ATMOSPHERIC PRESSURE (expressed in inches and hundredths).

The distribution of mean atmospheric pressure for April, 1893, as determined from observations taken daily at 8 a. m. and 8 p. m. (75th meridian time), is shown on Chart II by isobars.

Chart VI exhibits the normal distribution of atmospheric pressure and prevailing wind-directions over the United States for April. The publication of the charts of this series is preliminary to the publication by the Weather Bureau of specially prepared data and charts showing meteorological and climatic features and conditions of the United States.

In April, 1893, the mean pressure was highest along the immediate middle Pacific and south Atlantic coasts and over the Florida Peninsula, where it was above 30.10, and the mean readings were above 30.00 over the British Northwest Territory north of North Dakota and eastern Montana. The mean pressure was lowest in an area extending from Lake Superior southwestward to the southeast slope of the Rocky Mountains, and over the greater part of the southern plateau region, where it was below 29.90.

In April there is usually a decrease of pressure over the United States and Canada, except along the north Pacific coast and over Maine and the Canadian Maritime Provinces, where the normal pressure is slightly higher than for March. The most marked decrease of pressure usually occurs in the middle Missouri valley and on the northeast slope of the Rocky Mountains, where it is more than .10. In British America west of Hudson Bay the decrease of pressure probably exceeds .20.

A comparison of the pressure chart for April, 1893, with that of the preceding month shows a decrease of pressure, except over New England and the Canadian Maritime Provinces, and on the middle and north Pacific coasts. The most marked decrease of pressure was shown in an area extending from the Dakotas and Minnesota southward to Texas, where the mean pressure was .15 to .20 lower than for March. The greatest increase of pressure was noted along the Pacific coast between the 40th and 45th parallels, where the mean values were .15 to .18 higher than for March. On the extreme southeast New England coast, and over New Brunswick and eastern Quebec the increase of pressure was .05.

The mean pressure was above the normal over the Atlantic coast, east Gulf, and middle and south Pacific coast states; it was also slightly above the normal in the British Northwest Territory. The greatest departure above the normal was shown in New England and at Hatteras, N. C., where the mean pressure was .10, or more, higher than usual. Over northern California and northwestern Nevada the mean readings were .05, or more, above the normal. The most marked departure below the normal was shown from Lake Superior to the Rio Grande River, where the mean values were .05 to .10 lower than usual.

HIGH AND LOW AREAS.

The paths of areas of high and low barometric pressure over the United States and Canada during April, 1893, are shown on Charts IV and I, respectively, and some of the more prominent characteristics of the areas are given in the table at the end of this chapter.

HIGH AREAS.

Twelve high areas appeared, the average number traced for April during the last 18 years being 8. The average velocity of the high areas, 34 miles per hour, was about 8 miles per hour greater than the average velocity of high areas for April. Of the high areas traced for the current month, 2 advanced from the Pacific coast between the 40th and 45th parallels, 7 appeared over the British Northwest Territory, 1 over the northern plateau region, 1 on the northeast slope of the Rocky Mountains, and 1 over the region north of Lake Superior. One of the Pacific high areas reached the New England and the other the south Atlantic coast. Three of the high areas from the British Northwest Territory and the high area from the northern plateau region reached the New England coast, 2 disappeared over the Gulf of Saint Lawrence, 1 passed off the south Atlantic coast, and 1 occupied the middle Rocky Mountain region at the close of the month. The high area from the northeast slope of the Rocky Mountains advanced to the south Atlantic coast. The high areas of the month followed two principal paths, one from the British Northwest Territory eastward north of the Great Lakes and thence over New England or the Canadian Maritime Provinces, and the other southeastward to the upper Mississippi valley and thence to the Atlantic coast. The following is a description of the high areas traced on Chart IV.

I.—Occupied Manitoba at the opening of the month. The morning report of the 1st showed a fall in temperature of 20° to 30° in the Red River of the North Valley, and a reading of 6° below zero at Prince Albert, N. W. T. By the evening report of that date the center of the high area had moved to the region north of Lake Superior, and the temperature had fallen 20° to 30° in an area extending from eastern Iowa over Lake Superior. During the 2d this high area moved southeastward over New York and New England, the temperature fell 20° to 30° from the middle Ohio valley over New England and the Saint Lawrence Valley, the morning report showed temperature below freezing generally in the Lake region, and in the evening freezing weather was reported in northern New England. The morning of the 3d the pressure was above 30.40 over southeastern New England, and the temperature was 14° to 16° below freezing in eastern Maine and Nova Scotia.

