from the islands in the Pacific generally; that is, the way home thence is in all cases to run down south until you get into the westerly winds, and then bear away east.

Captain McKay made only one mistake by the way, and that was in getting from the SE. trades, through the belt of the horse latitude weather, into the NW. trades, I may call them, of the southern hemisphere.

In passing from one system of trades to the other, or from the trades to the variables, there is always a debatable ground, which belongs neither to trades nor variables. This debatable ground between the trades about the equator is called the doldrums. Between the trades and the variables of the extra-tropical regions it is called the horse latitudes.

In these debatable grounds calms and baffling winds are to be expected, sometimes of several weeks, and often of many days, and occasionally of only a few hours' duration. And the rule for crossing these belts is, whenever there is sea-room, to steer due north or south, according to your destination.

Therefore, in coming from the Sandwich or the Society Islands, or California to Cape Horn, the rule should be to go south as fast as possible, in order to get in the NW. trade-wind region of that ocean with its heaving swells. Until you get into the region of these winds no course can be given:—aim to get south and shape your course according to the winds. The best passages are to be made by crossing the trades with topmast studding-sails set.

And in illustration of this I might refer to the abstract log of the Sovereign of the Seas, as well as of the Comet and the Flying Dutchman, from California. The last two ships, though they lost the SE. trades in about 30°, did not get the regular westerly winds for some ten days afterwards, near the parallel of 48° or 50°.

All three of these ships were in this debatable ground of Capricorn in the Atlantic from two to three days; the Sovereign of the Seas making only 68, 84, and 72 miles a day; the Comet, 27 and 43 miles on two successive days; the Flying Dutchman, 46 and 104. Indeed, it may be said that these ships fell in with the baffling winds of the horse latitudes on the 3d of April, when they lost the NW. trades.

Returning, therefore, to the route to Australia, and thence home *via* Cape Horn, I beg to impress navigators with the fact that I am not prepared to speak outside of the ice table, p. 580, as to the ice that may be expected so low down as the parallel of 55° or 60° south, between the meridians of the Cape of Good Hope and Van Dieman's Land; and, therefore, those who take these Sailing Directions for their guide must judge for themselves as to dangers from the ice by the route of which I am now treating. I have no reliable information upon that subject, except such as I have already quoted at pp. 58–1.

The Sovereign of the Seas, (L. McKay,) *from Honolulu to New York*, 1853.

Date.	Latitude at noon.	Longitude at noon.	Dist. per log.	Bar.	Ther. 9 A. M. Air.	Ther. 9 A. M. Water.	Winds. First part.	Winds. Middle part.	Winds. Latter part.	Remarks.
	° ′	° ′			°	°				
Feb. 12	.....	.....	.....	.....	.....	.....	.....	.....	.....	Sailed from Honolulu.
13	19 21 N.	158 16 W.	168*	30.10	75	77	NE.....	Variable...	E	First part, squally; ends, light.
14	18 10	159 10	89	30.10	75	77	E. to E.SE...	SE.....	E. to NE.....	Nearly calm.
15	16 20	159 43	120	30.05	78	78	SE.....	S.SE.....	S.SE.....	Nearly calm; fine and clear.
16	12 27	160 28	265	30.00	75	78	S.SE.....	S.SE.....	E. by S.....	Ends, fresh and squally.
17	8 13	159 00	301	30.00	77	76	E. by S.....	E. by S.....	E.NE.....	Heavy breezes and cloudy weather.
18	4 20	157 42	302	30.00	81	79	NE. by E ...	NE. by E....	E. to E.SE...	Strong breezes; rough sea.
19	2 40	158 49	166	30.00	80	80	SE. by E.....	SE.....	SE	Moderate weather.
20	0 47	160 50	156	.....	.....	.....	SE.....	SE.....	SE. by E....	Pleasant weather and light breeze.
21	2 27 S.	157 35	211	30.00	85	85	E.NE.....	E.NE.....	E.NE..	Do.
22	5 47	159 38	199	30.10	85	83	.....	.....	.....	Do.
23	8 32	160 03	164	30.00	87	85	E.....	E	E.	Do.
24	9 22	160 11	82	29.95	87	81	E.SE.....	Variable.....	S.SE.....	Light and variable.
25	11 44	160 10	140	29.90	85	83	E.NE	Variable.....	Variable.....	Squally with rain.
26	16 25	159 54	307	.....	.....	.....	Variable.....	E	E	Ditto, fresh, with heavy rain.
27	20 42	160 59	308	29 90	78	82	E.....	E	E	Do.
28	24 34	160 41	231	.....	.....	.....	E.....	E	E.NE.....	Steady breeze and clear.
Mar. 1	27 32 D. R.	159 36 D.R.	179	29.90	77	80	NE. to SE...	E.SE.....	NE.....	Variable winds; ends, fresh.
2	30 17	159 20	173	29.92	78	78	NE.....	NE.....	NE.....	Light winds, with heavy rain.
3	32 41	159 40	150	29.00	87	76	SE. by E....	E	E	Ditto; ends, pleasant.
4	37 14	161 15	311	29.82	71	72	S.SE.....	S.SE.... ...	S.SE.....	Squally; sprung fore-topmast.
5	42 00	163 21	308	29.80	70	70	S.SE.....	S.SE.....	S.SE.....	Strong breezes and squally.
6	45 04	164 00	198	29.93	70	70	S.SE.....	E	E. by N.....	Do.
7	47 07 D. R.	.....	129	.....	.....	.....	SE. by E	SE. by E.. ..	SE. by E.....	Moderate; fished fore-topmast.
8	.....	.....	96	.....	.....	.....	NE. by E....	NE. by E ...	NE. by E...	Moderate.
9	48 26	156 23	169	29.90	67	65	N	NW.....	NW.....	Moderate and pleasant.
10	48 25	151 24	271	30.05	65	65	N.W.....,....	NW.....	NW.....	Fresh breezes and pleasant.
11	48 15	143 44	332	30.05	60	60	N.W.....	NW.....	NW.....	Strong gales and heavy squalls.
12	48 19	136 30	312	29.89	60	62	W.SW.....	W.SW.....	W.SW.	Strong breezes throughout.
13	48 40	129 19	284	28.95	40	43	W.SW.....	N.NW.....	N.NW	Fresh breezes.
14	48 58	125 02	207	.....	.....	.....	W.NW	NW.....	SW.....	Fresh gales and heavy sea.
15	49 00	118 46	275	.....	.....	.....	W.SW.....	W.SW.....	W.SW.....	Fresh breezes and cloudy.
16	49 40	109 28	396	.....	.....	.....	NW.....	NW.....	NW.....	Strong breezes and cloudy, with rain.
17	50 25	101 58	311	30.05	43	43	NW.....	NW.....	NW.....	Strong breezes and heavy sea.
18	52 12	91 28	411	.....	.....	.....	NW.....	NW.....	NW.....	Strong breezes and rough sea.
19	55 18	84 03	360	.....	.....	.....	NW.....	W.....	W.....	Strong westerly winds and heavy sea.
20	56 18	76 58	267	29.72	43	41	WNW.....	W.NW.....	W.NW.....	Strong breezes and pleasant.
21	56 23	69 00	307	29.60	49	49	N.NW.....	N.NW.....	NW.....	Moderate breezes and pleasant.†
22	55 17	64 50	172	29.60	.....	.....	N.NW.....	N.NW.....	N.NW.....	Light breezes and warm weather.
23	54 37	60 30	146	29.70	40	40	NW....	N.NW.....	N.NW.....	Fresh and foggy.
24	52 42 S.	53 15 W.	251	29.75	45	45	N.NW.....	NW.....	NW.....	Moderate breeze and foggy.
25	50 15	47 47	203	29.78	50	48	N.NW.....	W.NW.....	NW.....	Steady breezes and pleasant weather.
26	47 53	43 05	168	30.47	.....	.....	W.NW.....	W.....	W.N.W.....	Light breezes and pleasant.
27	44 39	43 24	190	29.95	47	47	W.NW.....	N.NE	NW.....	Light breezes and cloudy.
28	41 50	38 30	.....	29.95	52	52	.....	.....	.....	Light breezes and heavy sea.
29	39 19	34 20	237	30.10	54	54	NE. by N....	NE	E.NE.....	Moderate breezes and cloudy.
30	37 30	31 18	183	30.52	.....	.....	N	N	N. by E.....	Light breezes and pleasant.
31	35 28	29 57	188	29.95	63	63	N	N.NE.	N.NW	Strong breezes and squally; rain.
April 1	34 10	28 11	161	29.90	67	66	N.NE.....	N.NE	NW. by N....	Light breezes and pleasant.
2	32 13	30 47	171	30.12	67	67	N. by E.....	N.NE	NE.....	Do.
3	31 09	29 16	105	30.15	73	73	N. by E.....	N. by W.....	N	Do.
4	29 47	27 55	135	.....	.....	.....	N. by W.....	N. by E.....	N. by E.....	Do.
5	28 39	27 47	124	30.18	77	77	N	N. by E.....	N	Light breezes and rain squalls.
6	27 33	26 49	143	.....	.....	.....	N. by E.....	N. by E.....	N. by W.....	Light breezes and pleasant.
7	26 24	27 12	84	30.12	80	80	N.NW.....	SE	N.NE	Squally, with rain; ends, clear.
8	24 19	28 47	128	30.11	78	78	E.	E.NE.....	N.NE	Light breezes and pleasant.
9	22 18	30 20	156	30.10	76	76	N. by E.....	E.NE.....	N.NE	Light breezes and pleasant; rain.
10	21 11	32 21	149	30.10	79	79	N.NE.....	E.NE.....	NE.....	Light variable winds and pleasant.

* The distances in this column are the distances as given by the log. † This day, made Diego Ramirez, bearing E. by S., distant 15 miles.

The Sovereign of the Seas—Continued.

Date.	Latitude at noon.	Longitude at noon.	Dist. per log.	Bar.	THER. 9 A. M.		WINDS.			Remarks.
					Air.	Water.	First part.	Middle part.	Latter part.	
	° ′	° ′			°	°				
Apr. 11	19 53 S.	33 24 W.	207	30.10	79	79	NE. by E....	NE. by E....	NE. by E	*Moderate breezes and pleasant.*
12	12 31	34 37	280	30.00	76	76	E..... ...	E	E	Fresh and cloudy.
13	9 37	34 17	196	30.00	76	76	E.....	N.NE	E	Moderate; ends, squally, with rain.
14	7 03	34 22	141	29.90	82	82	E.....	E	S.E.....	Light and pleasant.
15	4 50	35 20	152	29.90	83	82	SE.....	SE	S.E.....	Fine weather.
16	3 14	37 25	166	29.95	85	84	SE.....	E.SE.....	E	Light winds and clear.
17	2 20	39 05	99	30.00	89	87	E.NE.....	E.NE.....	E.NE.....	Calm and squally, with light rain.
18	1 46	40 00	61	30.00	89	89	E.NE.....	N.NE.....	Calm.....	Light breezes and squalls.
19	0 48	40 37	98	30.00	89	89	Variable.....	E.NE	Variable.....	Calm, with passing squalls of rain.
20	0 49 N.	42 22	77	30.10	90	88	N.NE.....	N.NE	N.NE.....	Light airs and sultry.
21	1 21	41 18	53	30.10	90	90	N.NE.....	SE.....	Calm.....	Light airs and passing clouds; rain.
22	2 42	42 42	106	.....	.....	.....	Calm.....	N.NE	N.NE	Calms and squalls.
23	5 34	45 15	237	30.14	85	85	NE. by N....	NE.	W.....	Fine breezes, with occasional squalls.
24	.....	.....	293	.....	.....	.....	N.NE	N.NE.....	N.NE	Fine breezes.
25	13 20	52 23	285	.....	.....	.....	.....	.....	.....	Fine breezes and fine weather.
26	16 10	54 55	282	30.15	85	85	E.NE.....	E	E	Fresh breezes and pleasant.
27	19 42	59 02	286	30.12	86	85	E	E	E	Strong breezes and passing clouds.
28	23 21	61 35	273	30.00	83	83	E	E	E	Pleasant breezes, with a rough sea.
29	26 00	62 40	188	30.15	86	86	E.SE.....	W. ½ S.....	S.E	Light breezes and pleasant.
30	28 10	64 00	153	.....	.....	.....	SE	SE	S.E.	Ends rainy, with thick weather.
May 1	29 53	68 03	196	30.00	77	77	SE	NE.....	N.NE	Ends rainy, with moderate breezes.
2	31 43	71 26	199	30.12	68	71	N. by E.....	N.NE	N.NE	Pleasant, with passing clouds.
3	33 13	73 26	.....	.....	.....	.....	.....	.....	....	Weather cool and pleasant.
4	34 32	71 47	.....	.....	.....	.....	.....	.....	.....	Commences calm; ends with moderate breezes.
5	37 22	74 35	.....	.....	.....	.....	.....	.....	.....	Ditto; sounded in 40 fathoms.
6	.....	....	.....	.....	.....	.....	....	.....	.....	Made Barnegat light at 1 a. m.; took a pilot on board, and stood in; at 3 p. m. anchored in East river.

Captain Hoff, of the United States ship John Adams, in a letter to me, dated at sea, April 19, latitude 34° 34′ N., longitude 71° 33′ W., says:

"In a letter addressed to the Hon. Secretary of the Navy announcing to him my arrival at St. Helena, I ventured to express an opinion as to the advantages which might arise to the mercantile marine, especially the heavy laden guano ships, did they take a route similar to this ship after passing Cape Horn and running off in that belt of west wind which you lay down in your plate XVIII of 'Sailing Directions;'* she can then lay out a direct course for St. Helena, passing to the northward of Tristan d'Acunha, or passing to the southward of it, taking any parallel of between 40° and 45° where she is more likely to keep this west wind in greater strength; and when in the longitude of the island steer north, cross the 'calm belt,' and take the SE. trades, which, you are fully aware, will allow her to stop at the island for supplies or proceed on, crossing such a meridian on the line as will enable her (per your table) to take the NE. trades at the earliest time, making almost an uninterrupted fair wind.

"The passage of 53 days which this ship made from Valparaiso I do not think should be taken as a basis to form an estimate of time in comparison to the driving efforts made by the mercantile marine generally. We had much boisterous weather on the Pacific side, and from the general opinion of the officers and of the oldest hands in the ship that her standing rigging 'had the life taken out it,' (before I joined her,) and necessarily had to be cautious in giving it as little strain as possible, hence you may impute some delay, connected as it was with much severe weather and heavy gales, one of which we had to scud before for 23 hours, running as far south as 58° 30′, with two other vessels in sight compelled to the same course. The gale abating we passed the Cape with a light SW. wind, and on reaching to the eastward of it NE. winds for five or six days impeded us. Hence I am within bounds when I say that had the 'Adams' met with the usual summer weather on the Pacific side and taken the strong southwesters, to run around the Cape, which prevail most of the year, she could have easily made it in ten days less time, dull and heavy sailer as she is known to be.

"There is, in my opinion, this much to be said in favor of this route; you can run off to the eastward and avoid those boisterous winds which centre and are so often felt with dangerous results about the Falklands—a vicinity of which Parker and Fitzroy, of the royal navy, say, 'a region more exposed to storms, both in winter and summer, it would be difficult to mention, and during the summer a calm day is an extraordinary event.'

"It may be proper for me to state that we sighted but one iceberg, in latitude 50° 06′ S., longitude 50° 48′ 30″ W., and that one, in the great ocean around him, seemed like some stray individual who had escaped his brother bergs far south of him.

"It may be as well for me to mention also that in conversation with Admiral Bruce, commanding the English fleet in the Pacific, he seemed greatly alive to take this route on his return to England, but it was expected of him to take home the English minister from Brazil. I understood the French sloop 'Ambuscade' had already orders to take that route, and was expected to sail in a few days after us. The French consul informed me at the island that he looked for her daily, having a large quantity of letters in waiting.

"I lay this route, somewhat with hesitation, before you, feeling satisfied that it had not escaped your attention before; but not aware that any ships of our navy had made this passage, it seemed to me a matter of duty to call attention to it, and on your examination of

* 7th edition.

the 'abstract logs' I trust it may lead to one of greater advantage in point of time than the one I have passed over in this ship.

"I forward, also, the enclosed document of Lieutenant McCrea, an able and observant officer, doing the duty of master on several passages of this ship, and from his more minute references will greatly assist you in your examination of the abstract logs."

Also, Lieutenant McCrea, of the same ship, whose excellent remarks I have before had occasion to quote, says:

"Our passage from Valparaiso around Cape Horn admits of considerable comment, and though you are so well acquainted with that region I hope the 'abstract' will give you some new data. Regarding the barometer, it never failed us while west of Cape Horn, and told us faithfully the approach and abatement of all the gales; off the Falkland islands it was not so correct, though we had no gales, but drizzling rainy weather and easterly winds. A ship going to St. Helena from around the Horn should first keep west, clear of the Falkland islands, say four hundred miles, and not go north of 43° south till she can lay her course four points to windward in the SE. trades, and keep clear of Tristan d'Acunha at least four hundred miles, for the surrounding region is certainly under the influences of Tristan and Gough's Island.

"I would call your attention to our passage from St. Helena to this port: we crossed the line in 34° 16′ longitude W., and ran from one trade into the other; and in latitude 21° 30′ N. and longitude 57° W. we had variable winds (the wind having been south of east for three or four days previously) for several hours, a head sea from the westward, lightning in the northward, and very heavy rains and hard squalls. Trusting you will appreciate my motives for thus addressing you,

"Very respectfully, your obedient servant,

"EDWARD PRICE McCREA,

"*Lieutenant United States Navy.*

"Lieutenant M. F. MAURY, *United States Navy.*"

From Tahiti to Tristan d'Acunha the Great Circle passes through Terra del Fuego, and the distance is about 6,800 miles. The route from Cape Horn homeward may, as Hoff suggests, be shortened several days by running further to the east and before standing north after passing the Falkland islands. By doing this a vessel will get into a region of better winds, though, unless there is a particular reason, there is no necessity for her going as far out as Tristan d'Acunha or even as St. Helena.

The best crossing in the South Atlantic of the parallel on which Tahiti stands is about longitude 25° W. Now, suppose there was a ship canal dug on this parallel right straight through South America. How much, let me ask the ship master who is not familiar with the use of the terrestrial globe and the projection of Great Circle routes, would this canal shorten the route as above around Cape Horn to the intersection of this parallel with the meridian of 25° W. in the Atlantic? I suppose he will be surprised to hear that the difference of distance *via* Cape Horn and *via* the supposed canal would be less than 100 miles, and not more than three or four hours of good clipper sailing before the "brave west winds" of the Cape Horn route.

Homeward bound vessels, both European and American, will generally find it to their advantage after doubling the Horn to cross 40° in the Atlantic about 30° W. and 15° in about 25°. Ice or winds may sometimes render it inexpedient to attempt much easting on the polar side of 40° S. I speak of the rule. The navigator who puts it in practice will be the best

judge of exceptions. Pass to the east of Marten Vaz and you will avoid the light airs along the coast of Brazil.

FROM CALCUTTA AND WESTERN SUMATRA HOMEWARD.

This route traverses, especially in the winter time, the most remarkable belts of wind that are anywhere to be found. Lieutenants Guthrie, Newcomb, and Houston are now at work mapping them down, so that their limits may be established as the limits of the calm belts are in the Trade-Wind Chart. A vessel coming out of Calcutta in February, for instance, and gaining an offing, may expect to pass through the wind streaks of this route *generally* as follows: First, taking the NE. trades, she will carry them to, say, the parallel of about 6° N.; losing these, she enters the belt of adjoining calms, which is a degree or two broad, but shifting; clearing this belt, she comes to a westerly monsoon with northing in it. As she proceeds south, this westerly monsoon, with northing in it, will gradually haul due west, and finally become a westerly monsoon with southing in it. She may carry these monsoons to 6°, 8°, or 13° S.; crossing them, she then enters the calm belt which separates them from the regular SE. trades, which she will generally find in the north winter time between 10° and 15° S.

Here is a streak of winds flowing with monsoon regularity in mid-ocean, from the west, along the equator. This wind is going to Sumatra. The agents which produce it seem to have effectually concealed themselves, so far, from meteorologists, nevertheless they are to be sought for in some of the many phases which the equatorial cloud rising assumes especially over these seas.

The sailing directions for this route are few and simple. Make the best of your way south until you get the SE. trades, then join the Rodriguez route, and cross the parallel of 20° S. near the meridian of 60° E., taking care to cross the various belts of light airs and calms as nearly at right angles as practicable.

At 20° S. this route falls in with the route from the Straits of Sunda, Bally, etc., to the Fair Way off the Cape of Good Hope; thence to the offings of the Cape the two routes are one.—(See page 814, *et seq.*) The following tables of times and crossings were compiled by Lieutenants Young and McCauley.

Crossings from Calcutta to the offings of Good Hope.

Name of vessel.	Date of sailing.	80° E.		70° E.		60° E.		50° E.		40° E.		30° E.		20° E.		Total days.
		Days.	Lat. S.	Days.	Lat. S.	Days.	Lat S.	Days.	Lat. S.	Days.	Lat. S	Days.	Lat. S.	Days.	Lat. S	
			°		°		°		°		°		°		°	
Grey Feather	Jan. 1,1852	21	19½	3½	24½	5½	26	3	27	4	29	4	34	6	35	47
Newton	1,1852	27	19	5	24	3½	24	4½	27	5	29½	5	33½	4	37	54
Panther	1,1855	23	18¼	5½	21	6½	23½	4½	26½	3½	29	4	33	4	34	51
Isabella	2,1850	32	18	3½	22	4	25	3½	26½	4	29	4	33	5½	35	56½
John Knox	4,1857	26	16	3	22	5	26½	3	28	4	29	3	32	3	35	47
Mount Vernon	8,1835	23	17	5½	23	3½	23½	5	28	4	31	6	34	7	35	54
Gloriana	10,1856	28½	15½	5½	22	5½	26	4	27½	3½	30	5	33	6½	35	58½
Panther	15,1857	25½	17	4	23	2½	27	2½	29	2½	31	3	32	5	35	45
Bremen	17,1853	34	16	6	24	4	27	4½	32	4	31	5½	34	8	35	66
Emerald	18,1829	20	15	3	20	3½	23	5½	25	3	28	4	33½	3	35½	42
Syren	20,1857	26¼	17	3¾	22	4	25	3½	29	2	29	3½	33	4	35	47
Goddess	21,1857	28	19	4	23	3½	25	4½	27½	2½	30	3½	34	5½	35	51½
Cohota	21,1855	66½	15	2½	19	3	23	4	26	3	28	5	34	7	36	91
Culloma	22,1852	30	15	5	19	4½	23	4	26	9	29½	5	32	7	34½	64½
Messenger	22,1856	22	15	5	20	5	25	4½	27	3	30	4	32	9½	35	53
George Saunders	23,1825	25½	19	3	21	2½	23	6	27	4½	30½	6½	35	3	35	51
Mars	25,1830	20	13	9	22	6	23½	3½	26	3½	28	5	34	6½	35	53½
Emerald	26,1828	26	18	5½	22	4½	24	5	27	2½	28	5	33	5	36	53½
Staffordshire	26,1853	17	10	4	17	5	23	3	27	4	29	3	34	3	35	39
Dover	27,1841	19	16½	4	23	3½	26	5½	30	3½	31½	4½	34½	6	35	46
John	30,1793	33	14	6	20	5	24	5	28	6	31	8	33	5	35	68
Arcole	30,1852	25	13	4	21	5	24	4½	29	8½	34	5	33	5	35	57
Mean crossing		27.2	16¼	4.5	21½	4.3	24½	4.2	27	4.0	29¾	4.6	33½	5.4	35¼	54.3
Mean of ten best		24.0	17½	3.9	22¼	4.1	25	4.3	27½	3.2	29½	4.1	33¼	4.5	35	48.1
Restitution, (Sumatra)	Jan. 13,1825	17	17	3	21	4	24	6	26	6	30	4	33	3½	35	43½
Lowther, (Penang)	21,1816	30	19	3	21	3	24	4½	26	8½	31	2½	34	3½	36	50
Falcon, (Penang)	22,1855	19	17	4	22	3	25	3½	27	5	29	5	34	6	35	45½
Alexander	Feb. 1,1842	28½	17	4½	20	4	22	6½	27	3½	29	6	34	8½	35	61½
Samuel Laurence	1,1856	24	9½	7	18	5	28	5	27	3	30	6	34	3	35	53
Navigator	2,1851	36	14	4½	22	5½	26	7	27	4	30	4	34	6	36	67
Heraclide	3,1834	25	13	5	18	4	21	3½	24	4½	29	6	32	3½	35	51½
Arno	4,1849	28½	16	3½	21	4	25	5	27	4	29	5	34	5	35	55
Hurricane	4,1855	24	12	4	20	5	24	5	27	2½	31	3½	33	4	35	48
Sartelle	4,1847	30	18	3½	22	4½	25	7½	29	5½	33	5	36	6	37	62
Game Cock	5,1857	20¼	14	3¼	19	3	24	7	28	2½	31	3½	34	6½	35	46
Herbert	6,1854	36	18	3½	22	3½	25	4	26	4	29	4	33	8	35	63
Live Yankee	9,1856	27½	12	3½	20	2¾	25	2½	26	4½	29	5¼	31	5	35	51
George Saunders	12,1828	21	14	4	21	4	26	3½	27	4½	31	4	33	7½	35	48½
William Allston	13,1849	37	19	6	21	6	25	5½	27	4½	30	7	33	6	36	72
George Saunders	13,1824	27½	16½	2½	20	3½	23	4	27	3	29	3½	32	3½	35	47½
Eben Preble	14,1839	23	12	9	19	4	23	3½	26	3½	29½	3½	33	5	35	51½
Argo	14,1851	25	15	4	21	5	25	7	27	4	30	4	34	6½	35	55½
Lucknow	16,1856	42	17	3	24	5	27	3¼	29	8¾	30	9	32	10	36	81
Judge Shaw	18,1854	22	14	3½	20	3½	24	3½	26	4	29	3½	33	4½	35	44½
Cato	21,1842	36	16	3½	21	4½	24	4	27	4	30	4½	33	5½	35	62
Trimountain	25,1857	38	15	4½	22	4	25	5½	29	6	30	10	34	9	37	77
Catharine	25,1853	27	17	3½	22	5	25	3½	27	4	29	4	33	8½	35	55½
Oxnard	25,1854	39	14	3½	20	4½	24	5	27	4	30	5	33	3½	36	64½
General Palmer	27,1837	32½	14	5½	22	4	27	7½	30	5½	31	8	33	7	35	70
Mean crossing		29.5	14	4.3	21½	4.4	24¼	4.9	26¼	4.2	30	5.2	33¼	6.0	35¼	58.5
Mean of ten best		24.3	13¼	4.5	19½	3.8	23¾	4.3	26½	3.6	29¾	4.4	33	4.8	35	49.7
Endeavor, (Sumatra)	Feb. 15,1823	22	18	4	22	3	23	4	26	5	30	8½	34	10½	36	57
Grafton, (Sumatra)	25,1849	20	21	6	26	6	28	4	28	5	30	5	32	9	35	55

Crossings from Calcutta to the offings of Good Hope—Continued.

Name of vessel.	Date of sailing.	80° E.		70° E.		60° E.		50° E.		40° E.		30° E.		20° E.		Total days.
		Days.	Lat.	Days.	Lat.	Days.	Lat.	Days.	Lat.	Days.	Lat.	Days.	Lat.	Days.	Lat.	
			°		°		°		°		°		°		°	
George Saunders	Mar. 1, 1849	26½	15	3½	22	3	26	4	29	4	31	5	34	4½	35	50½
Albany	3, 1855	35½	10	5½	19	4	23½	3	28	5	30	6	33	5	35	64
Petrea	7, 1856	31	16	3	20	4½	23	4	27	2½	30	3½	33	5	36	53½
R. C. Winthrop	7, 1853	27	13	4	19	3½	24	3½	26	3½	29	5	32	3	35	49½
Douglass	7, 1849	35	12	5	19	4½	23	5	25	6	27	7	32	9½	36	72½
Derby	9, 1857	26	16	4	21	4	23	6	26	5¼	28	9	33	9	36	63
Grace Darling	9, 1855	23	17	4	25	5	23	3½	27	4½	29	6	32½	4	35	50
Arno	10, 1848	43	14¾	3½	19½	3	33	4½	27	4½	29½	6½	33	7	35	71
Sea Eagle	12, 1856	37¼	14	4	21	6	24	5½	26½	6	38½	4	33½	3¼	33½	66
Elsinore	16, 1852	56	13	4	20	6	24½	9	28½	5	32	11	33¼	6	35½	97
India	18, 1836	52	11	5½	16	4	21	4½	25½	7½	28	10	33½	14	37	98
Annie Burknan	19, 1855	45½	14	3	19	3	22	4	25	4	29	5½	34	9	36	74
Magnolia	19, 1856	28½	17	4½	22	3	25	4	28	4	29¾	8½	33	6½	35	59
Flying Dragon	20, 1855	30	16	5½	19	2½	22	2½	26	3½	30	4	32	4	35	52
Colorado	20, 1856	31	11½	3½	18	3½	24	5	25	6	27	6	32½	17	35	72
Live Yankee	21, 1855	29	7	5	17¼	3	22	2¼	27	2¼	29	7½	32	5	32	54
Josiah Bradlee	24, 1855	38½	14	3	19½	3	23	4	25½	4¼	29	4¼	33½	8	36½	65
Beverley	25, 1857	28½	10	3	14	3	19	3¼	24	3	28	4	32½	9	36	53¾
Cyclone	25, 1856	32	20	3	23	4½	25	4	27¼	7½	29¾	5	34	7	36½	63
Grenada	26, 1855	39	14	4	20¼	4	24	4	26¾	5	29	8	33	11½	35¾	75
Faneuil Hall	27, 1847	16	15½	3½	18	5½	24	4½	25½	3½	29	6½	32	8½	35	48
Lewis Henry	29, 1856	33	15½	4	20	6	24	3	27	4	30½	7	32	14	35	71
Cohota	30, 1850	26	10	4½	18	2½	23	3½	26	6½	30	4	33	13	36	60
Hornet	31, 1856	31	16¾	4	20½	5	23¾	3	27	4	31½	6	33½	3	36½	56
Mean crossing	.....	33.3	14	4	19¼	4	23¾	4.5	26½	4.5	29¾	6.1	33	8.5	35¼	64.1
Mean of ten best	.....	26.5	12¾	4.2	19½	3.6	23¼	3.4	26½	3.9	29½	5.7	32¾	6.0	35	53.3
Raven, (Sumatra)	.....	*17½*	*18*	*2.5*	*21¼*	*3*	*24*	*2.5*	*27*	*2.5*	*30*	*2.5*	*33*	*4.5*	*35*	*35*
Azzen	April 1, 1857	41	15	4½	19	4½	21	5	25	4	30	6	32	14½	35	79½
Sweden	1, 1856	48	15	6	23	4	24¾	14	25	7	29½	6½	33	9½	35	95
Morgiana	1, 1850	33	12	6	20½	6	23¾	4	26½	9	29	13½	34½	15½	35½	87
Restitution	1, 1817	35	8¾	5	15¼	4	20¾	5	25¾	5	39¼	3	32¾	6	34¾	63
Witch of the Wave	1, 1854	28	14¾	2½	19	5½	21½	4½	26	4	30	8	33	4	36	56½
Saxonville	4, 5857	43	12½	5½	19	5	23	5½	27	6	29¾	6	33	7	35	78
Congress	4, 1837	41½	12	4	17	4½	21¾	5	26½	3½	29	6½	32½	8½	35	73½
Beejapore	5, 1856	47½	10	5½	18	7	22	11	27	6	30¼	9	32	9	35	95
Sartelle	8, 1851	38	16	4	19¾	6	23	6	26½	4	28½	8	34	7	37	73
Blandina Dudley	10, 1857	35	12	5	19	4	23	5	27¾	5	32	5	33½	13	35½	72
Sabine	10, 1855	45½	10	5½	17¾	4	23¾	8	24	5	29	3	33	6	35½	77
Cyrus	10, 1821	21	14	5	18	10½	24	9	27½	4½	30½	6	33½	15	36	71
Cato	11, 1849	35	13	4	20	3½	22½	4½	25½	6	28½	7	32	7	27	67
Sartella	12, 1849	38½	15½	3½	19¾	3	22½	5	26½	5	30½	8	35	11	38	74
Witch of the Wave	13, 1853	17½	12	2½	17¾	2½	23	4½	27	3½	29	3	32	3½	35	37
Empire	13, 1854	29	15	5	20	6	24	5	26½	5	25½	6	31¾	5½	36½	61½
Taralinta	14, 1856	43	14	4	19¼	7	21	7	26	6	30	7	32	10	36	84
Wm. A. Banks	19, 1857	25½	14	3½	20	5	24	4	28	5	30	4½	34	5	35	52½
Lady Isabella	19, 1851	37	12¾	4	18¼	3	22¾	4½	27	7	30	5½	32½	4½	35	65½
Lady Franklin	19, 1854	34	9½	4	17¾	5	22½	2½	26	5½	28½	4½	34	6½	36½	61
Ellen Noyes	21, 1851	38	12	4	18½	4	22½	3½	26½	6½	30	5	33	4	37	65
Rome	22, 1849	29	13¾	4	20	6	24	5½	26	5	28	8½	32½	9	34¾	67
Black Sea	24, 1856	34	16	4	20½	8	21	4	25¾	6	29	5	32½	10	34¾	71
Flying Dragon	24, 1856	31½	12¼	4½	30	5	22½	9	26¼	6	31½	8	33½	7½	35	71
Winged Arrow	25, 1853	28	14	2½	18	3	22	4½	24	5½	28	4	32	7	34½	54½
Weymouth	25, 1857	27½	6	5½	15¾	4	23	5	25¾	5	29	4½	33	8½	35	60
Bald Eagle	25, 1857	27	10	3½	15	2½	21½	4	24¾	3¼	26	4¾	32	10	35	55
Mean crossing	.....	34.4	12½	4.3	19½	4.9	22¾	5.3	26	5.3	29½	6.1	33	8.2	35½	69.1
Mean of ten best	.....	28.9	11½	3.8	17¾	4.1	22½	4.2	26	4.8	29½	4.7	32¾	6	35	56.5

Crossings from Calcutta to the offings of Good Hope—Continued.

Name of vessel.	Date of sailing.	80° E.		70° E.		60° E.		50° E.		40° E.		30° E.		20° E.		Total days.
		Days.	Lat.	Days.	Lat.	Days.	Lat.	Days.	Lat.	Days.	Lat.	Days.	Lat.	Days.	Lat.	
			°		°		°		°		°		°		°	
Ann Maria, (Penang)	April 15, 1856	52	13¼	6	19¼	5	24	4	27	8	30	12	32½	21½	35½	108½
Dolphin ..... do	10, 1857	26	14¾	3½	19	3½	21	4½	24½	4	27½	6	32¾	12	35	59½
Tsar ..... do	21, 1855	30	16¾	4	20	4½	23	5½	28	7	29¾	5	34	5	35¼	61
Romeo ..... do	26, 1853	53	14	5	20½	4	24	5	27	6	28½	9	32½	11	35	93
Caroline, (Sumatra)	8, 1845	29	15	6	20	6	21	5½	25	6½	27½	6	32½	6½	35	65½
Raven ..... do	15, 1854	13½	18	5	21	4½	23	7	25	3	29	5½	32	7	35	45½
Cohota ..... do	10, 1853	15½	17	3½	20½	3½	23	3½	26	4	28	4½	32	4½	36	39
Vancouver .. do	14, 1846	20	17	5½	19½	4½	24	4½	26½	3½	29	5	31	13	35	56
George Lee	May 1, 1856	30½	11	4½	17	5	20½	4	26	5	39¾	6	33	9	35½	64
Arabella	1, 1854	39½	11	5½	21	5	25	7	28½	7	31	5½	32	14	35	83½
West Wind	2, 1856	31½	11½	4	17	3½	20	4	25¾	5½	29	6½	33¾	8½	36	63½
Chamberlain	4, 1855	34	11¼	5½	19	3	24	3	28	4	31	4½	33	8	37	62
John Flemming	5, 1844	25½	11	4½	16	4	20	4	26	4	30	5	32	7	35	54
Plymouth	7, 1845	33½	10	3½	16	3½	20	3	24	4	27½	4	31½	10½	35	62
Grafton	9, 1852	28	16½	4	19¾	3	22	4	25	5½	29½	6½	33	4	32	55
Petrel	11, 1855	49	13	5	18½	4	24¼	3	28	4	31½	6	33½	6½	36	77
Medford	11, 1855	38	17¾	5	23	3	26	3	26½	6	30	5½	34	8	35	68½
Bengal	12, 1807	38	15	5	18½	6	22½	5	26	7	30	6	32½	12	35½	79
Pontiac	13, 1851	40	12	4½	19	3	22	3½	25	4	28	6	32	10	35	71
Zenobia	16, 1845	37	11	4½	16½	3	21	4	25½	4	28	4	32	6	35	62
Arcole	17, 1850	50	13	3½	19	5½	23½	6	28	3	31	3½	34½	7	35¾	78½
Brooklyn	19, 1848	47½	13	3½	17½	4	20½	5	29	4	31	4	32½	4½	35	73½
Element	24, 1852	24	13	4	18½	3½	23	4½	26	3	30	5	33½	12½	35	56½
Corinne	25, 1855	37½	13	4½	18¾	4	24½	3	28	4	31½	6	33½	6½	36	65½
Ringleader	25, 1855	28	12¼	4½	17	3	21	4½	27	6½	29	5	35	4	36	55½
Saxonville	31, 1855	36	11½	4	17½	4	23	6	26¾	5	29½	5	32	10	35	70
Mean crossing	.....	36.8	12½	4.4	18¼	3.8	22¼	4.2	26½	4.7	30¼	5.2	32	7.6	35¼	66.7
Mean of five best	.....	27.9	12¾	4.5	18	3.3	22	4	26¼	4.6	30	5.2	33¼	7.1	35	56.6
Lucy Elizabeth, (Penang)	May 14, 1856	38	11¾	5	19½	4	22	9	24¼	6	30	9	33	9	35½	80
Grafton, (Sumatra)	2, 1853	23	17	3	20	4	23	7	25	4	28	8	32	9	35½	58
Malay, (Sumatra)	4, 1833	25	15	3	19½	5	24	4	28½	5	32	7	32	7	35	56
Raven, (Sumatra)	10, 1855	11½	16	3	19½	4	22½	3½	26½	3½	30	6	33½	7	35	38½
Flying Fish, (Sumatra)	20, 1855	11½	14	2½	17¾	4	22	5	24½	4	28½	3	34	4	35	34
Restitution, (Sumatra)	24, 1826	15	14	4	19	4	22½	3	26	5	29	6	31	15½	34¾	52½
Eagle	June 1, 1852	30½	14	3½	19	2½	23	2½	27½	8	29	4	32	9	36½	60
Geneva	5, 1849	21½	6½	5½	16	5	22	4	25	5	26½	7	32	9½	35½	57½
Granite State	6, 1856	38½	15	3	19	4½	22½	4	27	4½	30	4½	32	3	35¼	62½
Tsar	8, 1857	50	11¾	3¼	15½	4	22½	7¾	27	4½	29	6¾	33½	3½	35¾	79½
Valparaiso	8, 1855	35	9¼	3	15½	3½	21	4½	26½	4	31	5	32	8½	36	63½
Skylark	8, 1854	26½	13	2½	18	4	21	2½	25	3	29	6½	33	6½	33	51½
Malay	8, 1854	28	13	5	20	3	23	2½	26	3	28	6½	33½	6½	36	54½
Cohota	12, 1854	23	12¾	3	17½	4	21½	3	25¾	2½	27½	6½	32¾	8	36	50
James Perkins	12, 1839	43½	11½	4½	16½	5	21	8	25	4½	29	7½	32½	5½	35½	78½
J. Montgomery	13, 1857	52	10	5	20	5	24	6	27	4½	29	4½	33½	4	36	81
Monsoon	13, 1853	22	13½	4½	18	3	23	5½	25	3	30	4	33	8	35½	50
Walpole	14, 1850	40	15¾	3½	21	2½	24	5	27	7	30½	6	33	7	35	71
Morgiana	14, 1857	44	16½	5	20½	5	21¾	4	25½	7	27½	5	32	9	35¼	79
Sabine	14, 1856	57	11	7	20½	3	22½	5	27	5	30	4	35	8½	36	89½
Jennie W. Paine	15, 1855	29½	9	3½	16½	3	21½	4	25½	4	28½	5	32¾	8	35	57
Fleetwood	16, 1855	40½	8	5½	16	3½	21	10½	26½	4	30	4	34½	6½	35½	74½
Typhoon	18, 1852	14	13½	2½	18	4½	22	3	24	4	28¾	4	33½	5	36	37
Vision	20, 1856	30	11¼	3	16¾	3	22½	4	26¾	6½	27	7½	34	11	37	65
Element	21, 1851	39	12	4	18¾	6	22	5	26	6	30	5	33	6	36	71
Hornet	28, 1857	28½	15	2	18½	2½	21½	2½	25½	4½	28	3¾	32½	3¾	36	46¾
Wm. Frothingham	29, 1855	30	12¼	3½	19	5½	25	4	30	3½	34	4	35	6½	35	57
Mean crossing	.....	34.5	12	3.9	18	3.9	21¼	4.6	26¼	4.6	29	5.3	33	6.8	35½	63.6
Mean of six best	.....	23.7	13½	3.2	18¼	3.5	22	3.1	25¼	3.3	28½	5.2	33	6.3	35¼	48.3

Crossings from Calcutta to the offings of Good Hope—Continued.

Name of vessel.	Date of sailing.	80° E.		70° E.		60° E.		50° E.		40° E.		30° E.		20° E.		Total days.
		Days.	Lat.	Days.	Lat.	Days.	Lat.	Days.	Lat.	Days.	Lat.	Days.	Lat.	Days.	Lat.	
			°		°		°		°		°		°		°	
Lepanto, (Sumatra)	June 15, 1855	16	13	4¼	17	3½	20½	4	25¼	7	28	4	32	5½	35	44½
Envoy, (Sumatra)	15, 1832	16	16	4	19	5	21½	4½	25	6½	28½	5	33	11	35½	52
Leander, (Sumatra)	16, 1833	18	15	5	21	3	24	3	26	5	30	6¼	32	4	36	44½
Brazil, (Sumatra)	20, 1842	22	15½	4½	20	5¼	23½	6	26½	7	29½	10	31	6	35½	61
Walpole	July 1, 1851	41	14½	5	19	4	22½	4	27	4	29½	5	33	8½	35	71½
Brothers	1, 1832	39	13	3½	18	3½	23	5	27½	5	30½	4	33¾	7	35	67
Hindoostan	8, 1857	33	6¼	6	15½	4	22½	4½	26	3½	28¼	5	32½	7	35½	63
Malay	10, 1855	37	15	3	21	2	23	3½	25½	2½	28½	4	35	7	35½	59
Rome	11, 1851	44	5½	5	12¾	6	23½	10	28½	8	33	5½	35	7	37½	85½
Wm. Frothingham	16, 1854	20	11¾	3½	20	4½	25	3½	29	3½	34	4½	34	5½	35	45
Tangier	20, 1857	43	7½	6	17	4	23¼	5	28	5½	31½	5½	34½	7	36	76
Art Union	23, 1857	32½	9	4	18	3	21½	4¾	26	4	30	5¼	33	4¾	35	58¼
John Gardner	24, 1854	32½	14	5	20	7½	20	7½	20	6	26½	5	30½	5	34	68½
Wessacumoon	26, 1851	38	11½	6	18	5	22½	5	25¾	7	30	6	33½	8	35	75
Gentoo	28, 1843	43	14	4	19	4	22½	4	26¾	5	25½	6	32½	8	35	74
Charles	30, 1844	28	10¾	4	18½	4	24½	4	27¾	5	31½	5½	34	4½	35½	55
Mean crossing	.....	35.9	11	4.6	19¾	4.3	22¾	5.1	26¼	4.9	30	5.1	33¼	6.6	35¼	66.5
Mean of three best	.....	26.8	10½	3.8	18¾	3.8	23½	4	27½	4.2	31¾	5.2	33¾	4.9	35	52.7
Aldebaran, (Penang)	July 5, 1849	29	14	3½	18	4	23	5½	26	5	28½	9	33½	7½	36¾	63½
Escort, (Penang)	11, 1857	23	14¾	4	21	6	24	5½	26½	6	38½	4	33½	3½	35½	51¾
Caroline, (Penang)	13, 1847	37	13¼	4½	17	4½	23	4½	26	6½	29	5	34	6½	34¾	68½
Isaiah Crowell	Aug. 1, 1855	52	12¾	4	18¾	4	22½	5	28½	4	31	7	34½	6	36¾	82
Pontiac	1, 1852	28½	15	3	18	3½	22	3½	24½	3½	27	4	30¾	7½	34¾	53½
Pequat	2, 1855	26½	10	5½	19½	4	23¾	4	27	4	31	5	34	7	35	56
Pleiades	2, 1857	63	9½	7½	21	5	23	6½	26	3½	28½	6½	32½	6½	35	98½
Windward	3, 1856	23	16½	5½	23	3¾	23	4	28	3½	31	3¾	34	4¾	36	48¼
Art Union	7, 1855	28	10¾	4	18	4	22¼	4	26½	4	29	4	33½	5	35¼	53
John Gilpin	7, 1853	17½	15	3	19	3	23	2½	26	6	28½	3½	33	2½	35	38
Columbia	10, 1851	34	4	14	20	4	24	5	27	4	29	5	33	11	35	77
Anna Kimball	12, 1857	36¼	11	3	16	3¾	20	6	26	4	29	5½	32	5¾	35¾	64¼
Euterpe	12, 1856	18	7	4½	15	3	22	3½	27	2½	30	4½	33	3	36	39
Samuel Appleton	13, 1854	34	11¾	4	18¾	4½	22	3½	24½	3½	28	5	32½	4½	37½	59
Windward	19, 1855	24¼	13	3¼	18	5½	24½	3½	27	3	31	3	34	2¼	36	44¾
Western Continent	24, 1855	31½	14	3½	20	5	24½	4	27½	3	29¾	4	33½	3	36	54
Grey Feather	25, 1854	29	3½	5	13¼	3	20½	4	24½	4	28	3	33½	6½	35	53½
Dashing Wave	25, 1854	25	4	4½	14	3½	22½	3½	27	3½	29	6	35	7	35	53
Anglo Saxon	26, 1856	32	16½	3	20½	2	21½	4	26	4	30	7	35½	6	36¾	58
Morning Light	26, 1855	31	11¾	3	18¼	3	22	3	26	3½	31	3½	34	5	36	52
Hannibal	26, 1852	39	12	4	17½	6	22	6	29	5	31½	7	34	7	37	75
Alert	28, 1856	17	13	6	18	3½	24	4½	28	3	28	8	34	5	36	47
Art Union	28, 1856	31	14	3	19	3	22½	4	26¼	5	28	8	34	2½	35¾	56½
Cyren	28, 1854	27	6¾	4	17¾	4	25½	3½	29	3½	30½	3	33	7	35	52
Marathon	28, 1851	48	18	4	23	4½	26	4½	27½	6	29½	7	33	4	35	78
Mean crossing	.....	31.6	11¼	4.6	18½	3.9	23	4.2	27	3.9	29¼	5.1	33½	5.4	35¾	58.7
Mean of seven best	.....	22.6	12	4.2	18¼	3.7	23¼	3.5	27¼	3.6	30	4.1	34	4.2	34¼	.....
Fenelon, (Sumatra)	Aug. 11, 1854	16½	17½	3½	20¼	4	23	5	26	4½	29	9½	33	16	35½	59

Crossings from Calcutta to the offings of Good Hope—Continued.