II.—Appeared over the middle Missouri valley the morning of the 4th, and passed thence to the southwestern lake region by the evening report, with a fall in temperature of 20° from southern Wisconsin over west-central Lower Michigan. During the 5th this high area moved southeastward and disappeared off the south Atlantic coast, the morning temperature was below the freezing point in the lower lake region, and the evening report showed a slight fall in temperature in the middle Atlantic and New England states. The morning of the 6th the temperature was below 32° generally in New York and New England.

III.—Occupied the eastern Saskatchewan valley the morning of the 5th, with pressure above 30.50, and by the evening of that date had passed eastward over Manitoba, with a fall in temperature of 20° over the central part of the Dakotas. During the 6th this high area advanced to New England, with pressure rising above 30.60, and a slight fall in temperature from the Ohio Valley over the middle Atlantic and New England states. The morning of the 7th a fall in temperature of 20° was shown at Lynchburg, Va., and freezing weather was noted generally in New England.

IV.—Apparently advanced from the Pacific coast, and the evening of the 7th occupied southwestern Montana and the adjoining part of Idaho, with pressure above 30.20. On that date heavy frost injured foliage and pear buds about Keeler, Cal., and the temperature fell 30° to 40° from southeastern Montana over western South Dakota. During the 8th the high area moved over the middle Missouri valley, and a fall in temperature of 20° to 30° occurred from the southern lake region to northwestern Texas. During the 9th this high area moved eastward over the southern lake region, with a slight fall in temperature in the middle Atlantic and New England states, and during the 10th passed over New England and the Canadian Maritime Provinces.

V.—Advanced eastward from the Pacific coast between the 40th and 45th parallels the night of the 8th, and passing thence eastward, reached the southern New England coast on the 11th. Following closely number IV, this high area was attended by slight changes in temperature, except in western North Carolina, where a fall of 20° was noted the morning of the 11th.

VI.—Advanced southeastward from the British Northwest Territory and occupied North Dakota the evening of the 13th, with pressure above 30.40. On that date the temperature fell 20° to 30° in the upper lake region, was about 20° below the normal from the middle-eastern slope of the Rocky Mountains over the middle Missouri valley, and reached 32° at Davenport, Iowa, in the morning. During the 14th this high area passed to Colorado, and drifting thence eastward occupied an elongated area extending from Minnesota and Lake Superior to Texas at the evening report. On that date the temperature fell 20° to 30° in the Ohio and lower Mississippi valleys, and was about 20° below the normal in the middle Mississippi and middle and lower Ohio valleys. In the morning, heavy frost injured early fruit, especially plums, about Kearney, Nebr., and the temperature fell to the freezing point in central Indiana.

During the 15th this high area advanced slowly eastward over the Ohio Valley, the temperature fell 20° to 30° over parts of the Gulf and south Atlantic states and Virginia, freezing weather was noted in central Ohio in the morning, and frost injured fruit blooms and tender vegetation in Illinois, Kentucky, Missouri, Kansas, Arkansas, and Oklahoma. The evening of the 16th this high area covered the Northeastern States. On that date the temperature fell 10° to 20° in the south Atlantic states, and light frost was reported in the morning in eastern Kentucky, eastern Tennessee, in northern parts of the east Gulf states, and in Virginia and western North Carolina. During the 17th this high area passed eastward over the Canadian Maritime Provinces.

VII.—Advanced from the Oregon coast to Utah during the 15th, passed thence to Iowa during the 16th, and moved thence to the middle Mississippi valley by the morning of the 17th. On the 17th the pressure was high from the Great Lakes to the Gulf and middle and south Atlantic coasts, an area of high pressure advanced from Manitoba to Lake Superior, and anticyclonic centers were located over lower Lake Michigan, the upper Ohio valley, and eastern Tennessee. The morning of the 18th a ridge of high pressure extended from eastern Lake Superior to the south Atlantic states and Virginia, and during that date this high area passed off the south Atlantic coast. Following closely number VI this high area was attended by slight changes in temperature. The morning of the 18th light frost occurred in the southern Alleghany Mountain region, and heavy frost was reported at Lenoir, N. C.

VIII.—Appeared north of Lake Superior the morning of the 19th, with pressure above 30.20, and passed thence to the Gulf of Saint Lawrence by the evening of the 20th, with pressure rising above 30.40. The passage of this high area was unattended by noteworthy features.

IX.—Moved southeastward over the Missouri Valley during the 22d, following the passage of low area VI, and the evening of that date occupied an elongated area extending from the Red River of the North Valley to Oklahoma. Moving eastward over the Ohio Valley during the 23d this high area disappeared off the middle Atlantic coast during the 24th. The morning of the 22d considerable damage was caused by frost in eastern Tennessee, strawberries and tender vegetation about Nashville, Tenn., were damaged the morning of the 23d, and the morning of the 24th heavy frost occurred in Virginia and the District of Columbia.

X.—Appeared over Alberta the evening of the 23d. On that date the temperature fell 20° to 35° over the middle plateau region and on the northeast slope of the Rocky Mountains, and was 20° to 25° below the normal over Montana in the evening. During the 24th this high area moved slowly eastward north of Montana. During the 25th the high area passed to the region north of Lake Superior, and by the evening of the 26th had reached the New England coast. After the 23d the passage of this high area was attended by slight changes in temperature.

XI.—Appeared on the northeast slope of the Rocky Mountains on the 25th, with a marked fall in temperature in the middle and northern Rocky Mountain regions, and temperature 20° below the normal in Colorado the evening of that date. During the 26th the high area advanced to the middle-eastern slope of the Rocky Mountains, passed thence over the Ohio Valley during the 27th, and disappeared off the south Atlantic coast during the 28th. The passage of this high area was unattended by marked temperature changes in the central valleys and the Atlantic coast states.

XII.—Occupied Alberta the evening of the 26th, and moved slowly eastward north of Montana during the 27th, with a slight fall in temperature over the Western States. During the 28th the high area advanced to Manitoba, with pressure rising above 30.30, and a fall in temperature of 20° to 30° on the middle-eastern slope of the Rocky Mountains. On the 29th this high area passed southwestward to the middle Rocky Mountain region, the morning temperature at Dodge City, Kans., was 32°, and the temperature was 20° to 30° below the normal in Colorado, Kansas, and Nebraska. From the evening of the 29th until the close of the month this high area remained about stationary over Colorado, a slight fall in temperature occurred in the Southwest, and the temperature was 20° below the normal in the middle Missouri valley.

LOW AREAS.

The average velocity of low areas for April is about 26 statute miles per hour. A principal track of April low areas is traced from Wyoming eastward to New England, and thence to the Banks of Newfoundland. Less frequented tracks are traced from the British Northwest Territory to the Lake region, and from the southern plateau region and the south Atlantic coast northeastward toward the Great Lakes and Newfoundland, respectively. An average of about one low area per month traverses the continent from the Pacific to the Atlantic coasts.

The tracks of eight low areas are shown on Chart I for April, 1893, the average number traced for the corresponding month of the last 20 years being 10. Of the low areas traced for the current month 3 advanced from the Pacific coast, 2 from the southern plateau region, 2 from the southeast slope of the Rocky Mountains, and 1 from Alberta. Two of the low areas from the Pacific coast reached the Gulf of Saint Lawrence, and 1 disappeared over the Missouri Valley. One of the low areas from the southern plateau region, and the low area from Alberta, advanced to the Gulf of Saint Lawrence; the other low area from the southern plateau disappeared over the Ohio Valley. One of the low areas from the southeast slope of the Rocky Mountains disappeared over the Gulf of Saint Lawrence, and the other passed south of Nova Scotia. The average velocity of the low areas, 33 miles per hour, was about 7 miles per hour greater than the average velocity of low areas for April. The following is a description of the low areas whose paths are plotted on Chart I:

I.—The month opened with an area of low pressure over Alberta, where it remained nearly stationary until the night of the 2d. On the 1st heavy rain fell on the north Pacific coast, and snow was reported in the region north of North Dakota. During the 2d the rain area extended southward over the Pacific coast to San Francisco; snow fell in the Lake Superior region and the Red River of the North Valley, and

the temperature rose 20° from the Dakotas over northern Illinois. During the 3d the center of disturbance moved eastward over the Dakotas and Minnesota to central Wisconsin, the temperature rose 20° to 26° over the lower lakes, rain fell from the middle Mississippi and Ohio valleys over the Lake region and western parts of the Atlantic coast states, and thunderstorms were noted from Lower Michigan to western Virginia. By the evening of the 4th the storm-center had reached the lower Saint Lawrence valley, and rain was quickly followed by clearing weather in the Atlantic coast states. On that date thunderstorms were reported in New England, high winds caused some damage in eastern New York, and westerly gales prevailed over the Lake region.