Name of vessel.	Date of sailing.	80° E.		70° E.		60° E.		50° E.		40° E.		30° E.		20° E.		Total days.
		Days.	Lat. S.	Days.	Lat. S.	Days.	Lat. S.	Days.	Lat. S.	Days.	Lat. S.	Days.	Lat. S.	Days.	Lat. S.	
			°		°		°		°		°		°		°	
Ambassador	Sept. 1, 1850	31	11	4	18	4	23½	5½	28	3½	30	3½	33	3½	35½	55
Victory	1, 1856	27	13	3	18	3	22¼	4	26	4	29	7	33	4	36	52
Mary Goodall	3, 1855	30	14	2½	19	3	23	3½	26	3	30½	3	33	5½	36	50½
Octavius	6, 1856	42	16	6	19¼	5	23¾	6	27	5	28¾	4	33½	4½	35	72½
Farewell	8, 1842	39	12	3½	17	3½	20½	4	25	3½	27	5½	33	5½	35	64½
E. Kimball	11, 1856	22	12	4	20½	5	25	3	27	5	30½	6	34½	7	35½	52
Rambler	11, 1848	31½	16	5½	21¾	6½	24	7	27	6½	31	4½	33	7	35	68½
Hyppogriff	16, 1854	35	13½	3	18	3	22	4	25½	4½	27	4½	34	2½	35	56½
Flying Dragon	16, 1857	26¼	13	3	20	3¾	24	4	29	3	30	5	34	4½	35	49½
Corinne	17, 1856	38	12½	4½	19	3½	25	7	29	2½	31	3½	34	3½	36	62½
Ganges	30, 1856	27½	13	3	18	3	23	5	27	3½	29½	3	33	4	35	49
Mean crossing	.....	31.8	13¼	3.8	19	3.9	23¼	4.8	27	4	29½	4.5	33¼	4.7	35¼	57.5
Mean of two best	.....	26.9	13	3	19	3.3	23½	4.5	28	3.3	29¾	4	33½	4.3	35	49.3
Pamelia, (Penang)	Sept. 2, 1854	28	11¼	2½	19	4	23½	4½	26	2	29½	5	30½	6	35¾	52
Caroline, (Penang)	12, 1848	44½	15½	4	20	3½	23	6	27½	6	29	7	33	3½	35	74½
Oriental, (Sumatra)	17, 1854	20	13¾	5	20	5½	25	4½	27¼	5	28	8	33	3½	35	51½
Hull, (Sumatra)	17, 1845	10½	12	4½	16½	4	20¾	7½	24¾	3½	27½	4½	32	8½	34½	43
Oriental, (Sumatra)	28, 1856	12½	21	3½	23½	6	25½	4½	27½	3¾	30	5	32¾	8¼	35	43½
Hull, (Sumatra)	30, 1846	14	12	4½	16½	4½	20½	5	24	9	27½	5	32	8	34¾	50
Rienzi	Oct. 1, 1850	29	5½	8	20	3	24	5	27	5	29	10	33	8½	35	68½
Queen of the East	1, 1855	25	15½	3	20	4	23½	4	25½	3	28	5	34	3	36½	47
Massonomo	4, 1851	47	17½	6	21½	7	25	5	26¾	5	29	6	33	5½	35	81½
Scargo	8, 1854	30	8¼	4	13¾	4½	20½	5½	24½	4	28½	6	33	7	35½	61
Orissa	9, 1856	20½	12	3	18	4½	24	4½	27½	2½	29¾	4	33½	3½	35	42½
Union	9, 1857	25	14¼	3	18	4	21	5	27	4	30½	5	32	6½	35	52½
Saxonville	14, 1853	32¼	14	5	20	7½	20	6	26½	5	30½	5	34	7½	36	68¼
Fair Wind	15, 1856	26½	15	3½	22	6	23½	4½	25½	3½	30	7	32½	3	35	54
Scargo	15, 1853	21	8	4	16	5	22½	4	26	5	29½	5	33	4	36	48
Anna Kimball	15, 1853	33½	15	4½	20½	6½	25	3½	26½	4	29½	5	33	8	36	65
Coringa	17, 1854	34½	11	4	20½	3½	24¼	4	28¼	5½	31	4½	33¾	2¾	36½	58¾
Mary	19, 1856	21½	12	3	18	7	24	4½	27½	4	31	6½	31	6½	34	53
R. C. Winthrop	28, 1851	29	18½	5	21	4	24	5	26½	5	30½	5	33½	4	35¼	57
Cohota	29, 1849	18	11	5	19	4	24	6	28	4	29½	3	33	7	35	47
Mean crossing	.....	28.1	12½	4.4	19¼	5.4	23¼	4.1	26½	4.3	29¾	5.5	33.0	5.6	35¼	57.4
Mean of four best	.....	21.1	11¼	3.8	18¼	4.4	23¼	4.6	26¾	3.6	29	4.2	33¼	4.4	35½	46.1
U. S. S. Plymouth, (Penang)	Oct. 3, 1854	22½	15	2½	20¼	4	23	6	26½	3	29½	3½	34	3½	35	45
Dutchess, (Penang)	8, 1854	23	13	7	22¾	5	26½	4	28	7	30¾	8	33½	7½	35½	61½
Borneo, (Penang)	29, 1851	32	17½	5	23	10	27	6	27¾	4	30	8	34	11	35½	76
Lucilla, (Sumatra)	23, 1848	22	14	3	18	4	22½	6	26	7	29	6	32½	8½	35	56½
John Haven	Nov. 1, 1854	34	11	6	20½	6½	25	5½	27	4	29¼	4½	33½	6	35	66½
Saxonville	2, 1848	23½	15	5½	22	5½	24½	3½	26¾	5	29¾	5	33	9½	36½	57½
Union	3, 1853	28	14¾	5	20¾	5	25	3½	28	4	31	4	33	5½	36	55
John Gilpin	5, 1854	18½	14½	3	21	2½	24	3½	28	3½	30½	4	33½	2½	35	37½
Henry Ware	5, 1854	28	9	7	18	5	23	5	28	3½	31	3½	34	5½	35	57½
Daylight	8, 1856	24½	16	3½	20½	5	24½	4	27	6	39¾	5	34	7½	35½	55½
Sabine	15, 1852	26	16	4	20	5	24	4	26	4	29½	3½	32	5½	36	52
Thomas Church	18, 1853	25½	17	3	23	4½	27	3½	27½	6½	29½	6	34	5	36	54
Robert Burton	20, 1853	37	16	4	20¾	8	25	7	29	5	31¾	5½	33	3½	35	70
Huma	22, 1851	26	17¾	4½	21½	3½	23	6	25½	5	29½	7	33½	6½	35	58½

Crossings from Calcutta to the offings of Good Hope—Continued.

Name of vessel.	Date of sailing.	80° E.		70° E.		60° E.		50° E.		40° E.		30° E.		20° E.		Total days.
		Days.	Lat.	Days.	Lat.	Days.	Lat.	Days.	Lat.	Days.	Lat.	Days.	Lat.	Days.	Lat.	
			°		°		°		°		°		°		°	
Golden Rule	Nov. 23, 1855	35	15¼	2¾	21	5	26	4¼	29	4	31	4¼	33	9	35	64¾
Hannibal	24, 1850	26	8½	6	22	5	25	5	27	4	31	3	34	6	37½	55
Josiah Bradlee	25, 1857	23	18½	4	23	4	25½	4½	28	5	30	6½	33½	4	35¾	51
Huma	27, 1849	21½	16½	3½	20	4	24	3½	26½	4½	29½	6	33	3	35	46
Gertrude	28, 1851	21	16½	3½	23	3½	26½	4½	28	3½	30½	5	33¾	6	35½	47
Mean crossing		26.5	14¾	4.4	21	4.8	24¾	4.5	27¼	4.4	31	4.9	33¼	5.7	35½	55.2
Mean of five best		22	16¼	3.6	21¼	3.8	34¾	4	27¼	4	30	5.1	33¼	4.2	35¼	46.7
Thetis, (Sumatra)	Nov. 7, 1857	19	15	5½	21	5	24	5½	27½	5	29	5	33	7	36	52
Hollander..do	21, 1856	12½	18	3½	21	5	25	4	28½	4	30	5	33½	7	35½	41
Gratia	Dec. 1, 1856	20	13	4	20	4½	26½	3	28½	4	30½	3½	32	3½	35	42½
Ganges	1, 1857	19	11	3	18	4	24	4½	28	4½	30	7	34	3	35	45
Orion	1, 1856	30	19	5	23	6	25	4	27	3	30	5	34	3½	35	56½
Asia	3, 1849	41	17	6	22	5	27	4	29	5	31	4	34	9½	35½	74½
Juniata	5, 1854	19	11	5	21	9	28	4½	29½	3	31	3½	33	3	35	47
Bathina	6, 1851	25	14	4	19	4	23	9	26	6	30	8	33	7	35	63
Arab	6, 1839	25	17	4	20	4	23½	4½	27	4½	30	4	33	6	35	52
Judge Shaw	6, 1855	31	17½	5	22	6	26	6	28	7	30	5	34	4½	35	64½
Ellen Norris	9, 1856	25	18	4	21	7	25	6	28	8	37	6	34	3	35	59
Norwester	11, 1855	12	6	9	16½	6	23	7	27	3	30½	4	33	9½	35	50½
Colchis	13, 1847	21½	15	4	21½	6½	24	3½	26	4½	29	3	32	5	35	48
Milton	16, 1851	24	10	8	22	6	25	4	27	3	30	5	34	2½	35½	52½
Gertrude	18, 1853	18	14	4	18	4	22	5½	25	4	27	5½	33	3	35	44
Escort	19, 1856	24	14	3½	21	3½	26	4	28	2½	29	7½	34	5	35	50
Thos. B. Wales	20, 1852	18	14½	3½	20	3	24	4	27½	3	30	6½	33½	3½	35	41½
Milton	21, 1851	27	17	4	21	6	24	4	28	5	29	6	34	11	35	63
Huma	22, 1850	18	7½	8	20	6	25	3½	27	3	29	4½	33	2½	35	45
Hippogriff	23, 1855	24	15	3	19	6	23	5	27	4	30	3½	33	3½	35	49
Henry Pratt	25, 1851	29	14½	10	24	5	25	3	27	5	30	4	33	4	36	60
Equator	26, 1851	19	11	7	18	7	21½	7	25	6	28	5	32	5	36	56
Medusa	26, 1854	20	8	6	17	3	22	9	27	6	30	5	33	6	35	55
Oregon	26, 1853	19	16	3½	21	5½	26½	4½	28	3½	31	4	33	5	35	45
Milton	29, 1849	22	14	4	19	5	23	4½	27	3½	30	4½	33	8½	35	52
Fortitude	29, 1835	16	8¾	6½	17	3½	21	6	26	3	28	4	34	3½	35	42½
Delhi	29, 1848	25	9½	9½	21	3	23	5½	26	3	30	5	33	5	35	56
Mean crossing		22.8	13¼	5.3	20	5.2	24¼	5.2	27¼	4.1	30	4.9	33¼	5.1	35	52.6
Mean of ten best		19.8	13	4.2	19¾	5.3	24½	4.2	27¼	3.7	30	4.6	33	4.1	35	45.9
Franklin, (Sumatra)	Dec. 22, 1843	27½	19	4½	22	3	23	4	26	5	30	8½	34	10½	36	63
Falcon, (Penang)	31, 1855	13	11½	3½	17	4	22	3½	25	4	27	3½	30	4½	33	36

FROM THE STRAITS OF SUNDA HOMEWARD.

In Lieutenant Van Gogh's "Uitkomsten van Wetenschap en Ervaring," published in 1858, from the Meteorological Institute of Utrecht, we have the crossings of 550 vessels from the Straits of Sunda and Bally to the offings of the Cape of Good Hope. Of these 550 vessels, 120 were from the Straits of Bally. The following tables contain the crossings of 458 American vessels *en route*, from crossing to crossing, for the meridian of every 10th degree, from 100° to 20° E., with the time from the Straits of Sunda to the offings of the Cape of Good Hope; also the like by 550 Dutch, with the time and crossings of the best passages.

Time and Crossings from the Straits of Sunda to the Fairway off the Cape of Good Hope.

Name of vessel.	Date of sailing.	100° E.		90° E.		80° E.		70° E.		60° E.		50° E.		40° E.		30° E.		20° E.		Total days.
		Days.	Lat. S.	Days.	Lat. S.	Days.	Lat. S.	Days.	Lat. S.	Days.	Lat. S.	Days.	Lat. S.	Days.	Lat. S.	Days.	Lat. S.	Days.	Lat. S.	
			°		°		°		°		°		°		°		°		°	
Robin Hood	Jan. 1,1854	2½	8¾	2½	12½	3½	17¾	4	23½	3½	27	4	30	2½	32	5	34½	4	35	31½
Bay State	1,1854	5	18	4	17	3	21	3	23	4	26	4½	28	4	31	2½	33½	5	35	35
Ina	1,1854	6	13	3	12½	3	16½	3	21	3½	23	3½	30	4	30½	5½	34	5½	37	41
General Harrison	1,1849	10	11	5	15	4	19	4	24½	3	27	4½	28½	5½	31	4	34	5	35	45
Inca	1,1849	5	14	4	16	2½	18	4½	21	3	23½	3½	27	4	28½	4½	33	5½	34½	36½
Florida	2,1833	5	13	3	15½	2½	17½	3½	20	5½	22	5	26½	3	30	3½	34	3	36	34
John Q. Adams	2,1849	5	14	2½	16	3	18½	4	21	3	24	3	27	3½	28½	4	32½	7½	35	35½
Boston Light	2,1856	8½	13	3	15	3½	18	2	20½	6	23	4	26½	3	30	3	33	2½	36	35½
Talbot	3,1850	7	11	6	17	3½	22	3	25	3	27	5	26½	3	28	4	33	8½	35	43
Boston	3,1853	10½	13	4	16	3	18	3½	21	4	23½	6	26½	4	30	4	33	4	35	43
Swordfish	4,1857	6½	18	2	19½	2	20	3	24	5	25½	3	28½	2	30	3	34	5	35	31½
Bremen	6,1848	6	10	7	19½	4	18	3	23	4	28	5	31	5	33	4	35	5	36	43
White Squall	6,1852	2½	12½	4	15	2½	17	2½	19	2½	22	3	25	2	28	4	32	6	35	29
Panama	7,1857	2	17	3	19	2½	21	3	23	2½	26	3½	28	2½	31½	5	32	4	35	28
Robin Hood	7,1855	5½	11	4	14	3	18	3½	23	5	27	5	30	3	33	3	34	3½	35	35½
Swordfish	7,1856	5	12	4	17	3	19	2½	21	4	24	3½	27	3	30	3	34	3	36	31
Helena	9,1851	3½	10½	5½	14	3½	18	3½	23	5	25½	3	26½	4	31	4	35	7	35	39
Morrison	9,1834	7	12	3½	17	2½	21½	4	23	5	24	3½	26	2½	30	3½	33	2½	36	34
Thomas Perkins	9,1848	5½	18	3½	21	3½	24	3½	28	6	28	3	27½	4	29	7	33	4	35	40
Albert Edward	10,1848	5	11	4	14	4	17	5	21	5	25	3	28	3	30	5	32	7	35½	41
Game Cock	10,1855	5	8½	3	12½	3	16½	3	22	4	26	3½	28	3	30½	2½	33	3	35½	30
Raduga	11,1849	12	20	2½	21	2¾	22	2	24	2½	25	3½	26	3½	29	3	33	3½	35	35¼
Heber	13,1848	9	20	3½	21	5½	21	7	22	4	24½	5	27	3	30	4	32	7½	36	48½
Sea Serpent	13,1856	3	13	3	17½	2½	18	3½	22	3	24	4½	26	3½	30	2½	32½	3	35	28½
Golden State	14,1855	6	13	2½	15½	2½	17	3	19½	4	24	4½	30	2½	32	3½	33½	3½	36½	32
Foster	15,1852	6½	12	3½	17	3	21	4½	23	2½	25	3½	26	4½	28	4	33	4½	35	36½
Penguin	15,1855	5½	12	2½	15	3	18	4	21	5	25	3½	28	3½	31	3	33½	2½	36	32½
Carington	15,1849	10	14	3	19	2½	22	3½	24	4	25	2½	27	3	30½	4	32	4½	35	37
Surprise	15,1857	3	12	4½	16	3	20	4	22	2½	26	4½	28	2	30½	4½	33½	3	35½	31
Oneida	16,1849	9	14½	3	16	2	17	2¾	20	6½	24	3	27½	2½	30	5	33	3	35	36¾
Sea Witch	17,1848	7	13½	2½	15	2½	20	2	23	2	26	3	28	4	31	2	34	4	35	29
Horatio	17,1846	2	8½	3	12	3½	17½	3½	21	5	24	3	25	4	30	5	33	6	35	35
Flying Cloud	18,1852	10	16½	2½	18	2½	20	2	23	4	26	4	29½	3½	30½	3½	34	2	35½	34
N. B. Palmer	19,1852	6	12½	3	16	2½	19	3	22	2½	24	3	27	4	29	3	32½	2½	35	29½
Huntress	20,1847	6	10	3½	14	5½	18	4	22	3	26	3½	28	3	30	4	33½	2½	35½	35
Siam	27,1851	8	11	5	17	4	22	4	25	6	30	5	29	4	32	5	35	4	35	45
Talbot	20,1848	8	12½	3	15	3	18	4	24	4	25	3	27	4	29	6	33	3½	35	38½
Navigator	20,1849	7	12	5	14	5	18	9	24	6	27	3½	27	3½	29	4	32	3½	35½	46½
Highflyer	20,1854	3½	10	4	14	2½	18	5½	24	2½	26	2½	28	3	31	2½	34	5	35	31
Surprise	21,1858	6	13	3½	17	3	19	2	22	3	25	2½	28	3	31	4½	34	4½	35	32

Time and Crossings from the Straits of Sunda to the Fairway off the Cape of Good Hope—Continued.

Name of vessel.	Date of sailing.	100° E.		90° E.		80° E.		70° E.		60° E.		50° E.		40° E.		30° E.		20° E.		Total days.
		Days.	Lat. S.	Days.	Lat. S.	Days.	Lat. S.	Days.	Lat. S.	Days.	Lat. S.	Days.	Lat. S.	Days.	Lat. S.	Days.	Lat. S.	Days.	Lat. S.	
			°		°		°		°		°		°		°		°		°	
Valkyrien	Jan. 22, 1854	5	11⅛	4	16	5⅛	20	4	23⅛	3	26	4	28	3⅛	31	5	34	6⅛	35	40¼
Heber	22, 1844	1⅛	8⅛	3	13⅛	3⅛	17	3	20	5	23	3⅛	26	3⅛	29⅛	4⅛	33	4⅛	35	32
Memnon	22, 1850	6	13	4	18	2⅛	20	3	22	3	24	3	27	2⅛	28⅛	3	33⅛	3	35	30
Caledonia	22, 1824	9	12⅛	6	17	4	19⅛	5	21⅛	3	24	4	28	6⅛	31	3⅛	33⅛	8	35	49
Ronaldson	26, 1845	2⅛	9	3⅛	14	4	19	3⅛	22	4	25	4⅛	27	3⅛	30	4⅛	33⅛	7	35⅛	38
Oneida	27, 1857	6	13⅛	5⅛	18	3⅛	20	3⅛	21	3	24⅛	4	27⅛	3	31	4	33	3⅛	35	36
Ann Maria	27, 1847	3⅛	9	12⅛	18	9⅛	21	3⅛	23	4	25	4	28	5	30	6	33	3⅛	36	51⅛
Venice	27, 1855	4	9	2⅛	13	3	17	3	20	5⅛	24	3	27	3	29	3	33	5⅛	35	32⅛
Messenger	28, 1853	4	10	5⅛	16	2⅛	19	3	23	5	27	2⅛	29	3⅛	32	3	32	4	35	33
Rapid	28, 1856	8	12	4	15	3¼	19⅛	3¾	21	5	25	4⅛	27	2⅛	29	4	32	8	38	43
Oscar	29, 1842	7	15	3	16	4	18	4	21⅛	4⅛	25	3⅛	27	4	30	4	34	3	35	37
Eliza Ann	30, 1846	6	10	4	15	4	19	4	23	4	23	3	26	4	30	4⅛	32	4	35	36⅛
Stephen Lureman	30, 1852	6	12	3⅛	17	2⅛	20	4	20	3	22	4	26	3⅛	30⅛	3	33	4⅛	36⅛	34
Helena	30, 1853	2	8⅛	6	14	3	18	4	22	4	23	3⅛	23⅛	2⅛	29	4⅛	33	3⅛	35	33
Oneida	30, 1853	2⅛	9	5⅛	13	3⅛	18	4⅛	21⅛	4	24	3⅛	28	4⅛	30	4	33	3	35	35
Mean crossings		5.8	12¼	4.0	16.0	3.4	19.0	3.6	22¾	4.0	25	3.7	27¼	3.3	30¼	4.0	33¼	4.5	35¼	36.3
Mean of 12 passages, crossing 100° E. long. to the south'd of 14° S. lat.		7.4	16⅛	3.0	18⅛	3.0	20¼	3.5	23	4.0	25¼	3.5	27	3.2	30	4.1	33	4.5	35	36.2
Mean of 43 passages, crossing 100° E. long. to the north'd of 14° S. lat.		5.5	11¼	4.2	15.0	3.4	18¾	3.7	22	3.9	25	3.8	27¼	3.5	30¼	3.9	33	4.4	35¼	36.3
Mean of 10 best passages		4.3	10¼	3.5	16.0	2.7	19	3.2	22	2.8	25	3.4	27¼	2.9	30.0	3.2	33	3.7	35¼	29.7
Time and crossing of 27 Dutch ships from the Straits of Sunda		7.0	13	4.1	17⅛	3.8	21¼	4.3	24¼	4.4	26¾	4.2	28¼	3 9	30¾	4.3	33	5.6	35	41.6
Time and crossing of 30 Dutch ships from the Straits of Bally		16.1	17¾	4.1	20¾	4.1	23⅛	4.8	25⅛	4.4	27⅛	4.5	29¼	4.7	31	5.0	33¼	6.9	35¼	54.6
Siri	Feb. 3, 1856	2	11	7	15	3	18	6	24	5	28	4⅛	29	4⅛	33	6	33	7	36	45
R. H. Patilli	3, 1846	5	15	5	20	5	23	3⅛	23	2⅛	25	6	28	2⅛	28	5⅛	31	6	35	41
Morrison	3, 1833	8	9¾	10	16	3⅛	20	5⅛	23	4	24	4	26	3⅛	29	3⅛	33	7	35	49
Panama	4, 1849	7	15⅛	5	18⅛	3	20	4	23	4⅛	25	4⅛	27	4	30	6	33	10⅛	35	48⅛
Morrison	5, 1835	12	17⅛	3	19⅛	3	22	3	24	3	26	5	28	3	29	3	32	4⅛	35	39⅛
Grafton	5, 1846	4	12	4	17	5	21	5	24	3	26	4	29	4	30	4	32	5	36	38
Charles	6, 1848	11⅛	11	4⅛	14	4⅛	20	3⅛	22	6	26	4	30	7	33	6	34	4	36	51
Golden Eagle	6, 1856	8	15⅛	2⅛	19	3	23	4⅛	23	4⅛	26	5	28	4⅛	31	4	33	6⅛	35	42⅛
Houqua	7, 1854	4⅛	15	3	17	3	21	3⅛	24	3	26	3⅛	28	3⅛	31	4	32	4	35	32
Grafton	9, 1847	14⅛	13	7⅛	20	3	22	3	24	2⅛	26	3⅛	29	3	30	5	33	4	35	46
Franklin	10, 1834	6	12	4⅛	18	4⅛	22	5	24	5	26	4	29	4	32	5	34	6⅛	36	44⅛
Zenobia	10, 1843	7	14	5⅛	17	3⅛	20⅛	4	23	3	25	3	27	3	30	4	33	4⅛	35	37⅛
Candace	10, 1850	4⅛	11	4	15	3	17⅛	3	20	3⅛	24	2⅛	27	3⅛	30	3	33	3⅛	35	30⅛
St. Lawrence	10, 1851	5	9	5	14	3⅛	21	3	24	3	25⅛	4⅛	26	5	28	5	34	3⅛	35⅛	37⅛
Oriental	11, 1850	3⅛	13	3	17⅛	2⅛	19⅛	2	21	4	25	2⅛	26	2	27⅛	4	32	2⅛	35	26
Zenobia	12, 1843	10	13⅛	2⅛	16	4	20	2⅛	23	3	26	4	28	3	30	5	32	7	35	41
Lion	14, 1833	4	10⅛	4	16⅛	3⅛	21	4	25	3⅛	26	3	27	5⅛	30	4⅛	33	10⅛	35	42⅛
Alboni	16, 1856	10⅛	20	3	21	3	24	3	25	4	26⅛	3	28⅛	6	31	4⅛	34	5	35	42
Fleet Wing	17, 1856	9	19	3⅛	19	2⅛	20	3	22	3	24	3⅛	27	5	31	3⅛	34	8	36	41
Heber	18, 1850	15⅛	19	3⅛	21⅛	4⅛	23	4	26	3⅛	32	3⅛	32	3	31	4⅛	33	7⅛	36	49⅛
Albion	18, 1856	9⅛	20	3	21	3	24	3	26	4	27	3	28	6⅛	31	4	34	5¼	35	41¼
Stag Hound	19, 1852	2	9	2⅛	13	2	16	2⅛	21	6	26	5	28⅛	2⅛	30	5⅛	33	5	35	33
Mandarin	19, 1858	9	13	4	17	3	19	2⅛	19	3⅛	23	3	26	4	29	4⅛	33	4⅛	37	38
Lenore	20, 1846	10⅛	12⅛	3	15	4	19	3	21	4	24	5	25	6	28	4	32	8	35	47⅛
New Jersey	21, 1828	11	18	3	20	2⅛	23	3	25	4⅛	26⅛	3⅛	27	3	29	5⅛	33	4	36	40
Horsburgh	22, 1854	5	14	4	16	3	19	5⅛	21	3⅛	22	4⅛	27	4⅛	29	5	33	2	36	37
Oneida	23, 1854	4	13⅛	4	18	3	20	5	21	4	24⅛	4⅛	28	6	30⅛	4	34	5	35⅛	39⅛
Golden West	24, 1855	6	14	3⅛	17	2⅛	19	3⅛	23	3	26	2⅛	28	2⅛	30	5⅛	33	3⅛	35	32⅛
John Bertram	28, 1854	3	13	4⅛	19	4⅛	22	2⅛	22	4	26	3⅛	29	5	31	3	34	3	35	33
Sarah	28, 1848	5	11	4	15	4	19	4	22	4	24	3	28	4	31	5	33	4	36	37
Rose Standish	28, 1851	8	13	3⅛	20	4	25	4⅛	26	5	27	3⅛	29	3⅛	32	4	35	6	36	42
Mean crossingss		7.2	14	4.2	18	3.4	21	3.7	23	3.8	25⅛	3.8	28	4.1	30¼	4.5	33	5.4	35¼	40.2
Mean of 13 passages, crossing 100° E. long. to the south'd of 14° S. lat.		8.4	16⅛	3.7	19	3.1	22	3.7	23¾	3.6	26	3.9	28	3.8	30	4.6	33	5.5	35¼	40.3
Mean of 18 passages, crossing 100° E. long. to the north'd of 14° S. lat.		6.5	11¾	4.8	16⅛	3.6	20	3.6	22⅛	4.0	25¼	3.7	28	4.2	30¼	4.5	33¼	5.3	35⅛	40.2
Mean of 10 best passages		4.6	12¼	3.9	16	3.2	19⅛	3.3	22	3.7	25	3.5	27⅛	3.6	30	4.4	33	3.6	35¼	33.8
Time of crossing of 18 Dutch ships from Straits of Sunda		8.1	12.0	4.2	16.0	4.2	20.0	4.1	23.0	3.9	26⅛	4.1	28¼	4.5	30.2	4.5	33⅛	6.1	35¼	43.7
Time of crossing of 33 Dutch ships from Straits of Balie		15.0	17.7	3.7	20.2	3.8	23.0	4.1	25.0	4.3	27.0	4.7	29.0	4.8	30.5	5.0	33.2	5.8	35.2	54.2
Washington	Mar. 1, 1831	6	13	3⅛	16	3⅛	19	6⅛	22	3⅛	24	4	27	7	28	5⅛	35	2	35	41⅛
Eliza Ann	1, 1847	11	15⅛	3	18	4	22	3	24	4	26	6	28	9	29	5	32	7¼	36	52¼
Raduga	1, 1852	7⅛	12	2⅛	15	3	18⅛	3⅛	20	3	22	2⅛	27	7⅛	29	3⅛	32	8	36	41
Amity	1, 1851	9	13	4	18	4	22	3⅛	25	4⅛	27	3	28	3⅛	30	4⅛	33	5	35	41
Eben Preble	2, 1840	3	11	4	15	3	20	6⅛	21	3⅛	23	4	26	4	29	3	33	4⅛	35	35⅛
Flying Dutchman	3, 1854	3	12⅛	5	18⅛	3⅛	23	3⅛	25	2	28	3	29	4⅛	32	2⅛	34	3	36	30
Hurricane	5, 1853	8	15	2	17	3	19	2	20	3	23	3	27	5	29	4	33	4⅛	35	34⅛
Grafton	5, 1843	7	10	4	14	3⅛	17	3⅛	20	3⅛	24	4⅛	27	2⅛	30	4	33	3	35	35⅛
Nightingale	5, 1855	5	11	3	15	4	20	3	24	2⅛	27	3	30	2⅛	32	2⅛	34	5	36	30⅛
Siam	5, 1853	8	17	3	20	4	22	4	25	3	27	6	30	5	31	5	34	9⅛	35	47⅛
Romance of the Sea	6, 1857	8⅛	16	2	18	2⅛	21	3	23	2⅛	25	3	26	2	29	4	32	6	35	33⅛
Loo Choo	16, 1845	3⅛	8	3⅛	13	3	16	5⅛	20	4	24	3⅛	27	2⅛	30	6	31	7⅛	35	39
Eureka	16, 1852	2⅛	9	3	13	3⅛	18	4	22	7	26	4	28	5	28	5	34	3	37	37
Oneida	17, 1842	4	12⅛	3⅛	16	3	19	2⅛	21	3	23	3	26	2⅛	29	3⅛	32	4	35	29

Time and Crossings from the Straits of Sunda to the Fairway off the Cape of Good Hope—Continued.

Name of vessel.	Date of sailing.	100° E.		90° E.		80° E.		70° E.		60° E.		50° E.		40° E.		30° E.		20° E.		Total days.
		Days.	Lat. S.	Days.	Lat. S.	Days.	Lat. S.	Days.	Lat. S.	Days.	Lat. S.	Days.	Lat. S.	Days.	Lat. S.	Days.	Lat. S.	Days.	Lat. S.	
			°		°		°		°		°		°		°		°		°	
Siam	Mar. 18, 1852	1½	8½	4½	16	4	21½	6	26	4	26	4	29	4	30	4	33	11	35	43
Heber	25, 1852	3	12	4	17	4	20	7	22	3½	25	4	29	5½	31	6	32	7½	35	44½
Flyaway	25, 1854	5	14	3½	20	2	21½	1½	22	2½	23	3	26	5½	31	4	34	3½	36	30½
Horatio	25, 1834	4	11½	3	15	3	17	3	19	4	21	4½	25	3	30	5	33	3	34	32½
Argyle	25, 1837	3½	9½	3½	14	4½	17	3	20	6½	25	5	27	4	30	5	33	6½	35	41½
John Wade	26, 1854	4½	14	3	17	2½	18	2½	19	3½	22	5	26	3½	28	4½	33	3	35	32
Mermaid	26, 1852	2	9	3	14	2½	18	4½	24	3½	27	4	30	3	32	2½	33	5	35	30
Hamlet	27, 1856	7	9½	6	16	3	20	3½	24	4½	26	3	27	5	28	5½	32	10	35	47½
Wild Duck	28, 1854	4½	13	2½	18	2½	21	2½	23	4	26	3	28	4	30	6	33	3	36	32
Whistler	28, 1853	4½	13	3	17	2	19	2½	21	2½	25	4½	29	3½	31	3½	32	3	36	29
Celestial	29, 1851	3½	11½	3	15	6	17	4	20	2	22	3	26	4½	29	6	33	11	35	43
Helena	30, 1854	2½	12½	2½	17	2½	22	3	26	3½	26	3½	28	3½	29	5½	33	3	35	29½
Annie Buckman	31, 1853	7	11	7½	16	3	19	3	21	4	24	4½	24	4	29	5	32	8	35	46
Mean crossings		5.1	12¾	3.5	16¼	3.3	19½	3.7	22½	3 6	24¾	3.8	27¼	4.3	29¾	4.4	33	5.6	35¼	37.3
Mean of 6 passages, crossing 100° E. long. to southward of 14° S. lat.		7.5	15	2.6	18¼	3.2	20½	2.7	22	3.1	24¼	4.3	25½	5.0	29½	4.4	33	5.6	35¼	38.3
Mean of 21 passages, crossing 100° E. long. to northward of 14° S. lat.		4.5	11	3.7	15½	3.3	19¼	4.0	22¼	3.7	24¾	3.7	27⅛	4.1	29¾	4.5	43	5.7	35¼	37.3
Mean of 10 best passages		3.9	12¼	3.2	16¾	2.7	20	2.9	22¼	3.1	24¾	3.7	27¾	3.6	30¼	4.0	33	3.6	35¼	30.5
Time of crossing of 20 Dutch ships from the Straits of Sunda		6	11½	4.4	16½	3.4	20¼	4.5	23½	4.6	26¼	4.3	28¼	4.4	30½	6.1	33¼	7.4	35½	45.1
Time of crossing of 17 Dutch ships from the Straits of Balie		12.9	17½	3.8	19¾	4.1	21¾	4.4	24	4.2	26¼	4.9	28¾	4.4	30½	5.3	32¾	8.7	35¼	52.7
Sea Witch	April 1, 1853	5	12	3½	15½	2½	17	3	19¾	3	22¾	4½	26	2½	29	3½	33½	8	35	35½
Rapid	3, 1855	2½	9	2½	12½	3	16	3	18½	3	21¾	4	25	2½	28	3	32	3½	36	27
Telassar	3, 1851	7	11	4	15¾	4½	19	3½	22¾	5	24	4	26½	5½	31	6½	33½	17½	35	57½
Western Continent	5, 1857	2	11¾	2½	13½	3	17	3	21	4½	25	4	27½	7	29	4	33½	7	36	37
Morrison	5, 1836	2	11¾	4	19	2½	21	3½	24	4	25½	4	27	4	29	8½	34	4½	34¾	37
F. Warren	6, 1838	4½	10	3½	14	3	17½	3½	20½	4½	25½	5	26	3	29	10	35	7	35	44
Wizard	6, 1854	2	11	4	16	2	18½	3	21	3	23½	3	27	3	29½	5	34½	3	36	28
Sea Witch	6, 1851	3½	10	2½	13	3	15	3½	18	3½	21½	6	26	3	30	5	33	6	36	36
John Jay	10, 1851	5	11½	4	16	4	17¾	6	19½	3½	20	7½	22	15	29½	9	32¾	9	35¾	63
N. B. Palmer	10, 1856	3¼	13	3	17	2	19	3	22	2	24¼	3	27	2¾	28¾	5	33	8	36	32
Kensington	10, 1849	1½	8½	4	13½	3½	17	4½	22	6	24	5½	28	3½	30	5	33	8	36	41½
Lebanon	10, 1848	4	10	4	14½	2½	17	2½	20½	2½	23½	2½	25	4	29	5½	33	7	36	34½
Channing	11, 1850	2	11	4	16½	3	19½	4	21	3	24	6	26	4	28	8	32½	4	36	38
John Wade	13, 1853	7	12¾	2	15	3	18	2½	20½	3	22½	3	26	4½	29½	4	33	5	35½	34

Name of vessel.	Date of sailing.	100° E.		90° E.		80° E.		70° E.		60° E.		50° E.		40° E.		30° E.		20° E.		Total days.
Raven	13, 1853	6½	12	2½	15	2½	18	2½	20	3½	22½	3	25	5	28	4½	33	5	35	35
Sheridan	13, 1851	2½	10	3	14	3½	19	3½	22	3½	23	4	27	5	30	5½	33	12½	35½	43
Horatio	13, 1847	2½	8	5½	13	3½	16	3½	18	4	22½	3½	25	5½	29	6	32	3	35¾	37
Sea Witch	14, 1852	2½	8½	3	11	2½	13	2½	16	2½	20	4	25½	4½	28	5½	31	6	36½	33
St. Paul	15, 1842	9	12	4½	15½	3½	19½	5	24	4	25¾	5	27½	5	29	5	34	11	36	52
Northern Crown	15, 1857	1	10	3½	16	2½	20	3	24¾	6	26½	2½	28	3	32	4	34	8	38	33½
Bengal	20, 1806	7	14	3	16¾	4	18¾	3	20½	5	22¾	4	26	5	29	8	34	6	37	45
Telegraph	21, 1852	2	9	2½	12	2½	17	2½	22	3	24½	3½	27½	2½	30	3	33½	8½	36	30
Raven	21, 1852	1½	8	2½	12¾	2½	16	2½	19¾	3½	23	4½	25	3½	29	2	33	9	35	31½
Sumatra	21, 1843	8	13½	4	17	3	19½	4	22½	8	24	4½	26½	3½	29	5	33	11½	35	37½
India	21, 1843	4	12	4	15	3½	17½	5	20	3½	22½	4	24¾	4	28½	5	33½	10	35	43
Probus	22, 1844	2	9¼	4	15	4	18½	3	20½	5	22	4	24	5	29	6½	31	6	34	39½
U. S. Ship Macedonian	23, 1856	5	11¾	4	16	4	19	3½	22	2½	24½	3	27	5½	28	3½	30½	10	35¼	41
Hound	24, 1855	2	9	4	15¾	2	20	2½	24	3½	27	3	28	3	31	3	35	7	36	30
Navigator	24, 1843	6	9	4	13	3	17	3	20½	7	23	4½	25½	3½	28½	5	33½	9	37½	45
War Hawk	25, 1856	3½	14	3	19	4	21	4½	22½	3	25¼	2½	27	4½	32½	4	33	6	35	35
N. B. Palmer	28, 1853	9½	12	2½	16	4	19	5	21½	4	24	5	26	3	26¾	5	31	5½	35	43½
Leander	28, 1839	2	8¾	4	16½	3	17	3	20	5	22	3½	25	4½	27¾	5	34	7	36	37
Fenelon	28, 1853	10½	13	3½	18	5	24	4	28	3½	31	6½	35	7½	33	5½	35	14	35	60
Union	28, 1851	4	10¾	5	15	3	18	4	20	4	24	11½	28	3	29	4½	33	8½	35½	47½
Horatio	28, 1843	4	9½	3	13	3	17	6	19½	3½	22	3½	24	4	29	4	32	8	35	39
Coromando	29, 1843	2½	8	3½	12¾	3	16½	3	19¾	6½	22½	4	25½	3½	29	5½	33	8½	35	40
Winged Arrow	29, 1854	2½	9½	3	13	3	16½	4¾	20	2½	23	5	26	3	29	4½	33½	4	36	33¼
Alipore	29, 1852	5	8¾	3	12½	3	16½	3	19¾	5	23½	9	27¾	4	30½	5	34	10	35	47
Wild Pigeon	30, 1853	8	11¾	2½	15	4	18	4½	18½	3½	22	4½	24½	3½	29	7	33	4	35	41½
Heinrick	30, 1856	6	12	3	14½	4	17½	4	20½	3	23	4	26	7	30¾	8	34	9	36½	48
Reindeer	30, 1857	1½	8	4½	12½	3½	16½	3½	19	5	25	6	26	5	31½	6½	33	12	37	47½
Mean crossings		4.2	10½	3.5	14½	3.1	18	3.6	21	4.0	23½	4.5	26	4.4	29	5.3	33	7.7	35½	40.3
Mean of 12 passages, crossing 100° E. long. to the south'd of 14° S. lat.		5.2	14	3.0	18	3.7	19¾	3.8	21½	4.0	24	3.3	26½	5	31	6.0	33½	6	36	40
Mean of 39 passages, crossing 100° E. long. to the north'd of 14 S. lat.		4.1	10½	3.5	14½	3.1	18	3.6	21	4.0	24	4.5	26	4.4	29¼	5.3	33	7.8	35.6	40.3
Mean of 10 best passages		2.6	10	3.0	14	2.5	17¼	3	21	3.2	23½	3.6	26½	3.2	29½	3.9	33¼	6.2	36	31.1
Time of crossing of 32 Dutch ships from the Straits of Sunda		4.7	10½	4.6	15	3.9	18¾	4	22	4.8	25	4.7	27¾	5.2	30	6	32¾	9.5	35½	47.4
Time of crossing of 30 Dutch ships from the Straits of Balie		8.5	16¾	3.7	19	4.5	20¾	3.7	22¾	4.2	24¼	4.9	27	5.4	29½	6	33	11.7	35½	46.2
Samuel Russell	May 1, 1852	3	10½	3	17	2½	19½	2½	21	2½	23	3½	26	4	29¾	5	33	4½	36	30½
Horatio	1, 1843	3	9½	3	13	3	17	4	19½	2½	22	5	25	3½	29	4	32½	7	35	35
Do.	3, 1852	2	8¾	3	12½	3	16¼	3	19½	3	22	7½	26	6½	28	7	33	9	35	44
Albany	3, 1853	6	9¾	3½	14	3½	17¾	4	20½	4	22½	5	26½	6½	27	6	32	8½	35	47
Horatio	4, 1844	3½	9	3	12	3	16	3½	20	3	22	4	26½	4	29½	7½	32	15	35½	46½
Wild Pigeon	4, 1854	2½	8	3	12½	3	18	2½	21¾	4	25	3	27	4	29¾	4	33	4	35½	30
Sweepstakes	5, 1854	1½	9	2½	12½	3	17¾	2	20½	3	24	4	26½	2½	28	5½	33	3½	35½	27½
Horatio	5, 1854	2½	9	3	12½	3	16	3½	20	3	22	4	26½	5	29¾	6	31½	15	35½	45

Time and Crossings from the Straits of Sundá to the Fairway off the Cape of Good Hope—Continued.

Name of vessel.	Date of sailing.	100° E.		90° E.		80° E.		70° E.		60° E.		50° E.		40° E.		30° E.		20° E.		Total days.
		Days.	Lat. S.	Days.	Lat. S.	Days.	Lat. S.	Days.	Lat. S.	Days.	Lat. S.	Days.	Lat. S.	Days.	Lat. S.	Days.	Lat. S.	Days.	Lat. S.	
			°		°		°		°		°		°		°		°		°	
Winged Arrow	May 7, 1856	2	8	3	11¾	3½	15	3	19	2½	22	4½	27¾	3	30	7½	31	5	36	34
Grace Darling	9, 1856	3½	9	4½	14	4½	16	3½	22	3	22	11	26	5	30	6	33	8½	36	49
Hussar	9, 1856	3	13	3	16	3	18	3½	20	3	22	3	25	3½	28	3	33	6½	35	31½
Oscar	12, 1844	2½	8½	4½	13	4	18¼	4	23	4	25	6	27	5	29½	9	33	4½	35	43½
Wm. Sturgis	12, 1856	2	9¼	5½	13½	4	16	4½	20	5	23	11	25	7	29¼	6	33	10	33	55
Cyclone	13, 1857	3	12½	3	17	5	19¾	3	21½	3	25	5	27½	4	29½	5	33¼	6½	36	37½
Caledonia	14, 1821	5	8½	5	13¾	3	16	3	17¾	3	21	4	24½	6	29½	6	33	6	37¾	41
Horatio	14, 1853	4	9½	3½	13	2½	15½	3	20	3½	22	7½	25	3	27½	4	33	12	35	43
Brooklyn	14, 1834	2	8½	4	12	4	17	3	20	4	23	5	26	13	29	6½	32	9	35	50½
Horatio	15, 1841	3	10	3½	13½	3	16	4	20	5½	21	3½	25	4½	29	5½	32	4½	36	38
Oneida	17, 1841	3½	9½	4	13	3	16	4	20	6	21	3½	26	4½	29	5½	32	10	36	44
A. Heard	18, 1856	1½	9	4½	13	3½	17	4½	21	11	24	3½	28	5½	31	16	32½	16	35¾	66
Malay	19, 1853	3	8¾	4½	12½	2½	16	3	19¾	6	21¾	4	26	4	28¾	6	32	7	35¾	40
Toulon	20, 1848	3	11½	4½	18	4½	20	3½	21	4	24	4½	27	7	30	4	32	6½	35½	41½
Reindeer	22, 1857	1½	8	4	12	3	15	3	19	4	21½	5½	24¾	8	28	7	31	12	35	48
Don Quixote	22, 1857	2	8	2½	12	2	17	2½	22	3½	25½	4	27½	4½	29½	3½	34	6	35	30½
Argonaut	24, 1856	6	13	4	17½	3½	19	3½	22	3	24¾	3	27½	6	30	4	32¾	11	35¾	44
Hazard	27, 1852	3	9	2½	11	3	14½	3	18	3½	22	4	26	8	27	4	32	9	35½	40
Stag Hound	29, 1855	1	8¼	3	12	2½	16	3½	20	6	24¾	2½	27	3	31	3	34	6	35	30½
Winged Arrow	29, 1855	2½	8	3	11	2½	15	4	19½	4	22½	3	26½	3	30	3	34	5	36	30
Dragon	29, 1856	6	12¾	3	15	4	18	3	20	3	23	3½	25	4½	29½	9	33	4	35½	40
Mean crossings		3	9½	3.6	13¼	3.3	16¾	3.4	20¼	4	23	4.7	25¾	5	29	5.8	32½	8	35¼	40.8
Mean of 10 best passages		2.4	9½	2.9	13¼	3	17¼	3.1	20½	3.4	23½	3.8	26½	3.5	29½	4.3	33	5.4	35½	31.7
30 Dutch ships for Straits of Sunda		3	9¼	4.5	13¾	3.9	17½	4.6	21¼	4.8	24½	5.7	27	5.4	30¼	7.6	32¼	9.2	35½	48.9
Thomas W. Sears	June 1, 1853	2	8½	3	12	4	16	3	20	3	22	5	25	5	30	4	34	6	35¾	35
Resolute	1, 1855	1¼	7¾	3	11½	2¾	15	4	17	2½	21	4	27	2½	31	5	34	6½	35¾	31½
Ringleader	1, 1854	2½	9	2½	13¼	3	17¾	3½	21	2½	23	4	26½	4	29	5	33	3½	36	30½
Argyle	2, 1841	2	8½	4	13	3	16	3½	19	3½	22½	2½	25½	5	27	7	32	6½	35½	37
Golden City	3, 1854	3	9¾	2½	13	3	16½	3	19	2½	22	3½	26	5½	30	4	33½	3	36¾	30
Daniel Webster	4, 1854	3	8¾	3	13	3½	17	4½	22½	3	23½	5	26	4	28	4	33	10	35¾	40
Nabob	5, 1855	2	16	3	18	3½	20	2½	22½	3	26	4	29	4	32½	5	34½	7	35½	34
Celestial	5, 1856	1½	8	2½	12	1½	16	2½	19	2	21	3½	26	3½	29	5	31½	7	35	29
Vernon	8, 1848	2½	9	5	14	3	18	3½	21½	4½	24	5½	27	3½	30½	6	33	5½	35¾	39
Golden City	9, 1853	4	10	2½	14	2½	16½	3	20	2½	24	3½	26	2½	28	3½	32	3	35	27
Golden West	10, 1857	1	9	3	15	2½	18	2	20	3½	28½	2½	26	3	30	3	32½	8	35½	28½

Eureka	10, 1854	2	8½	2½	12	2½	16	2½	19	3	22	4½	25½	3	29	3	33	6	35½	29
Robert Patten	11, 1857	2	9	6	15	3	17	4	20½	4	24	4	26¾	4	29½	5	32	8	36	40
Henry Tuke	12, 1837	2	8¾	5	13	4	16	4	19	6	20½	6	26½	3½	30	5	34	5	35½	40½
Wild Pigeon	12, 1852	2	9	7	14	2½	15	2	16½	2½	19½	4	24½	3	27¾	10	33	4½	35½	37½
Wild Duck	14, 1853	2½	18¼	4	19	2½	20½	4	22½	6	25¼	3	28	3	31	4½	33	6	37	35½
Stephen Lureman	14, 1848	3	9	3½	13	3	17	3½	18	3½	20	3	24	3	29½	5	32	6½	36	34
Carrington	15, 1851	2	10½	4	12½	4	18½	2	20½	3½	23	3½	26½	5	29¾	4	32	9	36¾	37
Horatio	16, 1841	2	8	4	12	3	16	3	20	3	21½	2½	25	2½	29	4	32½	5½	35	29½
Celestial	17, 1852	7½	12	2½	15	3	18½	3½	20	3	22½	2½	27	7½	29	3½	32	8	36	41
Rome	22, 1839	2	8¾	4	12½	5	16½	4	20	4	24	5	27	5	29	13	34	11	35	53
Walter Scott	24, 1836	2	9	4½	13	5	15	3½	18	3	21¾	5	23½	4	28½	4	33¾	8	36	49
Raduga	24, 1856	2½	11	3	16	2½	18	4	20½	5	22½	4	27½	6	30½	4	32	7	35	38
Washington Obeas	24, 1834	1½	8	3½	11½	3	14	3	18¾	4½	22½	4	27½	4½	29	10	34	11½	36½	45½
Maury	25, 1856	2	14½	2½	16½	1½	17½	2	18¾	2	21¾	2½	25	3	29	3	33	6½	36	25
Sumatra	27, 1841	2	8	4	13	4	16	4	21	5	24	4	27½	4	30	4	33	5	35	36
Horatio	27, 1851	2	8½	4	12½	2½	15	3	19	3½	21½	3	26	4	29	6	32	8½	35¾	36½
Northern Light	29, 1857	2	10	2½	14	2½	17	2½	20	3	24	3	27	4½	30	4	32	4	36½	28
Roebuck	30, 1855	3	12½	3½	17	3	19	2½	20½	3	22	4	25½	4	29	7	32	10	35	40
Mean crossings		2.4	10	3.6	14	3.1	16	3.2	19¾	3.5	23	3.9	26¼	4	29¼	5.2	32¾	6.8	35½	35.7
Mean of 3 passages, crossing 100° E. long. to the south'd of 14° S. lat.		3.3	16¼	3.2	17¾	2.7	19¼	2.8	21½	3.6	24¼	3.2	27¼	3.3	30¾	4.5	33½	6.5	36	33.0
Mean of 26 passages, crossing 100° E. long. to the north'd of 14° S. lat.		2.4	9¼	3.6	13¼	3.1	17	3.2	19½	3.8	22¼	3.6	26	4.1	29	5.3	32¾	6.8	35¾	35.9
Mean of 10 best passages		2.2	9	2.5	13	2.6	16¼	2.8	19¼	2.6	22¾	3.4	26¼	3.4	29.5	4.0	33	5.3	35¾	28.8
Time of crossing of 29 Dutch ships from Straits of Sunda		2.9	9¼	3.7	13½	3.6	16¾	3.7	20½	3.9	24	4.8	27¼	5.1	29½	6	33	9.3	35½	43.0
Zenobia	July 1, 1846	3	8¾	4	12½	3	14½	3½	18	4½	20½	6	25	5	28½	5	32½	6½	35¾	40½
Lowell	2, 1855	2	6	4	12¾	4½	18	3½	20½	3½	22	4½	29½	5	30	8	34	6	37	41
Channing	5, 1851	6	13	4	17	4	20	5	22	3	24	5	28	5	28	7	33	7¼	35	46¼
Horatio	5, 1850	1½	9	3½	11	2½	15	2½	18	2½	21	3½	26	3½	29	4	32½	4	35½	27½
Fire Fly	10, 1856	3	9½	3	14½	3¼	20	2¾	22	3	24	4½	27	4	30	4½	33½	11	35¼	39
Fanny	10, 1851	2	10	4½	15	2½	17½	3	19	3	22	4	26	2½	29	6½	32	6	35½	34
Sweepstakes	10, 1855	1½	9½	3	13	2	17	2	20	3½	24½	3	25¼	4	29¾	3½	32	7½	35½	30
Richard Alsop	15, 1853	4	9¾	3½	13	2½	15¾	3½	19¾	3½	22½	3	25	4	29	4½	32½	6	35½	34½
Black Prince	19, 1857	2	8	4	15	4½	18	4	20	3½	25	7	27¾	5	30½	4	33	6	35	40
Horatio	19, 1839	1½	8	4	12	4	16½	4	18¾	4	23	6	26	4	30	5	32	8	35	40½
Hollander	21, 1855	2½	9	3½	12¼	4	17	4	20½	4	24	4	27	3	29½	8	33	4½	36½	37½
Southern Cross	21, 1855	1¾	9	3	14	3	16	2¾	20½	6	25	4	28	3½	30	3½	33	6¼	35	33¾
Santiago	23, 1854	3	7¾	2½	10	3	14	3	19	3	22½	4½	26	3½	28	4	33	6½	36½	33
Narragansett	24, 1841	2½	8	4	12	3	15	3	18	3½	21¾	5½	26	4	28	4½	32	8½	35	38½
Horatio	25, 1835	3	11	3	14¾	3	16	4	19¾	3	24	6	26½	3½	29	4½	33	12	36	42
Mameluke	27, 1856	2	8¼	3	12	2	15¾	2½	19	2½	22½	3	26	3	29	5	33	12	35	35
Comet	28, 1856	1½	8	2	12	2	16½	2	19½	2	22½	3	25¾	3	29	4½	32	8½	35	28½
Aurora	29, 1854	1½	8	2½	13	2½	17	2½	21	2½	24	3	26	2½	30	3	34	7	35½	28
Telegraph	29, 1854	1½	8	2	11	2½	16	2½	20	3½	25	3	26¾	3	30	2½	33½	6½	35	27

Time and Crossings from the Straits of Sunda to the Fairway off the Cape of Good Hope—Continued.

Name of vessel.	Date of sailing.	100° E.		90° E.		80° E.		70° E.		60° E.		50° E.		40° E.		30° E.		20° E.		Total days.
		Days.	Lat. S.	Days.	Lat. S.	Days.	Lat. S.	Days.	Lat. S.	Days.	Lat. S.	Days.	Lat. S.	Days.	Lat. S.	Days.	Lat. S.	Days.	Lat. S.	
			°		°		°		°		°		°		°		°		°	
Gravina	July 29, 1854	1½	16	2½	18	2½	19	2	21	3½	23	3	26½	3	29¾	2½	34	6½	36	27
Virginian	29, 1849	2½	11	3	15	4	18	2½	20¾	3	23½	3½	26	5	29	4½	33	9½	36	37½
Kate Howe	31, 1857	1½	9	4	15	3½	19	4	21¾	5	23	6	27½	4	29½	5	34	8	36	41
Mean crossings		2.3	9¼	3.3	13¼	3	17	3.1	20	3.5	23	4.3	26½	3.8	29¼	4.7	33	7.5	35½	35.5
Mean of 1 passage, crossing 100° E. long. to the south'd of 14° S. lat.		1.5	16	2½	18	2½	19	2	21	3.5	23	3	26½	3	29¾	2½	34	6½	36	27
Mean of 21 passages, crossing 100° E. long. to the north'd of 14° S. lat.		2.3	9	3.3	13	3.1	16¾	3.1	20	3.4	22¾	4.4	26½	3.8	29¼	4.8	33	7.5	35.5	35.7
Mean of 10 best passages		2	9½	2.9	13	2.5	16¼	2.6	19¾	3.4	23	3.4	26	3.2	29¼	3.8	32¾	6.5	35½	30.3
Time of crossing of 34 Dutch ships from the Straits of Sunda		2.7	9¼	4	13	3.5	17	3.5	20½	4.1	24	4.5	27¼	4.8	29¾	5.7	32½	8.5	35½	41.3
Mary	Aug. 1, 1821	2½	9	3½	13	3	16	3	19	2½	21	5½	26	4	28	4	33	7½	35	35½
Huntress	1, 1841	2	9	4	13¾	3	17½	3	20	4	23	4½	27	3½	30	6½	33	7½	35½	38
Mary Frazier	2, 1837	3	9½	3½	13	3	17	5½	20½	4	23½	5	26	3	29	7	33½	6	36½	40
Dragon	5, 1853	1½	9	3½	13½	2½	17	2½	20	3½	24	4½	27	4	27½	5	32	6½	35¾	33½
Annie Buckman	7, 1852	4	10	4	14	3	18	3½	21	3½	24¾	5	27¾	5	31	3	34	10	35	41
Hazard	8, 1851	1	8½	3	12	3	15	3	18½	3½	22	3	25	4	29	4½	32	8½	34½	33½
Ringleader	9, 1856	2	9¼	3	13	2½	16½	2½	20½	2	23	4	27	2½	30	5½	35	4	36	28
Quickstep	10, 1856	2	8¾	3	13	2½	16	2½	19	3	23	4	26	4	29½	4	33½	3¾	35	28¾
Maria	13, 1836	2	7	3	12¾	3	17¾	3	21½	4	23½	3	27	4	28¾	3	31	6	34¾	31
Architect	15, 1854	2½	8	3½	13	2	15	2½	19	2½	24	2½	28	2½	30½	2½	32	2½	36½	23
Sterme	16, 1854	1½	8½	3½	13¾	2½	16	2½	20	2½	23	4	26	2	28	3	33	6	35	27½
Sterme	16, 1853	1½	9	2½	13	3	18	3½	20	2½	23	3½	27	4	30	4	33	4	35	28½
Wizard	17, 1853	2½	7	2	9	2½	13¼	2½	17	2½	21	2	25½	3½	29	5	33	2¼	35¾	24¾
Surprise	18, 1852	3	8¾	5½	14	2	17	3	19	2	23	2½	26	3	30	4	36	6	36	31
David Brown	19, 1854	2	9¼	2½	14	2	17	2½	21½	2	24½	4	30	3	30¼	3	34¾	6	35¼	27
Horatio	21, 1836	2	9	3	14	3½	17	3½	19	3	23	3	26½	4½	30	5	32½	5½	35½	33
Valparaiso	21, 1854	2	8½	3	12½	3	16½	3	20¾	3½	23	3½	30	4	30½	5½	34	5½	37	33
Boston	21, 1855	2½	16¼	3	17½	3½	18½	3	20	4½	23	4	26¼	4	30½	5	35¾	8	35¾	37½
Sparkling Wave	22, 1855	2	8¾	4	15	4	18½	3	23	3	26½	4	29	3	30½	4	33½	5½	35½	32½
Ocean Pearl	23, 1855	2	9¾	3	14	3	18	3	21½	4	24	4	27½	2½	31	4½	33½	3	35¼	29
Loo Choo	24, 1851	3	7¾	4	13¾	3	17	4½	20	6½	24	4½	27	6	29	4½	32	9	35	45
Hussar	24, 1856	3	13	3	16	3	18	3½	20	3	22	3	25	3½	28	3	33	6½	35	31½
Amit	25, 1849	2	8½	4	12½	4	17	4	20½	3	22¾	3½	26	5	30	6½	33	4½	35	36½
Wild Pigeon	26, 1855	1	13¾	3	16½	2	18	4	22	3	25½	3	27	4	31	4¼	34	12	35½	36¼
Northern Light	26, 1856	1½	8¾	3	14	2½	17	3¾	19½	3¼	24	4½	28	4	31	4¾	33	3¼	36	30½
Sea Breeze	27, 1852	2½	14	2½	16½	3	19¾	2½	22	2½	25	3½	28	4	31½	3	33	3½	35	27
Potomac	30, 1836	1½	9	2½	13¾	3½	17	3½	19¾	4	23½	4½	27	5½	30½	6¾	34	8½	35	40¼
Maria	31, 1837	5	7¾	4	13	3	16¾	3	20½	4	24¼	2	26½	4	28¾	4	33	7	35	36
Mean crossings		2.2	9½	3.3	13¾	2.9	17	3.2	20	3.2	23	3.7	27	3.8	29¾	4.5	33¼	6	35¼	32.8
Mean of 2 passages, crossing 100° E. long. to the south'd of 14° S. lat.		2.5	15	2.8	17	3.3	19	2.8	21	3.5	24	3.8	27	4	31	4	34¼	5.8	35¼	32.5
Mean of 26 passages, crossing 100° E. long. to the north'd of 14° S lat.		2.2	9	3.3	14	2.8	17	3.2	20	3.2	23	3.8	27	3.7	29½	4.5	33	6	35¼	32.7
Mean of 10 best passages		2.1	9	2.6	13¼	2.6	16¾	2.7	20	2.8	23¼	3.5	27¼	3.2	30	3.8	33	4.1	35¼	27.4
Time of crossing of 39 Dutch ships from the Straits of Sunda		1.9	8½	3.8	13	3.3	16½	3.5	20½	4.1	24¼	4.6	27½	4.7	30	5.5	33	6.7	35	38.1
Roman	Sept. 1, 1831	2	8¾	3½	12½	2½	17½	3	21½	4½	24½	2½	28	5	29	3½	34	5	35	31½
Valparaiso	8, 1849	2½	10	3	15	2½	16¾	2½	19½	4	23	5	26¾	4	29	4	33	6	35	33½
Eagle Wing	8, 1854	2	13¼	2½	15½	3	18	5½	20½	4	23	3½	26	3½	28	4½	31½	6	35	34½
Stornoway	9, 1854	2	8¾	2½	13	2½	16¾	6	21	4	23½	3½	27	4	30	5	33	4	35¾	33½
Eliza Warwick	13, 1848	2½	9¾	3	12	3½	17½	3	20	3	23½	4	28	4½	31½	4	33	8½	35	36
Horatio	14, 1854	2	8	3	11¾	3	15	3	18	3	22	4	26½	4	29	6	33	8½	35	36½
Lightfoot	15, 1854	1½	9	2½	13¼	2½	17	3	20½	2½	24	3	26½	3½	31	4	35	4	36	26½
Mandarin	17, 1856	2	9½	2½	14	2½	17¼	3	19½	2	21	3	26	3½	29	5½	32½	7	36	31
Tsar	18, 1853	1½	8	3½	13	3	16¾	3	21¼	5	24¾	4	28¾	3	32	4	34¾	2½	36	29½
Yumski	18, 1846	1½	7¾	3½	12	3	16½	3	20	3	23	4	26	4½	29½	4	34	8	35	34½
Lotus	18, 1855	1½	14	4	16½	3	18	2½	21¾	3½	24	2½	27	3	30½	3	32½	4	36	27
Gauntlett	20, 1854	3	7¾	3½	14	3	19	4	22	3½	24¾	3½	28	4	29¾	5	34½	5	37	34½
S. Boyd	22, 1851	3	9	3	14	3	17½	3½	21	3	24	4	27	5½	30½	6	33½	7	35½	38
Sartelle	23, 1852	2	9	3	14	3½	18	4½	22	4	24	5	27	4	29	6	34	6	35	38
Samuel Russell	27, 1854	1½	8	2½	12	3	15½	2½	19	2½	22	3	26½	3½	29	3½	33	3½	35	25½
Channing	29, 1855	4	12	5	15¾	3	18¾	3½	22	3½	24	3½	27	3½	29½	5	33	3½	35	34½
Nightingale	30, 1852	1	8¾	2	11¾	2	15	2½	20	5½	23	2	26	5	29	3	33	10	35	33
Hotspur	30, 1857	1½	13½	2½	17	2½	19½	2½	23	4	26	5	28	3½	28¾	3	32	3¼	34½	27¾
Greenfield	30, 1856	2	10	3	14¼	3	18¾	3	22½	3½	26	3½	28	4	31	4	33¾	7	35	33
Queen of the East	30, 1854	2	9¼	3½	13¾	3	17	2½	21	3½	24	3½	26	3½	28	5	32	8	35½	34½
Mean crossings		2.1	9¾	3.1	13¾	2.9	17¼	3.3	20¾	3.6	23¾	3.6	27	4	29¾	4.4	33¼	5.4	35¼	32.5
One passage, crossing southward of 14° S. latitude		1.5	14	4	16½	3	18	2.5	21¾	3.5	24	2.5	27	3	30½	3	32½	4	36	27
Mean of 19 passages, crossing northward of 14° S. latitude		2.1	9½	3	13½	2.8	17	3.3	20¾	3.6	23½	3.7	27	4	29½	4.5	33¼	5.5	35¼	32.9
Mean of 6 best		1.6	10¼	3.1	14	2.7	17¼	2.8	21	3.7	24	3.3	27¼	3.6	30	3.5	33¼	3.7	35¼	28.3
49 Dutch ships from Straits of Sunda		2.2	8½	3.5	12½	3.6	16¾	4	21	4.6	24½	5.2	27¾	4.6	30	5.2	33¼	6.1	35½	39

Time and Crossings from the Straits of Sunda to the Fairway off the Cape of Good Hope—Continued.

Name of vessel.	Date of sailing.	900° E.		90 E.		80° E.		70° E.		60° E.		50° E.		40° E.		30° E.		20° E.		Total days.
		Days	Lat. S.	Days.	Lat. S.	Days.	Lat. S.	Days.	Lat. S.	Days	Lat. S.	Days.	Lat. S.	Days.	Lat. S.	Days	Lat. S.	Days.	Lat. S.	
			°		°		°		°		°		°		°		°		°	
Candace	Oct. 2,1851	3	10¾	3	15½	4½	18	3	21	3½	24	3	26½	3	30	6	32½	5½	35	34½
Candace	2,1852	2½	8½	6½	14	4	17½	3	20	5	24	4	27	6½	29	5½	32	7	35	44
Ariel	2,1852	1½	8½	3	13½	2½	17	3½	20	2½	24	4½	27½	3	29½	5	33	5½	35	31
White Swallow	3,1855	2	15	3½	17	2¾	19	2¾	21	3½	22	2½	26	3	30	4	32	2½	35	26½
Isabilita	3,1851	1½	9	3½	15	4	21	3	33	4	26	3	27	3	29	5	32	5½	35	32½
Sea Serpent	9,1853	3	8½	4	14	2½	17	3	20	2½	22½	2½	26	2½	30	3	32	3	35	26
Ianthe	10,1846	2	7¾	4	11	3½	15	3	18	4	20¾	4	25	4½	28½	4	32	5	34¾	34
Stephen Lureman	11,1850	2	9	2½	14	3½	18	4	21	4	23	3	25	3½	30	3½	32½	3½	35	28½
Ianthe	11,1846	1	8	3¾	11	3¾	15	3	18	4½	21	3½	25	4½	29	4	32	5	35	33
Samuel Russell	13,1855	1½	8	3	12	3½	16	2½	20	3½	24	3½	26	3½	29½	6	32	4	35½	31
Ariel	14,1851	1½	8½	3½	14	2½	17½	3	21½	6½	24½	4	28½	4	32	5	34	5½	35	35½
Grotius	14,1839	2	15	3½	15½	4	18½	4	20	3½	23	6½	27	6½	30	8	33	3½	36	41½
Montezuma	15,1840	2	8½	4	13	3	16	3½	19	4½	22	6	26	5½	30	5	33	3	35½	36½
Joshua Bates	15,1850	1¼	8	2¾	12½	4	20½	4½	23	4½	26	2½	28	3	31	4	33½	5½	35	32
T. W. Sears	15,1855	2	8	3	11	4	16¾	4	20	5½	24	4½	26½	5	29½	4	33	5	35½	37
Sword Fish	15,1852	3	10¾	2½	14½	2	16	2½	18¾	2½	22	4½	25	5	26	3½	30	6	35	31½
Phantom	16,1857	1½	9	3	13	3	17	3	22	3½	25½	4½	30	2½	32½	5	34	5	35	31
Howqua	16,1852	2½	10	2½	14¾	3	19	2	21	5	23½	6	27½	4½	30	5	33	5½	35½	36
Young America	17,1855	1½	7½	3½	11½	2	14½	2½	18	3	21	2½	24	3	29	5	32	3½	35	26½
Seaman's Bride	17,1854	2	8¾	2½	12	2	15	2½	18	4	23	6	27	3½	32	3	34	4½	35	30
John Bertram	18,1852	2	8½	2½	14	1½	18½	3	22	6	25	4½	28	3	30	3½	32½	5	35	31
Nestorian	18,1855	2½	8	3¼	13½	3½	16¾	4	21¾	4	24¾	4	26	3½	28	3½	33	6¼	35	34½
Shooting Star	19,1854	2	10	2½	13½	2	16½	2½	21	4	25½	5	25½	3	30	2½	33	3	36	26½
Chicora	19,1848	2	9	2½	13	3	17	2½	20	3	22	5	25½	3	28	5	33	6	35	32
Howqua	19,1849	1	8½	3	13	3	17	3	20	5	22½	6½	27	3½	29	4	32	8	35	37
Ariel	19,1853	2	9¾	4	14½	2½	18	2½	20	4	23½	5½	27	2½	29½	4	33½	3	35	30
Clarenden	21,1849	3	10½	5	17½	4	21½	9	22½	5	26	5	29	5	32	7	34	3	35	46
Paul Jones	21,1844	5½	14	2½	17	2½	19	3½	20	5	23	5	25	5	30	3½	33	4½	35	37
Mischief	22,1854	2½	8	2½	12	2½	17	3½	21	4	23½	4	27½	3	30½	3	34	3½	35½	28½
Tingua	22,1854	1	7¾	2½	11	2½	14½	3	17¾	4	22	4	24½	4½	28	4½	33¾	5	36	31
Falcon	22,1852	2	8	3	12	3	16½	3	20½	4	25	5½	29	3½	32	6½	33	3½	36	34
Restitution	22,1831	2	9½	4	14	5	18	3	20½	4	23	5	27¾	7	29	5	30	9	35	44
Boston	23,1851	3	9	3	13	3	16	4	20	4	23½	3	26½	3½	30	4½	33	12	35	40
Sea Serpent	23,1852	1½	8	2	12	2½	17	4	21	3	24	6	27	4	29½	6	33	2½	35	31½
Benj. Howard	24,1852	2	9	3	13	3	16½	3	20½	5	25	4½	27	4½	30½	6	33	5	35	36
Stingray	25,1855	2½	9	3	13	2½	17	3	20¾	3	23	4	26¾	2	29½	4	33½	2½	35	26½
T. W. Sears	26,1848	5½	9½	3	12	2½	16	2½	20	3½	23	4½	26	5	27½	3	32	2½	35	32
T. W. Sears	27,1854	2	14	3	16	3¼	18	3¾	20	4	22	5	25¾	5	30	4	31½	7½	35	37½
Ursula	27,1848	3	7¼	5	13½	2½	17	4½	21	3½	24	5½	28½	4	30½	3½	33	3	35	34½
Mary	29,1822	3	10¾	4	15	3	18	5	21	5	21	5	25½	5	28¾	6	33	4½	34½	40
Annie Burkman	30,1850	1	8	3	11½	3	16	3½	20	3½	24	5	26½	3	30	7	33	7½	35	36½
Challenge	30,1855	2	8¼	3	13	2½	17	2½	20	4	25½	3½	25	4	29	5½	32	4½	35	31½
Zenobia	31,1841	2	8½	4	12¾	3½	18	3	21	8	25½	4½	26	5	29½	4	33	12	35½	46
Robert Pulsford	31,1850	2	8¾	3	12½	3	16½	3½	20	3½	22	4	24½	5	26	5½	32	8½	35	38
Stag Hound	31,1851	2	8½	3	14	2½	18½	2	22	2	24½	3	27	2½	30½	3½	33	5½	35	26
Mean crossing		2.2	9¼	3.2	13½	3.0	17½	3.3	20¼	4.1	22½	4.4	26½	4	29½	4.6	32¾	5.1	35	33.9
Mean of 4 crossings southward of 14° S. latitude		2.9	14½	3.1	16¼	3.1	18½	3.5	20¼	4	22½	4.7	26	4.9	30	4.9	32¼	4.5	35	35.6
Mean of 41 crossings northward of 14° S. latitude		2.1	8¾	3.2	13	3	17¼	3.3	20¼	4.1	22½	4.3	26¾	3.9	29½	4.6	32¾	5.2	35	33.7
Mean of 10 best		2.1	9¼	3.1	13½	2.5	17	2.8	20¼	3.4	23	3.8	26¼	2.9	30	3.5	33	3.4	35¼	27.5
57 Dutch ships from Straits of Sunda		2.4	8¾	3.8	13½	3.8	18	4	21¾	4.9	25½	5.3	28¼	4.8	30½	5.5	33	7.7	35¼	42.2
Lantao	Nov. 1,1852	3	9	3½	14	2½	17	5	19¾	4	22½	4	26	3½	28½	3½	32½	3½	34½	32½
Do	1,1851	2	9	3½	14	2½	16½	2½	20	3	24	2½	27	4	29	6	33	6½	35	32½
Seaman's Bride	2,1852	2½	9	3	15	3½	21	8	24	3	26½	4	29½	3½	33½	2	35	3	36	32½
Sea Serpent	2,1851	6	9½	3	13½	3½	15	2	17	2	21	3	26	3½	29	3	31½	6	35	32
Quickstep	3,1857	3	10¼	3	14½	2½	16	3½	19	3½	21	4½	26	3½	29	4	32	5½	35	33
Samuel Russell	3,1848	2	10	2½	14	2	18	2	20	3	22½	3	26	3½	28	3	33	2½	35	33½
Channing	4,1852	2½	11	3	15	4½	20	4	22	3	24¾	6	27½	2	29	5	33	4	35	34
Restitution	5,1815	3	10	4	16	4	18	5	19½	4	20	6	25¾	3	30	4	33	5	34¾	38
Cœur de Leon	6,1854	3	9	2½	14	2½	18	3½	20	5	23	3½	26½	3	29	4	34	6½	35	33½
Siam	6,1855	2½	8	3½	12½	3	16	4½	22	5½	26	6½	29	6	30½	4½	33¾	5½	35½	41½
Witchcraft	7,1857	2	9	2½	12½	2½	17	3½	20	3½	23	4	26	3	28½	4	33½	10	35	35
Tartar	7,1848	7	13½	4	19	4	26½	4	25	3½	26	3½	30	6	32	6	34	7½	35	45½
Hanover	8,1837	6	15½	4½	16½	3½	17¾	3½	20	4½	23	5	26½	5	30½	5	33	3½	34½	40½
Franklin	8,1835	6	14	4	20	3½	21½	5	24	3½	26	4½	28¾	6½	32½	3	34½	7½	35½	43½
Golden City	8,1857	1½	9	3	15	2½	19½	4¼	23	3¾	24	3½	27	4½	29½	5	32½	9	35	37
Quincy	9,1854	3	8½	4	14	4	18¾	4	20½	5	24	5	27¼	7	30	4½	34	8½	35	45
Mary Frazier	10,1838	2	8½	4	12½	5	17	3½	21½	4½	23	6	26	5	29	5	33	7	36	42
Horatio	11,1855	3½	8¼	3	11½	3½	15½	4	20	4	23	5½	27½	5	30	6	31½	3	35	37½
Haidee	11,1856	2¾	9	2¾	13	3	17	2½	22	3½	24¾	3	28	3½	29	5	33¾	3	37½	30
Game Cock	11,1854	1½	7	2½	11	2½	15	2½	18¾	5	23¾	3½	28	3½	30¼	2½	33½	6	36	29½
Staghound	12,1853	1½	9	3	12	3	17	2½	20	5	26	2½	28½	3½	30½	4	33	4	35	29
Panama	12,1850	3	12	3	16	3	19	3	23	4½	25	4	27	5	30	4½	32	10	36	40
Flying Cloud	14,1852	4	15½	2	17½	3	18	5	20½	3	25	4½	28	3½	30½	5	33	8	38	38
Candace	14,1854	2	7¾	3½	13	2	15	2½	19	3½	22½	4	26	4½	30	4½	34	3	35½	29½
Messenger	15,1854	1½	8½	2½	12½	2½	16¾	2½	20	2½	23¾	5	26	4	30	6	32	2¼	35	30¾
Siam	15,1849	10	9½	3½	14	3½	18	4½	23	3	26	5½	28½	5½	32	6	35	9	35½	50½
Samuel Russell	16,1850	2	9½	3½	14	3½	19	3½	21	3	25	4	28	4	31	5	33	10	35	38½
E. F. Willets	16,1856	3½	8	3	12	3	16½	3	22	4	25½	4½	27	3½	29½	9	32½	4	36	37½
Candace	16,1850	2	9½	3½	14	3½	19	3½	21	3	25	4	28	4	31	5	33	10	35	38½
Santiago	16,1856	3½	11	3	14½	3½	16¾	3	19¼	5	23	4½	26	3½	29½	10	33	9	35	45
Volkyrien	17,1852	3	9½	3	13½	3	17¾	4	22	4	25½	3	28	5	30	5	33½	3½	34½	33½
Cora	18,1856	2	9½	3	14½	4	19½	3	22¾	4	25	5	27½	3	31	4	33	8	35	36
Australia	18,1856	3½	8½	6	11½	3½	17	4	21	6	25	4	27	5	27	5½	33	6½	33	44

Time and Crossings from the Straits of Sunda to the Fairway off the Cape of Good Hope—Continued.

Name of vessel.	Date of sailing.	100° E.		90° E.		80° E.		70° E.		60° E.		50° E.		40° E.		30° E.		20° E.		Total days.
		Days.	Lat. S.	Days.	Lat. S.	Days.	Lat. S.	Days.	Lat. S.	Days.	Lat. S.	Days.	Lat. S.	Days.	Lat. S.	Days.	Lat. S.	Days.	Lat. S.	
			°		°		°		°		°		°		°		°		°	
Electric	Nov. 18, 1855	3	9⅛	3	13¼	2⅛	17	3⅛	22	4⅛	25	3⅛	28	3⅛	30	4⅛	33	3⅛	35	31⅛
William Goddard	18, 1852	4	10	5	14¾	3	17⅛	4	21	6	24	7⅛	27	3⅛	29⅛	4⅛	33	5⅛	36	43
Do	18, 1853	3	10	2⅛	13	3	16	3	21	5	24⅛	4⅛	27	4⅛	29	5⅛	33	4	35	35
John Bertram	18, 1854	2	8⅛	2⅛	12	2⅛	16¾	2⅛	21	2⅛	25	3	29	4⅛	31	3⅛	33¾	2⅛	35	26⅛
Howqua	18, 1856	2⅛	9	2	12	3⅛	15¾	3	19⅛	3	23⅛	5⅛	27	3	30	3⅛	34	9	35	35
Hamburg	19, 1854	2⅛	9	3⅛	12	5	18⅛	7	22	5	26	5	28	5	30	4⅛	33	4⅛	35	42
Roland	19, 1855	2	9	3⅛	14	3	18	3⅛	23	4	25⅛	5	28	4	31	4	33	9	35⅛	38
Ariel	19, 1854	2	9	3	13	3⅛	17⅛	4⅛	20	6	23⅛	5	27¼	2⅛	29	6⅛	34	4	34⅛	37
Swordfish	22, 1854	2⅛	9	3	13	3⅛	18	6	20⅛	3⅛	24	5	27¼	2	30⅛	5	33	4	35	34⅛
Volkyrien	22, 1851	3	9¼	5	15⅛	3	19⅛	4⅛	23	6⅛	26	5⅛	27	2⅛	30⅛	5	33	5	34¾	40
Clyde	22, 1850	4	11	3	14	3	18	4	22	5⅛	24	5⅛	26⅛	5⅛	29	9⅛	35	5	36	45
Starlight	23, 1854	2⅛	9	3	13	5	17⅛	5	19⅛	3	23	5⅛	27	4	29¾	4	33¼	4¼	35	36¼
Horatio	24, 1837	2	9⅛	3	13⅛	3	16⅛	5	19	3⅛	24	3⅛	27	3	30	4	33	3	35⅛	30
Medora	24, 1845	2⅛	8	3	12	4	16	4⅛	21	5	26	3	27¾	5	30	9	33	5⅛	35	41⅛
Siam	26, 1848	3	10	4	16	4	19	6⅛	22	5⅛	25	4	27¾	5	30	5	34	8⅛	35⅛	45⅛
Hamilton	26, 1837	3	9	4	14⅛	4⅛	21	3⅛	24	5⅛	27⅛	4	29⅛	4⅛	31	6	34	14	36⅛	49
Matilda	26, 1851	5⅛	12	3	16	3	19	3⅛	23	5	24	7	26	3⅛	29	4⅛	32	10	35	45
R. B. Forbes	26, 1854	2¼	8	2¾	11¾	5	16⅛	4	21⅛	6	26⅛	3	28⅛	3	30	3⅛	33	4	35	33⅛
Panama	27, 1855	5	11¼	4⅛	15	2⅛	19	3⅛	22	4⅛	25	4	28¾	3	31	4⅛	34	3	35⅛	34⅛
Trader	27, 1815	4	12⅛	3	15⅛	6	20⅛	4	22⅛	4	25⅛	5	28⅛	5	30¾	6	29⅛	9	36⅛	46
Audubon	27, 1852	5	13⅛	3	16¾	3	19	4	21¾	6	23⅛	6	26⅛	5	30	5	33	8⅛	35	45⅛
Ino	28, 1851	3	12	3	16	3	18	3	22	5	25¾	5⅛	27	2	30	4⅛	34	5	36	34
Gravina	28, 1855	8	13	4	16	3	19	3	21	5	23	4	27	4	30	3⅛	33⅛	6⅛	35	41
Seringapatam	29, 1851	4	12¾	2⅛	15	3⅛	17¾	3	20⅛	9	25	5	27⅛	4	29	4⅛	32	7⅛	35	43
Susquehanna	29, 1851	3	12⅛	3	15	3	19⅛	3	22	9	25¾	5	28	4⅛	30	4⅛	33⅛	8⅛	34⅛	43⅛
Adriana	29, 1819	2	8	4	11¾	4	15⅛	4	19⅛	7	23¾	4	27	4	30	5	33	8	55⅛	42
Golden State	29, 1857	1	8⅛	2⅛	12	3	17	3⅛	21	4⅛	25	4	28	4	30	4	34	5	36	31⅛
Daring	29, 1856	4	11⅛	2⅛	15	2⅛	19¼	3	22	4	25	4	28	3	30	4	34	6⅛	35	33⅛
Cœur de Leon	29, 1855	8	12¾	4	16⅛	2⅛	19	3	21	5⅛	23	3⅛	26⅛	4⅛	30	4	34	4⅛	36⅛	39
Romance of the Sea	30, 1855	6	12¾	4	15¼	3	17¾	3	21	5	24	3	26	4	29	4	33	6⅛	35	38⅛
Seringapatam	30, 1851	3	13¼	2⅛	15	3⅛	18	3	20⅛	9	25	5	27⅛	4	29	4⅛	32	7	35	42
Talbot	30, 1839	5	8⅛	4	12¾	3⅛	17	3⅛	20⅛	3⅛	24	4	26	3⅛	29	5	32	5	35	37
Mean crossings		3.4	10	3.3	14	3.3	18	3.8	21¼	4.5	24¼	4.5	27¼	4	30	4.8	33	6.1	35⅛	37.7
Mean of 3 passages, crossing 100° E. long. to the south'd of 14° S. lat.		5.3	15	3.5	18	3.3	19	4.5	21⅛	3.7	23¼	4.7	27¾	5	31	4.3	33⅛	6.3	36	40.6
Mean of 62 passages, crossing 100° E. long. to the north'd of 14° S. lat.		3.3	9¾	3.3	14	3.3	18	3.7	21¼	4.6	24¼	4.4	27¼	4	30	4.8	33	6.1	35⅛	37.5
Mean of 10 best passages		1.9	8¾	2.8	12⅛	2.6	16¾	2.9	20¼	3.8	24¼	3.5	27⅛	3.8	30	4.1	33¼	3.5	35⅛	29.1
Time of crossing of 53 Dutch ships from the Straits of Sunda		3.6	10	3.8	14¼	3.7	18⅛	4.2	22⅛	5.2	25⅛	4.8	28¼	4.8	30¼	5.2	33	7	35¼	42.3
Time of crossing of 11 Dutch ships from the Straits of Bally		8.9	15⅛	3.7	18¾	3.9	21¼	4.4	23⅛	5	26	5.3	28¾	4.7	31	5.3	33	8	35	49.2

Challenge	Dec. 1, 1857	2	8	3.5	12	2⅛	15	2	19	3	23	4	27	2	29	4	32	6	35	29
Kate Hays	1, 1852	8	15	3	21	4	25	3	26	4	27	2	29	3	31	2	34	4	35	35
Sword Fish	3, 1857	2	8	3.5	12	2	15	3	20	4	26	2	29	4	30	5	34	13	35	39⅛
Cohota	4, 1851	4	14	3	18	2	20	7	25	4	27	4	28	3	29	4	32	8	35	40
Ariel	5, 1850	2.5	9	2	13	4	18	4	22	4	25⅛	3	29	4	31	4	33	4	35	33
Surprise	5, 1855	5.2	12	2	14	2	18	3	20	3	24	4	27	2	30	3	34	4	35	31
Vancouver	5, 1850	1	9	2	12	3	15	3	17	3	21	4	25	4	28	4	33	3	36	30⅛
Nestorian	5, 1850	3	9	3	13	6	19	4	21	4	24	4	27	3	29	4	34	3	35	35⅛
Caledonia	6, 1822	5	10	4	13⅛	3	16⅛	3	19⅛	5	24	4	28	3	31	4	34	3	36⅛	34
Ann Maria	7, 1857	11	9	4	12	3	17	4	23	8	27	5	28	4	30	7	32	6	35	53
Brooklyn	7, 1843	4	7⅛	10	13	4	19	6	23	5	27	5	29	4	31	6	33	4	38	49
Restitution	7, 1823	8	13	3	15	4	18⅛	4	20⅛	5	23	6	27	5	25	4	33	7	35	46
Brewer	7, 1854	8	11⅛	4	14	3	17	4	21	4	21	4	25	4	29	5	33	2	34	39⅛
Joshua Bates	7, 1855	2	9⅛	6	17	3	23	5	24	3	26	4	29	5	32	5	33	6	35	39
Brooklyn	8, 1842	5	8	7	15	4	19	4	23	10	26	3	29	4	31	5	32	6	35	49
Horsburgh	8, 1848	1	9	4	15	3	18	4	20	4	22	3	25	4	29	3	32	5	35	34
Natchez	9, 1850	2	7	4	11	4	19	4	23	4	26	3	29	3	30	5	34	2	36	32⅛
Houqua	9, 1850	1	8	5	14	3	19	3	21	5	24	3	27	3	30	3	34	4	36	32
Restitution	9, 1800	10	15	3	18	3	20	4	23	4	26	3	28	4	31	5	34	3	35	39⅛
Brooklyn	10, 1842	3	8	7	15	4	19	4	23	10	27	3	29	4	31	5	32	7	35	47⅛
General Palmer	11, 1838	5	10	8	17	5	21	4	25	7	27	5	30	5	31	6	33	8	37	55
Albion	11, 1838	4	8⅛	8	14	4	18	4	21	4	24	6	27	3	29	7	33	5	35	46⅛
Nestorian	12, 1851	6	9⅛	4	14	3	18⅛	2	21⅛	3	23	6	28	5	28	4	32	6	35	40
Golden Gate	12, 1854	3	10	3	15	2	18	3	22	4	25	3	27	3	30	5	33	4	35	31
Boston	15, 1856	10	15	4	18	3	19⅛	4	22	8	26	4	28	5	28	4	33	4	35	46⅛
Unicorn	15, 1843	15	13	4	15⅛	4	17	11	25	4	27	4⅛	28	5	31	8	35	9	36	65
Thomas Campbell	16, 1851	3	10	3	12	4	19	2	21	4	23	7	26	4	29	7	33	5	35	40
Nestorian	16, 1852	5	12	3	15	3	19	4	23	4	25	3	27	2⅛	29	3⅛	32	15	35	43
Albert	16, 1816	2	8	3	12	3	15	3	19	4	23	5	26	4	30	3	34	4	36	31
Intrepid	16, 1857	8	12	2	14	3	18	3	20	4	21	3⅛	24	4	27	4⅛	31	6	35	38
Fleet Wood	17, 1854	7	13	3	16	3	19	4	21	5	25	4	27	5	30	4	32	2⅛	34	37⅛
Star of the Union	17, 1853	5	10	3	14	2	17	3	20	5	24	4⅛	28	5	31	4	33	3	35	36
Audubon	17, 1852	4	12	5	16	3	20	4	23	4	27	4	30	6	32	7	34	6	36	44
Oneida	17, 1850	5	10	3	14	3	18	3	20	4	23	3⅛	26⅛	3	29	3	34	7	34⅛	36
Wisconsin	17, 1850	5	11	2	14	3	17	3	20	4	23	3	25	3	29	3	32	2¾	34	29¼
Russell	17, 1841	2	9	4	14	4	19	5	25	5	27	7	28	5	31	5	33	5	35	42
Prince de Joinville	19, 1848	5	12	4	16	3	20	4	23	3	25	3	27	3⅛	30	5	32	4⅛	35	36⅛
Kitty Simpson	19, 1857	5	10	3	15	3	20	4	23	6	25	3⅛	26	3	29	4⅛	33	8⅛	35	41⅛
Geffrard	20, 1854	3	10	3	13	4	18	3	21	7	24	4	27	3	29	4	33	3⅛	35	35⅛
Albion	20, 1839	7	12	3	16	3	18	3	21	4	25	4	27	4	30	4⅛	34	5⅛	35	39⅛
Oneida	20, 1839	7	11	3	15	3	18	4	22	4	24	3⅛	27	3⅛	29	4	33	6	35	39
Zenobia	21, 1848	4	13⅛	3	16	4	19	3	21	3	24	4⅛	27	2⅛	30	4⅛	32	4⅛	35	34⅛
Louvre	21, 1843	7	13	3	16	3	18	4	23	7	23	6⅛	28	3⅛	30	3⅛	32	9⅛	36	48⅛
Heber	22, 1845	2	9⅛	5	14	4	18	5	22	8	25	5	27	5	30	3	33	4	35	41
L. H. Watterman	23, 1856	3	16	4	21	5	25	6	25	4	26	4	29	4⅛	30	4	33	5	35	40
Foster	24, 1847	5	14	2	19	2⅛	23	4	26	4	26	5	28	3⅛	30	3⅛	33	3⅛	35	33⅛
Oneida	24, 1847	5	13	3	16	2⅛	18	3	26	2	22	5⅛	24⅛	3⅛	28	4	31	4	35	33

Time and Crossings from the Straits of Sunda to the Fairway off the Cape of Good Hope—Continued.

Name of vessel.	Date of sailing.	100° E.		90° E.		80° E.		70° E.		60° E.		50° E.		40° E.		30° E.		20° E.		Total days.
		Days.	Lat. S.	Days.	Lat. S.	Days.	Lat. S.	Days.	Lat. S.	Days.	Lat. S.	Days.	Lat. S.	Days.	Lat. S.	Days.	Lat. S.	Days.	Lat. S.	
			°		°		°		°		°		°		°		°		°	
Ann Hope	Dec. 24, 1809	7	13	3	16	3	19	2⅛	22	3⅛	24	4	25	7	30	3⅛	33	5	35	38⅛
Raleigh	24, 1853	7⅛	10⅛	4	14	3⅛	17⅛	3⅛	23	5⅛	26	6	29	4	31⅛	3⅛	34	5	35	42⅛
Coringo	25, 1855	12	20	4	23	4	24	4	25	5	25	4⅛	27	3	30	4⅛	34	4	35	45
Horsburgh	25, 1832	5⅛	11	3⅛	14	4	17	3	22	2⅛	25	3⅛	26	4	30	5	33	4	35	35
Carrington	26, 1849	6	11	5⅛	15	3	22	4	25	4	28	3⅛	29	3⅛	31	4	32	8⅛	35	42
Jalaware	26, 1856	3	9⅛	9	10⅛	5⅛	17	3⅛	23	4	28	4	29	3	31	7	33	5⅛	36	44⅛
Esther May	26, 1850	4	9	4	14	4	18	4	21	6	23	4	26	3	29	3⅛	33	5⅛	35	38
Oneida	26, 1849	5	11⅛	3	14	4⅛	17	2⅛	20	4	23	4	26	4	29	4	31	9⅛	35	40⅛
Heber	26, 1846	5	8	6	13	4	17⅛	4	21	3⅛	24	5⅛	27	2⅛	31	4	33	4	35	38⅛
U. S. S. Levant	27, 1857	2	9	2⅛	12	2⅛	17	3⅛	20	3⅛	23	4	26	3	28	4	33	10	35	35
Herculean	28, 1856	12⅛	14	4	17	3⅛	20	3	21	5⅛	24	3	27	5⅛	30	3	37⅛	7	36	47
Sweepstakes	28, 1856	10⅛	20	3⅛	22	2	24	3⅛	25⅛	2⅛	26	3⅛	29⅛	1⅛	30⅛	3⅛	33	2⅛	36⅛	33
Surprise	28, 1856	8	16	2⅛	18	3⅛	20⅛	3⅛	22⅛	3⅛	26⅛	5⅛	28	3⅛	31	3¼	34	3⅜	36	37
Sancho Panza	29, 1856	10	21⅛	3⅛	22⅛	3	22	3	22⅛	3	23	4⅛	26⅛	3	29	6	31⅛	4⅛	35	40⅛
Sarah H. Snow	29, 1857	6⅛	11	4	16⅛	3⅛	20⅛	3⅛	23	3⅛	26	5⅛	28⅛	4	30	3	33	5	36	38⅛
Monterey	30, 1855	10⅛	16	4⅛	18	5	21	5	25	5	27	5	29	5	33	4	35	4⅛	35	48⅛
Competitor	30, 1856	8¼	16	3	19	3	21	3	22	3¾	24	5	27	4	29	4	32	2¼	35	36⅛
Caroline	31, 1844	8	14	4	18	3	20	4⅛	22	2⅛	24	3⅛	27	3	30	3	32	5	35	36⅛
Albert	31, 1817	2	13	4	15	3	17	5	21	4	25	3	27	3	30	6	34	3	37	33
Mean crossings		5.6	11⅛	4.0	15¼	3.5	19	4.0	22	4.5	24¾	4.3	27	3.9	30	4.4	33	5.4	35⅛	39.6
of 13 passages crossing 100° E. long. south of 14° S. lat.		8.2	16¼	3.4	19¾	3.3	22	4.4	24	4.1	25⅛	4.1	28	3.6	30	4.0	33	4.3	35¼	39.4
Mean of 53 vessels crossing 100° E to the north of 14° S. lat.		4.9	13¼	4.2	14¼	3 5	18¼	4.0	21¾	4.6	24⅛	4.3	27¼	4.0	30	4.5	33	5.6	35⅛	39.6
Mean of ten best		3.1	10	3.4	13⅛	3.0	17¼	3.3	21¼	3.7	24	3.8	27	3.2	29¾	4.0	33	3.9	35¼	31.5
Time and crossing of 46 Dutch ships from the straits of Sunda		6	13	4.2	16⅛	4.1	20⅛	4.8	24	5.3	26¾	4.7	29	4.4	30¾	5.1	33¼	6.1	35¼	44.7
Twenty-four vessels from the straits of Bally		12.9	17⅛	3.9	19⅛	4.4	22⅛	4 9	24¾	5.2	27¼	4.6	29	4.4	31	5.2	33⅛	6.9	35¼	52.4

These tables show a well beaten track, and we have now, I thought, the means of comparing the Dutch and American vessels as to speed, and of ascertaining whether the difference between them in the Atlantic (p. 369) be owing to difference of winds or of speed. Assuming the mean monthly track for the vessels under each flag to be the same, we obtain from the Dutch crossings and the American, data for the following tabular statement as to the speed of vessels, the average time from 100° E. to 20° E., and the average distance made good per day.