II.—Advanced from the Pacific coast and the evening of the 3d was central north of Washington, with pressure below 29.60, and heavy rain on the north Pacific coast. During the 4th this low area advanced to the middle Missouri valley, and a disturbance developed on the southeast slope of the Rocky Mountains. The morning of the 5th the storm-center occupied Oklahoma, from which position it apparently moved northward the night of the 5th and united by the morning of the 6th with low area III which had extended southeastward over the plateau and central Rocky Mountain regions. On the 5th rain fell in areas in the central valleys and the Lake region, and thunderstorms were noted in eastern Tennessee in the afternoon.

III.—Advanced over the Oregon coast during the 5th, with rain in the middle and north Pacific coast states and high winds in the central valleys of California. During the 6th the center passed to southeastern Montana, with pressure below 29.10, the temperature rose 20° in the Northwest and was 20° to 30° above the normal on the middle-eastern slope of the Rocky Mountains, rain fell generally on the middle and north Pacific coasts, in the plateau regions, the British Northwest Territory, and north-central districts, heavy gales prevailed in the middle and southern Rocky Mountain and plateau regions, and thunderstorms and high wind caused considerable damage in the western lake region.

During the 7th this low area advanced to Lake Superior, with central pressure 29.20, the temperature rose 20° to 30° in the Ohio Valley and the Lake region, and was 20° to 35° above the normal in the middle Mississippi valley, the rain area reached the middle Atlantic and New England coasts, snow fell in the Northwest, severe thunderstorms occurred in the Lake region and New York, and destructive gales prevailed in the Western and Northwestern States and the Lake region. Moving eastward this low area reached the lower Saint Lawrence valley the evening of the 8th. On that date the temperature rose 20° to 30° in the middle Atlantic states, and was 20° to 30° above the normal in parts of eastern Pennsylvania, Maryland, and Virginia, and unusually severe thunderstorms occurred in New England during the afternoon and evening. By the morning of the 9th the storm-center had disappeared over the Gulf of Saint Lawrence.

IV.—Apparently developed over the southern plateau region, and the morning of the 10th occupied Utah, with pressure below 29.80. By the evening report the center of disturbance had moved eastward to Colorado, with pressure below 29.50, snow over the middle plateau region, and high winds in the Rocky Mountain districts. During the 11th this low area passed northeastward to the middle Missouri valley, with pressure falling to 29.00 at Sioux City, Iowa, at the evening report. On that date rain fell generally in the Ohio, middle and upper Mississippi, and Missouri valleys, snow was reported in North Dakota and Montana, heavy gales prevailed in the central valleys and the western lake region, and destructive local storms occurred throughout the Western States. In the evening a well-defined tornado moved northeast over a part of Lafayette County, Mo.; tornadoes were also reported in Iowa and Kansas. By the morning of the 12th the storm-center had passed northward to Minnesota, with pressure 28.86 at Moorhead, and by the evening report had advanced to northeastern Minnesota, with a marked increase in central pressure. On that date the rain area extended to the middle and south Atlantic coasts, snow fell in the Northwest, exceptionally severe gales prevailed over the Great Lakes and the middle and northern districts of the central valleys, and destructive local storms occurred in the Ohio and Mississippi valleys and the upper lake region. During the 13th this low area moved eastward to the middle Saint Lawrence valley, with an appreciable loss of energy, the rain area contracted to the Atlantic coast, snow fell in the northern lake region, and southwesterly gales prevailed over the Lake region.

V.—Developed during the 13th in the southwest part of a trough of low pressure which extended from the Lake region and Saint Lawrence Valley to the Rio Grande River, and at the evening report was central near Abilene, Tex., with pressure below 29.70. During the 14th this low area moved rapidly northeastward to the middle Atlantic coast, rain fell generally south of the Lake region, high winds occurred over the Gulf States, and destructive local storms were reported in the Southwestern States. The morning of the 15th the low area was central near Philadelphia, Pa., with pressure below 29.60, and by the evening report had passed northeastward off the New England coast, with rapidly clearing weather in the middle Atlantic and New England states, and northwest gales along the Atlantic coast north of North Carolina.