Months.	AMERICAN VESSELS.			DUTCH VESSELS.			
	Vessels.	Days.	Miles per day.	Vessels.	Days.	Miles per day.	Daily difference.
January	55	30.5	150	57	36.6	125	.....
February	31	33.0	138	51	37.9	120	18 miles.
March	27	32.0	143	37	36.6	125	18 "
April	41	36.1	126	38	42.9	106	20 "
May	29	37.8	124	30	45.9	99	25 "
June	29	33.3	137	29	40.1	114	23 "
July	22	33.2	138	34	38.6	118	20 "
August	28	30.6	149	39	36.2	126	23 "
September	20	30.5	150	49	36.8	124	26 "
October	45	31.7	144	57	39.8	115	29 "
November	65	34.3	133	64	39.0	117	16 "
December	66	34.0	134	64	39.2	116	18 "
	458	33.1	138	549	39 1	117	21 miles.

It would appear from this that the average difference of speed between the Dutch and American vessels in this part of the ocean is about 20 miles a day or nearly a knot an hour in favor of the American.

Here is a difference that is too constant to be accidental. The mean monthly tracks of the Dutch and Americans do not coincide exactly. They are in some parts of the route several degrees apart. With the view, therefore, of settling this question as to speed, I selected those parts of the route through which the march of both fleets happened to be on the same water and through the same winds. Such coincidences are found in which the extreme divergence of the two paths did not exceed a degree. From these coincidences Lieutenant McCauley constructed the following table, in which are compared the rate of sailing of Dutch and American vessels through the SE. trades of the Indian Ocean.

Rate of sailing of Dutch and American vessels on the same water and through the same winds, compared.

Month.	From—		To—		Dutch vessels.			American vessels.		
	Latitude.	Longitude.	Latitude.	Longitude.	No.	Days.	Miles per day.	Miles per day.	Days.	No.
	°	°	°	°						
January	28 S.	50 E.	35 S.	20 E.	27	13.8	111	130	11.8	55
February	20	80	35	20	18	27.2	116	125	25.3	31
March	28	80	35¼	20	20	17.9	85	107	14.3	21
Do.	30	40	35¼	20	17	14	75	101	10.4	20
April	10¼	100	35¼	20	33	42.7	103	122	36.1	41
May	9¼	100	35¼	20	30	45 9	96	117	37.8	29
June	9¼	100	35¼	20	29	40.1	110	131	33.3	29
July	9¼	100	35¾	20	34	38.6	114	133	33.2	22
August	9	100	35	20	39	36.2	122	144	30.6	28
September	30	40	35¼	20	40	11.2	75	86	9.8	66
October	10	100	25	60	53	16.9	133	151	14.9	65
Do.	28	50	34¾	20	.....	18	85	104	14.9	.....
November	30	40	85	20	57	13.2	80	108	9.7	45
December	9	100	35¼	20	49	36.8	121	146	30.5	20

By this table it appears that the average speed of the homeward bound American vessels is 20 miles a day greater than the homeward bound Dutch vessels. When they were out of the Straits of Sunda on the outward voyage, the speed, p. —, of the two through the SE. trades was identical.

I referred the case to friend Jansen, and he accounts for it in this way:

"In your letter," says he, "of June 10, you ask my opinion about the comparative sailing qualities of Dutch and American vessels in the Indian trade. Dutch vessels, outward bound, are in light trim, and sail uncommonly well. As you observe, there is but little difference between them and your ships in the trades. But they are but small; but few are larger than 1,000 tons, and homeward bound from Java they have invariably a heavy cargo, and as much as they can carry. Small ships with a heavy cargo cannot make so much progress as larger ships, and decidedly are they inferior in sailing to larger ships with a tea cargo or with coolies, and many of the American ships in your crossings are from China. Very few Dutch ships are in the China trade."

It so happens that we have the time and crossings of 233 American vessels from Calcutta to the Cape of Good Hope. The track of these falls in, on 60° E., with the track from the Straits of Sunda. Consequently, from 60° to 20° E. the homeward path of the American fleet from Calcutta and Sunda lies on the same routes and through identically the same winds. It appears from the following statement, that the American vessels that pass through the Straits of Sunda out sail the fleet from Calcutta. From this statement it appears that we should expect an average of at least 15 miles a day of the American over the Dutch after they double the Cape and enter the long stretch through the South Atlantic from the line. We shall see.

Average miles "made good" daily, from 60° E. to 20° E. (off Cape Good Hope.)

	January.	February.	March.	April.	May.	June.	July.	August.	Septemb'r.	October.	Novemb'r.	December.
By Calcutta ships...	120	108	93	90	103	107	103	120	126	114	112	113
Sunda ships	143	124	124	102	101	118	119	129	132	124	117	122
Difference.....	23	16	31	12	—2	11	16	9	8	10	5	9

Making a mean average difference of 12 miles in favor of the ships *via* Straits of Sunda. Thus we are entitled to conclude that the difference in favor of the China traders is owing, not to difference of winds, but rather, as Jansen suggests, to difference of cargo.

Having established the fact that the difference of distance made good on the homeward passage through the Indian ocean by Dutch and American vessels is not an affair of winds by the way, we may proceed to examine into the question of choosing a quicker route from Sunda to the offings of the cape. Preliminary to this the following table, prepared by Lieutenant McCauley, is presented.

Average speed, by crossings, from the Straits of Sunda to the Fairway off the Cape of Good Hope.

Month.		STRAITS OF SUNDA TO—									No. of ships.
		Long. 100°	Long. 90°	Long. 80°	Long. 70°	Long. 60°	Long. 50°	Long. 40°	Long. 30°	Long. 20°	
		Lat. 12¼°	Lat. 16°	Lat. 19°	Lat. 22¾°	Lat. 25°	Lat. 27¼°	Lat. 30¼°	Lat. 33¼°	Lat. 35¼°	
January	Distance run, (miles)	511	612	590	603	571	557	555	552	511	55
	Days	5.8	4	3.4	3.6	4	3.7	3.3	4	4.5	.....
	Daily run, (miles)	88	153	174	167	143	150	168	138	114	.....
		Lat. 14°	Lat. 18°	Lat. 21°	Lat. 23°	Lat. 25½°	Lat. 28°	Lat. 30½°	Lat. 33°	Lat. 35½°	
February	Distance run, (miles)	590	621	598	563	564	572	534	541	516	31
	Days	7.2	4.2	3.4	3.7	3.8	3.8	4.1	4.5	5.4	.....
	Daily run, (miles)	82	148	176	152	148	150	130	120	96	.....
		Lat. 12¾°	Lat. 16¼°	Lat. 19½°	Lat. 22½°	Lat. 24¾°	Lat. 27½°	Lat. 29¾°	Lat. 33°	Lat. 35¼°	
March	Distance run, (miles)	535	607	596	590	555	573	544	550	528	27
	Days	5.1	3.5	3.3	3.7	3.6	3.8	4.3	4.4	5.6	.....
	Daily run, (miles)	105	173	181	159	154	151	126	125	94	.....
		Lat. 10½°	Lat. 14¼°	Lat. 18°	Lat. 21°	Lat. 23½°	Lat. 26°	Lat. 29°	Lat. 33°	Lat. 35½°	
April	Distance run, (miles)	440	605	630	588	582	569	556	571	511	41
	Days	4.2	3.5	3.1	3.6	4	4.5	4.4	5.3	7.7	.....
	Daily run, (miles)	105	173	206	163	146	127	126	108	67	.....
		Lat. 9½°	Lat. 13¼°	Lat. 16¾°	Lat. 20¼°	Lat. 23°	Lat. 25¾°	Lat. 29°	Lat. 32½°	Lat. 35¼°	
May	Distance run, (miles)	408	637	608	600	579	625	562	548	520	29
	Days	3	3.6	3.3	3.4	4	4.7	5	5.8	8	.....
	Daily run, (miles)	136	177	184	176	145	133	112	94	65	.....
		Lat. 9¼°	Lat. 13¼°	Lat. 17°	Lat. 20°	Lat. 23°	Lat. 26½°	Lat. 29¼°	Lat. 33°	Lat. 35½°	
June	Distance run, (miles)	421	636	588	583	604	604	543	556	511	29
	Days	2.4	3.6	3.1	3.2	3.5	3.9	4	5 2	6.8	.....
	Daily run, (miles)	175	177	190	182	173	155	136	107	75	.....
		Lat. 10°	Lat. 14°	Lat. 16°	Lat. 19¾°	Lat. 23°	Lat. 26¼°	Lat. 29¼°	Lat. 32¾°	Lat. 35½°	
July	Distance run, (miles)	401	637	616	600	580	582	564	571	516	22
	Days	2.3	3.3	3	3.1	3.5	4.3	3.8	4.7	7.5	.....
	Daily run, (miles)	174	193	205	194	166	135	149	122	69	.....
		Lat. 9½°	Lat. 13¾°	Lat. 17°	Lat. 20°	Lat. 23°	Lat. 27°	Lat. 29¾°	Lat. 33¼°	Lat. 35¼°	
August	Distance run, (miles)	407	623	606	600	580	592	554	559	511	28
	Days	2.2	3.3	2.9	3.2	3.2	3.7	3.8	4.5	6	.....
	Daily run, (miles)	185	189	209	188	181	160	145	124	85	.....
		Lat. 9¾°	Lat. 13¾°	Lat. 17¼°	Lat. 20¾°	Lat. 23¾°	Lat. 27°	Lat. 29¾°	Lat. 33¼°	Lat. 35¼°	
September	Distance run, (miles)	418	625	610	604	572	585	554	559	511	20
	Days	2.1	3.1	2.9	3.3	3.6	3.6	4	4.4	5.4	.....
	Daily run, (miles)	199	201	210	183	160	163	139	125	95	.....
		Lat. 9¼°	Lat. 13½°	Lat. 17½°	Lat. 20¼°	Lat. 22½°	Lat. 26½°	Lat. 29½°	Lat. 32¾°	Lat. 35°	
October	Distance run, (miles)	401	639	625	580	565	593	556	561	509	45
	Days	2.2	3.2	3	3.3	4.1	4.4	4	4.6	5.1	.....
	Daily run, (miles)	182	200	208	176	138	135	139	122	100	.....
		Lat. 10°	Lat. 14°	Lat. 18°	Lat. 21¼°	Lat. 24¼°	Lat. 27¼°	Lat. 30°	Lat. 33°	Lat. 35½°	
November	Distance run, (miles)	421	636	625	588	572	564	555	541	512	65
	Days	3 4	3.3	3.3	3.8	4.5	4 5	4	4.8	6.1	.....
	Daily run, (miles)	124	193	190	153	127	131	139	113	84	.....
		Lat. 11½°	Lat. 15¼°	Lat. 19°	Lat. 22°	Lat. 24¾°	Lat. 27°	Lat 30°	Lat. 33°	Lat. 35¼°	
December	Distance run, (miles)	480	622	610	590	569	549	556	541	562	66
	Days	5 6	4	3.5	4	4.5	4.3	3.9	4.4	5.4	.....
	Daily run, (miles)	86	156	174	148	124	128	143	123	95	.....
Average daily run, (miles)		140	178	192	170	150	143	138	118	87	458
Average latitude, (degrees)		10¾	14¾	18	21	23¾	26¾	29¾	33	35¼	.....

Uniformly, the best run for each month is from the meridian of 90° to 80° E., and this part of the route is between the parallels of 14° 45′ and 18°. The average miles made good in this section is 192 a day, whereas for the section both before and after the daily run is 13 miles less, and so on diminishing until you reach the meridian of 60°. From 70° to 60°, the average daily run is 54 miles less than it is from 90° to 80°. The run from 70° to 60° E. lies between the parallels of 21° and 23° 45′.

We infer from this that the SE. trade winds of the Indian ocean blow with their greatest strength between the parallels of 15° and 18° S.

Now, suppose ship masters on the homeward route from Batavia, the Straits of Sunda, Bally, &c., when they reach this streak of freshest trades, were to run along with it due east until they cross the meridian of 60° in, say 20° S., then stand away for 20° E. at the usual crossing of 35° 15′ S., they might gain in time, though they would lose in distance.

The distance by this route is about 120 miles greater than by the usual track; the time, I think, would be about two days and a half shorter.

Ship masters disposed to try this route, which they will perceive passes near the island of Rodriguez, should steer about SW. from Sunda, Bally, &c., until they cross 15° S. From this place they should steer straight for 60° E. in 20° S. Arriving there, they should make the best of their way to the offings of the cape in 20° E.

If, from the crossing of 60° E., vessels can sail at the same average rate that they now do from 60° E. and 23° 45′ S.—and they ought to sail faster—they will certainly save by the Rodriguez route two days and a half, and probably more, of the time they now take from the Straits of Sunda, &c., to the offings of the cape in 20° E.

The question naturally arises, in what part of the route between the Straits of Sunda and the "fair way" off the cape does this gain of six days by the American upon the Dutch fleet take place? As answer to this, Lieutenant McCauley prepared the subjoined table.

By this it appears that the Dutch fleet holds its own best between the Straits of Sunda and the meridian of 100° E. In this stretch it drops astern on the average about ten hours, though in August it actually head reaches seven hours and a quarter. This is the only stretch and occasion that it does head reach. In the next stretch it drops twelve, in the next thirteen and a half, in the next fourteen and a half, and so on until it gets to the last, which is between 30° and 20° E., when it is dropped one day and seven hours, making a total average for the whole distance of upwards of six days.

It appears that the track of the Dutch fleet crosses the meridian of 60° E. a degree and a half to the south of the American crossing. This brings them out of the trades sooner, and this may help to account for the accelerated rate at which the Americans gain on them. This fact proves the idea of crossing 60° still further to the north, as in 20°.

Average time and gains from the Straits of Sunda to—

Month.	No. of crossings.	Vessels.	100° E.		90° E.		80° E.		70° E.		60° E.		50° E.		40° E.		30° E.		20° E.		Total gain.
			Time.	Gain.	Time.	Gain.	Time.	Gain.	Time.	Gain.	Time.	Gain.	Time.	Gain.	Time.	Gain.	Time.	Gain.	Time.	Gain.	
			Days.	*Days.*	*Days.*	*Days.*	*Days.*	*Days.*	*Days.*	*Days.*	*Days.*	*Days.*	*Days.*	*Days.*	*Days.*	*Days.*	*Days.*	*Days.*	*Days.*	*Days.*	*Days.*
January	55	American	5.8	1.2	9.8	.1	13.2	.4	16.8	.7	20.8	.4	24.5	.5	27.8	.6	31.8	.3	36.3	1.1	5.3
	27	Dutch	7	.....	11.1	.....	14.9	.....	19.2	.....	23.6	.....	27.8	.....	31.7	.....	36	.....	41.6	.....	.....
February	31	American	7.2	.9	11.6	.....	15.0	.8	18.7	.4	22.5	.1	26.3	.3	30.3	.4	34.9	.....	40.1	.7	3.6
	18	Dutch	8.1	.....	12.3	.....	16.5	.....	20.6	.....	24.5	.....	28.6	.....	33.1	.....	37.6	.....	43.7	.....	.....
March	27	American	5.1	.9	8.6	.9	11.9	.1	15.6	.8	19.2	.1	23	.5	27.3	.1	31.7	1.7	37.3	1.8	7.8
	20	Dutch	6	.....	10.4	.....	13.8	.....	18.3	.....	22.9	.....	27.2	.....	31.6	.....	37.7	.....	45.1	.....	.....
April	41	American	4.2	.5	7.7	1.1	10.8	.8	14.4	.4	18.4	.8	23.9	.2	28.3	.8	32.6	.7	40 3	1.8	7.1
	33	Dutch	4.7	.....	9.3	.....	13.2	.....	17.2	.....	22	.....	26.7	.....	31.9	.....	37.9	.....	47.4	.....	.....
May	29	American	3	.....	6.6	.9	9.9	.6	13.3	1.4	17.3	.8	22	.1	27	.4	32.8	1.8	40.8	1.2	8.1
	30	Dutch	3	.....	7.5	.....	11.4	.....	16.2	.....	21	.....	26.7	.....	32.1	.....	39.7	.....	48.9	.....	.....
June	29	American	2.4	.5	6	.1	9.1	.5	12.3	.5	15.8	.4	19.7	.9	23.7	1.1	28.9	.8	35.7	2.5	8.3
	29	Dutch	2.9	.....	6.6	.....	10.2	.....	13.9	.....	17.8	.....	22.6	.....	27.7	.....	33.7	.....	43	.....	.....
July	22	American	2.3	.4	5.6	.7	8.6	.5	11.7	.4	15.2	.6	19.5	.2	23.3	1	28	1	35.5	1	5.8
	34	Dutch	2.7	.....	6.7	.....	10.2	.....	13.7	.....	17.8	.....	22.3	.....	27.1	.....	32.8	.....	41.3	.....	.....
August	28	American	2.2	.....	5.5	.5	8.4	.4	11.6	.3	14.8	.9	18.5	.9	22.3	.9	26.8	1	32.8	.7	5.3
	39	Dutch	1.9	.3	5.7	.....	9	.....	12.5	.....	16.6	.....	21.2	.....	25.9	.....	31.4	.....	38.1	.....	.....
September	20	American	2.1	.1	5.2	.4	8.1	.7	11.4	.7	15	.1	18.6	1.6	22.6	.6	27	.8	32.4	.7	6.6
	49	Dutch	2.2	.....	5.7	.....	9.3	.....	13.3	.....	17.9	.....	23.1	.....	27.7	.....	32.9	.....	39	.....	.....
October	45	American	2.2	.2	5.4	.6	8.4	.8	11.7	.7	15.8	.8	20.2	.9	24.2	.8	28.8	.9	33.9	2.6	8.3
	57	Dutch	2.4	.....	6.2	.....	10	.....	14	.....	18.9	.....	24.2	.....	29	.....	34.5	.....	42.2	.....	.....
November	65	American	3.4	.2	6.7	.5	10	.4	13.8	.4	18.3	.7	22.8	.3	26.8	.8	31.6	.4	37.7	.9	4.6
	53	Dutch	3.6	.....	7.4	.....	11.1	.....	15.3	.....	20.5	.....	25.3	.....	30.1	.....	35.3	.....	42.3	.....	.....
December	66	American	5.6	.4	9.6	.2	13 1	.6	17.1	.8	21.6	.8	25.9	.4	29.8	.5	34.2	.7	39.6	.7	5.1
	40	Dutch	6	.....	10.2	.....	14.3	.....	19.1	.....	24.4	.....	29.1	.....	33.5	.....	38.6	.....	44.7	.....	.....

NOTE.—The column "*Time*" gives the days from Sunda to the meridian under which it stands; the column "*Gain*" shows the difference in the time occupied by Dutch and American from meridian to meridian. Thus in January the average run from Sunda to 30° E. is 31.8 days for American ships, 36 for the Dutch, and the gain from 40° to 30° E. is 0.3 day by the former.

DOUBLING THE CAPE OF GOOD HOPE ON THE HOMEWARD ROUTE.

We have now brought the track of all homeward-bound vessels that double the Cape of Good Hope into one. We left them on the meridian of 20° E., near its intersection with the parallel of 35° 15′ S. —P. 815.

By the time the Indian and China traders reach the meridian of 40° E., which they generally do between 28° 30′ and 30° S., they have passed out of the trade-wind region of the Indian ocean and entered the debatable ground between the trades and the "brave west winds." Doubling the Cape, they recross the parallel of 30° in the Atlantic, near the meridian of 11° 20′ E. Between these two crossings of 30° S. lies the most difficult part of the homeward route. They have to make about 1,800 miles "*good*" to accomplish this section, which they do, on the average, in 21 days, and at the rate of 85 miles a day. That is the Cape Horn rate. From October to March is the most favorable time for good runs. The average passage for this season is 18 days, and the average run 100 miles "good." February gives the largest average. For the other six months the average time and distance is 24 days and 75 miles. June, with 27.4 days, giving the highest average.

The subjoined summary of average monthly crossings and daily distances has been prepared by Lieutenant May from the Dutch tables*, which give the runs of no less than 583 vessels along this part of the route. I have not had the force to get out American crossings to compare with them; there is probably not much difference here in their rate of sailing; at any rate, there is not much room for choice along this part of the route. The navigator must "take things as he finds them," and do his best to make westing. The general daily average stated above is a little less than the average of Mr. May's table, (p. 835,) owing to the circumstance that the table gives the miles "made good" from crossing to crossing, which is a sort of zigzag from 30° S. in the Indian to 30° S. in the Atlantic ocean; whereas the miles "made good," as above, are counted on the shortest route possible from one crossing of lat. 30° to the other crossing of the same parallel.

* "Uitkomsten van Wetenschap en Ervaring Aangaande Winden en Zeestroomingen in Sommige Gedeelten van den Oceaan, Uitgegeven door het Koninklijk Nederlandsch Meteorologisch Instituut. Boekdrukkerij: Kemink en Zoon te Utrecht, 1858."

Average monthly crossings off the Cape of Good Hope by 583 Dutch ships homeward-bound.

Months.	From long. 45° E.	To 40° E.		35° E.		30° E.		28° E.		26° E.		24° E.		22° E.		20° E.		18° E.		16° E.		14° E.		Lat. 30° S.		Total days.	No. of ships.
	Lat.S.		Lat.S.		Lat.S.		Lat.S.		Lat S.		Lat.S.		Lat.S.		Lat.S.		Lat.S.		Lat.S.		Lat.S.		Lat.S.		Lon.E.		
January	30°	2.1*d.*	30¾°	2.5*d.*	32°	2.7*d.*	33½°	1.2*d.*	34¼°	1.0*d.*	34¾°	1.6*d.*	35⅛°	1.4*d.*	35¼°	1.8*d.*	35¼°	1 1*d.*	34¼°	0.9*d.*	33¾°	0.8*d.*	32⅛°	1.3*d.*	11¼°	17.9	56
Daily run and distance	....	123*m.*	259*m.*	106*m.*	265*m*	99*m.*	266*m.*	90*m.*	108*m.*	103*m.*	103*m.*	99*m*	109*m.*	71*m.*	100*m.*	54*m.*	98*m.*	100*m.*	115*m.*	104*m.*	104*m.*	111*m.*	125*m.*	144*m.*	188*m.*	.....	.....
February	30°	2.2*d.*	31°	2.3*d.*	32°	2 2*d.*	33¼°	1.1*d.*	34°	0.9*d.*	34⅛°	1.1*d*	34¾°	1.3*d.*	35¼°	1.6*d.*	35°	1.0*d.*	34¾°	0.9*d.*	33⅛°	0.8*d.*	32¼°	1.4*d.*	10¾°	16.8	57
Daily run and distance	.....	119*m.*	262*m.*	113*m.*	261*m.*	118*m.*	260*m.*	101*m.*	111*m.*	104*m.*	104*m.*	91*m.*	100*m.*	79*m.*	103*m*	63*m.*	100*m.*	100*m.*	100*m.*	110*m.*	124*m.*	111*m.*	125*m.*	151*m.*	212*m.*	.....	.....
March	29¾°	2.3*d.*	30⅛°	2.4*d.*	31⅛°	2.5*d.*	33⅛°	1.1*d.*	34¼°	1.0*d.*	34¾°	1.0*d.*	35°	1.3*d.*	35¼°	1.4*d.*	35¼°	1.1*d.*	34¾°	0.9*d.*	33¾°	1.1*d.*	32¼°	1.5*d.*	11¼°	17.6	56
Daily run and distance	.....	113*m*	260*m.*	109*m.*	261*m.*	111*m*	278*m.*	89*m.*	98*m.*	103*m.*	103*m.*	100*m*	100*m*	76*m.*	99*m.*	70*m.*	98*m.*	93*m.*	102*m.*	102*m*	115*m.*	123*m*	135*m.*	129*m.*	193*m.*	.....	.....
April	29¾°	2.5*d.*	30⅛°	2.7*d.*	31¾°	2.8*d.*	33°	1.5*d.*	34°	1.0*d.*	34¾°	1.3*d.*	35°	1.7*d.*	35¼°	1.9*d*	35⅛°	1.4*d.*	35°	1.2*d.*	34°	1.4*d.*	32⅛°	2.1*d.*	11¼°	21.5	51
Daily run and distance	.....	104*m.*	260*m.*	98*m.*	265*m.*	94*m.*	263*m*	78*m.*	117*m.*	108*m.*	108*m.*	77*m.*	100*m.*	58*m.*	99*m.*	57*m.*	108*m.*	73*m.*	103*m.*	96*m.*	115*m.*	95*m.*	133*m.*	98*m.*	205*m.*	.....	.....
May	29°	2.6*d.*	30°	3.0*d.*	31°	3.3*d.*	33°	1.3*d.*	34°	1.2*d.*	34¾°	2.0*d.*	35°	2.3*d.*	35⅛°	2.7*d.*	35⅛°	2.2*d.*	35¼°	1.9*d.*	34¼°	1.9*d.*	32⅛°	2 2*d.*	11⅛°	26.6	47
Daily run and distance	.....	101*m.*	263*m.*	88*m.*	263*m.*	85*m.*	280*m.*	90*m.*	117*m.*	90*m.*	108*m.*	50*m.*	100*m.*	78*m.*	102*m.*	36*m.*	98*m.*	49*m.*	108*m.*	61*m.*	115*m.*	77*m.*	146*m.*	89*m.*	196*m.*	.....	.....
June	29°	2.7*d.*	30¼°	3.6*d.*	31¼°	4.4*d.*	33°	1.8*d.*	34°	1.4*d.*	34¾°	1.3*d.*	35°	2.3*d.*	35⅛°	2.6*d.*	35⅛°	1.9*d.*	35¼°	1.7*d.*	34⅛°	1.5*d.*	33°	2.2*d.*	11⅛°	27.4	33
Daily run and distance	.....	99*m.*	268*m.*	73*m.*	263*m.*	62*m.*	271*m.*	65*m.*	117*m.*	77*m.*	108*m.*	77*m.*	100*m.*	78*m.*	102*m.*	38*m.*	98*m.*	57*m.*	108*m.*	64*m.*	108*m.*	89*m.*	134*m.*	100*m.*	219*m.*	....	.....
July	28½°	2.6*d.*	30°	2.7*d.*	31°	3.2*d*	33°	1.4*d.*	34°	1.2*d.*	34½°	1.4*d.*	35°	3.0*d.*	35¼°	2.5*d.*	35½°	1.9*d.*	35°	1.6*d.*	34¼°	1.7*d.*	32⅛°	2.2*d.*	11¾°	25.4	40
Daily run and distance	.....	105*m.*	272*m.*	97*m.*	263*m*	88*m.*	280*m.*	84*m.*	117*m.*	90*m.*	108*m.*	71*m.*	100*m.*	33*m.*	99*m.*	43*m.*	108*m.*	54*m.*	103*m.*	68*m.*	108*m.*	86*m.*	146*m.*	85*m.*	188*m.*	.....	.....
August	28¾°	2.6*d.*	30°	2.6*d.*	31°	2.8*d.*	32¾°	1.1*d.*	33¾°	1.3*d.*	34½°	1.6*d.*	35°	2.2*d.*	35¼°	2.1*d.*	35¼°	1.4*d.*	35°	1 5*d.*	34°	1.4*d.*	32¼°	1.8*d.*	11¼°	22.4	40
Daily run and distance	.....	103*m.*	269*m.*	101*m.*	263*m.*	97*m.*	273*m*	106*m.*	117*m.*	83*m.*	108*m.*	64*m.*	103*m.*	45*m.*	99*m.*	47*m.*	98*m.*	70*m.*	98*m.*	77*m.*	115*m.*	104*m.*	146*m.*	107*m.*	193*m.*	.....	.....
September	29°	2.6*d.*	30°	2.5*d.*	31¼°	2.9*d.*	33°	1.1*d.*	34°	1.1*d.*	34¾°	1.1*d.*	35°	1.6*d.*	35¼°	1.8*d.*	35¼°	1.5*d.*	35°	1.1*d.*	34°	1.2*d.*	32¼°	1.5*d.*	11¼°	20	37
Daily run and distance	.....	101*m.*	263*m.*	106*m.*	265*m.*	93*m.*	271*m*	106*m.*	117*m.*	97*m.*	108*m.*	91*m.*	100*m.*	62*m.*	99*m.*	54*m.*	98*m.*	62*m.*	98*m.*	105*m.*	115*m.*	121*m.*	146*m.*	129*m.*	193*m.*	.....	.....
October	29¼°	2.3*d.*	30¼°	2.4*d.*	31¼°	2.9*d.*	33°	0.9*d.*	34°	1.1*d.*	34½°	1.0*d.*	35°	1.2*d.*	35¼°	1.5*d.*	35½°	1.0*d.*	35°	1.0*d.*	33¾°	0.9*d.*	32¼°	1.3*d.*	11¼°	17.5	52
Daily run and distance	.....	114*m.*	263*m.*	110*m*	263*m*	93*m.*	271*m.*	107*m.*	117*m.*	95*m.*	104*m.*	103*m.*	103*m.*	82*m.*	99*m.*	65*m.*	98*m.*	98*m.*	98*m.*	124*m.*	124*m.*	121*m.*	135*m.*	148*m.*	193*m.*	.....	.....
November	29½°	2.7*d.*	30⅛°	2.3*d.*	31¾°	2.8*d.*	33¼°	1.3*d.*	34°	1.3*d.*	34¾°	1.4*d.*	35°	2.0*d.*	35¼°	1.6*d.*	35¼°	1.1*d.*	34¾°	1.0*d.*	33⅛°	0.9*d.*	32¼°	1.3*d.*	11¼°	19.7	52
Daily run and distance	.....	97*m.*	263*m.*	113*m.*	265*m.*	95*m.*	266*m.*	85*m.*	111*m.*	83*m.*	108*m.*	71*m.*	100*m.*	49*m.*	99*m.*	61*m.*	98*m.*	93*m.*	102*m.*	124*m*	124*m.*	121*m.*	125*m.*	148*m.*	193*m.*	.....	.....
December	29¼°	2.5*d.*	30⅛°	2.5*d.*	31¾°	2.7*d.*	33°	1.1*d.*	34°	1.0*d.*	34⅛°	1.6*d.*	35°	1.6*d.*	35¼°	1.9*d.*	35¼°	1.3*d.*	34¾°	0.9*d.*	33⅛°	0.9*d.*	32°	1.2*d.*	11°	19.2	62
Daily run and distance.	.....	107*m.*	267*m.*	106*m*	265*m.*	97*m.*	263*m.*	106*m.*	117*m.*	104*m.*	104*m.*	64*m.*	103*m*	62*m.*	99*m.*	52*m.*	98*m.*	78*m.*	102*m.*	112*m.*	124*m.*	121*m.*	135*m.*	162*m.*	195*m.*	.....	.....
Average latitude and days	29¼°	2.5*d.*	30¼°	2.6*d.*	31⅛°	2.9*d.*	33°	1.2*d.*	34°	1.1*d.*	34¾°	1.4*d.*	35°	1.8*d.*	35¼°	1.9*d.*	35¼°	1.4*d.*	35°	1.2*d.*	33¾°	1.2*d.*	32⅛°	1.7*d.*	11¼°	19.2	583
Average runs and distance*	.....	107*m.*	264*m.*	102*m.*	263*m.*	91*m.*	270*m.*	92*m.*	113*m.*	95*m.*	106*m.*	79*m.*	91*m.*	62*m.*	99*m.*	52*m.*	99*m.*	79*m.*	106*m.*	96*m.*	124*m.*	107*m.*	137*m.*	124*m.*	189*m.*	.....	.....

* "Runs," the daily average distance made good. "Distance," the distance from crossing to crossing. Thus, from the crossing of 45° E. to 30° the average distance is 264 miles, the time 2.5 days, and the daily n 107 miles.

FROM THE OFFINGS OF THE CAPE OF GOOD HOPE HOME.

After having doubled the Cape and crossed the parallel of 30° S. in the Atlantic we come to a fork in the track of homeward-bound Indiamen. Arriving at this fork in the road, the European fleet bears to the right, and crosses the equator at a mean near long. 21° 25′. The American fleet keeps to the left and has its average crossing of the equator near the meridian of 33° 30′ W. Such are the mean crossing places of the two fleets. To reach the line the American fleet has to run by an air line about 500 miles further than the Dutch; but it has the advantage of ½ a knot an hour in average speed, which reduces the difference in time to the line to a day and a half. It will be recollected that the American fleet from the Straits of Sunda, sailing on the same water and with the same winds down the Indian ocean, beats the American fleet from Calcutta 12, and the Dutch fleet from Batavia and the Straits of Bally 20 miles a day on the average. The two American fleets sail over the same ground after reaching the offings of the Cape. Consequently, their joint average, considering the number of sail in each, should exceed the average miles "made good" by the Dutch fleet in the Atlantic by 16 or 17 miles a day over the same water and with the same winds.

I shall discuss the homeward route from the Fairway of Good Hope, both to Europe and America, in this chapter, and, as preliminary thereto, offer the following tables of crossings from long. 0° to the line, and thence to 30° N.; they were compiled by Lieutenants Guthrie, Young, and Forrest:

Crossings and time of homeward-bound Indiamen from 30° S. to 0°.

JANUARY.

Name of vessel.	Port from—	Days.	30° S.		25° S.		20° S.		15° S.		10° S.		5° S.		Equator.	Total days.
			Long.	Days.	Long.	Days.	Long.	Days.	Long.	Days.	Long.	Days.	Long.	Days.		
			°		°		°		°		°		°		°	
Ariel	Shanghai	67	8 E.	2¾	¾ E.	4	10 W.	3¼	17¼ W.	3	23⅛ W.	3	31¼ W.	2	35¼	18
Australia	Manilla	75	8¼	6	2 W.	5	11½	3	17	4	24½	3	29⅞	5⅛	35¼	26⅛
Saxonville	Calcutta	73	9	3	2 E.	3	3	4	7⅛	6	13⅛	5⅛	24¼	4	30	25⅛
Starlight	Manilla	59	10¾	2⅛	3	3	3	3	8¾	5	18⅛	2⅛	24¼	3	30¼	19
Siam	....do	80⅛	9¼	2⅛	4	2⅛	1	5⅛	8⅛	5	18¾	4	27¼	3⅛	32	23
Susquehanna	Shanghai	73	6	5⅛	4 W.	4	15	3⅛	23¼	3⅛	30¼	4	35⅛	3⅛	40¼	24
Goddard	Manilla	66⅛	11	3⅛	4¼ E.	3	1	4	8⅛	5	18	3⅛	24	5⅛	31¾	24⅛
John Haven	Calcutta	70	11	3	4	3	1⅛	5	8¾	6	19	5	29⅛	4	35¾	26
Houqua	Canton	62⅛	10	2⅛	4¼	3	2¼	3	7¾	3	15	4	24¾	3⅛	32	19
Hollander	Padang	44	10¾	3	3¾	3	1⅛	3	7¼	5⅛	16	3⅛	22¾	4⅛	30	22⅛
Daylight	Calcutta	59⅛	8	4	2⅛	2	1	4⅛	7	4⅛	16	5⅛	27¾	5	35	25⅛
Daring	Shanghai	68	9	3	1¾	3	4¾	2⅛	10	3	17	3⅛	25	5⅛	31⅛	20⅛
Eagle Wing	....do	49	11¼	2	5⅛	2	¼	4	10	3⅛	21	3	28	3	33	17⅛
E. F. Willetts	Foo-choo Foo	64⅛	12	3⅛	3⅛	2⅛	2	2⅛	9¼	4	17¾	3⅛	25	3	30⅛	19
E. Kimball	Calcutta	55	9	4	¾	3⅛	5	4⅛	12¼	3⅛	18	4	26	4⅛	33⅛	24
R. B. Forbes	Canton	53⅛	10	2	3	3	2	2⅛	8	4⅛	16	3⅛	24¾	4	34	19⅛
Sabine	Calcutta	57⅛	14	4	3	4	4¼	3⅛	12	3⅛	17¼	3	22¼	4¼	28¼	22⅛
Josiah Quincy	Manilla	111	11⅛	4	2	5	8¼	5	17	3⅛	23¼	3	28	2⅛	31⅛	23
Swordfish	....do	56⅛	7	3	2 W.	3	10	4	19	3	26	2	31	2⅛	37	17⅛
Surprise	Shanghai	50	10⅛	3⅛	0	2⅛	5¾	2⅛	10⅛	4⅛	20	4⅛	29¼	2⅛	32	20
Union	Calcutta	59	10	5	0	4	8¼	3⅛	16	3	23	3	28⅛	3⅛	34¾	22
Joshua Bates	Shanghai	68⅛	10⅛	2⅛	4 E.	2⅛	1	3	7	4	14¼	5⅛	24	4⅛	29⅛	22
Santiago	Foo-choo Foo	80⅛	11	3⅛	1	4	6¼	3⅛	15	4⅛	24	3	30⅛	4⅛	35⅛	23
Maria	Sumatra	43	10¼	4⅛	1	3	3	4⅛	14¼	3	20⅛	3	28	2	31¾	20
Robin Hood	Shanghai	49	11⅛	2⅛	4⅛	3	4⅛	3	10	4	19⅛	3	26	3⅛	34	19
Restitution	Manilla	74	11¾	3⅛	3	4	3	3	11	4	18	4	23⅛	5⅛	32	24
Maria	Sumatra	42	10¾	3	4⅛	3⅛	3	3⅛	9¾	5	19⅛	4	28¼	2	30¼	21
Means	.....	.....	10.0E.	3.4	2.1E.	3.3	4.5	3.6	11.2	4.1	19.5	3.7	26.9	3.8	32.8	21.8

FEBRUARY.

Gertrude	Calcutta	49	8¾ E.	3	2¾ E.	8	4⅛ W.	5	15¼	4⅛	23	3	29	3	34⅛	26⅛
Ino	Manilla	56⅛	10¾	3⅛	3¼	5⅛	5¼	3⅛	12¾	3⅛	20	3	27	3	34	22
Audubon	Shanghai	73⅛	12	3	4⅛	4⅛	1⅛	4	7¼	6	17⅛	4⅛	26⅛	4	31⅛	26
Hippogriffe	Calcutta	56	1 W.	4	3¾ W.	3⅛	7	3	13	3⅛	19¾	3	25⅛	3	30⅛	20
Jalawar	Manilla	78⅛	6⅛ E.	3	1 E.	3⅛	4¼	4	11¾	2⅛	16	3	22	6	28¾	22
Lantao	Canton	58⅛	6	3	¼	7	10	3	12	2⅛	18	6⅛	33	3	35¼	25
Panama	Shanghai	60	6¾	3⅛	3 W.	3⅛	10	3	16	2	21⅛	2⅛	27	2⅛	33⅛	17
Star of the Union	....do	63	6⅛	4⅛	2¾	3⅛	10	3	16	3	21⅛	3⅛	29	2⅛	35	20
Oriental	Padang	56⅛	6	4⅛	1	5	9¼	4	16	4⅛	24	3⅛	30	3	36	24⅛
Orion	Calcutta	60	8	4	2	4	9¾	3⅛	15⅛	3	21	2	24¾	2⅛	29¾	19
Surprise	Shanghai	49⅛	1 W.	4	11⅛ W.	3	18	3	23⅛	1⅛	27⅛	1⅛	30⅛	2	35	15
Thos. B. Wales	Calcutta	45⅛	11 E.	3	4 E.	4	¾	5	9⅛	5⅛	17¾	4	24⅛	4⅛	30¾	26
Bay State	Shanghai	73	13	5	3¾	3	1⅛	4	7¼	5	18⅛	4	26⅛	3⅛	33	24⅛
Boston	Manilla	68	15	4	9¾	4	2⅛ E.	5	6¾ W.	5	6¼	3	24	3	29¾	24
Boston Light	Shanghai	54	11¼	2	5⅛	3	1 W.	3	7⅛	5	18	4	28⅛	4	36	21
Thomas Church	Calcutta	64	9	2	4	4	2	4	8⅛	6	18¾	4	26	4	31	24
Escort	....do	60	9⅛	4⅛	2 W.	5	8⅛	3	15	2⅛	20¾	2⅛	26	3⅛	30¾	21
Fleetwood	Shanghai	72	11⅛	3⅛	4 E.	2⅛	1¾	3	7¼	5	14¾	5	24¼	4	32⅛	23
Oregon	Calcutta	51	8¾	4⅛	2¾	6	10⅛	6⅛	24⅛	4	33¼	3	35	3	41	27
Restitution	Java Head	49	11⅛	4	4	4	¾	4⅛	8⅛	5	16	3⅛	22¾	4	30	25
Sancho Panza	Foo-choo-Foo	66	12¾	2⅛	4⅛	4	1⅛	3	7¼	4	17¼	4⅛	29⅛	3	34	21
S. H. Waterman	Manilla	73⅛	11⅛	4⅛	4¼	4	2	4	7	4⅛	17	3	26	4⅛	34¼	24⅛
Sweepstakes	Shanghai	55⅛	5⅛	2	1	3	5⅛	3	9⅛	2⅛	14⅛	3⅛	21⅛	3⅛	32¼	17⅛
Swordfish	Hong Kong	43⅛	10⅛	2⅛	4¾	2	1	3⅛	7⅛	4⅛	20⅛	2⅛	27	3⅛	36	18⅛
Sea Serpent	....do	40⅛	11¼	3	¼ W.	4⅛	12	3	15¼	2	24	2	28¾	3	34⅛	17⅛
Means	.....	.....	8.8E.	3.5	1.0E.	4.2	5.4W.	3.7	12.0	3.9	19.5	3.4	27.0	3.4	33.2	22.1

Crossings and time of homeward-bound Indiamen, &c.—Continued.

MARCH.

Name of vessel.	Port from—	Days.	30° S.		25° S.		20° S.		15° S.		10° S.		5° S.		Equator.	Total days.
			Long.	Days.	Long.	Days.	Long.	Days.	Long.	Days.	Long.	Days.	Long.	Days.		
			°		°		°		°		°		°		°	
Endeavourer	Shanghai	54	9½ E.	6	1½ E.	3½	6 W.	3½	14½ W.	4½	22¼ W.	3½	31 W.	3	37¾	24
Falcon	Penang	48½	11	2½	3½	2½	2	3	8	4½	17½	4	25½	4	32¾	20½
Boston	Manilla	60	12	4	4¼	3	2	4	6¼	6	14¾	4	21	4	24½	25
Judge Shaw	Calcutta	69	10	3	3	5	2½	4	6½	5	16	4½	25¼	7	32½	28½
Herculean	Singapore	67½	10½	3	4	3	3	3	10	4½	18½	4	26	4	35	21½
John Knox	Calcutta	47	7¼	5	4¼ W.	3½	12	3½	18¾	3	23¾	2½	28	3½	33½	21
Panther	....do	47½	10	2	4 E.	4½	7	4	13½	3	19½	4½	30	2½	34¼	20½
Highflyer	Canton	47½	12½	4	4	2	1	3	7	3	14	4	23	3½	31½	19½
Houqua	Fuhchau	53½	10	3	2	3½	5¾	2½	13	3	19	2½	26¼	7	32½	21½
Golden State	Shanghai	49½	7	2	2¼	3	5	3	12	3	21	4½	29¾	4½	36	20
Helena	....do	55	8½	4	2¾ W.	4	11	3	18	4	26	3½	31½	4	40	22½
Goddess	Calcutta	55	8	2½	¼ E.	3½	8¼	4	16¼	3½	24	4½	30¾	3	34	21
Messenger	Canton	54	8¼	5½	1 W.	3	8½	3½	16¼	3½	24	4	33	3½	38¾	23
Staffordshire	Calcutta	43½	10	3	1 E.	3	6	3	12	3	19	3	25	5½	30¼	20½
Valparaiso	....do	70	12¾	4½	8	2½	¾	5	7¼	4½	19½	3½	27	3½	33½	23½
Messenger	....do	55	9¾	3½	2	3½	9	2	14¾	2½	20	4	29¼	4	32½	19½
Penguin	Hong Kong	43	8	3	0	2½	7	3	15¾	2	21	3	26	3½	31½	17
White Swallow	Shanghai	54½	7½	3	2½ W.	3	10	2½	17½	3	23½	2½	29½	4	35½	18
Syren	Calcutta	53	12¼	2½	4½ E.	3	3¾	3	11½	3½	20	4	30	4	36½	20
Oneida	Shanghai	61½	10½	3	2	4½	7¼	3½	14½	3	21½	3	25½	4½	31½	21½
Swordfish	Manilla	53½	8½	3½	1¼ W.	3½	10	2½	16¾	3	23¾	3	30¾	3½	38	19
Oneida	Shanghai	63	11¾	4½	8 E.	3½	1	4½	13½	4	22	3	29½	3½	34	23
Means	... .	.....	9.8 E.	3.5	1.9 E.	3.3	5.8 W.	3.4	12.8	3.6	20.5	3.6	27.9	4.1	33.5	21.4

APRIL.

Fleet Wing	Whampoa	61½	7 E.	3	2 E.	3	3 W.	4½	10	4½	21	3	28	4½	33¼	22½
Golden West	Manilla	51	10	3½	4	2	1	4	9	3½	17¾	3½	25	7½	31½	24
Game Cock	Calcutta	49	6	3½	2 W.	3	10	3	19	2½	25¾	5	31	7	36	24
Hurricane	Hong Kong	57	10	4	3½ E.	3	3¼	2	9¼	2½	15	2	20½	2	25¼	15½
Horseburgh	Batavia	43½	10	3½	2½	4½	7	4	16	3	22	3	30	3½	36½	21½
Herbert	Calcutta	71	10¾	3½	4	2½	¾	5	8¾	5	18¼	3½	24	5	28	24½
Judge Shaw	....do	48½	13	4	5	3½	2½	5	11¾	3	18¼	3½	26¼	4	31	23
Alboni	Shanghai	63	10	2¾	2½	4¾	5½	6	14	3	21	3½	28¾	5	34¼	25
John Bertram	Canton	52	13½	2	7¼	4	5	3	14½	3	23	2½	28½	2½	34¼	17
Oneida	Shanghai	77½	10½	3½	5¼	5	4¼	3	11½	3½	18½	3	25½	3½	31½	21½
Romance of the Sea	....do	57½	9	4	1½	6	5	4	14	3½	21¾	2½	28½	3½	34¼	23½
Siri	Manilla	50	10¾	2½	3	4	6½	4½	15¼	4	25	3½	31	3	36	21½
Niobe	Columbo	50½	10	4	3¼	3	4	4	12	3½	19¼	3	26	3½	32	21
Trenton	Canton	56½	11	4	2¾	4	5½	3½	12½	3½	20¼	3½	27¾	9	30¾	27½
Sarah	Manilla	64	10½	4½	4¾	3½	2¼	3½	10	3½	17¾	3½	25	4	33¾	22½
Charles	Canton	48½	10½	4	4	5	2	4	8	4	14½	4	20	4	26	25
Navigator	Calcutta	65½	10¼	5½	3½	3½	2	3½	9¼	3½	17¼	4	25½	4	30½	24
St. Lawrence	Manilla	58½	8¼	2½	3¼	2½	2	3	7½	4½	16½	4	24¾	4	30½	20½
Means		.....	10.0 E.	3.6	3.3 E.	3.7	4.0 W.	3.9	11.2	3.5	19.6	3.4	26.4	4.4	31.9	22.4

Crossings and time of homeward-bound Indiamen, &c.—Continued.

MAY.

Name of vessel.	Port from—	Days.	30° S.		25° S.		20° S.		15° S.		10° S.		5°		Equator.	Total days.
			Long.	Days.	Long.	Days.	Long.	Days.	Long.	Days.	Long.	Days.	Long.	Days.		
			°		°		°		°		°		°		°	
Falcon	Penang	61	11⅛ E.	4	4 E.	2⅛	2 W.	2⅛	8¼ W.	3	16⅛ W.	3⅛	26 W.	2⅛	31¼	18
Grace Darling	Calcutta	59⅛	10¾	3	4¼	3	2	3⅛	9¼	5	22¾	4	31⅛	2⅛	35	21
Helena	Shanghai	36	8	2⅛	3⅛	5	6⅛	4⅛	15	3	23	3	30	4	38	22
Hound	Macao	61⅛	13	4⅛	8	2⅛	0	4	9 W.	4	20	3⅛	29¾	2	35⅛	20⅛
Matanzas	Calcutta	63⅛	9	4	1	3⅛	4¾	5	11¾	4⅛	20	7⅛	30¼	3	36	27⅛
Whistler	Whampoa	61	8¾	2⅛	10¼	3	2 E.	6⅛	6¾ W.	4	19¼	3⅛	29	4	34⅛	23⅛
John Wade	....do	51⅛	9	3	4	3⅛	6¼ W.	6⅛	12⅛	3⅛	22⅛	3⅛	30	3⅛	35	23⅛
Wizard	Canton	48⅛	9	5⅛	3⅛	2⅛	2	3	11	3⅛	21¼	3	30¼	3	37¼	20⅛
N. B. Palmer	Shanghai	66	10⅛	5⅛	4¼	2	¼ E.	4	10 W.	3	18⅛	3	25¼	3⅛	33¼	21
Anna Bucknam	Canton	68⅛	12	4⅛	6	3	2¼ W.	4	11⅛	3	18¾	4	27	3	34	21⅛
Wild Duck	Shanghai	61	12¼	2⅛	6	6⅛	1 E.	3	8⅛ W.	4	19¼	3	28	3⅛	35⅛	22⅛
Fly Away	Whampoa	57⅛	8⅛	4	3¼	2⅛	1⅛	3⅛	10⅛	5⅛	21⅛	3	29⅛	2	33¾	20⅛
Flying Dragon	Calcutta	58	7	2⅛	1⅛ W.	4	11 W.	7⅛	22¾	3	26¾	2	31¾	2	35¾	21
Anna Bucknam	....do	85	11⅛	3	6¼ E.	6	¼ E.	4	10⅛ W.	3	18¼	4	27⅛	3	33	23
Robt. C. Winthrop	....do	58	13¾	3⅛	8	5	7 W.	6	15	3⅛	22¼	3	27¾	3	32¼	24
Siam	Manilla	67⅛	13	3⅛	4¾	2⅛	2	3	7	5⅛	21¾	3	29⅛	3	33¾	20⅛
Siam	Anger	49⅛	12⅛	3	7	4	1	3⅛	7¾	6⅛	18⅛	4	27¼	3⅛	34¾	24⅛
Morrison	Manilla	59	10¾	6	3¼	4	2	4	8⅛	3	15⅛	3⅛	23	4	31	24⅛
Argyle	Canton	46	11⅛	3	3¾	3	2	2⅛	6⅛	5	16⅛	4	25⅛	4	32⅛	21⅛
Means		.....	10.6E.	3.7	4.7E.	3.6	2.4W.	4.2	10.6W.	4.0	20.1	3.6	28.4	3.1	34.3	22.2

JUNE.

William Chamberlain	Calcutta	73⅛	2⅛ E.	4⅛	2⅛ W.	4	5 W.	4	16⅛	4	27⅛	2	31	2⅛	36¾	21
Cahota	....do	65	15¼	5	9¼ E.	2⅛	2 E.	5	6¼ W.	3	13	2⅛	19	3	23¼	21
Cyclone	....do	69	7⅛	3⅛	4 W.	5	15 W.	3⅛	21¾	3	26¾	2¼	30¾	2¼	33	19⅛
Derby	....do	55⅛	6¾	5⅛	4¾ E.	3⅛	1	2⅛	8¼	3⅛	16⅛	2⅛	23	4	32⅛	21⅛
Albany	....do	68	11	4	1¼	6	7	6	14⅛	3	20⅛	4	29⅛	3	36⅛	26
Josiah Bradlee	....do	76	13⅛	4	7¼	4	¾	3	6⅛	4	16¾	3	23	4⅛	32	22⅛
Beverly	....do	62	11	4	4	4	5	3⅛	12	3	19	2⅛	25	2⅛	31	19⅛
Sweepstakes	Canton	53⅛	11	2	2	3⅛	6⅛	3⅛	12¾	3	23	2	28	1⅛	32¾	15⅛
War Hawk	Leratown	66⅛	12	2	6⅛	2⅛	⅛	2⅛	5⅛	5⅛	18¾	3	27	2⅛	33	18
Northern Crown	Manilla	57⅛	13	4⅛	3⅛	3⅛	5	3	12	3	20	3	27¾	4	36¼	21
Hambet	....do	74	10⅛	3⅛	7⅛	3⅛	2⅛	4	12⅛	4⅛	21¾	3⅛	29⅛	3⅛	36⅛	22⅛
Hornet	Calcutta	62	8¾	2	1¼	3	6⅛	3	12⅛	4⅛	21	3	27	1⅛	30⅛	17
Lucknow	....do	88	10¾	5	6¼	3⅛	⅛	3⅛	7⅛ W.	5	19	4	28¼	4	35⅛	25
Siam	Manilla	68¼	13⅛	2¼	8	3⅛	0	4	8	5	20	4	29⅛	3¾	35¾	22⅛
Trinduntain	Calcutta	87	10⅛	5	6	3⅛	0	3	7	5	18¾	3⅛	26¾	4	34¾	24
Magnolia	....do	65⅛	14	4	9	3	2	4⅛	6¼	6	15¼	3⅛	23	4	33	25
Witch of the Wave	....do	41	11⅛	3	9	3	⅛ W.	3	8¼	4	17¾	3	25⅛	2⅛	32	18⅛
Wild Pigeon	Anger	46	14¾	3	4¼	7	7¾	6⅛	18	3	28	2	33	1	35	22⅛
N. B. Palmer	Batavia	50⅛	12	3⅛	1¼	5⅛	5	5	13⅛	2	18	2	24⅛	2	30	20
Samuel Russel	Canton	61⅛	11	3	6	2	1	3⅛	12	4	21¼	4⅛	31	2⅛	34⅛	19⅛
Sea Eagle	Calcutta	77	14¼	4	4⅛	4	5¼	5	13¾	4⅛	21	3⅛	27⅛	4	34	25
Winged Arrow	Manilla	68⅛	12⅛	3	9	4⅛	1	3	7¾	4	17⅛	4	27¾	3⅛	37⅛	22
Western Continent	....do	74	10¾	4⅛	5¾	3	⅛	3⅛	8¼	3⅛	17	3	23⅛	2⅛	28¾	20
Wild Pigeon	Canton	64⅛	9⅛	2⅛	1⅛	2⅛	4⅛	3	10⅛	3	17	3	27	3⅛	34⅛	17⅛
Witch of the Wave	Calcutta	61	10⅛	3	3	2	1¾	2⅛	8	3⅛	17¾	4	26⅛	2⅛	33¾	17⅛
Winged Arrow	Manilla	65⅛	9	2	2⅛	3⅛	4¾	3⅛	12	2⅛	19	3⅛	28	4	35¾	19
Restitution	Calcutta	70⅛	9	3⅛	3¼	6	¾ E.	2	6¼ W.	2	14	2	21⅛	2	28¼	17⅛
Raven	Padang	51	10¾	3	5	3	3¾ W.	2⅛	12	2⅛	19⅛	5	28⅛	3	35¼	19
N. B. Palmer	Manilla	56	15¼	3⅛	10¼	2⅛	3 E.	4	8 W.	5	21¼	4⅛	34¼	1⅛	41	21
Means		.....	11.1E.	3.5	4.7 E.	3.7	2.8W.	3.6	9.9	3.7	19.2	3.2	27.1	2.9	34.2	20.7

Crossings and time of homeward-bound Indiamen, &c.—Continued.

JULY.

Name of vessel.	Port from—	Days.	30° S.		25° S.		20° S.		15 S.°		10° S.		5° S.		Equator.	Total days.
			Long.	Days.	Long.	Days.	Long.	Days.	Long.	Days.	Long.	Days.	Long.	Days.		
			°		°		°		°		°		°		°	
Bald Eagle	Calcutta	59	12¼ E.	6	5 E.	3	6⅛ W.	2	13¼ W.	2⅛	19 W.	2⅛	24¾ W.	2	31	18
Albany	Manilla	73⅛	12	4⅛	5¼	2⅛	1⅛	3⅛	9	4¼	18	3¾	25¾	3⅛	32⅛	22
Celestial	Shanghai	78⅛	9	4⅛	2¾	4	8	3	15⅛	3	24	3	28¾	2⅛	31¾	20
Cyclone	Manilla	78⅛	13⅛	5	3	3	7	3⅛	16¾	3	23	3	29¼	3	34	20⅛
Dragon	....do	75⅛	12	2⅛	7¾	4	0	3	5 W.	5	17	4	24¾	3	31¼	21⅛
Don Quixote	Fouchow	64	13	2⅛	7⅛	3	3	2	8	3⅛	17¾	3	27	3	34¾	17
Lady Franklin	Calcutta	66⅛	11⅛	2⅛	5¼	2⅛	2	5⅛	6¾	3⅛	16¼	3⅛	26¾	2⅛	32⅛	20
Raven	Padang	43	13¾	2	7⅛	3	¾	3	8¾	4	19¼	4	28⅛	3	36¼	19
Reindeer	Anger	52⅛	12	4	2⅛	7⅛	7	5⅛	14¾	4⅛	22	3⅛	29	3⅛	34	28⅛
Saxonville	Calcutta	87	11¾	4	4⅛	5	3	4⅛	12	5⅛	20¾	3	26⅛	2⅛	30¾	24⅛
Horatio	Shanghai	85	6¾	3⅛	¾	3	5	3	13	4	20	3	27	3	34	19⅛
Resolute	Foo-choo Foo	78⅛	11	3⅛	5¼	4⅛	3¾	3	9⅛	3⅛	18⅛	3	26	3	33	20⅛
Sabine	Calcutta	83⅛	13	4⅛	6¼	4⅛	¾	3⅛	7	4⅛	16¼	4⅛	26¾	3	33	24⅛
West Wind	....do	67⅛	7	3	1	3⅛	4¾	3	10	4	19⅛	3	26⅛	3	32	19⅛
Dolphin	Penang	65⅛	11⅛	5	6	3	1	3	7⅛	4⅛	17¼	4	26⅛	3⅛	32¾	23
Flying Fish	Padang	38⅛	11¼	3	3	2	2	3⅛	7⅛	3	14⅛	4	24¾	2⅛	31	18
Fleet Wood	Calcutta	82	9⅛	4	2¾	4⅛	2¾	3⅛	9	3⅛	16	3⅛	24¾	3	31	22
Flying Dragon	....do	76	6⅛	2⅛	0	4	5	3	11	4	20	3⅛	28⅛	4⅛	38	21⅛
Grafton	Sumatra	64⅛	10	4	3	3	1¼	3⅛	8⅛	5⅛	16	3⅛	23¾	3⅛	31¾	23
Golden City	Manilla	63⅛	10⅛	2⅛	1¾	3⅛	4	3⅛	7⅛	4	20⅛	3	29⅛	2⅛	35	19
Granada	Calcutta	81	13⅛	6	8	3⅛	1⅛ E.	3⅛	7⅛ W.	6	18⅛	5⅛	30	3⅛	38	28
George Lee	....do	69	10¾	3	4¼	4	1⅛ W.	3	7	4	15¾	4	23¼	3⅛	29⅛	21⅛
Golden City	Shanghai	70⅛	8	3	2	4	4⅛	2⅛	12⅛	2⅛	18	3⅛	28⅛	3	36	18⅛
Ringleader	Manilla	71⅛	7	3	⅛	4	6	2⅛	13¾	2⅛	21	3	29⅛	2⅛	36	17⅛
Thos. W. Sears	Singapore	55⅛	11	3	2	5⅛	6	3	11⅛	3⅛	21	3⅛	29⅛	3⅛	35⅛	22
Reindeer	Manilla	87⅛	11¾	4⅛	1⅛	4	8¼	5	18⅛	7	30⅛	3⅛	34¾	2⅛	39¾	26⅛
Ellen Noyes	Calcutta	75⅛	11⅛	4	¾	2⅛	4	4⅛	12¼	3⅛	19¾	3⅛	27⅛	2⅛	32	20⅛
Fenelon	Shanghai	93	6⅛	3⅛	5	2⅛	2 E.	3⅛	6 W.	3	13⅛	7	25	3	32	22⅛
Tsar	Penang	67	10¼	3⅛	3¾	3	1 W.	3	6⅛	5	16⅛	5	24⅛	4	33	23⅛
Winged Arrow	Calcutta	60⅛	11¼	2⅛	5¾	4⅛	2	2⅛	8¾	4⅛	20¾	4⅛	32⅛	2⅛	40⅛	21
Eureka	Whampoa	65	9¾	3	9⅛	3⅛	2 E.	4	10 W	3⅛	20¾	4⅛	28⅛	3⅛	37⅛	22
Winged Arrow	Manilla	59⅛	12⅛	3	7	4	1 W.	3⅛	10	4⅛	19⅛	8⅛	30¾	2⅛	37⅛	21
Means		.....	10.7 E.	3.6	4.1 E.	3.8	3.1 W.	3.4	10.1	4.0	19.1	3.7	27.5	3.0	34.0	21.4

AUGUST.

M. Homes	Penang	74⅛	11⅛ E.	3⅛	1¾ E.	4	8⅛ W.	3⅛	16	3⅛	23	3⅛	30	2⅛	36¼	20⅛
Lowell	Padang	72	11¾	4	7⅛	4⅛	1¾	4	9	4⅛	17¾	5	28⅛	4⅛	37⅛	26⅛
A. Heard	Manilla	81⅛	10	3⅛	4⅛	4	2	3⅛	9⅛	3⅛	17⅛	4	25¾	3	31¾	21⅛
Lucy Elizabeth	Penang	87	14	6	5¾	4	1⅛	3⅛	7¼	5	17	4⅛	25¾	4⅛	34⅛	27⅛
Lowell	Batavia	47	7⅛	4⅛	0	4⅛	6¼	7	16⅛	4	23¾	4	30	3	35¼	27
Jennie W. Paine	Calcutta	67⅛	9	3⅛	¼ W.	3⅛	7	3⅛	15	3	23	3⅛	30¼	3	36	20
Malay	..do	60⅛	7⅛	3	0	3⅛	6¾	3	13⅛	3	20⅛	2⅛	26	2⅛	31¾	17⅛
Mahota	....do	55⅛	11	2⅛	4⅛ E.	2⅛	1	3	7	3	13	3	19	2⅛	24⅛	16⅛
Wild Duck	Shanghai	83⅛	12⅛	2	8¾	2⅛	2¾ E.	4⅛	8 W.	5⅛	21¼	6⅛	33⅛	2	37	23
Arabella	Calcutta	92	11	6	7⅛	5	2¾ W.	4	11	5	20⅛	5	29	4	37	29
Borneo	Penang	98	11⅛	4	6¼	4	1¼	4	8⅛	4	17	4	25	4⅛	33	24⅛
Corrinne	Calcutta	68	10¾	3	4¼	3	1⅛	3	8	6	17	4	25⅛	3	31¼	22
Daniel Webster	Singapore	49⅛	10⅛	3	2	6⅛	7	5⅛	14⅛	3	21⅛	3	27	3	33	24
Siam	Anger	51⅛	13⅛	4	5⅛	4⅛	¾	5	6⅛	3⅛	12¾	4	20	4⅛	29¼	25⅛
Monsoon	Calcutta	54⅛	10¾	5	6	3⅛	4	5⅛	12	3	20	2⅛	26	3	32¾	22⅛
Medford	.. do	76⅛	11	4⅛	2¼	7	4¾	4	12	3	17¼	3⅛	21⅛	3⅛	27	25⅛
Northern Light	Manilla	71⅛	11	3	2 W.	3⅛	12	4⅛	21	2	25	2⅛	30	3	36¼	18¼
Skylark	Calcutta	59⅛	8	3	1	3	7⅛	3	14⅛	3	21⅛	3	28¾	2⅛	35	17⅛
Raduga	Manilla	72⅛	12¾	3	7 E.	3⅛	1¼	2⅛	6⅛	3	14⅛	2⅛	20¾	2⅛	23¾	17
Means		.....	10.8 E.	3.2	3.2 E.	4.0	3.3 W.	4.0	11.4	3.7	19.1	4.2	26.4	3.2	32.8	22.4

Crossings and time of homeward-bound Indiamen, &c.—Continued.

SEPTEMBER.

Name of vessel.	Port from—	Days.	30° S.		25° S.		20° S.		15° S.		10° S.		5° S.		Equator.	Total days.
			Long.	Days.	Long.	Days.	Long.	Days.	Long.	Days.	Long.	Days.	Long.	Days.		
			°		°		°		°		°		°		°	
Aurora	Manilla	60	6⅛ E.	4¼	3¼ E	2¼	4 W.	3¼	13⅛	3⅛	22	2¾	29¼	2¾	36	18¾
Anna Maria	Penang	115	13	5	6	4	1 E.	5	7¼ W.	4	15⅛	3⅛	23	3¾	31	25¼
Black Prince	Singapore	58½	10	4⅛	5¾	4	1⅛	4	8	3	17	5	28¼	4	35¾	24⅛
Southern Cross	Manilla	69⅛	11	3	7⅛	2⅛	2¾	4	8⅛	4	18¾	3	26	1⅛	31	18
Cornet	Canton	83	7⅛	5	1 W.	3	7¾ W.	3⅛	17	2⅛	24	2	28¾	2	37	18
Escort	Penang	60⅛	12	3	4⅛ E.	2⅛	1	4	8⅛	4⅛	17⅛	3⅛	26¾	3⅛	34	21
Wizard	Manilla	45⅛	13	3	3¼	4	6	4	15⅛	4⅛	29⅛	2⅛	34⅛	2	38⅛	20
Hindoostan	Calcutta	70⅛	12	3	4	4⅛	¾	5	10¾	5	19⅛	4⅛	28	4⅛	38	26⅛
Lurch	Padang	53⅛	13⅛	5	10⅛	4	3	6⅛	10¾	4⅛	22	4	29	4	37	28
Fire Fly	Manilla	88	10⅛	3⅛	4	6⅛	4¼	3⅛	12	2⅛	18	3	23¾	3⅛	31	22⅛
John Gilpin	Calcutta	54⅛	3	3	8 W.	7	23	2⅛	28	2	32	1⅛	35	1⅛	38	17⅛
John Gardner	....do	58⅛	10	3⅛	2 E.	3	5⅛	3⅛	14	3⅛	22⅛	2⅛	28	2⅛	34	18⅛
Maria	Bencoolen	35	11¼	2⅛	5	2⅛	⅛ E.	4	7¾	4⅛	17⅛	2⅛	25⅛	2	30	18
Malay	Anger	36⅛	9⅛	4	3⅛	3⅛	3⅛ W.	2⅛	10	3	18	3	25	3	31⅛	19
Mameluke	Manilla	74	8¾	5⅛	2	3	7	3⅛	17⅛	4	28¼	3	34¾	2	39⅛	21
Quick Step	Whampoa	72	14	3⅛	9⅛	2¼	2 E.	4	9⅛	3⅛	18	4	28	3	34⅛	20⅛
Santiago	Canton	90⅛	8	3⅛	2⅛	3	0	3⅛	10	3	16⅛	4	27	3	34	20
Storm	Manilla	62⅛	9⅛	2⅛	1¼	3⅛	7 W.	3	14¼	2	20	2⅛	26⅛	2	30¾	15⅛
Tsar	Calcutta	83	11¼	5	5⅛	4⅛	⅛ E.	3⅛	6¼	5	16⅛	4	23⅛	4	30	26
Malay	....do	65	10¼	2⅛	3	2	1 W.	4	8	3⅛	17⅛	3	25	3	32¼	18
Means	.....	.....	10.2	3.7	3.7	3.6	3.3	3.8	11.8	3.5	20.5	3.2	27.8	2.9	34.2	20.8

OCTOBER.

Dashing Wave	Calcutta	59	11 E.	2⅛	4 E.	3	4 W.	3	12⅛	2⅛	20	3	28	2	33¼	16
Fenelon	Padang	67⅛	10⅛	4	4¼	3⅛	2	3⅛	7¼	5⅛	18¾	4	25⅛	6	34¾	26⅛
Hussar	Canton	76⅛	11	4	3	3	6	2⅛	12	4	21¼	3	26⅛	3	33¼	19⅛
Ocean Pearl	Manilla	73	10¼	5	5⅛	2⅛	⅛ E.	3⅛	7⅛ W.	5	18¼	4⅛	28¼	5	39	25⅛
Northern Light	....do	64	9¾	4	7⅛	4	7¾ W.	4	17¾	3	24⅛	3	30⅛	2⅛	35	20⅛
Rubicon	Calcutta	86⅛	11¼	2	6	3	1¼	4⅛	7⅛	5	19¾	5⅛	31	3	35⅛	23
Art Union	....do	65	9¾	4	2¾	5	3¾	3	10⅛	6	22	4	29	3¼	35¼	25¼
Boston	Manilla	47	12	5⅛	5¾	3	⅛	4	8	5	16	3	20⅛	3	26	23⅛
Morning Light	Calcutta	54	10¼	2	4	2⅛	1	2⅛	6⅛	4	17⅛	4⅛	28⅛	3⅛	39	19
Mandarin	Foo-choo Foo	75⅛	9	3	1⅛	3	3	2	8	5	23	3	31⅛	2⅛	38	18⅛
Maria	Batavia	39⅛	11⅛	2⅛	6¼	3⅛	0	2⅛	6¾	5	19⅛	3⅛	26⅛	3	30¾	20
Windward	Calcutta	55⅛	9	4	7	3	1¼	3	8⅛	4⅛	19	5	30	3	37	22⅛
Sabine	....do	96⅛	11⅛	3	4⅛	7	1	3⅛	9¾	3⅛	15¼	3⅛	20¾	4	28⅛	24⅛
Aldebaran	Penang	75⅛	10	3⅛	2¾	4⅛	2	3⅛	7⅛	4	15⅛	5	23¼	4	29⅛	24⅛
Amity	Manilla	76⅛	8	5	1⅛	4⅛	5	3⅛	11¼	4	18¾	3	26¾	3⅛	33¼	23⅛
Panther	....do	70	18¼	2⅛	11	4	0	5	6	7⅛	18⅛	3⅛	25¼	3	31	25⅛
Goodwin	Bombay	45	11	4⅛	5	4	1	4	6¾	6	19¼	4⅛	25	5	34¾	28
Sappho	Canton	71	10¾	3⅛	2⅛	3	1¾	3⅛	7¼	4⅛	18⅛	4	28	3	34¾	21⅛
Means	.....	.....	10.8	3.6	4.7	3.7	2.3	3.4	9.0	4.7	19.2	3.9	26.9	3.5	34.9	22.6

Crossings and time of homeward-bound Indiamen, &c.—Continued.

NOVEMBER.

Name of vessel.	Port from—	Days.	30° S.		25° S.		20° S.		15° S.		10° S.		5° S.		Equator.	Total days.
			Long.	Days.	Long.	Days.	Long.	Days.	Long.	Days.	Long.	Days.	Long.	Days.		
			°		°		°		°		°		°		°	
Anglo Saxon	Calcutta	63	9¼ E.	2	4½ E.	2⅛	3¾ W.	2½	10	5¼	21½	4	31¼	2	35	18
Art Union	....do	61	9¼	2	3	3	5	4	14	4	22¼	3	29	3⅛	35	19⅛
Jacob Bell	Manilla	75	5¾	2⅛	0	2⅛	7⅛	2⅛	14	3	20	2⅛	27	3⅛	35	16⅛
Samuel Russel	Foo-choo Foo	61⅛	11⅛	2	6¼	2⅛	1⅛	3	10¾	4	20¾	3⅛	30	2	33¼	17
Pamelia	Penang	57⅛	8	4	2 W.	3⅛	8	4	14¼	3	22¼	2	27	2⅛	31	19
Hippogrippe	Calcutta	60⅛	9	3	5 E.	3⅛	4⅛	4	13	4	19¾	3⅛	27	3	33	21
Josiah Crowell	....do	90	9	3	3¼	3⅛	1	3	7	4⅛	16¾	4⅛	26	4	34	22⅛
Mary Goodell	....do	56⅛	10¼	4	¼ W	5	8	3⅛	13¼	5	23¼	2⅛	29	2⅛	35	22⅛
Horatio	Shanghai	112	11¾	3	1⅛ E.	3	5¼	3	14	3	20⅛	3⅛	28⅛	3	34¼	18⅛
Shooting Star	Whampoa	61⅛	13	2	11	2⅛	2¾ E.	4	7¼ W.	4⅛	16¼	4	27	3	34⅛	20
Young America	Manilla	54⅛	6	4	0	3	5⅛ W.	5	17¼	4	24¼	3	31¼	2	34¾	21
Samuel Russel	Foo-Chow	79⅛	10¼	3⅛	1⅛	4⅛	8⅛	4	18⅛	2	24¼	2	30	2	33⅛	18
Victory	Calcutta	53⅛	9⅛	2⅛	3	3	5	3	11¾	3⅛	18	2⅛	23	3	28⅛	17⅛
White Swallow	Foo-choo Foo	70	5⅛	3⅛	¼	3	7	3⅛	14⅛	4⅛	26	2	30⅛	2	35	18⅛
Samuel Russel	....do	76⅛	7⅛	3⅛	2⅛	3⅛	4	3⅛	13¼	4⅛	19¾	2⅛	26⅛	3	32⅛	20⅛
Oriental	Padang	56	9	3⅛	4	4	0	4	7⅛ W.	5	15	5	24¼	4⅛	32¾	26
Syrene	Calcutta	56⅛	12¾	2⅛	4¾	2⅛	1	2⅛	6⅛	4	17¾	3⅛	26⅛	4	34⅛	19
Sea Serpent	Whampoa	57⅛	11	3	3⅛	2⅛	2	3	7	4	16¾	2⅛	23	3	30	18
Greenfield	Manilla	73⅛	9	4⅛	1¾ W.	3⅛	8¼	2⅛	14	3	19¾	2⅛	24	3	30	19
Means	.....	.....	9.3 E.	3.0	2.6 E.	3.2	4.4 W.	3.4	12.0 W.	3.9	20.2	3.1	27.4	2.9	33.2	19.6

DECEMBER.

Candace	Shanghai	46	7¼ E.	4	5 W.	4⅛	14 W.	4	22	2	26	2⅛	30⅛	2	34⅛	19
Coringa	Calcutta	65	6	3	¼	3	6	3⅛	13	3⅛	18⅛	3⅛	26	3	32	19⅛
Cœur de Lion	Shanghai	78	8¼	3	2¼ E.	2⅛	2⅛	3⅛	12	5	24¼	2¼	29	3¼	35	19⅛
Challenge	Manilla	75⅛	5	5	3 W.	3	10	4	18	3⅛	25	2⅛	30	4	37	22
Corinne	Calcutta	66	9¼	4	2¾	3⅛	2	3	6	5	15	4⅛	25⅛	3⅛	33	23⅛
Dashaway	....do	46	10⅛	3	2¼ E.	3⅛	3	3⅛	10¾	3	17⅛	4	25¾	3⅛	32	20⅛
Electric	Shanghai	55⅛	11	3⅛	2¼	3	6	3⅛	14	3	20	3	28⅛	2	34	18
Fair Wind	Calcutta	57	7¾	4⅛	3⅛ W.	3⅛	12¼	3	21	2	25¾	2⅛	30	2⅛	34¾	18
Game Cock	Shanghai	72	7¾	3	⅛	3⅛	10	3	18	3	24	2⅛	31¼	2⅛	36	17⅛
Ganges	Calcutta	51	9	3⅛	2¾ E.	4⅛	5⅛	4	13⅛	4	21⅛	4	30	3	37⅛	23
Haidee	Shanghai	66	8¼	3⅛	¼	2	5⅛	2⅛	12	3	18⅛	2⅛	24	2	29	15⅛
Stag Hound	Canton	51	12⅛	3⅛	4	4	5⅛	2⅛	11	2⅛	17	3	24	3⅛	31	19
Seargo	Calcutta	53	9¾	6	4⅛	6	4¼	4⅛	12	3	17	3⅛	23¾	3	28	26
Mischief	Foo-choo-Foo	73⅛	8	4	1	2⅛	3¼	4	13¼	2	18¼	3⅛	26	3	33	19
Seaman's Bride	Manilla	72⅛	9⅛	2	3	4	6	3	12	3⅛	20	3	27⅛	2⅛	34	18
Seargo	Calcutta	66⅛	8⅛	4⅛	2 W.	3⅛	9	3⅛	15⅛	3⅛	21⅛	4	28	3⅛	34⅛	22⅛
Ariel	Shanghai	67	9⅛	5	2¼ E.	4	8	7¾	12¾	4¼	22¼	3⅛	30	2⅛	35	27
John Bertram	Manilla	47	6¼	3	4 W.	3	8¾	3	15	4	24	3	30	2⅛	36	18⅛
Candace	Shanghai	76	8⅛	6	3 E.	5	3⅛	5	13	3	19¼	3	25⅛	4⅛	34	26⅛
Falcon	Anger	38⅛	10⅛	2⅛	6½	2⅛	1	3	8	4	17⅛	3⅛	26	3	32	18⅛
Tingua	Shanghai	72	9¾	3⅛	3⅛	3⅛	4¼	3	11	3	17	2⅛	20¼	2⅛	27⅛	18
Orissa	Calcutta	47⅛	6	4⅛	0	6	10	4	17¼	3	23⅛	3	30	3	37	23⅛
Octavius	....do	74⅛	13⅛	4⅛	3¾	4	1¾	3	6¾	5	14¾	4	22¾	4⅛	31¼	25
Pontiac	....do	64	13	5	9⅛ W.	6	2	6	11	3⅛	17⅛	3⅛	24	4	29	28
Restitution	Batavia	55⅛	11⅛	3	3⅛ E	3	2¾	2⅛	7⅛	4⅛	16	6	23⅛	4	28⅛	23
Messenger	Shanghai	50⅛	8⅛	3	⅛	3	8⅛	3⅛	18¼	2⅛	24¾	2⅛	30¾	2	33¾	16⅛
Mary	Calcutta	54⅛	10¾	2⅛	4	3	2	3	8¼	4⅛	19	4	28	3	35	20
Western Continent	....do	58⅛	9⅛	3⅛	2¾	2⅛	1⅛	5	10¼	3	17¼	3	23	3⅛	2[illegible]	20⅛
Thos. W. Sears	Singapore	60	11⅛	4⅛	2	4⅛	4¼	6	15¾	4	21¼	4	28¾	3	35¼	26
Means	.....	.....	9.2 E.	3.8	.9 E	3.7	5.6 W.	3.8	13.1	3.4	20.1	3.3	27.0	3.1	33	21.1

Time from 30° south to the equator, and crossings thence to 35° north—American route.

Name of vessel.	Days from 30° S. to equator.	Date of crossing the equator.	5° N.		10° N.		15° N.		20° N.		25° N.		30° N.		35° N.		Total days from equator to port.	Port arrived at.
			Days.	Lat.	Days.	Lat.	Days.	Lat.	Days.	Lat.	Days.	Lat.	Days.	Lat.	Days.	Lat.		
				°		°		°		°		°		°		°		
Ariel	18	Jan. 17	3	39	3½	45	3	51	2	57¼	3	64¾	4	69	8	75¼	30	New York.
John Bertram	18⅛	4	2	40⅛	3	46⅛	3	52	2	59⅛	3	66⅛	2	67	3	71	25	Boston.
Candace	26⅛	1	3	40	2¾	46	2	51	2	56	2	61⅛	4⅛	66	3¼	76½	29	New York.
Do.	19	1	2⅛	39⅛	4	44	2	49	2	54½	2⅛	59¾	4	66	4	69¼	26	Do.
Cœur de Lion	19⅛	1	3⅛	41	3	46¾	2¾	54	3	58	4⅛	66⅛	4¼	71	3¼	72¼	24	Do.
Daring	20⅛	25	3	36¾	1⅛	42	1¾	47¾	2¼	54¼	4	65	2¾	69	4	74	21	Do.
Dashaway	20⅛	1	3	36	2	41⅛	2¼	49	3	53	4	59	4	62	9⅛	65¾	40	Boston.
Eagle Wing	17⅛	27	4	40¾	2	46¾	2	42	2¼	59¾	2	65	2	69⅛	3	71¾	20	New York.
Electric	18	8	2⅛	40¼	2	45¾	2	51¾	2¾	57⅛	3	61	3	65¼	7⅛	70⅛	32	Do.
E. F. Willets	19	16	3	36	3	45	2⅛	50	4	55	6	63¾	2⅛	70⅛	1¾	74	28	Do.
E. Kemball	24	28	5⅛	38⅛	2⅛	42¾	1¾	47¼	2	51¼	2	54	2¼	58⅛	3	65⅛	24	Boston.
R. B. Forbes	19⅛	21	3	39¼	2¾	45	2	51⅛	2¼	58	2	62⅛	3	66⅛	3	71	25	New York.
Goddard	24⅛	21	4¾	38	2¼	44	2¾	49	3⅛	55	4¼	62⅛	2¼	67	4⅛	70¼	30	Boston.
Houqua	19	31	4	40¼	2	47	2⅛	55	2⅛	60¾	3	68¾	4	73	4	71	24	New York.
Holland	22⅛	26	6	37⅛	2⅛	43⅛	2¼	49	2⅛	56	3¼	62¾	2⅛	69	2	71	27	Boston.
John Gilpin	20	5	2	36¾	4⅛	42¼	2¾	51¾	2	59	3⅛	66¼	2¼	69	3	69	28	Do.
Houqua	19	13	4	39¼	2⅛	47	2⅛	54¾	2	60	3	68	4	73¾	4	74	24	New York.
Mary	21	1	3	41⅛	2	47⅛	2⅛	53	3	60	4	65	4	69	6	70¼	33	Boston.
Santiago	23⅛	26	2	39⅛	2⅛	46	2⅛	52⅛	2⅛	58¾	4⅛	66⅛	2⅛	70¾	4	73	21⅛	Do.
Maria	21	24	3¼	36	2	41⅛	2	49	3⅛	55	2	62	5	67	3	71	25	New York.
Do.	20	11	2⅛	37	2⅛	42	2⅛	48	2¼	53	3	59⅛	4	64⅛	3	70	26	Do.
Swordfish	17⅛	17	2	41⅛	3	44⅛	2⅛	49¾	2¾	54	3	60⅛	3	65¼	3	69	28	Do.
Surprise	20	29	2⅛	34⅛	3	42	2	49¼	3	55¾	4	62	4	67⅛	11	73	35	Do.
Union	22	22	2¾	40¾	2	47	2	52	3	57¾	3	63	4	68⅛	5	69⅛	28	Boston.
Pontiac	28	2	2¼	35	3¼	43	3⅛	52	3⅛	61	4	71	4	76	3	74	31	Do.
Starlight	19	20	2⅛	35	4	41	2¾	48¼	3	57	3	63	4⅛	70	4	74⅛	29	Do.
Star of the Union	20	17	3	41	2	48	2	53	2	59	2¼	66	4	72	2⅛	72	22	New York.
Scargo	26	2	4	36¼	3⅛	38	2	42	2⅛	47	4	54	7	60⅛	5	71	43	Boston.
Stag Hound	19	2	2	38	2	44	2	51¼	2	58	2¼	65⅛	2	70	3⅛	72⅛	19	New York.
Joseph Quincy	23	20	2¾	34	4¼	38¾	4	46	5	55	5⅛	63¼	5⅛	69	15⅛	73	58	Boston.
Means	20.8	.....	3.3	38.3	2.7	44.1	2.4	50.0	2.7	56.5	3.3	63.3	3.5	68.0	4.6	71.8	29.2	

Time from 30° south to the equator and crossings, &c.—Continued.

Name of vessel.	Days from 30° S. to equator.	Date of crossing equator.	5° N.		10° N.		15° N.		20° N.		25° N.		30° N.		35° N.		Total days from equator to port.	Port arrived at.
			Days.	Lat.	Days.	Lat.	Days.	Lat.	Days.	Lat.	Days.	Lat.	Days.	Lat.	Days.	Lat.		
				°		°		°		°		°		°		°		
Australia	26⅛	Feb. 1	4⅛	41⅛	3	48	2¼	53	2⅛	58¼	3⅛	65¼	7⅛	74¼	3¼	72¾	35	New York.
Boston Light	21	29	2⅛	42⅛	2	48⅛	2⅛	52¾	2⅛	57	2¾	61	4	65⅛	3¾	70¼	26	Do.
Boston	24	26	4	35	2¾	43	2¾	52	2	58	2	63	3	67	3	70	28⅛	Boston.
Daylight	25⅛	1	3	39⅛	2¾	46⅛	2	51⅛	3	56⅛	3⅛	62⅛	3	68⅛	3¼	73	28	Do.
Fleetwood	23	21	3⅛	36⅛	2	42⅛	2	47⅛	3	54⅛	4	61	4	67	3	69	29	Do.
John Haven	26	5	3⅛	41⅛	3	46¾	4	52⅛	3	57	3⅛	58⅛	5¼	62	4¼	65	40	Do.
Siam	22⅛	2	5	35⅛	3	42⅛	3	49	8	58¼	5	62¼	3¾	65	3	67	38	Do.
Susquehanna	24	9	2⅛	44	2¼	49	3	55	2	59	2	65	2	68⅛	2	70	20	New York.
Robin Hood	19	22	3	41	2	48	2	54	1⅛	58	2	62	4	65⅛	3	67	23	Do.
Orion	19	18	2⅛	35	2¾	44	3	52	2⅛	59¾	4	66¾	2⅛	71⅛	4⅛	73¾	25	Do.
Restitution	25	18	6	33⅛	2¼	38¾	3	46¾	4	54⅛	6	59¼	4⅛	58	4⅛	63¼	41	Boston.
Do	24	5	3	36¾	2¼	42	2⅛	48	3⅛	53	4	59⅛	5⅛	64	4⅛	67	33	Do.
Sweepstakes	17⅛	20	1⅛	34¾	2	41	2	47	2⅛	53	1¾	56¾	1⅛	58	5¾	67	23	New York.
Saxonville	25⅛	1	4	37	3	44	2⅛	50	3¾	57	4	62	4	64	4	67	33	Boston.
Means	23	.....	3.5	38	2.5	44.6	2.6	50.8	3.1	56.7	3.4	61.8	3.9	65.6	3.7	68.7	30.2	
Albany	26	Mar. 15	3	42	3⅛	48	4	55⅛	2	60¼	3	65	6	69⅛	3	74	27⅛	New York.
Boston	25	15	4⅛	31¼	3	41	2¾	48⅛	3	56	4¼	60¾	3	65¼	4	71	28	Do.
Bay State	24⅛	7	2⅛	40	2	45¾	2⅛	53	2⅛	51¾	5⅛	64	2	67	6	72	28⅛	Do.
Escort	21	5	3¼	39¾	2⅛	48⅛	2	55	2	61	1⅛	64⅛	2⅛	68⅛	2⅛	69¾	22	Do.
Endeavor	24	30	2⅛	43	2	49¾	2	54	2⅛	57¾	2⅛	63⅛	2⅛	67⅛	3¼	70¼	25	Do.
Gertrude	26⅛	3	3	40⅛	2	46	2	51¼	2¼	57¾	4	63	4¼	70	5	73	30	New Bedford.
Highflyer	19⅛	15	3	37⅛	2	43⅛	2	49	3¼	55	5	61¾	2	67¼	4	74	23	New York.
Golden State	20	11	2⅛	42⅛	1¾	48	2¼	51	2¼	60	2	64	3	67	2¼	68	21	Do.
Helena	22⅛	31	2¼	45	2	51	2	57	2	63	3	68	2⅛	73	2⅛	74	19	Do.
Audubon	26	2	3⅛	36	2⅛	40	2¼	44	2¼	49	6	58⅛	7⅛	69	3¼	72¾	31	Do.
Hippogrippe	20	10	2¾	35¾	2¾	44	4⅛	50¾	3	55¾	3	59⅛	5¼	62⅛	5⅛	69	32	Boston.
Judge Shaw	28⅛	17	3¼	37¾	3¾	44⅛	2⅛	49	3¼	54	3⅛	59	4⅛	64	3⅛	68	30	Do.
Herculean	21⅛	17	3⅛	40	2	45¾	2¼	50¼	2	55	6	63	3⅛	68	2	72	26	New York.
John Knox	21	18	3¼	38⅛	2⅛	44	2⅛	48	2¼	52⅛	2¼	56⅛	4⅛	59⅛	3¼	67	24	Do.
Jalawar	22	9	5	35	2	39¼	2¼	43	2	49¾	5	58	9	68	2	71¼	31	Do.
Panama	17	2	4	43	1¾	50	2	57	1¾	62	2	67	3	72	3⅛	72⅛	20	Do.
Panther	20⅛	24	3	40⅛	2	47	2¼	53	4	58⅛	2⅛	62	2⅛	68⅛	1¾	70	23	Boston.
Ino	22	7	3	41	2	48	2	53	1¾	59¾	3	64	3	67	5	73	32	New York.
Staffordshire	20⅛	30	2¾	36	2	41⅛	1⅛	44	2	49	2	54¼	2¼	59	3	63¾	21	Boston.
Messenger	23	28	2⅛	45	1⅛	49	2	55⅛	2¼	59	3¼	63	2¾	67¾	2	71	17	New York.
Thos. B. Wales	26	1	4	35	3	44	2	50	2⅛	55¼	4	59¾	2⅛	65¼	3¾	68	30	Boston.
Penguin	17	10	3	37⅛	1¾	43	2	47¾	2	54	2¼	59¼	4	65¾	5	69¼	26	New York.
Oregon	27	13	2⅛	47	2¼	51	2	55	3	58	3⅛	60	5	65¼	3	71⅛	26	Do.
Oneida	21⅛	31	2⅛	38⅛	2⅛	45	2	50⅛	3	58⅛	5¾	69	3⅛	71	3	72	27	Do.
Sea Serpent	17⅛	3	3	42	2	49⅛	1¾	55	2⅛	60⅛	4⅛	64¼	3	69¼	2	71¾	21	Do.
Sancho Panza	21	5	2	37	2¼	44	2⅛	50⅛	2	57¼	2¼	63	3	67⅛	2	70	23	Boston.
Surprise	15	8	2	40⅛	2	47⅛	2	54	1⅛	59	2	63	3¼	67¼	2⅛	70	19	New York.
Swordfish	19	31	3¼	43	2	49¼	3	54	4⅛	58	4	63⅛	4	67¼	5	72¼	29	Do.
White Swallow	18	1	3	43	2	48¼	2	50¾	4	53	4⅛	57	5	61	4⅛	61	29	Do.
G. H. Waterman	24⅛	6	3	42	2¼	48	2	53	2	57	3	63⅛	4⅛	69¾	4¼	69¾	30	Do.
Means	21.9	.....	3.0	39.8	2.3	46.1	2.3	51.4	2.5	56.6	3.5	62.4	3.4	67.0	3.4	70.4	25.7	
Albion	25	April 26	3	41¼	2⅛	49	2	54⅛	3⅛	59⅛	5	64	2¼	68⅛	1¼	72¼	22	New York.
John Bertram	17	23	2⅛	40⅛	2	47	2	51⅛	3⅛	55	4⅛	61	2⅛	67	2	70¼	22	Do.
Falcon	20⅛	1	3⅛	37¾	2	43	2⅛	47¾	4	54	3	59¾	4	65	3⅛	70⅛	25	Do.
Fleetwing	22⅛	25	3	39	1¾	45	2	50	3	55	6	59	3	67	1¾	71¾	23	Do.
Houqua	21⅛	5	4⅛	42	2	48¾	4	53	2	61	2	65	2	68⅛	2¼	71	21	Do.
Golden West	24	24	2⅛	35	2	41¼	3⅛	45⅛	4	51	3	56	3	64¼	3¼	70⅛	24	Do.
Siri	21⅛	14	3	41	2⅛	47⅛	2¼	53	2	58	5	65¾	3¼	70	3	72¼	28	Boston.
Messenger	19⅛	5	3	40⅛	2	47	2	53¼	3	59	3	65	3¼	70	2	73	21	Philadelphia.
Game Cock	24	19	2	41⅛	1⅛	47	2⅛	52	4	57	3	60	2⅛	64	2	68	21	Boston.
Hurricane	15⅛	25	3¼	33	1¾	40¾	2	48	3	56	3⅛	62⅛	3¼	68	3	72	22	New York.
Goddess	21	7	2	38¾	2	43¾	2	49	3	56	5	60	5⅛	66⅛	2	69	25	Boston.
Horsburgh	21⅛	27	4¼	39¾	2⅛	45	2¼	50	3¼	55¾	3¾	60	2⅛	67¾	4	72	26	New York.
Syren	20	2	2	41¾	1¾	45⅛	3	50⅛	4	54	6⅛	59¾	5	65	4⅛	68	31	Boston.
Means	21.0	.....	3.0	39.4	2.0	45.4	2.5	50.6	3.2	56.2	4.1	61.4	3.2	67.0	2.7	70.8	24.0	
Wild Duck	22⅛	May 27	5⅛	38⅛	2	45	2¼	50	1⅛	56	2	61¼	3	66	2¼	69	22	New York.
Fly Away	20⅛	18	3	37	1¾	42⅛	2	49	3¼	55	3⅛	62⅛	3⅛	69	2⅛	72¾	21⅛	Do.
Oneida	21⅛	4	8	35⅛	3	42	3	48¾	4	54¾	4	60	5	64¾	3⅛	69	33	Do.
Judge Shaw	23	1	2⅛	36	2	40⅛	2	44¾	2⅛	49⅛	3	56	2⅛	61⅛	2⅛	66	23	Boston.
Matanzas	27⅛	18	4	37¾	3⅛	43	2¼	48	3⅛	54	2⅛	59¾	3⅛	64⅛	2⅛	68	26⅛	Do.
Whistler	23⅛	25	5	38¾	2¾	45¼	2⅛	52¼	2	58¼	2¾	65¼	3	70	2	72	22	New York.
John Wade	23⅛	25	4	40	2⅛	48⅛	2⅛	55¾	3	65	2	68¾	2¼	71¾	1¾	73	21	Do.
Wizard	20⅛	29	4	43	1¾	49¾	2	56¼	2	62	1⅛	66	2¾	69	2¼	72⅛	20	Do.
Siam	24⅛	30	4¾	40	2	44⅛	2⅛	50	2	55	2⅛	59	3	60⅛	2⅛	62⅛	24	Boston.
Grace Darling	21	27	3	40	2	44⅛	2	50⅛	2⅛	55¼	3	61¾	4	68	3⅛	70¾	24	Do.
Herbert	24⅛	11	4	33	3	39¾	3	47	5	53¾	4	59	5¾	66	2	68⅛	31	Do.
Helena	22	23	4⅛	44¾	2¼	51	2	58	2	63	2⅛	69	3	73⅛	2	73	22	New York.
Romance of the Sea	23⅛	7	3	40¼	2	47¾	2	53	2⅛	59	2	63⅛	2	67¾	4⅛	71	20	Do.
R. C. Wentworth	24	27	3⅛	36⅛	4	43	3	48	3	53	3	58	2	62	3	66	25	Boston.
Siam	20⅛	26	2¼	37	2⅛	42¼	2	47	2	52⅛	2	57¾	3⅛	65	2	69	20	Do.
Means	22.8	.....	4.1	38.5	2.5	44.6	2.3	50.5	2.8	56.4	2.7	61.8	3.2	66.6	2.6	69.5	23.7	

Time from 30° south to the equator and crossings, &c.—Continued.