VI.—Apparently developed over the southern Rocky Mountain region on the 17th, and during the 18th moved to Oklahoma, with pressure falling below 29.50, rain generally in the central valleys, and thunder and hail storms in Kansas, Nebraska, and Missouri during the day and evening, and an unusually severe thunder and rain storm at Galveston, Tex., at night. During the 19th the center advanced to eastern Missouri, with pressure below 29.20, rain in the central valleys and the Gulf and middle and south Atlantic states, and destructive local storms in the Southern States and the Mississippi Valley, and hard gales over the upper lakes. The morning of the 20th the low area was central near Davenport, Iowa, with pressure 28.80, and by the evening report had reached western Lake Michigan, with pressure 28.90 at Milwaukee, Wis. On that date the rain area contracted northward and covered the middle and northern districts east of the Rocky Mountains, snow fell in the middle and upper Mississippi and Missouri valleys and the northern lake region, and destructive local storms occurred in the Atlantic coast states, the Lake region, and the Ohio and upper Mississippi valleys. On the 21st the center of disturbance moved slowly northward to eastern Lake Superior, with pressure rising above 29.30, the rain area contracted over the north-central and northeastern districts, snow fell in the upper Mississippi valley and the upper lake region, and gales prevailed over the Lake region, the middle and upper Mississippi and Ohio valleys, and the Atlantic coast states. Moving eastward with a marked decrease of energy, this low area disappeared over the Gulf of Saint Lawrence by the morning of the 23d.

VII.—Appeared on the north Pacific coast on the 21st, and during the 22d moved eastward toward Calgary, Alberta, with pressure below 29.60, and rain from the middle and north Pacific coasts over west parts of the middle and northern plateau regions. During the 23d the storm-center passed southeastward over Montana, with pressure below 29.50, the rain area extended over the middle plateau region, snow fell on the northeast slope of the Rocky Mountains, and an exceptionally severe thunder and rain storm was reported at

Salt Lake City, Utah, in the afternoon. By the evening of the 24th this low area had moved southward to Kansas, rain fell in the western lake region and the middle and upper Mississippi and Missouri valleys, and snow continued in the extreme northwest.

During the 25th the low area remained nearly stationary over Oklahoma, with pressure about 29.50 at the evening report, rain fell generally over the interior of the country, unusually well-defined tornadoes occurred in the evening in Oklahoma and northeastern Texas, and thunderstorms were noted thence over the lower Missouri, middle Mississippi, and lower Ohio valleys. By the evening of the 26th the center of disturbance had advanced to the extreme upper Mississippi valley, with pressure below 29.50, rain had fallen from the interior of the Gulf and south Atlantic states over the Lake region and the Northwest, thunderstorms were reported in Arkansas, Indiana, Alabama, and Lower Michigan, and heavy winds prevailed over the Great Lakes. During the 27th this low area passed slowly northeastward over Lake Superior, with pressure below 29.40 at the morning report, the rain area contracted to the Saint Lawrence Valley and the New England States, and high west winds continued over the Great Lakes. By the evening of the 28th the low area had disappeared over the Gulf of Saint Lawrence.

VIII.—Appeared central over the middle plateau region the morning of the 27th, to which position it had apparently advanced from the southward, and by the evening of that date had passed eastward over Colorado, with pressure below 29.70, and rain along the middle and west Gulf coasts. During the 28th this storm moved southeastward to Oklahoma, with rain in the upper Mississippi valley, snow in the Northwest, very destructive tornadoes in north-central Texas and Oklahoma in the evening, and heavy rain and hail storms in Missouri. During the 29th this low area moved northeastward, and at the evening report a trough of low pressure extended from the middle Atlantic coast to Texas. On that date rain fell over the northern and central districts east of the Rocky Mountains, snow was reported in the middle Rocky Mountain region, and thunderstorms occurred from the middle Mississippi valley to the middle Atlantic coast. During the 30th the pressure continued low from the upper Ohio valley to Texas, rain fell generally in the central valleys, and destructive rain, wind, and thunder storms were reported in the Ohio and lower Mississippi valleys.

Tabulated statement showing principal characteristics of areas of high and low pressure.