Name of vessel.	Days from 30° S. to equator.	Date of crossing equator.	5° N.		10° N.		15° N.		20° N.		25° N.		30° N.		35° N.		Total days from equator to port.	Port arrived at.
			Days.	Lat.	Days.	Lat.	Days.	Lat.	Days.	Lat.	Days.	Lat.	Days.	Lat.	Days.	Lat.		
				°		°		°		°		°		°		°		
Anna Bucknam	21½	June 11	2½	37	2½	44¼	2½	52	2	57	2	63¼	5½	67½	4	69	25	New York.
Do	23	4	2	36¾	7	37¼	2½	43½	2½	50½	2½	55¼	3	58½	4	62	35½	Boston.
Bombay	19½	14	3½	35¼	6¾	41	2	47½	3	52½	3	56¾	2	61	4½	65	33½	Do.
Cohota	21	26	2½	28½	4	31½	2½	35¾	2	41	2½	47	4½	53½	5	60½	29	Do.
Cyclone	19½	21	2	35¾	2½	39½	1¾	45¾	2	51¼	3¼	58¼	3¾	64½	3	68	22	Do.
Derby	21½	14	3½	39	3	45	2	50½	2	56	3	61½	3	62	2½	65	23	Do.
Falcon	18	14	3	36	3	42	2	47½	2¼	52¾	3¾	59	4	63	3¼	71	25	New York.
Flying Dragon	21	8	3	38½	3	45½	2½	53	2½	61¾	4½	68	2	70¾	2	71½	20	Boston.
Hamlet	22½	16	3	40	4	45½	2½	51	2	55	4½	60	5	66	3	69	28	Do.
Do	17	18	3	33¼	4	36	2	42	2	48	3	54	3	57	2¼	69	23	New York.
Wild Pigeon	17½	24	3	39½	2	44	2	49	2	55	4	41½	5½	66	3½	70	25	Do.
Witch of the Wave	18½	10	2¾	37½	2	43	1¾	48	2	53	1½	57	5	60½	3½	63	22	Boston.
Magnolia	25	17	3	36¼	3¾	39	2½	45	2	49¼	2½	54	4	57¾	2¼	64	24	Do.
Trimduntain	24	16	5	38¾	5	44½	2½	52	4½	59	3	66	2¼	69¾	3	71	34	Do.
Northern Crown	21	15	4	41¾	3½	48¼	1¾	53¼	1¾	58	6	62	2	66¾	3	70¾	26	New York.
Raven	19	18	2	39	2½	47	2	53	2	60	3½	66¾	3¾	69	3	72	23	Do.
Western Continent	20	12	2½	33	3½	38½	2	45	2	50	5	54½	3	58	3	64	24	Boston.
Siam	22½	21	2½	40½	3¼	48	2	53	2½	59¼	3	64¾	4	68	3	70	23	New York.
Sam'l Russell	19½	30	2½	36½	2½	41	3	50¾	3½	59	4	66½	3	71½	2	74	22	Do.
Neobi	21	8	5	35½	3½	44	2½	50½	2¾	57	3	62	5	67¼	4½	72½	31	Do.
Restitution	23	5	4	33½	2½	39	3	45	3½	50	3¼	58	4½	64	4	70	32	Boston.
Witch of the Wave	17½	8	2	38	2	43	1½	48½	1¾	53¼	2	56	4	59	6	63¾	23	Do.
Winged Arrow	19	24	3¾	39½	3	46	2	49	1½	55	2½	58¼	4	62	5¼	67	28	Do.
Sweepstakes	15½	21	3½	36¾	4	45	2	53	1½	57	2	61	8	68	3	72	29	New York.
Sea Eagle	25	21	2½	38	2	41	2¼	45	2	49	2	52¼	3¼	56	4	61½	23	Boston.
N. B. Palmer	21	29	1½	42	4	47	2	56	2	62¾	2	66	3¾	68	3	71	22	New York.
Means	20.5	...	3.0	37.1	3.4	42.5	2.2	48.6	2.3	54.3	3.1	58.8	3.8	63.7	3.4	67.9	26.0	
Albany	22	July 17	3	40¾	5½	43¾	3½	49¾	2½	56	3	64½	3½	70¼	4½	73½	30	New York.
Bald Eagle	18	11	1½	35¼	4½	37	3	43¼	2	50	1½	56	2	61	2	65½	21	Boston.
Chamberlain	21	5	2¼	39	7	40¼	3	47½	2	53¼	2	58	4	65	4	68½	30	Philadelphia.
Celestial	20	29	2	35¾	4	40	5	50½	3½	61	2	64	2¼	67	3	70¼	29	New York.
Cyclone	21½	15	2¾	35	3	36½	3½	44¼	2½	49½	2	58	5	65¼	4½	68½	29	Boston.
Don Quixote	17	13	3	40¾	5	45¾	2¾	52¾	1¾	58	1¼	62	2	65	2¾	70	22	New York.
Lady Franklin	20	14	3½	49½	4¼	43	2¼	48½	2	55	2½	60	4½	65	3½	67½	28	Boston.
Flying Fish	18	15	3¼	38½	3	41	5½	49½	3	55	5	59	3¼	62½	2	64	30	Do.
Fleetwood	22	29	2	34¾	4	36½	2¾	44	2	50	3½	55¼	4½	58¾	4½	64	29	Do.
Flying Dragon	21	30	2¼	40	4	42¾	3	50	2¼	56¼	4½	62½	3	65	3	67	28	Do.
Golden City	19	30	2	38¼	3½	38	6½	47½	3	55	2½	61¼	2	65½	3½	70	26	New York.
Do	18½	29	2	39¼	3	41	2½	45½	2½	53	2¾	61	2¾	66	3	70	21	Do
Granada	28	17	2¾	42	5¼	43½	3½	48	2¼	53	4¼	57	3¾	62	6¼	66	32	Boston.
George Lee	21½	2	3	33¾	4	34¼	4½	41½	2¼	47	2	52¾	4	58¾	3	63¼	32	Do.
Horatio	19½	24	2½	39½	8	39¾	4¼	46¼	2¾	53¾	2½	59¼	3	65	3	71	32	New York.
Dolphin	23	16	3	37¾	4	40	4¾	44¾	2	51	2¼	56	4¼	59¼	5	64¼	31	Boston.
Fenelon	22½	28	2¼	33	4	37	9	47	3½	55	3	62	4	67	7	71¾	38	New York.
West Wind	18½	21	2¾	37	5	43	3	49	1½	54¼	5	59¾	3	62	3	63	30	Boston.
Tsar	23½	19	3	38½	4½	40¼	2½	45¾	2¼	51	4	56¼	12	62	6	69	38	New York.
Winged Arrow	21	15	2½	44	2¼	48½	2	53	2	56	1½	59	1½	62½	3½	66	21	Boston.
Reindeer	20½	26	2	42	3	43¾	3½	49	2	53	2½	58	3½	61¼	4¼	64½	26	Do.
Wild Pigeon	22	7	3	41	3	45¾	2	52¾	2	58	2	62¼	3	68¾	2½	73¾	20	New York.
N. B. Palmer	20	4	2½	35	5	39¾	2¾	50	2	57¾	2	64	2	68	2¾	71	22	Boston.
Ellen Noyse	20½	7	3¾	36¾	3	40	4	45	3½	52	5	61¾	6	66	3	67½	38	Do.
Restitution	17½	3	2½	31½	2½	32½	4½	40	4¼	45	2¼	51	3	56	5	64	30	Do.
Ringleader	17½	28	2	40¼	4	41¾	2¾	47	2¼	53	2	59	3	64¾	2½	67½	24	Do.
Winged Arrow	21	22	2½	41¾	3	45¾	1½	50	2	54¾	3	58	3	62	2¼	65	23	Do.
Do	22	10	2¼	42	5	47	1¾	50	2	54	1¾	58½	4	60¾	3½	64	26	Do.
Sabine	24½	29	3	37¼	7	40½	4	45¼	2¼	52	3	58	3	62	4	66¾	34	Do.
Joseph Bradlee	22½	2	3	37	5	39	3½	44	2½	49	2½	54	5	60	6½	62½	35	New York.
Means	20.7	...	2.6	38.6	4.3	40.9	3.6	47.4	2.4	53.4	2.8	58.9	3.3	66.7	3.4	67.3	28.5	
Arabella	29	Aug. 28	4½	41¾	3	43¼	5	47¾	4	52¾	3½	59	4	65	3½	68¾	37	Boston.
Corinne	22	23	3	37	3	38	7	48½	2½	51	4½	58¾	6	66¼	8½	72¾	44	Do.
Cohota	16½	22	2½	29	3	32¼	3½	36	3½	42	3½	47¼	6	53¾	4	61	32	Do.
Wild Duck	23	19	2	40	6½	40½	6½	50½	3	54¼	3½	59½	7¼	65¼	4	71	37	New York.
Dragon	21½	2	3½	37¾	6	40½	3½	50	3	57	3	62	4	65	3	69	33	Salem.
Medford	25½	21	2½	30¼	4½	33½	7½	41	3½	47	3	53	6	59¼	5	65¾	43	Boston.
Skylark	17½	23	2½	41	4¼	45	2¾	53	3½	58¼	3	65½	2½	71	3½	73	25	New York.
Northern Light	18½	21	2	39	3	42	2	48¼	3	54	5	62	5	66½	3½	68	25	Boston.
A. Heard	21½	29	3	38	5	42¾	3½	49½	3	55¼	10½	60¼	5	67¼	3¾	71½	40	New York.
Malay	17½	24	2½	37	4	40	2½	46	3¾	52	3	57¾	6¾	65	3	69	30	Do.
Eureka	22	3	2½	42½	3	46	2	53	2	57½	3	63	3	67	3½	71½	22	Do.
Daniel Webster	24	16	3½	40¼	3½	44¾	7	50¼	3½	55¾	5	61½	3	64½	4¼	67	36	Boston.
Wm. Sturgis	24½	4	3¼	36	7	40	5½	49	2¾	54	3½	60	6	65¼	4½	71½	37	New York.
T. W. Sears	22	2	2	42¼	4	44	6	51	3	60	2½	63	3½	68	4	72	30	Do.
Raduga	17	22	3	30	2½	32¼	3½	40	2¼	46	3½	51¼	5	57¾	5	65¼	30	Boston.
Monsoon	22	29	3½	39	2½	41	3½	47½	2½	54½	2	60	5	65	3	69	25	New Bedford.
Means	21.5	...	2.9	37.9	4.0	40.4	4.5	47.6	3.0	53.2	3.9	59.0	4.9	64.5	4.1	69.1	32.9	

Time from 30° south to the equator and crossings, &c.—Continued.

Name of vessel.	Days from 30° S. to equator.	Date of crossing the equator.	5° N.		10° N.		15° N.		20° N.		25° N.		30° N.		35° N.		Total days from equator to port.	Port arrived at.
			Days.	Lat.	Days.	Lat.	Days.	Lat.	Days.	Lat.	Days.	Lat.	Days.	Lat.	Days.	Lat.		
				°		°		°		°		°		°		°		
Arrora	19¾	Sept. 21	2¾	41	2½	43¾	2	49	3	55	3⅛	61	3	66	4⅛	72	24	New York.
Anna Maria	25¼	4	4	36¼	4	38¾	5½	47	4	53	4½	59	7½	68	3½	72½	46	Do.
Borneo	24⅛	1	3	39¼	4	43¼	4½	49	3⅛	54¾	5	60	5	66	7	71	38	Do.
Black Prince	24½	24	2¼	37½	3	41	2¾	48	3	55	6	60¼	5	67	2½	69¼	29	Do.
Southern Cross	18	16	2	35½	4½	37½	3⅛	42	2	48½	3¼	53	4½	62	3	67¼	26	Boston.
Comet	18	23	2¾	37	4	40½	3	48	4¼	55½	3¾	60¼	3	62½	4	72	30	New York.
M. Howes	20	9	3	43	3	47	4	53⅛	5	59¾	4⅛	65	3½	70	5⅛	74	33	Do.
Lowell	26½	1	2⅛	42½	4	44	3	50¼	3	56¼	7	58¼	4	61	5½	66¾	40	Boston.
Fire Fly	22½	23	3	37	2	38¾	4½	44	4	50	3	54	3⅛	59¼	13	66	40	Do.
Tsar	26	26	2¾	33	5	35½	5	39½	5	50	5	61¾	4½	69¼	3	71	38	New York.
Santiago	20	21	4	40½	3½	44	2¼	50½	2	56	2	61	4	69	3⅛	74	26	Do.
Malay	18	2	3	38¼	3¾	41	4	47	2¼	53⅛	5	58½	4¾	66	3⅛	69½	32	Boston.
Lowell	27	5	4½	39½	7⅛	40¼	6¼	51	3	59	3⅛	64¾	6	66¼	5	68	40	Do.
Mamaluke	21	27	2½	43½	3⅛	46¼	3	52	3	57	3	60½	5	64¼	5	70¾	29½	New York.
Quickstep	20½	30	1½	39	5½	42½	3¼	47¾	1¾	52	4	55½	4¾	61	5	66½	30	Boston.
Malay	19	25	3	38½	3	41	3¼	44⅛	4¼	52	3	57	4	64	6	71	33	Do.
Lowell	28	23	3	42	3¼	44	3½	52½	4⅛	61	6	64¼	4	66	3	67⅛	32	Do.
Siam	25½	11	3¼	32¾	6	36¾	6½	40½	3	46¼	3½	51¼	2¾	56¾	4	62¼	42	Do.
Means	22.4	.....	2.9	38.7	4.0	41.4	3.9	47.6	3.4	54.1	4.2	59.2	4.4	64.6	4.8	69.5	33.8	
Art Union	25¼	Oct. 20	4¼	39⅛	4	42¾	3	48¾	2⅛	55	2	60	2¼	66	2	69	27	Boston.
Boston	23⅛	23	4	29¼	7⅛	30⅛	4	35⅛	6	51½	4⅛	61¼	4	67¾	3	69¼	43	Do.
Hussar	19⅛	28	3½	37⅛	2¼	41¼	2½	48½	4	58	3	64¼	2½	70	3	74	22	New York.
John Gilpin	17½	8	3	41½	5	41	2⅛	45	1¾	54	4	59	4	65	4¾	69	29	Boston.
ohn Gardner	18⅛	10	3¼	39¼	4¼	40⅛	3½	49½	4⅛	54½	2½	60½	5½	66	5⅛	70	34	Do.
Northern Light	20⅛	18	3	37¼	3	41	2	47	3¾	55	3	62	2¼	67½	2	69¼	23	Do.
Sabine	24½	15	3½	37	5½	38	2	42¾	3	46¾	3	52¼	3	57½	6½	65	30	Do.
Storm	15½	1	3½	36	3½	39½	4⅛	45	2½	49¾	4	55	3½	63¼	4¼	69	30	New York.
Hindostan	26	31	3¾	43	5	47½	3	54	2⅛	56	4	61	4½	66½	3	70½	31	Boston.
Maria	18	8	3	36	3	39¾	2½	49	2⅛	54½	2¼	59¾	5	64	6½	70½	32	New York.
Maria	20	31	2½	34	2	40	2½	47¼	2½	55	2⅛	60	3	65	3½	72	23	Do.
Wizard	20	4	2	42½	3¼	47	3¾	54	2	59	3½	63¾	5	68¼	3½	72¼	27	Do.
Ocean Pearl	25½	24	2¼	43	2	45	2¼	51	3	56	2⅛	62	5	68	2	72	23	Do.
Means	21.1	.....	3.2	38.1	3.9	41.1	2.9	47.5	3.1	54.2	3.1	60.1	3.8	65.7	3.8	70.1	28.8	
Anglo Saxon	18	Nov. 14	4	39⅛	2¾	46	5	54	2	60	3¼	64¾	3	68¼	6	74	28	New York.
Art Union	19½	16	3⅛	40	2⅛	42	6	50	2⅛	56	5⅛	62¾	5	67¼	2½	70⅛	34	Boston.
John Bell	16⅛	11	2	39	2⅛	44½	3¼	51¼	2¼	59¼	2¼	65¾	3⅛	71	2	73⅛	22	New York.
Dashing Wave	16	7	2¾	37	3¼	41⅛	3⅛	49⅛	3	57¼	5¾	62⅛	6	66¼	7	70¼	40	Boston.
Greenfield	19	26	3	32¾	3½	36	3½	43½	3	53	4⅛	60⅛	3⅛	67	5⅛	73⅛	36	New York.
Falcon	26⅛	11	4¼	39⅛	3	45	4	52	8	62	4	66¾	4⅛	69	5⅛	74⅛	44	Boston.
Horatio	18½	12	2	38⅛	2	42¼	2	47¼	2⅛	54⅛	4	60½	4	66¾	4	67⅛	40	New York.
Parmelia	19	16	2	32⅛	4	37¼	3	44	6	51¾	7½	67	3	72⅛	3	74	32	Do.
Saml. Russell	18	19	3¼	36½	3	38⅛	4⅛	43¾	5	57⅛	3½	68¾	2⅛	74	3	75⅛	29	Do.
Victory	17⅛	13	4	34¾	4	41¾	5	47	4	56	6	64	4⅛	69½	2⅛	70¾	38	Boston.
Sea Serpent	18	24	2	35	3½	39	2¼	45	2½	53	3	60¾	2	66¾	7	75	25	New York.
White Swallow	18½	21	2	38	2	43	3⅛	51	4⅛	57⅛	6	66	4	68	3½	73	28	Do.
Morning Light	19	8	3	46¾	8	52	3½	57	3	62	3	68⅛	3⅛	71	3	74	31	Philadelphia.
Isaac Cornell	22½	23	2¼	39	4⅛	45	2¼	52¼	8½	68	4⅛	70	2¾	71½	5⅛	71¾	39	Boston.
Jennie W. Paine	20	10	2¼	40¾	4	42¾	3¾	51	3	58	6	62¼	6	65½	5¼	74¾	34½	New York.
Syren	19	9	2¾	38	2	42	2	48	2¼	53⅛	4	59	4	66½	4	68	33	Boston.
Mandarin	18½	9	2¾	42	2⅛	47¼	3¼	54	4	62	3⅛	68	4⅛	72⅛	2⅛	74¼	26	New York.
Saml. Russell	17	10	2	37¼	2	44	3	49	3	60	5	69	3	70	3	71	27	Do.
Mary Goodall	22½	20	2	37¾	2⅛	43	2	48¾	4	54¾	9	64¾	2¾	66	4⅛	70¼	29	Boston.
Means	19.1	.....	2.7	38.1	3.2	42.8	3.4	49.4	3.8	57.7	4.7	64.8	3.8	68.9	4.2	72.4	32.4	
Ariel	27	Dec. 19	2½	38½	2⅛	45	2¼	50	3⅛	56¼	2¼	63	3½	69¾	3	73¾	23	New York.
Coringa	19⅛	8	3	38	2⅛	43⅛	3	50	4	56¼	3	62⅛	4½	67	3½	68¼	38	Boston.
Challenge	22	26	2	42	2	48¼	1⅛	53	2	61	2	67	2½	70¼	5	74¾	20	New York.
Corrinne	22½	15	3	39	2	43	5¼	50	2½	54⅛	3	61¼	13	64¼	4	70¼	50	Boston.
Ganges	23	11	2	42	2	46¾	1¾	52	2	57¼	3½	64	3½	63¾	4¼	64¾	41	New York.
Hippogriffe	21	7	2	37	4	41	6½	48⅛	3¼	56	3½	63¾	3⅛	67¾	4¼	73⅛	30	Philadelphia.
Haidee	15½	29	3	33	2⅛	39	1¾	44	2⅛	50¾	3¼	57	3¼	64	3¾	68¾	29	New York.
Fair Wind	18	29	3	40	2	46	2	51	3	56	4	59½	3¼	65	4⅛	70	33	Boston.
Game Cock	17⅛	29	2⅛	41	2	46¼	3⅛	52⅛	2	59	2½	64¾	3½	69	5	74	22	New York.
Octavius	25	15	3	36	3½	42	5	49¼	4	57¾	11	68	4	70¼	9	71⅛	51	Boston.
Shooting Star	20	9	2⅛	40½	2¼	44¼	6	52	2¼	58	2⅛	65	2⅛	70	3	71	24	New York.
Western Continent	20½	11	2⅛	33¼	2¼	39¾	3	46¼	3	53	3	61	3¼	68⅛	3	72¼	32	Do.
S. W. Sears	26	20	3	39⅛	3⅛	48⅛	2⅛	56	6½	66¾	3½	72¼	3⅛	74	3½	74¼	31	Do.
Messenger	16½	30	2⅛	38	2	43	3¾	50	2¼	61	3	68¾	2½	72	3	74¾	23	Do.
Samuel Russell	20½	7	3	35½	2⅛	41	5	48	3	55½	3⅛	62	2⅛	66¾	3	71¾	26	Do.
Oriental	26	8	2¾	36	7	39¾	3¼	45¾	5⅛	53	3	59	7½	69¾	5	73	48	Boston.
Falcon	18⅛	18	3	38¼	2⅛	45⅛	2	52⅛	2	58	2	63	2	67⅛	3	69	21	Do.
Orissa	23⅛	18	3½	42	3¼	47¾	4	55	2½	60⅛	3	65½	5	66½	9	67⅛	34	Do.
Means	21.3	.....	2.7	38.3	2.8	43.9	3.4	50.3	3.1	57.3	3.4	63.7	3.4	68.1	4.4	71.3	32	

From these tables we may deduce the following comparative statement of the average monthly runs of American and Dutch vessels through the trade winds of the Atlantic.

Months.	FROM 30° S. TO THE LINE.						FROM THE LINE TO 30° N. AND TO PORT.					
	AMERICAN.			DUTCH.			AMERICAN.			DUTCH.		
	From 30° S.	Days.	To Line.	From 30° S.	Days.	To Line.	Days.	From 30° N.	To port.	Days.	From 30° N.	To port.
	°		°	°		°		°	Days.		°	Days.
January	10 E.	21.8	32.8W.	11¼E.	20.7	21W.	17.9	68 W.	29.2	20.6	37½	41.4
February	8.8	22.1	33.2	11¼	20.5	20½	19	65.6	30.2	18.5	38	42.6
March	9.8	21.4	33.5	10¾	20	20¾	17	67	25.7	18.4	38¾	41
April	10.0	22.4	31.9	11½	20.1	20½	18	67	24	20.1	38	41.4
May	10.6	22.2	34.3	11½	20.9	21¾	17.6	66.6	23.7	20.9	38½	41.6
June	11.1	20.7	34.2	11½	19.8	21¼	17.8	63.7	26	20.5	38½	41.8
July	10.7	21.4	34	11½	20.4	21½	19	66.7	28.5	19.1	38	41.7
August	10.8	22.4	32.8	11¼	20.1	20¾	23.2	64.5	32.9	18.6	35¾	41.2
September	10.2	20.8	34.2	11½	19.1	20¾	22.8	64.6	33.8	19.5	34¾	42
October	10.8	22.6	34.9	11¼	18.1	20½	20	65.7	28.8	20.4	35¼	41
November	9.3	19.6	33.2	11½	19.7	20½	21.6	68.9	32.4	19.8	34¼	38.6
December	9.2	21.1	33	11	19.4	20½	18.8	68.1	32	19.5	35¼	35.2
Means	10.1	21.5	33.5	11.3	20	21.4	19.3	66.4	28.9	19.7	36.9	40.8

	Days.		Miles.	Per day.
American: From 30° S. and 10°.1 E. to Line in 33°.5	21 5	Distance	360	= 142
Dutch: From 30° S. and 11°.3 E. to Line in 21°.9	20	Distance	2,600	= 130
American: From 0° and 33°.5 to 30° N. and 66°.4 W	19.3	Distance	2,620	= 137
Dutch: From 0° and 21°.4 to 30° N. and 36°.9 W	19.7	Distance	2,030	= 103
American: From 30° N. and 66°.4 W. to New York	9.5	Distance	730	= 77
Dutch: From 30° N. and 36°.9 W. to Lizard	21.1	Distance	1,830	= 87

Referring to this table it appears that the average difference of speed through the SE. trades of the Atlantic, instead of being about three-quarters of a knot an hour in favor of the American fleet, as according to the estimate it should be, is only one-half a knot. It was three-quarters of a knot and more over the same route and through the same winds in the Indian ocean; but in the South Atlantic the two fleets have separated and the Dutch have the wind a little more quartering.

From this circumstance we are entitled to infer that in that portion of the South Atlantic which lies between the forks of the road made by the homeward bound Dutch and American East Indiamen there is no appreciable difference in the average strength of the SE. trades.

However this may be as to the *average* strength of the whole belt, it appears that the average strength of the winds between 15° and 10° S. is at a maximum along the American and at a minimum along the European track, for the Dutch crossings may be taken fairly to represent the homeward track of all European Indiamen. Between 10° and 15° S. the American average speed is 149, the Dutch 122 miles a day. The mean of a still greater number will probably reduce this difference by increasing the Dutch average somewhat, which, between these parallels, is only 122 miles, if it do not decrease the American average, which is 149 miles a day. It would, therefore, perhaps be more correct to say that the band of freshest winds in the South Atlantic lies between the parallels of 5° and 15° for the American, and between 10° and the equator for the European route.

Average crossings, Dutch and American, from 30° S. to the Line.

Month.		30° S.		25° S.		20° S.		15° S.		10° S.		5° S.		Line.		No. of vessels	
		American.	Dutch.	American.	Dutch.	American.	Dutch.	American.	Dutch.	American.	Dutch.	American.	Dutch.	American.	Dutch.	American.	Dutch.
January	Longitude, (degrees)	E. 10	E. 11¼	E. 2	E. 5	W. 4⅛	W. 1	W. 11¼	W. 6¾	W. 19⅛	W. 12⅛	W. 27	W. 17¼	W. 33	W. 21	27	64
	Days	.....	.....	3.4	3.2	3.3	3.4	3.6	3.5	4.1	3.8	3.7	3.4	3.8	3.4	.....	.....
	Runs, (miles)	.....	.....	159	140	146	132	139	126	139	119	144	121	118	127	.....	.....
February	Longitude, (degrees)	8¾	11¼	1	5	5⅛	1¼	12	6⅛	19⅛	12⅛	27	16¾	33¼	20⅛	25	61
	Days	.....	.....	3.5	3.2	4.2	3.4	3.7	3.3	3.9	3.9	3.4	3.3	3.4	3.4	.....	.....
	Runs, (miles)	.....	.....	145	140	108	136	133	128	147	177	160	120	120	126	.....	.....
March	Longitude, (degrees)	9¾	10¾	2	4¾	6	1	12¾	6⅛	20⅛	12¼	28	17¼	33⅛	20¾	22	49
	Days	.....	.....	3.5	3.2	3.3	3.2	3.4	3.1	3.6	3.8	3.6	3.1	4.1	3.6	.....	.....
	Runs, (miles)	.....	.....	146	138	158	137	146	141	149	119	149	139	110	117	.....	.....
April	Longitude, (degrees)	10	11⅛	3¼	5¼	4	⅛	11⅛	6⅛	19⅛	12¼	26¼	17	32	20⅛	18	48
	Days	.....	.....	3.6	3.6	3.7	3.7	3.9	3.4	3.5	3.5	3.4	3	4.4	2.9	.....	
	Runs, (miles)	.....	.....	136	126	133	118	131	134	160	130	134	135	102	145	.....	.....
May	Longitude, (degrees)	10⅛	11⅛	4¾	5	2⅛	1	10⅛	6⅛	20	12¼	28⅛	17⅛	34¼	21¾	19	37
	Days	.....	.....	3.7	3.8	3.6	3.9	4.2	3.5	4	3.8	3.6	3.1	3.1	2.9	.....	.....
	Runs, (miles)	.....	.....	116	121	136	115	137	125	156	119	160	142	148	116	.....	.....
June	Longitude, (degrees)	11	11⅛	4¾	5¾	2¾	¼	10	6⅛	19¼	12¼	27	17¼	34¼	21⅛	29	40
	Days	.....	.....	3.5	3.4	3.7	3.5	3.6	3.7	3.7	3.5	3.2	3	2.9	2.7	.....	.....
	Runs, (miles)	.....	.....	129	126	137	127	142	114	168	131	156	146	177	165	.....	.....
July	Longitude, (degrees)	10¾	11⅛	4	6	3	⅛	10	6⅛	19	12¼	27⅛	17	34	21⅛	32	34
	Days	.....	.....	3.6	3.6	3.8	3.5	3.4	3.6	4	3.6	3.7	3.1	3	3	.....	.....
	Runs, (miles)	.....	.....	128	115	129	126	149	133	151	127	156	130	161	143	.....	.....
August	Longitude, (degrees)	10¾	11¼	3¼	6	3¼	0	11⅛	6⅛	19	12⅛	26⅛	17	32¾	20¾	19	40
	Days	.....	.....	3.2	3.8	4	3.7	4	3.6	3.7	3.4	4.2	2.8	3.2	2.8	.....	.....
	Runs, (miles)	.....	.....	154	108	118	119	140	133	146	135	126	144	167	150	.....	.....
September	Longitude, (degrees)	10¼	11⅛	3¾	5⅛	3¼	¾	11¾	6¾	20⅛	12⅛	27¾	17	34¼	20¾	20	45
	Days	.....	.....	3.7	3.2	3.6	3.3	3.8	3.3	3.5	3.3	3.2	3.1	3.9	2.9	.....	.....
	Runs, (miles)	.....	.....	121	148	135	137	150	138	168	131	164	134	164	148	.....	.....
October	Longitude, (degrees)	10¾	11¼	4¾	5¼	2¼	¾	9	6¾	19¼	12⅛	27	17	35	20⅛	18	50
	Days	.....	.....	3.6	2.9	3.7	3.1	3.4	3.3	4.7	3.4	3.9	2.8	3.5	2.6	.....	.....
	Runs, (miles)	.....	.....	121	129	128	127	144	138	128	129	132	143	157	161	.....	.....
November	Longitude, (degrees)	9¼	11⅛	2¼	5	4⅛	1¼	12	6⅛	20⅛	12⅛	27⅛	17	33¼	20⅛	19	40
	Days	.....	.....	3	3.4	3.2	3.5	3.4	3.3	3.9	3.7	3.1	3	2.9	2.8	.....	.....
	Runs, (miles)	.....	.....	155	135	155	131	157	128	151	124	133	134	157	150	.....	.....
December	Longitude, (degrees)	9¼	11	9	4¾	5⅛	1	13	6⅛	20	12	27	17	33	20⅛	29	30
	Days	.....	.....	3.8	3.3	3.7	3.3	3.8	3.2	3.4	3.6	3.3	3.3	3.1	3.8	.....	.....
	Runs, (miles)	.....	.....	140	136	131	132	139	136	150	120	154	132	149	111	.....	.....
Average time during the year				3.5	3.4	3.7	3.5	3.7	3.4	3.8	3.6	3.5	3.1	3.4	3.1	.....	.....
Average daily run during the year				137	130	132	128	141	130	149	122	148	134	140	139	.....	.....

This table, (p. 851,) compiled by Lieutenant McCauley, is very instructive, and the navigator who studies it day after day as he is running down these "crossings" will not only find in it useful information, but some good and practical suggestions also; and it will prove the more suggestive and beneficial as he compares it with the following, prepared by Lieutenant May for the North Atlantic.

Average crossings, times, and runs from the Line to 35° N.

Month.		Line.		5° N.		10° N.		15° N.		20° N.		25° N.		30° N.		35° N.		No. of runs.	
		American.	Dutch.	American.	Dutch.	American.	Dutch.	American.	Dutch.	American.	Dutch.	American.	Dutch.	American.	Dutch.	American.	Dutch.	American.	Dutch.
January	Long. W., (deg.).	32¾	21	38¼	23¾	44	28¾	50	32½	56½	35	63¼	38½	68	37½	71¾	35	30	50
	Days	.....	.....	3.3	5.5	2.7	3.7	2.4	2.6	2.7	2.7	3.3	3.1	3.5	3.0	4.6	3.7	.....	....
	Daily runs, (miles)	.....	.....	135	62	167	115	150	143	179	123	147	100	112	102	78	87	.....	....
February....	Long. W., (deg.).	33¼	21¼	38	24½	44½	30	50¾	33¾	56¾	36½	61¾	37¾	65½	38	68¾	35¾	14	44
	Days	.....	.....	3.5	6.1	2.5	4.3	2.6	2.6	3.1	2.5	3.4	2.8	3.9	3.0	3.7	3.3	.....	....
	Daily runs, (miles)	.....	.....	120	59	197	104	181	143	146	137	122	110	95	100	86	97	.....	....
March.....	Long. W., (deg.).	33½	21	39¾	24¾	46	31	51½	34¾	56.6	37¼	62½	38¾	67	38¾	70½	37	30	53
	Days	.....	.....	3.0	6.3	2.3	4.2	2.3	2.5	2.5	2.6	3.5	3.0	3.4	3.4	3.4	3.1	.....	....
	Daily runs, (miles)	.....	.....	163	60	203	114	192	148	170	129	126	103	114	86	101	100	.....	....
April	Long. W., (deg.).	32	20¾	39½	23½	45½	30	50½	34	56¼	36½	61½	38	67	38	70¾	36½	13	44
	Days	.....	.....	3.0	5.5	2.0	4.4	2.5	2.6	3.2	2.4	4.1	2.8	3.2	3.1	2.7	3.3	.....	....
	Daily runs, (miles)	.....	.....	180	63	230	112	172	147	138	139	102	111	133	97	132	92	.....	....
May.....	Long. W., (deg.).	34¼	20¾	38½	23	44½	28½	50½	33	56½	35¾	61¾	37¾	66½	38½	69½	36½	15	48
	Days	.....	.....	4.1	4.2	2.5	5.6	2.3	3.0	2.8	2.4	2.7	2.9	3.2	3.3	2.6	4.2	.....	....
	Daily runs, (miles)	.....	.....	98	79	186	80	198	134	163	142	157	110	123	92	129	75	.....	....
June	Long. W., (deg.).	34¼	21¾	37	23½	42½	25½	48½	31½	54¼	34½	58¾	36¾	63¾	38½	68	37¾	26	33
	Days	.....	.....	3.0	2.8	3.4	5.8	2.2	4.2	2.3	2.3	3.1	2.4	3.8	3.7	3.4	4.4	.....	....
	Daily runs, (miles)	.....	.....	119	117	128	56	215	111	193	152	126	136	105	84	108	69	.....	....
July.....	Long. W., (deg.).	34	21¾	38½	23½	41	24¼	47½	29¼	53½	33¼	59	36¼	66¾	38¼	67¼	38½	30	25
	Days	.....	.....	2.6	2.5	4.3	3.4	3.6	5.7	2.4	2.9	2.8	2.5	3.3	3.1	3.4	4.6	.....	....
	Daily runs, (miles)	.....	.....	160	131	77	89	133	74	191	132	153	137	156	102	89	65	.....	....
August.....	Long. W., (deg.).	32¾	21¼	38	23½	40½	24	47½	27½	53¼	31½	59	34¼	64½	35¾	69	35¾	16	34
	Days	.....	.....	2.9	2.7	4.0	2.5	4.5	5.2	3.0	3.0	3.9	2.4	4.9	3.6	4.1	3.8	.....	....
	Daily runs, (miles)	.....	.....	146	121	85	121	116	70	148	127	113	140	86	86	93	79	.....	....
September..	Long. W., (deg.).	34¼	20¾	38¾	22¾	41½	24	47½	28	54	32	59¼	33¾	64½	34¾	69½	35	18	33
	Days	.....	.....	2.9	2.7	4.0	3.8	3.9	4.4	3.4	2.7	4.2	3.1	4.4	3.3	4.8	4.4	.....	....
	Daily runs, (miles)	.....	.....	140	122	85	82	129	87	142	141	98	102	95	92	93	68	.....	....
October	Long. W., (deg.).	35	20½	38	22¼	41	24	47½	28¼	54¼	31¼	60	33¼	65¾	35¼	70	35	13	40
	Days	.....	.....	3.2	2.8	3.9	5.1	2.9	3.6	3.1	2.8	3.1	2.9	3.8	3.7	3.8	3.4	.....	....
	Daily runs, (miles)	.....	.....	113	113	89	63	166	109	161	125	145	110	112	86	99	88	.....	...
November..	Long. W., (deg.).	33¼	20	38	22	42¾	25	49½	29	57¾	32	64¾	33½	69	34½	72½	33½	19	33
	Days	.....	.....	2.7	3.0	3.2	4.2	3.4	2.6	3.8	2.4	4.7	3.1	3.8	3.7	4.2	3.3	.....	....
	Daily runs, (miles)	.....	.....	157	108	127	84	142	146	149	146	106	101	107	83	78	93	.....	....
December ..	Long. W., (deg.).	33	20½	38¼	22¾	44	26½	50¼	30½	57¼	33¼	63¾	35	68	35¼	71¼	33¾	18	34
	Days	.....	.....	2.7	3.2	2.8	3.9	3.4	2.5	3.1	2.4	3.4	2.6	3.4	2.9	4.4	3.2	.....	....
	Daily runs, (miles)	.....	.....	163	102	157	96	141	153	162	142	134	121	113	104	77	97	.....	....
General average—Days		.....	.....	3.1	3.9	3.1	4.2	3.0	3.5	3.0	2.6	3.5	2.8	3.7	3.3	3.8	3.7	.....	....
Daily runs...		.....	.....	139	90	132	90	157	113	160	135	126	114	111	92	93	83	.....	....

This table is in striking accord with the Pilot and the Trade-Wind Charts. It had been well established by these that the belt of light airs and calms which separate the "trades" in the Atlantic is wedge-shaped, having the base of the wedge turned towards Africa, the edge towards America. The Dutch cross on the African side in the thick part of the wedge; their average speed the year round, from the line to 10° N., is 90 miles only, whereas the American average between the same parallels is upwards of 130 miles a day. The greatest contrast as to the strength of the winds between the same parallels on the African and American side appears to be from January to April, inclusive, when the "doldrums rage" between the equator and 5° N. On the American side, for these four months, the average daily run is from 60 to 117 miles greater by the American or western crossing than it is by the European or eastern crossing.

We thus see where to look for the lightest airs; now let us search for the belts of freshest winds, and inquire also which blow with the greatest strength, the NE. or the SE. trades.

The freshest trades in the north Atlantic the year round are between the parallels of 10° and 20°. They give to the homeward bound American ships a higher daily average in miles "made good" than the SE. trades do; but it should not be inferred from this fact that the NE. are therefore the fresher. Before forming any conclusion as to the relative strength of these two winds the navigator will take into consideration this circumstance, viz: the American fleets, which in this case afford us the best data for comparing the relative strength of the NE. and SE. trades—indeed, I might say the absolute *nautical* strength of the two winds—run through the SE. trades with the wind aft, through the NE. with the wind a little abaft the beam, and still the difference between the greatest average daily runs with these two winds the year round is only ten miles a day, or say half a knot an hour.

Through the freshest part of the SE. trades a ship sailing before them will average the year round 6¼ knots. Suppose you bring the same wind a point abaft the beam, she would average not less than 8 or 9 knots, say 200 miles a day. Through the freshest part of the NE. trades the actual yearly average with the wind just abaft the beam is 6¾ knots the hour, or 161 miles a day. Thus is confirmed by a new and beautiful proof, the fact that has been treated in previous editions of this work: that the SE. trades of the Atlantic are stronger winds than the NE.

It appears that the average strength of the SE. trades from 30° S. to the line is sufficient to drive a ship before them 144 miles a day—say 6 knots—and that the average strength of the NE. trades from the line to 30° N. is sufficient to drive a ship sailing through them with the wind just abaft the beam at the rate of 140 miles a day, or not quite 6 knots. The average propelling power of the SE. trades in the Atlantic, taken just abaft the beam, is, according to estimate, about 8 knots, or at least two miles an hour greater than the NE. trades. Thus we arrive at the conclusion to which other investigations had pointed us, viz: that the SE. trades are fresher than the NE. The excess of land in the northern hemisphere will help to account for this phenomenon.

The shortest sailing distance from the line, where it is crossed by the American fleet, to New York is about 3,350 miles. The practical sailing distance from the European crossing to the Lizard is 500 miles greater, and yet the average difference of time in making the run is 12 days!

It is well to follow this up, that the cause of this difference may be unmasked. From the line to 30° N. the European bound fleet hugs the wind, while the American "spanks it off"

with flowing sheets. The result is a general average the year round of 35 miles "good" per day in favor of the American. Still, both fleets reach 30° N. just about the same time. From this parallel to port, the path is first through the debatable ground between the trades and the variables, and then through the variables, which prevail from the west. This reverses the condition, by bringing the American fleet closer to the wind and letting that for Europe go free. The result is, the average speed of the latter is ten miles a day greater than the former—87 against 77. This is shameful performance on both sides, but especially on the American. Vessels struggling to get to the westward against the currents, the west winds, and high seas off Cape Horn, make better headway than do our homeward bound vessels from 30° N. to New York! The key to this difficulty is in leaving the trade wind belt too soon. Vessels should run *further* to the *west in them*, and never of choice cross the parallel of 30° N. to the east of 72° W.

One can see by table page 852 where the freshest trades are usually to be found for any month; and the parallels between which they blow are the parallels between which the navigator should run down most of his westing. Thus, in March and April the best runs (203 and 230 miles) are made; and consequently the freshest trades are found between 5° and 10° N. Whereas in July, August, September, and October, the worst runs, and consequently the lightest winds, are found between these parallels. The daily average here at this season is from 77 to 89 miles a day. In these four months, these would be the worst parallels possible for running down longitude; whereas in February, March, and April they are the very best.

In January, July, August, and December, the freshest trades are usually between the parallels of 15° and 20° N.

In May, June, and October they are between 10° and 15°; and

In February, March, and April between 5° and 10°.

In September and November the freshest trades in the northern hemisphere are between the equator and 5°. But these are the SE. trades.—(See Trade-Wind Chart.)

Let us take the calm belt in July to illustrate the advantage of hastening straight across the belts of baffling airs to make latitude, and of running along the belts of "spanking" winds for longitude. In this month the average course from 5° to 10° N. is N.NW. ¼ W., distance 330 miles, and speed 3¼ knots. The best course and shortest distance is due north 300 miles. In crossing it, therefore, as per table, the vessels make 67 miles of westing, which, at the average rate of 77 miles a day N.NW. ¼ W. good, requires 9 hours.

Now, the average speed and course in July, from 15° to 20°, is eight knots an hour NW. ¼ W. But if the course be altered half a point more to the west, the vessel sailing at the rate of 191 miles a day will take ten hours longer to clear these parallels; but, instead of 67, she will in those ten hours make 105 miles of longitude.

But with such statistics as are presented in these tables, the American navigator will know exactly what is that "furthest way round which will make the shortest way home." He will be at no loss in deciding when to turn out of the beaten track, what course to steer, and what increase of distance will give the greatest decrease of time.

He should, however, bear this in mind, viz: the table (page 852) presents a system of averages. The freshest trades, therefore, are not to be *invariably* found between the parallels which give the greatest average runs. Tables p. 843 abundantly prove this. Therefore, when a navigator intends to turn out of the beaten track of the tables, to make longitude in streaks where the trades are freshest, he should take them wherever he finds them fresher than the freshest on the average, whether he be in the latitude for the freshest on the average or not. Thus, suppose he be on this part of the homeward route in September; according to

the table, the freshest trades in this month are found, on the average, between the parallels of 15° and 20°. There they give him an average speed of six knots an hour. Now, suppose that he finds between the line and latitude 5° a wind that will give him a greater speed; by all means he should take it to get west, and not wait until he reaches the parallel where the freshest trades are *most generally* found; for when he gets there he may find "catspaws," in their place; the exception, not the rule. Of all the months August and September give the most feeble expression to the NE. trades.

As a rule, however, navigators on the American route should do this: aim to cross 20° N., not to the east of 60°, but as much to the west as, on account of the Leeward Islands and the winds encountered between the equator and 20° N., it may be prudent to go.

Having made this crossing, then strike for the parallel of 30° N. in about 72°–4° W., taking care to cross the light airs of the horse latitudes by a due north course. In late winter and early spring they will generally be found south of 30°, and north of this parallel from midsummer to early autumn. From this crossing the Gulf Stream will help along.

Of course the homeward bound Indiaman will take advantage of fresh streaks of trades to make westing in the South Atlantic. The meridian of 40°–3° is not too far west when SE. trades are fresh either for the homeward bound Indiaman or the Pacific cruiser to cross the line.

Navigators will bear in mind that the detour here recommended will tell best from August to March, inclusive. The average run to New York, from the usual crossing of 30° N., during that season, is 9.4 days; during the other months it is only 7 days.

By following these directions, with the "Wind Charts" and "Time Tables" for his guide, the intelligent navigator will find himself possessed of an *auxiliary* power which is all head work, and which costs *him* a little study and *owners* nothing, but which will enable him, from October to March, to reach the parallel of 30° N. in the same time from the offings of the African Cape of Good Hope that he now does, and save him thence to New York three or four days. From 30° N. and 74° W. the average run to Sandy Hook should not exceed five or six days at any season of the year.

Let us now turn to the Dutch crossing tables and to the homeward route to Europe.

The homeward route to America intersects the doldrums between 5° and 10° N. during the months of July, August, September, and October. That to Europe intersects them 5° more to the nothward, except in October. The American vessels take four days to cross them; the Dutch, five. The American cross them by a course N.NW. ½ W.; the Dutch, NW. ¾ N.

On the American route the runs afford no other marked traces of the doldrums. On the European route they are well marked for every month except December.

Time occupied and westing made by the Dutch in crossing the doldrums in—

January	between 0° and 5° N.,	5.5 days,	165	miles westing.
February	between 0° and 5° N.,	6.1 days,	195	"
March	between 0° and 5° N.,	6.3 days,	195	"
April	between 0° and 5° N.,	5.5 days,	165	"
May	between 5° and 10° N.,	5.6 days,	330	"
June	between 5° and 10° N.,	5.8 days,	120	"
July	between 10° and 15° N.,	5.4 days,	270	"
August	between 10° and 15° N.,	5.2 days,	210	"
September	between 10° and 15° N.,	4.4 days,	240	"

October.....between 5° and 10° N., 5.1 days, 105 miles westing.
November.....between 5° and 10° N., 4.2 days, 180 "
December.....between —° and —° N., —. days, —— "

The mean route of the Dutch across the calm belt of the equator is NW. by N. I cannot account for this. The American fleet wants to make westing, the European fleet wants to make easting, and yet in crossing this calm belt the European fleet makes more westing than the American. The airs of the doldrums are southwardly, and a north course is practicable for both fleets. The Dutch "dally" there, on the average, five days and a quarter every voyage, making 69 miles a day, or a total of 362. They thus tarry there one day longer than need be.

The passage from the line to the Lizard resembles the passage from the line in the Pacific to San Francisco. Before experience proved otherwise, it was thought that the meridian of 90° W. was about the best place to cross the equator on that voyage; but it appears that the meridian of the Sandwich Islands affords a crossing which will give better runs than the meridian of 90°.—(See that chapter.) On the run from the line to the Lizard, the continent of Africa affords a lee as that of America does for the run to California.

It will afford an interesting inquiry to investigate this route more thoroughly as soon as an opportunity for so doing is afforded. In the mean time the question to which I shall now address myself is this: Will not a vessel—that crosses the equator between 25° and 30° W., that crosses the NE. trades with foretopmast studding sail, and that cares not to make easting, unless with "brave winds," until she gets on the polar side of 40° N.—make on the average a better run from the line to the Lizard than vessels by the present route do?—(See Lieut. Van Gough's Uitkomsten, 1858.)

By this route she will find more regular trades; that is certain. By this route, I *conjecture*, she could reach, from the line the parallel of 30° N. in 40°–45° W. in 17 days—two days sooner than the Americans reach it in 66° W. By this route it would take her a day longer from Good Hope to the line than it does to the present crossing in 21°.4, (p. 850;) but then, by making the best of her way to the parallel of 40° N. and thence to the Lizard, I compute the gain at two or three days more, say total gain five days.

I will not, in the present state of our information concerning the winds along this route, do more than call the attention of navigators to it. *Forty-one* days from the line to the Lizard is too great an average.

And this may be shortened somewhat, even without crossing the line any further west than 22°, if navigators will not, on clearing the NE. trades, be in such haste to make easting. When they clear the trades they are in the horse latitudes. Instead of being enticed to attempt easting by the uncertain winds of these latitudes, they should hurry north in search of better ones.—(See the route from the Sandwich Islands to California.) The Sandwich Islands are in 23° N.; they are west of San Francisco. Now, a vessel in 36°–9° W.—the present crossing of 30° N. on the route from the Line to the Lizard—is nearer to the Lizard than the Sandwich Islands are to California, and yet the run to the Lizard, in consequence of the course pursued through the horse latitudes, is three days longer than the average from Honolulu.

The Dutch give the names of 49 ships that, from September to March, passed east of the Western Islands. Their average run from the line to the Lizard is a day and a half shorter than the average of those that went west during the same seasons of the year.

AVERAGE FORCE OF THE TRADE-WINDS.

No navigator ever sailed from one hemisphere into the other without passing through calm places and streaks of winds. The pilot charts and the track charts both indicate the neighborhood wherein those streaks are to be found; but what might be the strength of the wind in them the charts do not attempt to show.

To determine the average strength of the wind in the various parts of the ocean is an interesting physical problem, and it is a nautical one the true solution of which will be regarded as of high value to commerce and navigation. To vessels whose course lies west through the trade-winds, as it does on the voyage from Europe and Africa to the West Indies; as it does on the voyage from the west coast of America to China, India, and Australia; or as it does for all vessels whose courses lie to the west through the westerly winds of the extra-tropical regions of either hemisphere—as from America to Europe, from Asia to America, from the offings of Good Hope to Australia, and from Australia to the meridian of Cape Horn, such knowledge will be of the greatest importance, for it will enable the shipmaster possessing it to place his ship at once between those parallels where the best winds for his purposes are to be found.

Such knowledge would also no doubt help us to understand atmospherical laws.

The tables of time and crossings for those routes that lie through the trade-wind regions afford us a pretty good measure of the force of the trade-winds taken in belts 5° of latitude in breadth, and gauged for each month. These tables contain the time from crossing to crossing, through the trade-winds, of 2,235 runs made by vessels at all seasons and in various years. The time from crossing to crossing is also given, and we have but to measure the average distance from one crossing to the other, and then divide it by the time involved, to get a measure of the trade-wind force for any belt at any season. The trade-wind force thus obtained is expressed by the average number of knots which the several squadrons comprising this fleet of 2,235 sail make by the day or the hour in any given belt.

When we say that the average strength of the SE. trade-winds in the belt between the equator and 5° S. is sufficient to send a vessel sailing along, with studding sails, before it, at the rate of $7\frac{1}{2}$ knots the hour in June, but only $4\frac{1}{4}$ in April, we convey to the mariner as clear an idea as to the force of the wind as we would to the meteorologist by telling him that its force was equal to a pressure of ten pounds the square foot in June, and of three in April.

Therefore, as these tables give correct ideas as to the relative and general movement of the atmosphere over certain seas, they may be considered to contain information which cannot fail to possess a certain degree of interest both among navigators and meteorologists; this interest is sufficient to justify a recast of them. Such a recast, with the assistance of Lieutenant May, I am now enabled to present in the shape of the following tables showing the mean strength of the trade-winds, as determined by the average knots made per hour by American vessels sailing through them:

Between 30° N. and the Line, Atlantic Ocean.

Month.	Route.	30° N.	25° N.			20° N.			15° N.			10° N.			5° N.			0° N.			Monthly average.	Course.	Number of runs.
		Longitude W.	Days.	Average daily distance.	Longitude W.	Days.	Daily dist.	Longitude W.	Days.	Daily dist.	Longitude W.	Days.	Daily dist.	Longitude W.	Days.	Daily dist.	Longitude W.	Days.	Daily dist.	Longitude W.			
		°		miles.	°		Miles.	°		Miles.	°		Miles.	°		Miles.	°		Miles.	°			
January.....	A	42¾	3.1	116	39	2.7	118	37	2.3	133	35⅛	1.8	183	33	2.3	149	30⅛	3.3	91	30	132	S. 22° E...	64
	H	68	3.5	112	63¼	3.3	147	56⅛	2.7	179	50	2.4	192	44	2.7	167	38¼	3.3	135	32¾	155	N 48⅛ W..	30
	C *	17¼	3.0	109	19¾	3.5	88	21	2.2	136	21	2.3	131	22	3.3	91	22	5.8	57	24⅛	102	S. 13 W..	3
	B †	18¾	2.9	115	21⅛	3.3	99	24	2.1	158	26⅛	2.2	139	25⅛	2 1	146	24⅛	4.3	70	25⅛	121	S. 12 W..	6
February	A	43	3.2	118	39¼	2.6	121	37	2.2	159	34¼	1.9	167	32	1.8	176	30	3.3	93	29¾	139	S. 23 E ..	82
	H	65⅛	3.9	92	61¾	3.4	122	56¾	3.1	146	50¾	2.6	181	44⅛	2.5	197	38	3.5	120	33¼	143	N. 46 W..	14
	C	16	3.0	120	19¾	3.2	101	22	2.5	122	23	2.0	151	22⅛	3.5	90	20¾	5.5	60	23	107	S. 13 W..	2
	B	20¼	2.4	129	21¾	2.0	164	24¼	2.2	144	26	2.2	138	25¼	2.1	147	24	6.1	49	23¾	129	S. 12 W..	11
March.... ...	A	43	4.1	95	38¼	2.8	113	36⅛	2.0	158	34¼	1.9	180	31¾	1.9	174	29⅛	3.7	82	28¾	134	S. 25 E...	83
	H	67	3.4	114	62⅛	3.5	126	56⅛	2.5	170	51⅛	2.3	192	46	2.3	203	39¾	3.0	163	33⅛	161	N. 47 W..	30
	C	18	1.8	175	19¾	2.3	141	22	2.2	137	21¾	2.2	137	21¼	3.3	93	20¼	8.0	38	20¼	120	S. 4⅛ W..	3
	B	19¼	2.7	125	22¼	2.1	160	25	2.2	140	26¼	2.0	152	25⅛	2.2	140	24¼	6.2	50	25⅛	128	S. 11 W..	6
April.....	A	41	3.1	105	38⅛	2.5	129	36¾	2.0	158	34⅛	1.8	187	32	2.4	137	29⅛	4.2	72	30	131	S. 19 E...	81
	H	67	3.2	132	61⅛	4.1	99	56⅛	3.2	138	50⅛	2.5	172	45⅛	2.0	230	39⅛	3.0	180	32	158	N. 48 W..	13
	C	19	3.0	109	21⅛	2.0	162	23¾	2.0	151	24¼	1.5	201	24¾	5.5	55	24¼	3.0	119	27⅛	133	S. 15 W..	1
	B	19⅛	2.2	154	22⅛	2.4	137	25	2.1	147	26¼	2.0	151	25¾	2.4	129	24⅛	4.5	70	26	131	S. 12 W..	8
May.....	A	41⅛	3.0	107	39¼	2.5	125	37¼	2.1	158	34¾	2.0	173	31¾	3.7	90	29	4.6	69	30¾	120	S. 19 E...	74
	H	66⅛	3.2	122	61¾	2.7	157	56⅛	2.8	163	50⅛	2.3	198	44⅛	2.5	186	38⅛	4.1	98	34⅛	154	N. 46 W..	15
	C	20	2.3	135	21⅛	1.9	158	21¾	2.2	137	22	2.7	111	22	5.8	52	21¼	5.1	68	24¼	110	S. 7¾ W..	5
	B	20⅛	2.5	131	23	2.2	149	25⅛	2.0	151	26¼	2.3	132	25⅛	5.3	62	23¼	4.4	81	26⅛	118	S. 11 W..	12
June.....	A	42⅛	3.6	87	41	2.2	147	38⅛	2.2	148	36	3.0	118	32¾	7.0	63	27¼	3.7	96	30¼	110	S. 21 E...	57
	H	63¾	3.8	105	58¾	3.1	126	54¼	2.3	193	48⅛	2.2	215	42⅛	3.4	128	37	3.0	119	34¼	148	N. 43 W..	26
	C	18⅛	1.7	206	22	2.2	139	21	2.5	123	22¼	5.3	57	22¼	6.7	48	20¼	4.3	81	23¼	109	S. 8⅛ W..	2
	B	20⅛	2.3	147	23⅛	2.0	159	25⅛	2.1	145	26⅛	2.9	105	25¾	5.4	61	23⅛	3.7	106	27¾	121	S. 13 W..	17
July.....	A	45⅛	3.5	93	43	1.9	165	41⅛	1.8	179	39	3.2	116	35	6.7	74	28⅛	3.1	107	31	122	S. 24⅛ E...	39
	H	66¾	3.3	156	59	2.8	153	53⅛	2.4	191	47⅛	3.6	133	41	4.3	77	38⅛	2.6	160	34	145	N. 46 W..	30
	C	19¼	2.0	155	20¾	2.3	138	22¾	2.7	112	23	3.5	87	22	6.2	58	18¼	4.8	78	22⅛	105	S. 6 W..	3
	B	20¾	2.5	138	24	2.4	137	26⅛	2.1	145	27⅛	3.2	101	25⅛	6.0	70	20⅛	4.8	88	25⅛	113	S. 8¾ W..	9
August...	A	45⅛	3.9	86	42⅛	2.5	130	41¼	2.2	157	38¼	3.8	100	34	6.4	78	27¼	3.9	88	30	106	S. 27 E...	53
	H	64⅛	4.9	86	59	3.9	113	53¼	3.0	148	47⅛	4.5	116	40⅛	4.0	85	38	2.9	146	32¾	106	N. 46 W..	16
	C	18¾	1.7	185	20⅛	2.0	154	21¾	2.0	151	22¼	4.7	66	21	4.7	79	17¼	4.0	96	21¼	122	S. 4⅛ W..	2
	B	19⅛	2.5	135	22⅛	2.0	171	25⅛	2.4	128	26¾	2.9	106	25¾	4.7	79	22	5.5	70	26	115	S. 12 W..	11
September....	A	43¾	4.2	83	39	3.6	88	36¾	2.4	129	36	3.0	117	32⅛	6.5	58	28¾	4.4	75	31	92	S. 22 E...	76
	H	64⅛	4.4	95	59¼	4.2	98	54	3.4	142	47⅛	3.9	129	41⅛	4.0	85	38¾	2.9	140	38¼	115	N. 49⅛ W..	19
	C	19⅛	4.2	73	20⅛	4.0	78	22	2.0	151	21⅛	4.0	75	21¼	5.5	73	16¾	8.2	37	17¼	81	S. 4 E...	2
	B	19¾	2.5	131	22¼	2.0	162	24⅛	2.4	132	26¼	3.1	100	25	6.0	57	22¼	5.7	60	25	107	S. 9⅛ W..	14
October	A	43	3.7	95	39⅛	3.3	102	37	2.9	111	35¼	2.8	112	33¾	4.4	79	31	4.4	70	32	95	S. 19 E...	83
	H	65¾	3.8	112	60	3.1	145	54¼	3.1	161	47⅛	2.9	166	41	3.9	89	38	3.2	113	35	131	N. 45 W..	13
	C	18⅛	2.1	150	20¼	2.1	150	22	2.0	150	22¼	3.0	100	22	5.2	58	22⅛	4.1	83	25¼	115	S. 12 W..	4
	B	19¼	3.0	113	22¼	2.7	124	25	2.2	139	26	2.4	126	25⅛	5.0	61	24⅛	4.3	83	27¾	108	S. 15 W..	10
November	A	42¾	3.9	99	38¼	3.4	97	35¾	2.5	128	34	2.3	138	31¾	3.0	110	29⅛	4.0	77	31	108	S. 21 E...	87
	H	69	3.8	107	64¾	4.7	106	57¾	3.8	149	49⅛	3.4	142	42¾	3.2	127	38	2.7	157	33¼	131	N. 49 W..	19
	C	18¼	2.3	147	21¼	2.6	116	20¾	1.5	200	20¾	1.8	166	20¾	3.3	92	20	5.6	64	23¼	131	S. 9 W..	3
	B	20¼	2.3	147	23¼	3.7	86	25¼	2.7	114	26⅛	2.7	112	26¼	4.3	70	26	4.8	88	31	103	S. 19 W..	3
December	A	44¼	3.2	129	39	2.8	113	37⅛	2.2	144	35¼	1.9	184	32¼	2.2	145	30¼	3.6	85	31¼	133	S. 23 E...	90
	H	68	3.4	110	63¾	3.4	134	57¼	3.1	162	50¼	3.4	141	44	2.8	157	38¼	2.7	163	33	145	N. 48 W..	18
	C	17⅛	3.0	102	18⅛	3.6	90	20¾	2.0	150	21	1.7	176	21¼	2.4	125	21	6.4	49	22⅛	115	S. 9 W..	4
	B	21	2.4	127	21¾	2.4	148	25¼	2.2	139	26¼	2.1	145	25⅛	2.0	150	25⅛	4.6	67	26⅛	129	S. 10 W..	4
General year ly averages.	A	43¼	3.5	100	39¾	2.5	126	37	2.2	147	35⅛	2.5	141	32¾	4.0	93	29¼	3.8	82	30⅛	115	S. 22 E...	869
	B	20	2.5	134	22⅛	2.4	135	25	2.2	141	26⅛	2.5	123	25⅛	4.0	83	23¾	5.0	70	26⅛	114	S. 12 W..	121
	C	18⅛	2.5	131	20⅛	2.6	119	21¾	2.1	142	22	2.9	105	22	4.6	70	20⅛	5.4	63	23	105	S. 8 W..	34
	H	66⅛	3.7	109	61¼	3.5	124	55⅛	2.9	158	49¼	3.0	156	43	3.1	134	38⅛	3.1	129	34	135	N. 46 W..	243

* The vessels that make this average passed inside or east of the Cape de Verd Islands.

† The vessels that make this average went west or outside of the Cape de Verd Islands.

Between 30° S. and the Line, Atlantic ocean.

Month.	30° S.	25° S.			20° S.			15° S.			10° S.			5° S.			0° S.			Monthly average.	Courses.	Number of runs.
	Long. E.	Days.	Average daily distance.	Long. E.	Days.	Daily dist.	Long. W.	Days.	Daily dist.	Long. W.	Days.	Daily dist.	Long. W.	Days.	Daily dist.	Long. W.	Days.	Daily dist.	Long. W.			
	°		Miles.	°		Miles.	°		Miles.	°		Miles.	°		Miles.	°		Miles.	°	Miles.		
January	10	3.4	159	2	3.3	146	4¼	3.6	139	11¼	4.1	139	19½	3.7	144	27	3.8	118	33	141	N. 54° W.	27
February	8¾	3.5	145	1	4.2	108	5½	3.7	133	12	3.9	147	19½	3.4	160	27	3.4	120	33¼	136	N. 53° W.	25
March	9¾	3.5	146	2	3.3	158	6	3.4	146	12¾	3.6	149	20½	3.6	149	28	4.1	110	33½	143	N. 55° W.	22
April	10	3.6	136	3¼	3.7	139	4	3.9	131	11½	3.5	160	19½	3.4	134	26¼	4.4	102	32	133	N. 53° W.	18
May	10½	3.7	116	4¾	3.6	136	2½	4.2	137	10½	4	156	20	3.6	160	38½	3.1	148	34¼	142	N. 55° W	19
June	11	3.5	129	4¾	3.7	137	2¾	3.6	142	10	3.7	168	19¼	3.2	156	27	2.9	177	34¼	152	N. 55° W.	29
July	10¾	3.6	128	4	3.8	129	3	3.4	149	10	4	151	19	3.7	156	27½	3	161	34	146	N. 55° W.	32
August	10¼	3.2	154	3¼	4	118	3¼	4	140	11½	3.7	146	19	4.2	126	26½	3.2	167	32¾	142	.....	19
September	10¼	3.7	121	3¾	3.6	135	3¼	3.8	150	11¾	3.5	168	20¼	3.2	164	27¾	3.9	164	34¼	150	.....	20
October	10¾	3.6	121	4¾	3.7	128	2¼	3.4	144	9	4.7	128	19¼	3.9	132	27	3.5	157	35	135	N. 56° W.	18
November	9¼	3	155	2¼	3.2	155	4¼	3.4	157	12	3.9	151	20½	3.1	133	27½	2.9	157	33¼	151	N. 55° W.	19
December	9¼	3.8	140	9	3.7	131	5½	3.8	139	13	3.4	150	20	3.3	154	27	3.1	149	33	144	N. 55° W.	29
Yearly averages	10	3.5	138	3¾	3.6	137	4	3.6	142	11¼	3.8	151	19¾	3.5	147	27¼	3.4	144	33½	.....	N. 55° W.	277

Between Sunda and 30° S., Indian Ocean.

Month.	Sunda to 100° E.			90° E.			80° E.			70° E.			60° E.			50° E.			40° E.			Monthly average, daily dist.	Course.	Number of runs.
	Days.	Daily dist.	Lat. S.	Days.	Daily dist.	Lat. S.	Days.	Daily dist.	Lat. S.	Days.	Daily dist.	Lat. S.	Days.	Daily dist.	Lat. S.	Days.	Daily dist.	Lat. S.	Days.	Daily dist.	Lat. S.			
		Miles.	°		*Miles.*	°		*Miles.*	°		*Miles.*	°		*Miles.*	°		*Miles.*	°		*Miles.*	°	*Miles.*		
January	5.8	88	12¼	4	153	16	3.4	174	19	3.6	167	22¾	4	143	25	3.7	150	27¼	3.3	168	30¼	149	S. 69° W.	55
February	7.2	82	14	4.2	148	18	3.4	176	21	3.7	152	23	3.8	148	25⅛	3.8	150	28	4.1	130	30¼	141	....do.....	31
March	5.1	105	12¾	3.5	173	16¼	3.3	181	19⅛	3.7	159	22⅛	3.6	154	24¾	3.8	151	27¼	4.3	126	29¾	150	....do.....	27
April	4.2	105	10⅛	3.5	173	14⅛	3.1	206	18	3.6	163	21	4	146	23½	4.5	127	26	4.4	126	29	149	S. 70° W.	41
May	3	136	9⅛	3.6	177	13¼	3.3	184	16¾	3.4	176	20¼	4	145	23	4.7	133	25¾	5	112	29	152	....do.....	29
June	2.4	175	9¼	3.6	177	13¼	3.1	190	17	3.2	182	20	3.5	173	23	3.9	155	26⅛	4	136	29¼	170	....do.....	29
July	2.3	174	10	3.3	193	14	3	205	16	3.1	194	19¾	3.5	166	23	4.3	135	26¼	3.8	149	29¼	174	....do.....	22
August	2.2	185	9⅛	3.3	189	13¾	2.9	209	17	3.2	188	20	3.2	181	23	3.7	160	27	3.8	145	29¾	180	S. 69° W.	28
September	2.1	199	9¾	3.1	201	13¾	2.9	210	17¼	3.3	183	20¾	3.6	160	23¾	3.6	163	27	4	139	29¾	179	....do.....	20
October	2.2	182	9¼	3.2	200	13⅛	3	208	17⅛	3.3	176	20¼	4.1	138	22⅛	4.4	135	26⅛	4	139	29⅛	168	....do.....	45
November	3.4	124	10	3.3	193	14	3.3	190	18	3.8	153	21¼	4.5	127	24¼	4.5	131	27¼	4	139	30	151	....do.....	65
December	5.6	86	11⅛	4	156	15¼	3.5	174	19	4	148	22	4.5	124	24¾	4.3	128	27	3.9	143	30	137	....do.....	66
Yearly averages.	3.8	136	10¾	3.6	178	14⅛	3.2	191	17¼	3.5	170	21	3.9	150	23¼	4.1	143	26¾	4	138	29¼	158	S. 69¼° W.	.....

Between Calcutta and 30° S. in 40° E., Indian Ocean.

Month.	Calcutta to 80° E.				70° E.			60° E.			50° E.			40° E.			80° to 40°		
	Days.	Average daily distance.	Lat. S.	Course.	Days.	Daily dist.	Lat. S.	Days.	Daily dist.	Lat. S.	Days.	Daily dist.	Lat. S.	Days.	Daily dist.	Lat. S.	Course.	Monthly average daily distance.	Number of runs.
		Miles.	°			*Miles.*	°		*Miles.*	°		*Miles.*	°		*Miles.*	°		*Miles.*	
January	27.2	87	16¼	S. 11° W	4.5	146	21½	4.3	136	24½	4.2	134	27	4	141	29¾	S. 70° W	129	22
February	29.5	75	14	S. 12 W	4.3	172	21½	4.4	132	24¼	4.9	114	26¼	4.2	138	30	S. 66¼ W	126	22
March	33.3	66	14	S. 12 W	4	164	19¼	4	155	23¾	4.5	130	26½	4.5	127	29¾	S. 67 W	128	24
April	34.4	63	12½	S. 12½ W	4.3	166	19½	4.9	122	22¾	5.3	110	26½	5.3	109	29½	S. 65½ W	114	27
May	36.8	59	12½	S. 12½ W	4.4	155	18¼	3.8	162	22¼	4.2	145	26½	4.7	123	30¼	S. 64½ W	129	18
June	34.5	60	12	S. 13 W	3.9	175	18	3.9	155	21¼	4.6	137	26¼	4.6	122	29	S. 65½ W	130	21
July	35.9	57	11	S. 13 W	4.6	171	19¾	4.3	139	22¾	5.1	115	26¼	4.9	118	30	S. 63 W	120	12
August	31.6	65	11¼	S. 13 W	4.6	158	18½	3.9	160	23	4.2	142	27	3.9	140	29¼	S. 64 W	135	22
September	31.8	66	13¼	S. 12 W	3.8	179	19	3.9	160	23¼	4.8	124	27	4	141	29½	S. 67 W	134	11
October	28.1	77	12½	S. 12½ W	4.4	161	19¼	5.4	116	23¼	4.1	142	26½	4.3	133	29¾	S. 65 W	126	14
November	26.5	84	14¾	S. 12 W	4.4	156	21	4.8	125	24¾	4.5	126	27¼	4.4	130	31	S. 66 W	124	15
December	22.8	96	13¼	S. 12 W	5.3	133	20	5.2	120	24¼	5.2	111	27¼	4.1	138	30	S. 68 W	120	25
Yearly averages	31	70	13	S. 12¼ W	4.4	160	19½	4.4	138	23½	4.6	126	26¾	4.4	129	29¾	S. 66 W	125	233

These tables show the average rate of sailing from crossing to crossing in the trade-wind belts for each month along several great highways. They show the relative strength of the trade-winds of the two hemispheres. Reason had led us to infer that the SE. trade-winds of the Atlantic are fresher than are their congeners on the opposite side of the equator.—

These tables prove that this conjecture is founded on fact; for instance, the homeward-bound Indiamen average, with the wind dead aft, through the trade-winds of the South Atlantic, six knots the hour; through the trades of the North Atlantic, with the wind abeam, or somewhat abaft, their average is 5.6. The difference in the strength of these two winds is equal to, at least, 2 or 2½ knots an hour: that is, a vessel with average sailing qualities that can go 5.6 knots with the wind dead aft through the SE. trades, would, if she were to head up so as to bring the wind just abaft the beam, go at least eight knots, instead of 5.6. Hence, we perceive how very much stronger are the SE. than the NE. trades of the Atlantic.—

These tables show that the band or belt of freshest trades the year round, is, in the South Atlantic, between the parallels of 10° and 15°, and in the North between 15° and 20°; that the month of freshest trades is June for the SE., between the equator and 5° S., and in the North Atlantic it is April, between 5° and 10° N.—

These tables also show that the streak of weakest winds in the trades along the homeward route to the United States is found in July between 5° and 10° N.; that on the outward-bound route the weakest winds are between the same parallels in September, when the average speed of the ship is but 2½ knots an hour for 375 miles.—

They also show that the NE. trades are much fresher along the homeward route than they are on the outward-bound route, where the course through them is, from the United States, on a bow-line; from Europe, with flowing sheets. Thus we are again reminded that longitude, especially in the trade-wind region of the Atlantic, has, as well as latitude, something to do with the force, as well as with the direction of winds.—

These tables will serve as a landmark, both to navigators and ship builders, by which they may in time to come, judge of the progress which shall be made in the shortening of passages. Such progress may be the result of improvements in ship building, as they affect sailing qualities of ships; or it may be the result of improvements as to the standard of qualifications among navigators; or it may be owing to the effect which these tables themselves may have in stimulating navigators, and keeping them up to their mettle on the race, upon which all who use these tables at sea will feel themselves to have entered, against time. Progress from this cause, in the shortening of voyages and saving of time, will probably be the first to be perceived. The rage for clipper ships of high speed, and at any cost, appears to have passed the flood, and to be now on the ebb; so that any shortening of voyages in consequence of improvements in the average sailing qualities of ships can scarcely be expected within any very short time.

Nevertheless, these tables are, in some respects, abundantly instructive; they are also suggestive.

The Royal Society and the British Association have recently applied to the British government for the establishment of anemometrical observations at certain stations. The matter has been referred to Admiral Fitz Roy, of the meteorological department of the Board of Trade (and Admiralty.) The Admiralty have placed two superb anemometers, costing £65 each, at his disposal, one for Halifax and the other for Bermuda. The observations with them

will commence at midsummer of 1859, and continue daily for 12 months, and in connexion with a regular plan which, at the instance of the societies aforesaid, is about to be undertaken under the auspices of the British government for the "investigation of atmospheric laws throughout the Atlantic ocean." "During this interval of twelve months," writes Admiral Fitz Roy, "a collection of meteorological information will be sought for every part of the Atlantic ocean—from ships and from every observer on its coasts and islands."

I hope American shipmasters who are co-operating with me, will be true to themselves and our cause in this matter and give to the noble enterprise all the aid, co-operation, and encouragement which it may be in their power to bestow. Explanations as to the particular information sought at their hands will be given at length through other channels.

In reply to the Admiral's letter (February 25, 1859,) apprising me of this important meteorological enterprise, I found occasion to go at length into an explanation of these tables, and into the suggestions which they already afford touching the objects of his "intended investigation." Therefore, in further explanation of these tables, I refer to that letter, slightly amended:

"I had not heard anything of the meteorological move which your government is making; I rejoice at it. Of course you may rely on me as a friend of the measure, and count on me for whatever service in the way of co-operation it may be in my power to render.

"It so happens that I have of late been going into the question as to the force of winds, to which your expedition in part relates. The tables of time and crossings (chap., p. 143, vol. II, 8th edition Sailing Directions) have led me into the discussion. Mine is a rude way of getting at the force of the wind. It is not so good as your £65 anemometers; nevertheless it is better than nothing, and it is only one of those "make shifts" to which those who deal much with the sea so often find themselves compelled to resort. In my straits for a measure for the wind, I was driven to the expedient of using fleets of ships as an anemometer, and I find that ship sailing in the wake of ship, voyage after voyage, year after year, and in great numbers, will, under certain circumstances, and through certain winds, make pretty good anemometers.

"They serve this purpose best in the trade-winds, and along routes for which these winds are fair. There their average speed in knots per hour will express to the mariner, in the most intelligible terms, the force of the wind, while it will afford to the philosopher, in convertible figures, the means of expressing, in his peculiar way, the average pressure, force, or velocity of the trade-winds. Let me take as an illustration the tables of time and crossing of the homeward-bound American ships after they have doubled the Cape of Good Hope, p 860.

"Their mean crossing place of 30° S. is about 10° E.; of the equator it is near 33½ W.; and of 30° N. it is about 66¼° W. This gives them, from 30° S. to the equator, a course about NW. by W., which you observe leads them through the belt of SE. trades with a following wind. Indeed, for this part of the voyage the wind is at a mean just about "dead aft."

"From the equator to 30° N. their course is about NW. A ship steering NW. through the NE. trades will have the wind a little abaft the beam.

"The average speed through the SE. trades with the wind aft is 6 knots. What would it be with *identically* the same wind if the ship were hauled up so as to bring it a little abaft the beam as it is on the run through the NE. trades?

"Fairly to compare the strength of these two systems of winds with ships for anemometers, this question needs to be answered. For the present, however, we must *guess* at the answer, knowing full well that a guess will be an approximation. As a rule, all ships—and we are

dealing with averages derived from multitudes of individual cases—will sail faster with the wind just abaft the beam than they will with the wind "dead aft." Taking one ship with another, and after putting her before a wind that will send her six knots through the water, and then hauling her up so as to bring the wind abaft the beam as above, and you will increase her speed about two knots; perhaps not quite so much, perhaps a little more; but few, I imagine, would contend for an increase of less than a knot or for one more than three: therefore I say it is a case in which we may approximate by estimation. Hence we assume that the average rate of speed that vessels would make, if they were to sail on the same angle across the path of the wind in the SE. that they do in the NE. trades, would be 8 instead of 5.6 knots.

"It is very desirable that some of our men-of-war co-operators should give us a practical answer to this question by repeatedly bringing the wind, when she is running five or six knots before it, just abaft the beam, and then, when she gets everything set and trimmed, heave the log, and enter her rate. A few well-conducted trials of this sort at various times and with winds of various strength, during an ordinary cruise, would really enable us to use ships as anemometers at sea with decided benefit to philosophy as well as to navigation.

"But to return to our '*jury*' anemometers as they are.

"This homeward fleet, after it crosses the line and brings the wind nearly abeam, averages 5.6 knots an hour. If the SE. trades were brought nearly abeam, they would, let it be assumed, make ships average about 8 knots, instead of 5.6. Here therefore is a great difference in the average force of the trade winds in the North and South Atlantic. The difference expressed by this new formulary being as an 8-knot breeze is to one of 5.6 knots.

"These averages, you will observe, are derived from a great number of cases. I have taken American ships only for this inquiry, in order to have each individual case to embrace, as far as possible, the main features of all the rest. Besides, the logs of American vessels are the most plentiful with me.

"To make myself clear I epitomize from the tables aforesaid the following:

Average daily runs through the trade-winds from latitude 30° *S.*, *longitude* 10° *E.*, *via* 33½° *W. on the equator, to latitude* 30° *N. and longitude* 66¼ *W.*

Months.	FROM LAT. 30° SOUTH THROUGH THE—															
	SOUTHEAST TRADES TO SOUTH LAT.—								NORTHEAST TRADES TO NORTH LAT.—							
	25°.	20°.	15°.	10°.	5°.	0°.	Knots.	Course.	5°.	10°.	15°.	20°.	25°.	30°.	Knots.	Course.
	Miles.	*Miles.*	*Miles.*	*Miles.*	*Miles.*	*Miles.*	*Pr.hr.*	°	*Miles.*	*Miles.*	*Miles.*	*Miles.*	*Miles.*	*Miles.*	*Pr.hr.*	°
January	159	146	139	139	144	118	6	N. 54 W...	135	167	192	179	147	112	6¼	N. 49 W...
February	145	108	133	147	160	120	5½	N. 55 W...	120	197	181	146	122	92	6	N 46 W....
March	146	158	146	149	149	110	6	N. 55 W...	163	203	192	170	126	114	6¼	N. 47 W...
April	136	133	131	160	134	102	5¼	N. 53 W...	180	230	172	138	99	132	6¼	N. 48 W...
May	116	136	137	156	160	148	6	N. 55 W...	98	186	198	163	157	122	6¼	N. 46 W...
June	129	137	142	168	156	177	6¼	N. 55 W...	119	128	215	193	126	105	6	N. 43 W...
July	128	129	149	151	156	161	6	N. 55 W...	160	77	133	191	153	156	6	N. 46 W...
August	154	118	140	146	126	167	6	N. 55 W...	146	85	116	148	113	86	4¾	N. 46 W...
September	121	135	150	168	164	164	6¼	N. 55 W...	140	85	129	142	98	95	4¾	N. 50 W...
October	121	128	144	128	132	157	5¼	N. 56 W...	113	89	166	161	145	112	5½	N. 45 W...
November	155	155	157	151	133	157	6¼	N. 55 W...	157	127	142	149	106	107	5½	N. 49 W...
December	140	131	139	150	154	149	6	N. 55 W...	163	157	141	162	134	110	6	N. 48 W...
Means	137	137	142	151	147	144	6	N. 55 W...	149	144	156	162	127	112	6	N. 47 W...

"This epitome is derived from the performance of 520 vessels. It tells in its own peculiar way what we had learned from the Pilot and other Charts, viz: that in the Atlantic, the SE. are much more steady than the NE. trades. They are stronger too. And it shows the parallels between which vessels bound from England and Europe to the West Indies, Spanish Main, and Caribbean Sea may run down the trades at the highest speed for each month. For instance, a vessel passing the Lizard on her way to one of the Guayanas, in April, should go as though she were bound to India until she should cross the parallel of 10° N. Between this and 5° the sailing force of the wind is 230 miles a day—9½ knots; but between these parallels, in July, it is only 77 miles a day—3¼ knots. In July, the best belt for running down longitude is between 15° and 20°, where the average strength of the trades is that of an 8-knot breeze.

"There are other peculiarities in these two systems of winds which this table brings out in a very striking manner. One of them is the difference between the calms of Capricorn and of Cancer in the Atlantic. The average rate which vessels make between the parallels of 25° and 30° is, 5¾ knots in the south Atlantic, 4¾ in the north.

"I have tabulated (p. 867) the average speed of vessels from Calcutta and the Straits of Sunda through the SE. trades of the Indian ocean, also of the outward bound vessels from 30° N. to the line, both from this country and from Europe. The outward bound vessels from America cross 30° N. in about 43° W. and the line in about 30½. Their course (made good) is to the southward and eastward. Let us call this Route A.

"The vessels from Europe are divided into two fleets. One, going inside of the Cape Verde islands, crosses 30° N. in 20½° W., and the equator in 23°, (Route C.) The other, going outside of these islands, crosses the same parallel in 21° W., and the equator in 26°, (Route B.) The average course of these two fleets is to the west of south, with the wind quartering; while of the former it is to the east of south, with the wind close, through the trades. Neither of these fleets average as much as the homeward bound India fleet, (H, p. 865.) Its track lies along the west side of the Atlantic; that of the outward bound American fleet (Route A) lies nearly midway of that ocean, while the fleet from Europe lays its track on the eastern side of the Atlantic. The average rate of sailing for these fleets is greatest on the western side, less in the middle, and (notwithstanding the sharply braced yards of A) least on the eastern side, as the following synoptical table will show:

Average rate of sailing from 30° N. across the northeast trade-wind belt of the Atlantic.

Month.	Route.	To lat. 25°.	Lat. 20°.	Lat. 15°.	Lat. 10°.	Lat. 5°.	Lat. 0°.	Mean. Daily.	Mean. Hourly.	Course.
		Miles.	*Miles.*	*Miles.*	*Miles.*	*Miles.*	*Miles.*	*Miles.*	*Knots.*	°
January	A.	116	118	133	183	149	91	132	5⅛	S. 22 E.
	B.	115	99	158	139	146	70	121	5	S. 12 W.
	C.	109	88	136	131	91	57	105	4¾	S. 13 W.
February	A.	118	121	159	167	176	93	139	5¾	S. 23 E.
	B.	129	164	144	138	147	49	129	5¼	S. 12 W.
	C.	120	101	122	151	90	60	107	4⅛	S. 12 W.
March	A.	95	113	158	180	174	82	134	5½	S. 25 E.
	B.	125	160	140	152	140	50	128	5⅓	S. 11 W.
	C.	175	141	137	137	93	38	120	5	S. 5 W.
April	A.	105	129	158	187	137	72	131	5½	S. 19 E.
	B.	154	137	147	151	129	70	131	5½	S. 12 W.
	C.	109	162	151	201	55	119	133	5½	S. 15 W.
May	A.	107	125	158	173	90	69	120	5	S. 19 E.
	B.	131	149	151	132	62	81	118	5	S. 11 W.
	C.	135	158	137	111	52	68	110	4⅛	S. 8 W.
June	A.	87	147	148	118	63	96	110	4⅛	S. 21 E.
	B.	147	159	145	105	61	106	121	5	S. 13 W.
	C.	206	139	123	57	48	81	109	4½	S. 9 W.
July	A.	93	165	179	106	74	107	122	5	S. 24 E.
	B.	138	137	145	101	70	88	113	4¾	S. 9 W.
	C.	155	138	112	87	58	78	105	4½	S. 6 W.
August	A.	86	130	157	100	78	88	106	4½	S. 27 E.
	B.	135	171	128	106	79	70	115	4¾	S. 12 W.
	C.	185	154	151	66	79	96	122	5	S. 5 W.
September	A.	83	88	129	117	58	75	92	3¾	S. 22 E.
	B.	131	162	132	100	57	60	107	4⅛	S. 10 W.
	C.	73	78	151	75	73	37	81	3½	S. 4 E.
October	A.	95	102	111	112	79	70	95	4	S. 19 E.
	B.	113	124	139	126	61	83	108	4½	S. 15 W.
	C.	150	150	150	100	58	83	115	4¾	S. 12 W.
November	A.	99	97	128	138	110	77	108	4½	S. 21 E.
	B.	147	86	114	112	70	88	103	4¼	S. 19 W.
	C.	147	116	200	166	92	64	131	5½	S. 9 W.
December	A.	129	113	144	184	145	85	133	5½	S. 23 E.
	B.	127	148	139	145	150	67	129	5½	S. 10 W.
	C.	102	90	150	176	125	49	115	4¾	S. 9 W.
Yearly averages	A.	100	126	147	141	93	82	115	.....	
	B.	134	135	141	123	83	70	114	.....	
	C.	131	119	142	105	70	63	105	.....	

"The speed along the Routes B and C is not deduced from a sufficient number of individual cases to give fair averages. (B is the average of 126 and C of 34 runs only.) But the indications are significant enough. Another circumstance should be borne in mind while we are drawing inferences as to the difference of trade-wind force along these three routes, which is this: Many vessels that take the Route A are on a bowline until they reach the belt of equatorial calms. From this point to the equator their course is west of south. Whereas along Routes B and C the wind is free, quartering all the way through the trades. As an example, in June, Route A crosses 5° N. in 27¼° W. by a course from 30° N. of S. 30° E., and the equator by a course from 5° N. of S. 30° W., (instead of S. 21° E. as by the table.)

"Still, I have put down the course in the tables from the crossing on 30° to the crossing on the line. It may be set down as a rule, however, that all the ships of Route A run through the trades with their yards braced sharp. Bearing this fact in mind, your quick eye will catch at a glance the peculiar aspects of the difference in the trade-wind force according to longitude. The homeward route (H, p. 865) and Route A afford the best averages, because these are derived

from the greatest number of runs, (1,111.) As a rule, the belt of strongest trades lies further to the north along Route A than it does along the homeward route. Thus, in January and February, May, July, August, September, and October, the belt of strongest trades is between the same parallels for both routes; in the other months it is generally more decidedly to the north along Route A. Consequently, a vessel bound from Europe into the Caribbean Sea in June, should find the strongest trades between the parallels of 30° and 20° N. on the eastern side of the Atlantic and between 20° and 10° on the western. These tables appear to settle the question as to the best parallels for 'running down the trades' in the north Atlantic at any given time of the year.

"I will not trouble you further at present with this mode of measuring the trade-wind strength in different parts of the ocean, if you will allow me to lay before you the following comparative statement of average speed through the SE. trade-winds of the Indian and Atlantic oceans. The average course of the route through the former is about W.SW.; through the latter, NW. by W., as already stated. The wind, therefore, is aft through the trades of the South Atlantic, and quartering through those of the South Indian ocean. Supposing these two winds to be of the same force, the average speed in the Indian ocean should be greater. How much? a knot? I should judge about that, (rather under than over.)

"The time tables for the South Indian ocean were not got out for the parallels of 5°, 10°, 15°, and so on, as the others are; they were got out for the meridians of 100°, 90°, 80° E., and so on. But the mean crossings of 100°, 90°, 70°, 60°, and 40° E. are respectively so near the even parallels of 10°, 15°, 20°, 25°, and 30°, that they will answer present purposes nearly as well as though the crossing had been exactly upon the even parallel.

Average daily runs of 458 *American vessels through the southeast trades.*

Months.	SOUTH INDIAN OCEAN, BETWEEN SUNDA AND—								SOUTH ATLANTIC OCEAN, BETWEEN 5° AND—							
	10°.	15°.	20°.	25°.	30°.	Means.		Course.	10°.	15°.	20°.	25°.	30°.	Means.		Course.
						Daily.	Hourly.							Daily.	Hourly.	
	Miles.	*Miles.*	*Miles.*	*Miles.*	*Miles.*	*Miles.*	*Knots.*		*Miles.*	*Miles.*	*Miles.*	*Miles.*	*Miles.*	*Miles.*	*Knots.*	
January	88	153	171	143	159	141	6	NW.byW.	144	139	139	146	159	145	6	W.SW..
February	82	148	164	148	140	136	5½	....do....	160	147	133	108	145	139	5¾	....do....
March	105	173	170	154	139	148	6¼	....do....	149	149	146	158	146	145	6¼	....do....
April	105	173	186	146	127	147	6¼	....do....	134	160	131	133	136	139	5¾	....do....
May	136	197	180	145	123	152	6¼	....do....	160	156	137	136	116	141	6	....do....
June	175	177	186	173	146	171	7	....do....	156	168	142	137	129	146	6	....do....
July	174	193	200	166	142	155	6½	....do....	156	151	149	129	128	141	6	....do....
August	185	189	200	181	153	182	7½	... do....	126	146	140	118	154	137	5¾	....do....
September	199	201	197	160	151	182	7½	....do....	164	168	150	135	121	148	6¼	....do....
October	182	200	192	138	137	165	7	....do....	132	128	144	128	121	131	5½	....do....
November	124	193	172	127	135	150	6¼	....do....	133	151	157	155	155	150	6¼	... do....
December	86	156	161	124	156	133	5½	....do....	154	150	139	131	140	141	6	....do....

"The belt of strongest SE. trades in the Indian ocean lies between the parallels of 14½° and 17° S. Here the average speed, as indicated by the runs of 458 vessels, is, the year round, 192 miles a day—8 knots; the highest monthly average between these parallels being 209, and the lowest 174 miles a day. So here is a streak of remarkably strong and steady trades. In the South Atlantic the belt of strongest trades is between 10° and 15°; but they vary in their monthly averages from 128 to 168 miles a day. The force of the wind, as indicated by the average speed from Sunda to 10° S. in the Indian ocean, should not be compared with the force as indicated between 5° and 10° S. in the Atlantic, because in the Indian ocean the run is from

the Straits of Sunda to 10° S; consequently, the land and the trouble of getting an offing interfere with both wind and ship.

"We may from this table—for it is derived from the performance of some 458 vessels, as aforesaid—conclude that the SE. trades of the Indian ocean are stronger in the middle, but weaker near the southern edge; so are those of the Atlantic. Curious fact this.

"Upon second thought it is not so curious either. Where, but in the middle of the stream, should we look for the strongest part of the current? May not the calm belts retard the edges of the trade-winds, as the still waters of the ocean do the edges of the Gulf Stream?

"The Pacific and Indian oceans are broad; the Atlantic is a narrow sea, compared with them. Hence, as well as on account of the land, the belt of strongest trades in the South Atlantic may well be somewhat nearer to the equator than it is either in the Pacific or Indian ocean.

"By this use of daily runs at sea, and with observations with good anemometers at suitable stations—as Heard's islands, in the route to your golden colony, as Prince Edward's Island, Amsterdam, and the station already at Hobarton—we could pick out for every season the best streak of winds to and from Australia. Perhaps you may think it worth while some day to establish temporarily meteorological stations on these or some other points in the region of the "brave west winds" of the southern hemisphere. I know of no enterprise in the meteorological way that, at so small an expenditure of time and money, gives promise of richer rewards than this does, both practically to the mariner and scientifically to the philosopher.