Barometer.	First observed.			Last observed.		Duration.	Velocity per hour.	Maximum pressure change in 12 hours, maximum abnormal temperature change in 12 hours, and maximum wind velocity.									
	Date.	Lat. N.	Long. W.	Lat. N.	Long. W.			Station.	Rise.	Date.	Station.	Fall.	Date.	Station.	Direction.	Miles per hour.	Date.
High areas.		°	°	°	°	*Days.*	*Miles.*		*Inch.*			°					
I	1	51	97	43	73	1.5	35	White River, Ont	.92	1	Quebec, Que	27	2	Atlantic City, N. J	nw.	30	2
II	4	43	99	35	74	1.5	42	do	.88	4	Swift Current, N. W. T	25	3	Cleveland, Ohio	nw.	28	5
III	5	52	104	42	72	1.5	47	Qu'Appelle, N. W. T	.60	5	Chicago, Ill	20	6	Block Island, R. I	ne.	48	6
IV	7	45	114	47	71	2.5	38	Miles City, Mont	.78	7	Pierre, S. Dak	32	7	Swift Current, N. W. T	s.	26	8
V	8	42	124	41	68	3.0	42	Wilmington, N. C	.28	11	Charlotte, N. C	20	11	Winnemucca, Nev	sw.	30	8
VI	13	47	100	47	65	3.5	35	Moorhead, Minn	.68	13	Abilene, Tex	29	14	Hatteras, N. C	ne.	36	17
VII	15	45	124	33	82	3.0	37	Calgary, N. W. T	.30	15	Concordia, Kans	12	16	Chicago, Ill	sw.	36	16
VIII	19	48	86	48	72	1.0	27	Chatham, N. B	.42	19	Montreal, Que	11	19	Alpena, Mich	e.	30	19
IX	21	50	107	38	80	3.0	24	La Crosse, Wis	.36	21	Cincinnati, Ohio	12	22	Bismarck, N. Dak	nw.	36	22
X	23	52	115	41	71	3.0	32	Calgary, N. W. T	.42	23	Helena, Mont	32	23	Atlantic City, N. J	e.	32	26
XI	25	48	111	37	80	2.5	34	Abilene, Tex	.45	26	Rapid City, S. Dak	28	24	Rapid City, S. Dak	nw.	34	26
XII	26	51	114	40	106	4.0	19	Edmonton, N. W. T	.24	26	Concordia, Kans	24	28	Winnipeg, Man	w.	12	28
Mean						2.5	34		.53			23				31	
Low areas.									Fall.			Rise.					
I	2	51	113	48	70	2.0	47	Chatham, N. B	.70	4	Rochester, N. Y	21	3	Winnemucca, Nev	sw.	56	2
II	3	52	121	37	96	2.0	40	Swift Current, N. W. T	.24	4	Valentine, Nebr	25	4	Fort Canby, Wash	s.	72	3
III	5	44	124	48	71	3.0	37	Port Huron, Mich	.58	7	do	33	6	Rapid City, S. Dak	sw.	63	7
IV	10	40	113	47	72	3.5	29	Pueblo, Colo	.62	10	Dodge City, Kans	21	11	Amarillo, Tex	w.	66	11
V	13	33	100	43	67	2.0	42	Lynchburg, Va	.32	14	Chattanooga, Tenn	10	14	Galveston, Tex	nw.	54	14
VI	17	37	102	46	80	5.0	16	Toledo, Ohio	.58	20	Pueblo, Colo	17	17	Detroit, Mich	ne.	72	20
VII	22	50	115	49	70	5.5	26	White River, Ont	.64	26	Buffalo, N. Y	18	26	Huron, S. Dak	se.	56	23
VIII	27	40	113	37	93	2.0	27	Dodge City, Kans	.40	27	Pueblo, Colo	23	27	Chicago, Ill	ne.	53	30
Mean						3.1	33		.51			21				61	

NORTH ATLANTIC STORMS FOR APRIL, 1893.

[*Pressure in inches and millimeters; wind-force by Beaufort scale.*]

The paths of storms that appeared over the west part of the north Atlantic Ocean during April, 1893, are shown on Chart I. These paths have been determined from reports of observations by shipmasters received through the co-operation of the Hydrographic Office, Navy Department, and the "New York Herald Weather Service."

Over the north Atlantic Ocean the April normal pressure is highest in a belt extending from the west coast of Africa between the 20th and 30th parallels south of west to the 50th meridian, where it is above 30.10 (764), and is lowest in an area which occupies Iceland and southeast Greenland and the ocean thence to the 50th parallel, where the values fall below 29.80 (757).

The principal track of April storms is traced from Nova Scotia eastward to the 40th meridian, where it divides, one branch passing to Iceland and the other to the region west of Ireland. From the ocean west of the British Isles one class of storms passes southeastward over the Bay of Biscay and another to the north of Scotland. An average of 1.5 storm per month traverses the ocean from coast to coast in April. The average velocity of April storms over the north Atlantic is about 20 statute miles per hour.

The severest storms noted for April, 1893, occurred over the western part of the ocean on the 1st, 2d, 5th, and 18th, and over mid-ocean north of the Azores on the 18th. From the 8th to the 16th the pressure continued low in the region of the Azores, and high pressure obtained over and near the