"Are you aware that Heard's islands have never been surveyed, or visited even, by any man-of-war? I have called the attention of American officers to the importance of at least establishing the position of this group correctly. But it has not happened to be convenient for any American surveyor to go that way. These islands were discovered, November 25, 1853, by Captain Heard, of the American barque Oriental; they are right in the fair way to Australia. Perhaps some of her Majesty's men-of-war, on their way to Australia, may find it convenient to touch there and establish position.

"What a boon would it be to navigation to push these ship-measures of the wind along the brave west winds to and from Australia, and across the trade-wind belts in other parts of the ocean, so that the navigator should never be in doubt as to the parallels between which to place his vessel in order to be sure of his chances for the best winds for 'running down his longitude.'

"I have been only beating the bush by the side of the field you propose to occupy and to traverse. The promise in it is fine, and I wish you success with all my heart.

"Ships may be used in the same way to measure the force of the variables, if in getting out averages we will group results according to the wind, whether it be ahead, abeam, quartering, or aft, and classing storms to themselves. It is the *average* condition of wind and weather which is really the main object of our investigation; and if this investigation were carried out at sea, with the observations on land which you have in contemplation to refer to, and with your anemometers* as standards, it would give mariners much valuable and useful knowledge.

"The observations, therefore, which you are planning will have an important bearing upon this question, touching the force of the prevailing winds in different parts of the ocean. It is a question of great practical importance to commerce and navigation."

* A good anemometer, that can be used on board ship at sea, with all winds, is a very great desideratum. Your ingenious countryman, Piazzi Smyth, the Astronomer Royal of Edinburgh, has been giving his thoughts to the invention of one. Surely the ingenuity of the age is equal to this want. To satisfy it would be a high honor.

CONDITIONS UPON WHICH THE WIND AND CURRENT CHARTS ARE FURNISHED TO NAVIGATORS.

The proceedings of the Maritime Conference at Brussels have given a new impulse to the Wind and Current Charts, and greatly increased the number of laborers in this field of research. To enlarge the corps of observers and to extend the benefits of this system of observations, the Hon. J. C. Dobbin, Secretary of the Navy, authorized the merchant vessels of all friendly nations trading upon the high seas, to be put upon a footing with American vessels as it regards these charts.—(See below.)

He moreover commanded the abstract log recommended by the Conference at Brussels to be used on board of every man-of-war; and he recommended the same to be done by merchantmen, as per the following:

GENERAL ORDER.

NAVY DEPARTMENT, *November* 3, 1853.

The form of the "Abstract Log" recommended by the late Maritime Conference at Brussels is hereby approved and adopted for use in the Navy of the United States.

It is recommended to navigators generally, and will be faithfully kept on board of all vessels in the naval service.

Commanding officers of vessels are especially charged with the execution of this order; and they will transmit copies of the abstract kept on board to the Chief of the Bureau of Ordnance and Hydrography, at the end of the cruise, and at such other times as he may direct.

J. C. DOBBIN,
Secretary of the Navy.

To entitle the navigator to a copy of these Charts, or rather, of such sheets as relate to his cruising ground, and a copy of the Sailing Directions, he should be able to show that he is qualified and prepared to make the observations required of him; or, in other words, that he is provided with the requisite instruments, which should be, at least, one good steering compass, one good sextant, one mercurial barometer, and three air and water thermometers. I say at least, because the above enumeration includes only the instruments that are essentially necessary to enable the navigator to comply with his part of the agreement; and his part of the agreement, it should be distinctly understood, does not terminate with one voyage, nor with two, but it is intended to be binding upon him as long as materials are required for the prosecution of the work. On arriving in any port of the United States, those leaves only of the abstract log that are occupied with the records of the voyage should be cut from the pamphlet, and mailed to me at the Observatory, Washington. If mailed as "ship letters," which, by post office regulation they are considered to be, they will come without the prepayment of postage. Those masters who arrive in New York, however, are requested to hand their journals over to to the agent of this office, or to Messrs. Eggart & Son, chronometer makers in that city.

New charts are in process of construction or publication all the time. Co-operators, therefore, when they arrive in the United States, should report as to their next voyage, in order that they may be supplied with the latest publications. These are to be had by application to the Superintendent of the Observatory, or to the chart agent in New York.

In foreign countries, the following named offices or establishments are charged with the distribution of the Charts and Sailing Directions to ship masters, each to those of the nation to which the distributing office belongs:

HOLLAND.—Meteorological Institute, Utrecht. Lieutenant Andreau.

ENGLAND.—Meteorological Department, Board of Trade and Admiralty, London. Admiral Robert Fitz Roy, R. N.

FRANCE.—Captain De La March. Office of the Minister of Marine.

PORTUGAL.—Polytechnic School, Lisbon. Dr. G. J. A. D. Pegado.

RUSSIA.—Hydrographical Office, St. Petersburg.

SWEDEN AND NORWAY.—Marine Department.

DENMARK.—Hydrographical Office, Copenhagen. Captain P. Rothe.

SPAIN.—Minister of Marine, Madrid.

PAPAL STATES.—Minister of Marine, Rome.

BELGIUM.—Minister of Marine, Brussels.

SARDINIA.—Minister of Marine, Turin.

BRAZIL.—Minister of Marine, Rio de Janeiro.

CHILI.—Minister of Marine, Santiago.

AUSTRIA.—Board of Trade, Trieste.

BREMEN.—Marine Department.

HANOVER.—Minister of Public Instruction.

OLDENBURG.—Minister of Marine.

These charts, it cannot be too often repeated, are based upon information collected, for the most part, by private ship owners and masters. The information being furnished to the government gratuitously, the government incurs the expense of publishing it, and of making it available to navigators. The government then offers a copy of the chart so published to every navigator, upon condition that he will *continue* to keep and forward to this office abstract logs of his voyages, which abstracts are required to be kept according to the form prescribed at pp. 340–'1, vol. I.

Every navigator who, after receiving a copy of the Charts, fails to comply with these conditions, viz: to keep abstracts of his voyages, as per form, and to transmit them to me, at the National Observatory, on his return to the United States; or, on his return to his own country, to transmit them to the person appointed to receive them, forfeits his claim, not only to all future publications, but is bound to surrender up those he may have received.

Why do so many American navigators fail to fill properly with observations the three columns in the Brussels form of the abstract log, headed (p. 192) "FORMS AND DIRECTION OF CLOUDS." "PROPORTION OF SKY CLEAR." "HOURS OF FOG, RAIN, SNOW, HAIL."? I ask the question because I judge the impression has got out that these columns are but of little consequence. If any such notion has gone abroad it is both erroneous and mischievous. The information called for by these columns is of great value and importance, and I hope they will not be slighted hereafter. [This request, it gives me pleasure to say, *most* of my co-operators now (1859) comply with.]

The following is the form of the receipt which every navigator is required to sign for such Charts as he may receive:

FORM OF RECEIPT.

Received this *day of* 185

from *one Abstract Log, one copy of*

Maury's Sailing Directions, *edition, and*

sheets Nos. *(Series A.)*

do. do. *(" B.)*

do. do. *(" C.)*

do. do. *(" D.)*

do. do. *(" E.)*

do. do. *(" F.)*

MAURY'S WIND AND CURRENT CHARTS; *for and in consideration of which I promise to keep, in the manner and form prescribed, a journal of my voyages, and, on my return, to transmit the same to the National Observatory, Washington.*

_____ _____

_____ *Commanding* _____

_____ *of* _____

_____ *Bound* _____

Navigators will please bear in mind that the abstract logs which they return to this office are to be bound, and to be preserved for use and reference for an indefinite period. Therefore, it is desirable that care should be used with the abstract on board ship, so that it may be returned in good condition for preservation.

For these reasons, it is desired that the abstract log should be returned only at the end of the voyage, and not, as heretofore, when the voyage has been half completed. Vessels, therefore, in the California trade, are requested not to return their logs from San Francisco, but to continue them, and transmit them on their return to the Atlantic States.

It may be proper to add here, that the navigator who receives a copy of the *Charts and Sailing Directions* is expected to give his co-operation by keeping an abstract log, not only for the voyage upon which he may then be bound, but for all subsequent voyages, or until he shall be informed that no further co-operation is desired.

And whalemen will please recollect that their abstracts must embrace, for *every day that they are not at anchor*, a regular record of their latitude and longitude, force and direction of the wind three times a day, temperature of air and water, and mention of whales whenever seen. It is also desirable that every vessel should give her position in the abstract log, not by the bearings of the land, but by *latitude and longitude*, though the land may be close aboard.

STATEMENT SHOWING THE CHARTS THAT HAVE BEEN PUBLISHED, AND STATE OF FORWARDNESS OF THOSE REMAINING TO BE PUBLISHED.

NORTH ATLANTIC TRACK CHARTS, in eight sheets, extending from 20° E. to 100° W., and from the equator to 65° 30′ N. Nos. 2, 3, 6, and 7, have been re-engraved. Marginal numbers 1 to 8, inclusive. All published.

NORTH ATLANTIC THERMAL CHARTS, in eight sheets, and of the same dimensions as the Track Charts. Marginal numbers 14 to 21, inclusive. All published.

NORTH ATLANTIC PILOT CHARTS, in two sheets, extending from 0° to 100° W., and from the equator to 70° N. Second edition. Marginal numbers 9, 10. All published.

TRADE WIND CHART OF THE NORTH ATLANTIC, in one sheet, extending from 10° W. to 100° W. Published.

STORM AND RAIN CHART OF THE NORTH ATLANTIC, in one sheet, extending from 10° E. to 100° W., and from the equator to 60° N. Marginal number 119. Published.

SOUTH ATLANTIC TRACK CHARTS, in six sheets, extending from 20° E. to 70° W., and from the equator to 65° 30′ S. Sheets 1, 2, and 3 are a second edition. Marginal numbers 22, 23, 24, 25. Four published.

SOUTH ATLANTIC THERMAL CHARTS, in six sheets, and of the same dimensions as the Track Charts. Marginal numbers 72, 73, 74, 75. Four published.

SOUTH ATLANTIC PILOT CHARTS, in two sheets, extending from 20° E. to 70° W., and from the equator to 70° S. Marginal numbers 12, 13. All published.

PILOT CHART FOR THE COAST OF BRAZIL, in one sheet, extending from 29° W. to 39° W., and from 1° S. to 25° S. Marginal number 11. Published.

CAPE HORN PILOT CHART, in two sheets, extending from 55° W. to 91° W., and from 50° S. to 62° S. Marginal numbers 117, 118. Published.

STORM AND RAIN CHART OF THE SOUTH ATLANTIC, in one sheet, extending from 20° E. to 70° W., and from the equator to 60° S. Marginal number 120. Published.

NORTH PACIFIC TRACK CHARTS.—This series, when completed, will consist of eleven sheets, extending from 70° W. to 110° E., and from the equator to 65° 30′ N. Of these, all are published, except No. 1. No. 1 has Plan and Title engraved. Marginal numbers from 50 to 59, inclusive.

NORTH PACIFIC THERMAL CHARTS, in eleven sheets, and of the same dimensions as the Track Charts. Considerable progress has been made in the construction of this series; but the work upon them has been suspended for the present, for want of office force.

NORTH PACIFIC PILOT CHARTS, in six sheets, extending from 15° E. to 75° W., and from the equator to 70° N. Of these, sheets Nos. 1, 2, 3, 5, and 6, have been published. Sheet No. 4 is in process of construction. Nos. 1 and 2 are superseded by No. "1 and 2" North Indian Ocean. Marginal Nos. of sheets 3, 5, 6, are 68, 70, 71.

STORM AND RAIN CHARTS FOR THE NORTH AND SOUTH PACIFIC OCEANS are being constructed.

SOUTH PACIFIC TRACK CHARTS.—This series will consist of ten sheets, extending from 140° E. to 70° W. Sheets Nos. 5, 9, and 10 have been published. Nos. 1 and 3, plan work done; No. 4, projection only. Marginal Nos. 43, 47, 48.

SOUTH PACIFIC PILOT CHARTS.—This series will consist of six sheets, of which Nos. 1, 2, 5, and 6 have been published. The remaining sheets are now under construction. Marginal Nos. 60, 61, 64, 65.

INDIAN OCEAN TRACK CHARTS.—This series will consist of eleven sheets, extending from 20° E. to 140° E. Of these, Nos. 4, 5, 6, 7, 8, 9, 10, and 11 have been published, and the Coast Line has been engraved for the remaining sheets. Marginal Nos. 31 to 38, inclusive.

INDIAN OCEAN THERMAL CHARTS.—The series will consist of eleven sheets, and will be of the same dimensions as the Track Charts. Considerable progress has been made in the preparation of all the sheets of this series; but the work upon them has been suspended for the present, for want of material.

PILOT CHARTS FOR THE SOUTH INDIAN OCEAN are included under the head of SOUTH PACIFIC PILOT CHARTS.

PILOT CHARTS FOR THE NORTH INDIAN OCEAN, in one sheet, numbered "1 and 2," covers the same ground with Nos. 1 and 2 North Pacific, which it supersedes. Marginal No. "66 and 67."

WHALE CHART OF THE WORLD, in four sheets. Marginal Nos. 79 to 82, inclusive. All published.

PROGRAMME WHALE CHART, in one sheet. Marginal No. 78. Published.

PHYSICAL MAP OF THE OCEAN, in four sheets—in process of construction.

RECAPITULATION.

Number of sheets already published	68
Number of sheets in the hands of the engraver	20
Number of sheets projected and in process of construction	32

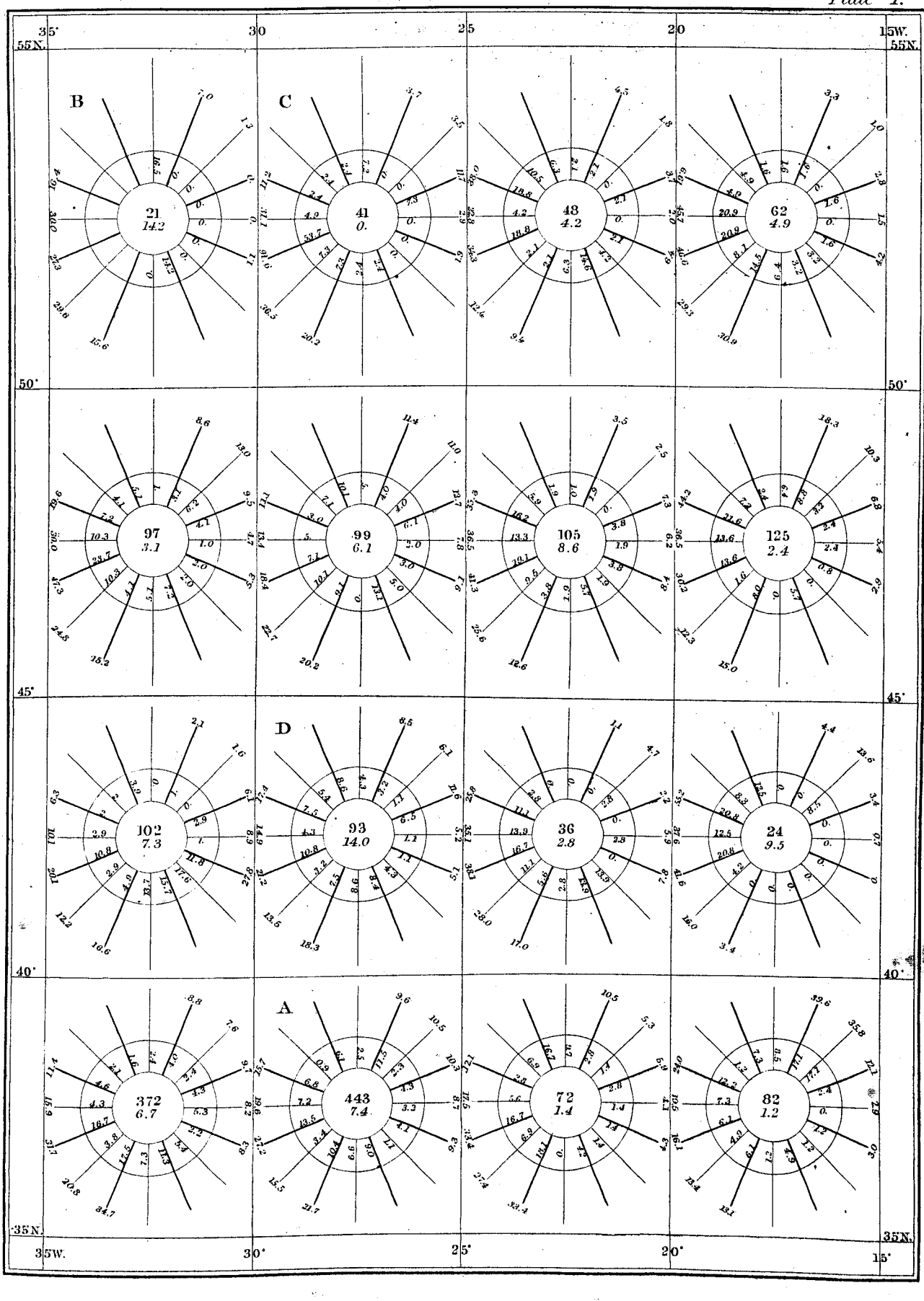
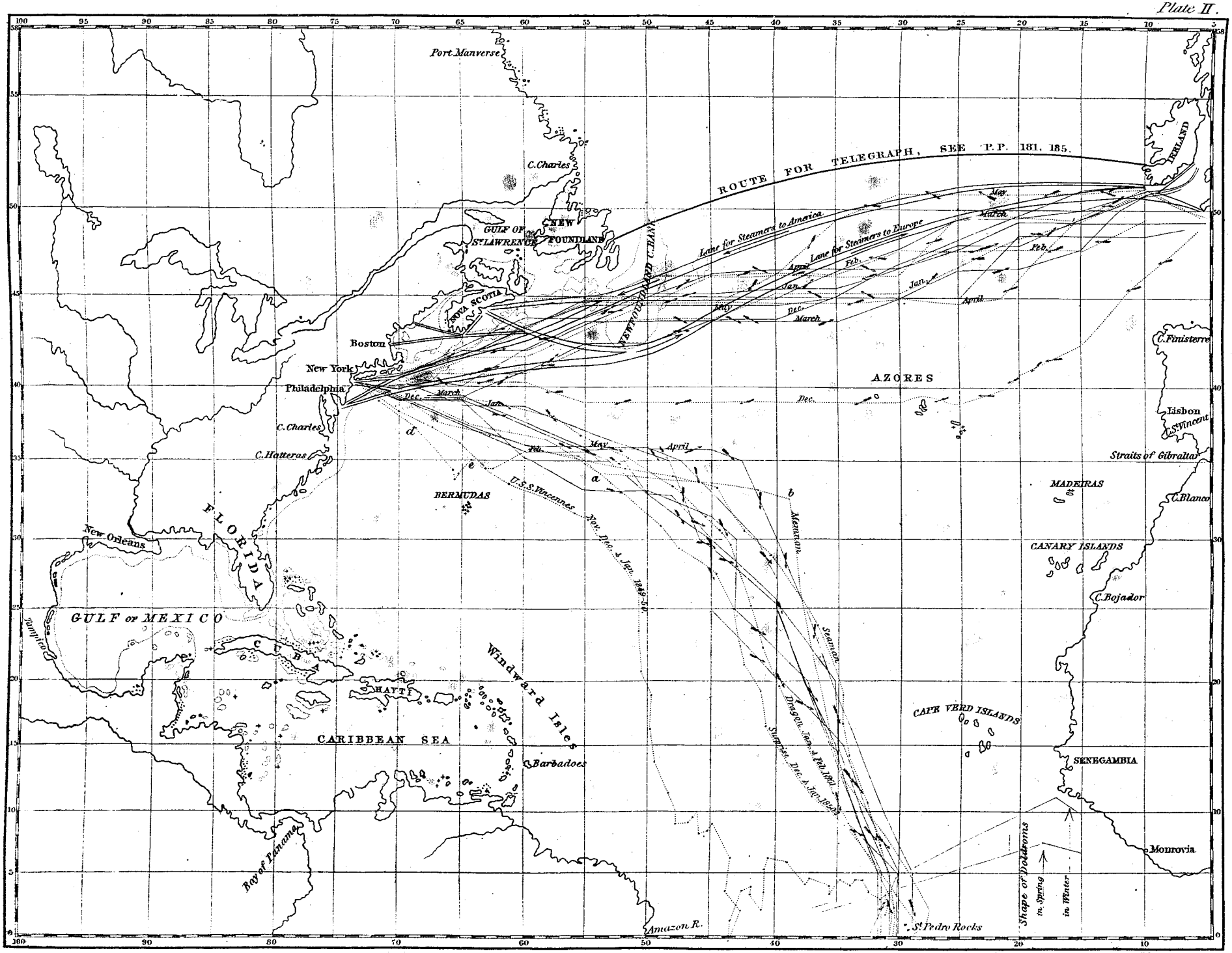
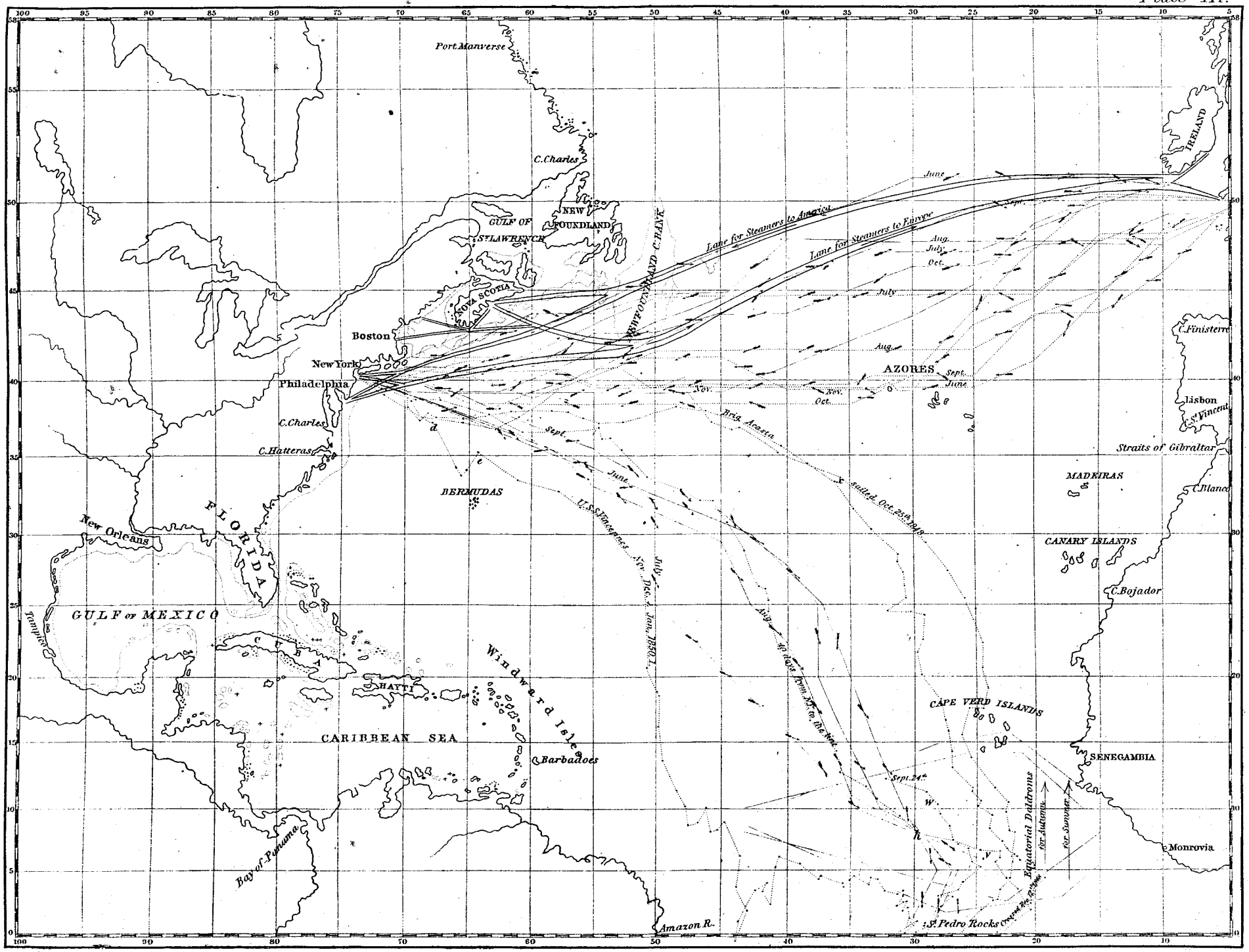

35°
30
25
20
15W.
55N.
55N.
B
21
14.2
C
41
0.
48
4.2
62
4.9
50°
50°
97
3.1
99
6.1
105
8.6
125
2.4
45°
45°
D
102
7.3
93
14.0
36
2.8
24
9.5
40°
40°
A
372
6.7
443
7.4
72
1.4
82
1.2
35N.
35N.
35W.
30°
25°
20°
15°

Plate II.

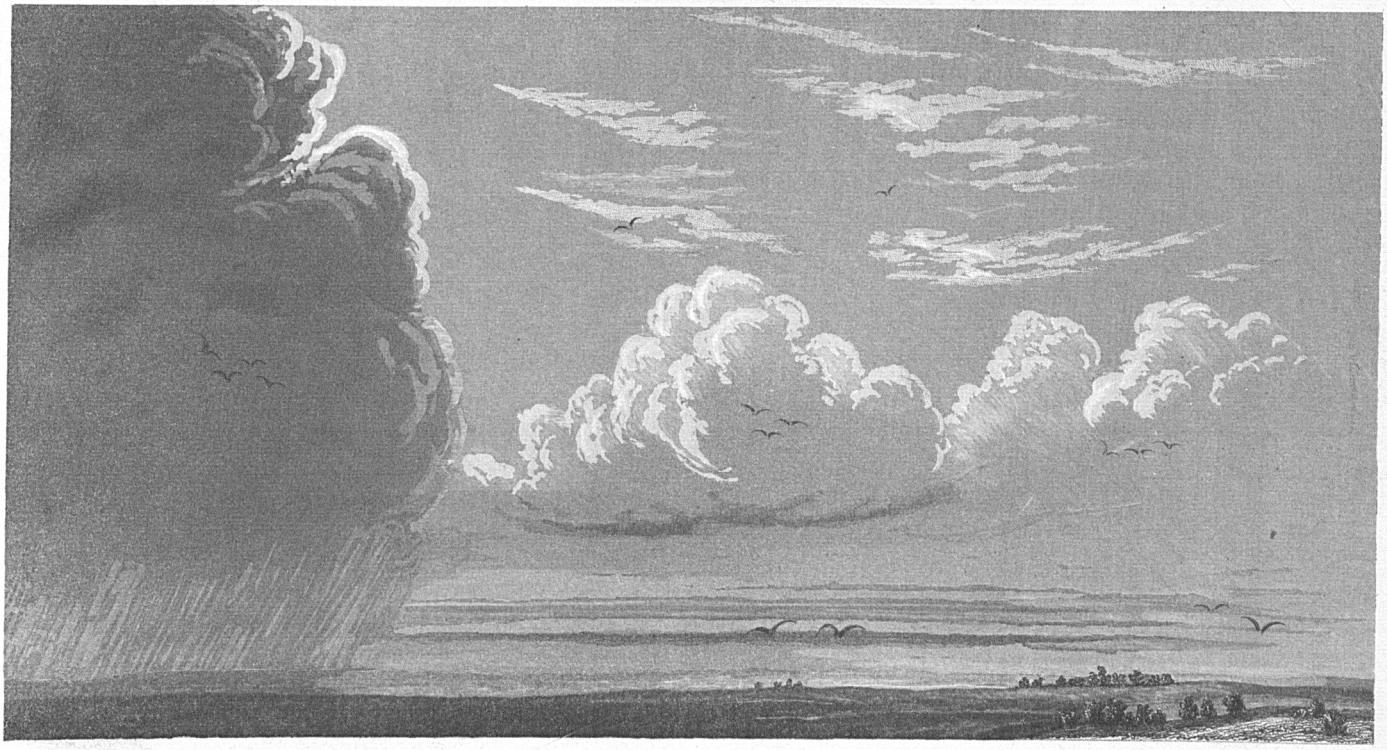

ROUTE FOR TELEGRAPH, SEE P.P. 181, 185.
Port Manverse
C. Charles
GULF OF St. LAWRENCE
NEW FOUNDLAND
NOVA SCOTIA
NEWFOUNDLAND C. BANK
Lane for Steamers to America
Lane for Steamers to Europe
IRELAND
Boston
New York
Philadelphia
C. Charles
C. Hatteras
BERMUDAS
U.S.S. Vincennes
Nov. Dec. & Jan. 1849-50
Mentor
Seamen
Dragon Jan. & Feb. 1850
Surprise Dec. & Jan. 1850
AZORES
C. Finisterre
Lisbon
St. Vincent
Straits of Gibraltar
MADEIRAS
C. Blanco
CANARY ISLANDS
C. Bojador
CAPE VERD ISLANDS
SENEGAMBIA
Monrovia
St. Pedro Rocks
Shape of Doldrums in Spring in Winter
FLORIDA
New Orleans
GULF of MEXICO
Tampico
CUBA
HAYTI
CARIBBEAN SEA
Windward Isles
Barbadoes
Bay of Darien
Amazon R.


Port Manverse
C. Charles
NEW FOUNDLAND
GULF OF ST. LAWRENCE
NOVA SCOTIA
Boston
New York
Philadelphia
C. Charles
C. Hatteras
BERMUDAS
New Orleans
FLORIDA
GULF OF MEXICO
Tampico
CUBA
HAYTI
CARIBBEAN SEA
Windward Isles
Barbadoes
Bay of Panama
Amazon R.
NEWFOUNDLAND BANK
Lane for Steamers to America
Lane for Steamers to Europe
June
Sept.
Aug.
July
Oct.
July
Aug.
Sept.
June
Nov.
Nov.
Oct.
Brig Acasta
Sept.
June
U.S.S. Vandalia
Nov. Dec. & June 1861
July
Aug.
sailed Oct. 25th 1848
Aug. 40 days from N.Y. to the Isl.
Sept. 24th
W.
h
v
Equatorial Doldrums
for Autumn
for Summer
St. Pedro Rocks
AZORES
IRELAND
C. Finisterre
Lisbon
C. St. Vincent
Straits of Gibraltar
MADEIRAS
C. Blanco
CANARY ISLANDS
C. Bojador
CAPE VERD ISLANDS
SENEGAMBIA
Monrovia

CLOUDS.

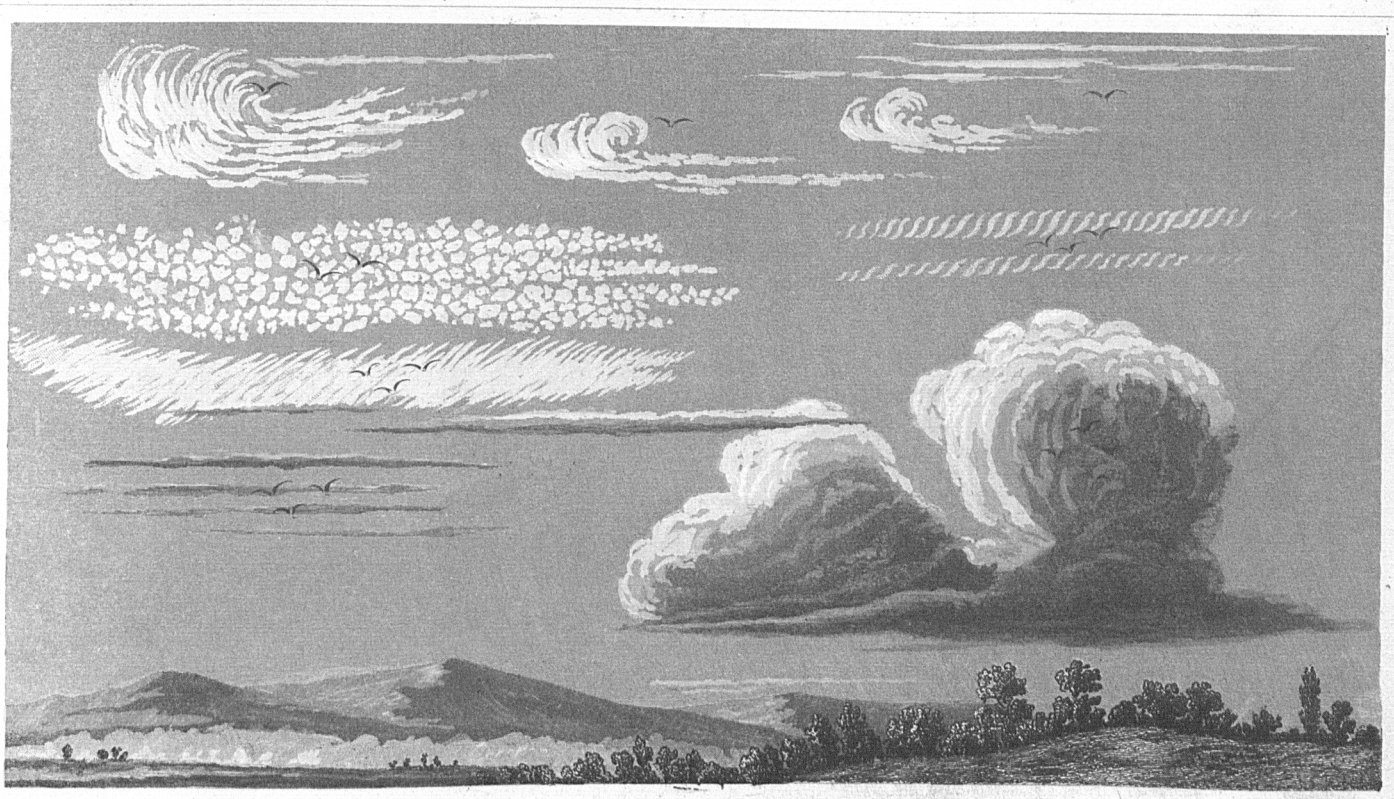
PRIMARY FORMS.

PLATE IV.



Stratus (Str.) Cirrus (Cir.) Cumulus (Cum.) Nimbus (Nimb.)

SECONDARY FORMS.

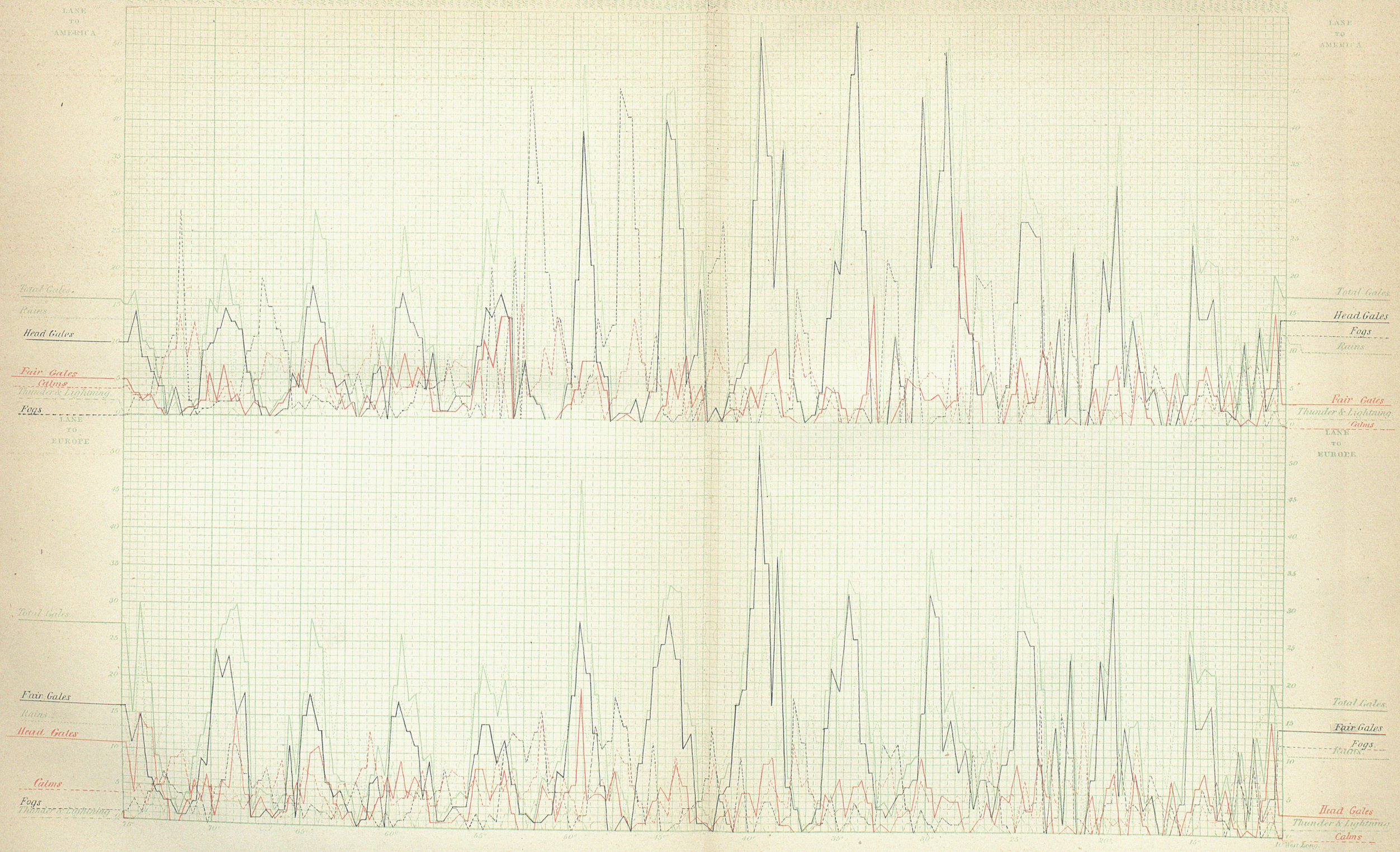


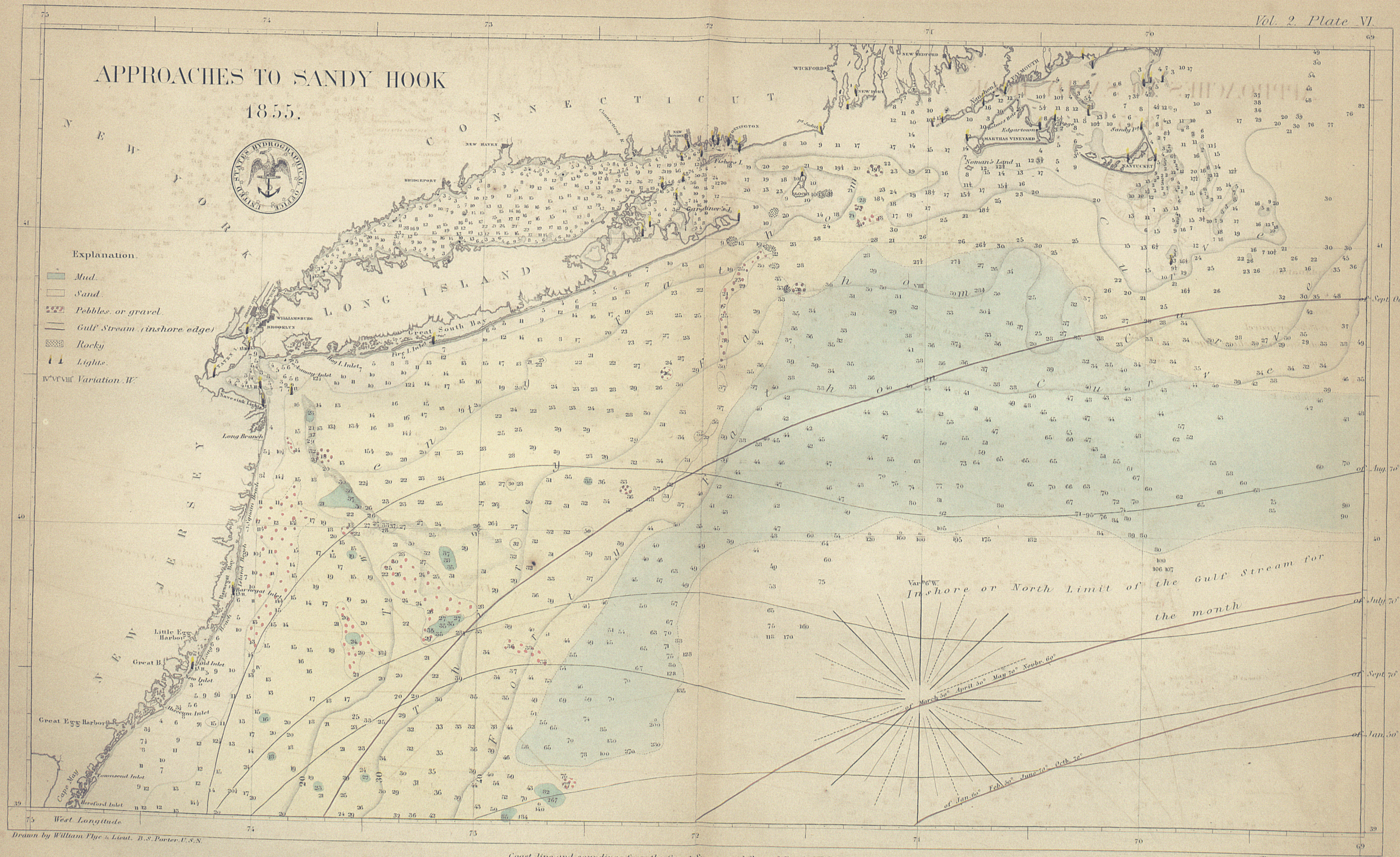
Engraved & Printed by J.M.Butler, Philad.a

Cirrus Cirrocumulus (Cir-Cum.) Cirrostratus (Cir-Str.) *various forms* Cumulostratus (Cum-Str.)

GALES AND FOGS ALONG THE STEAM LANES ACROSS THE ATLANTIC

Plate V

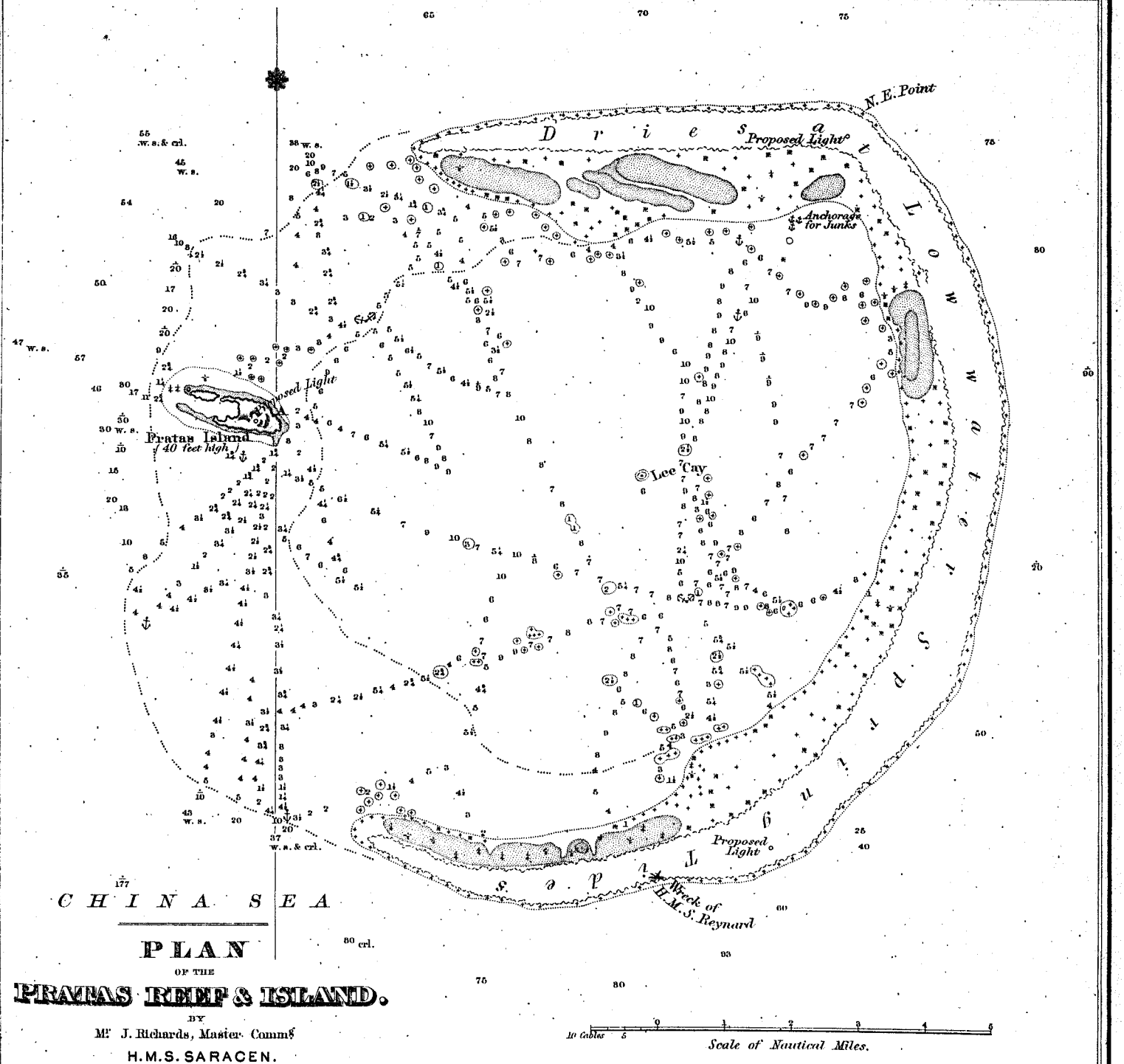




Drawn by William Flye & Lieut. B. S. Porter U.S.N.

Coast line and soundings from the Coast Survey and Chart of E. & G. W. Blunt 1852.

Engraved by Selmar Siebert



PLAN

OF THE

PRATAS REEF & ISLAND.

BY

Mr J. Richards, Master Comm^d

H.M.S. SARACEN.

Assisted by

Mr J. H. Kerr, Master Comm^d

H.M.S. DOVE.

and

Mr W. Blackney ..... *Ass^t Pay^t*

Mr J. H. Ellis ..... *Sec^d Master*

Mr Henry Bond ..... *Sec^d Master*

H.M.S. ACTEON.

APRIL, 1858.

A { *Latitude* 20° 00′ 00″ N.
Longitude 116° 43′ 22″ E.
Variation
H.W. at F. & C. (about) IV. A.M.
Rise & Fall (about) 5 feet.

Mer Dist. E. of Cowloon P^t (Hong Kong) 10 min. (2.3 sec.)

Numerous Coral Knolls are believed to exist in the Lagoon and Channels leading thereto, beside those appearing in this Survey. Vessels wishing to enter the Lagoon are recommended to use the South Channel which is believed to be available for 15 feet draft.

Great caution is required. The Vessel should be conned from the mast head, having the Sun astern or abaft the beam.

∘ *Proposed positions for the Light houses.*

Engd by Oliver J. Stuart, N.Y.