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CARLILE P. PATTERSON
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LOCAL COAST PILOT

SUB-DIVISION 1

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NOTE.

All bearings and courses are *magnetic.*

All distances are in *nautical miles.*

Except where otherwise stated, **all depths** are at *mean low water.*

All can or nun buoys marked thus * are replaced during the winter months by **spar buoys.**

UNITED STATES
COAST AND GEODETIC SURVEY OFFICE,
WASHINGTON, D. C., *June 1, 1879.*

This volume of the Local Coast Pilot embraces the coast from **Passamaquoddy Bay to Schoodic**; and is printed without alteration either in paging or otherwise from the large volume covering the coast from Eastport to Boston.

The system adopted in this work includes—

I. A general description of the coast-line and of the shores of the several harbors and thoroughfares.

II. A detailed description of all dangers and obstructions to navigation on the coast and in the harbors, with directions for avoiding them.

III. Sailing directions for coasting, and for approaching and entering the harbors.

IV. Geographical positions of all light-houses and lighted beacons.

V. Practical information in regard to fog-signals, tides, tidal currents, ice formations, variation of the compass and life-saving stations.

VI. Views of the coast and of the entrances to the more important harbors.

VII. Charts of the coast on a uniform scale, and of the principal harbors.

VIII. Appendix, relating to currents at the entrance to the Gulf of Maine.

IX. For marginal references the styles of lettering in use on the charts of the Coast Survey, (being upright for names, &c., applicable to land, and inclined when applicable to water,) and also systematic sizes and weights in printed names to indicate the relative importance of coast features.

This second edition embodies the results of the Government surveys made since the publication of the first; and, like that edition, has been compiled by **John Service Bradford**, Assistant, Coast and Geodetic Survey. It includes the results of previous detailed surveys by the Coast Survey, and those which his own continuous observations and verifications (by visiting every locality along the coast and personally testing all sailing-lines, bearings and courses given) have developed.

The views of the coast and approaches to the several harbors were drawn by Mr. Jno. R. Barker.

The facts in relation to ice are from an able report by Lieutenant Chas. A. Bradbury, U. S. Navy, Assistant, Coast Survey, who made a careful personal examination of this subject during the very cold winter of 1874–5.

The compiler, who has been ably assisted by Mr. John W. Parsons, has exercised every care to avoid errors; but, as absolute accuracy in a work of this class is scarcely possible, it is earnestly hoped that navigators and others interested will note all errors or omissions which they may discover, or any additional matter they think should be inserted, and forward a notice of the same to the Superintendent of the Coast and Geodetic Survey, Washington, D. C.

Carlile P. Patterson,
Superintendent.

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INDEX.

A.

Page.

Ackley's Point 40
Addison, Village of 86
Alley's Bay 64
Ammen's Rock 1
Anguilar Island 55
Avery's Rock 44
Avery's Rock Light-house 44, 50

B.

Back Bay 87, 89–90
Back Bay Settlement 89
Baker's Cove 110
Baker's Point 110
Balch's Head 38
Bald Head 15, 20
Bald Hill 29
Bald Point 110
Bald Tuskat Passage 10
Ballast Island 60
Bar Island:
(Machias Bay,) 43; (Moos-a-bec Reach,) 66; (Pigeon Hill Bay,) 98.
Bare Cove 51
Bare Island 43
Barney's Little Island 64
Batson's Ledge 76
Bay Ledges 67
Bay of Fundy 6–10
Bayley's Ledge 38,
Bayley's Mistake 38
Beal's Island 60, 64
Beal's Mountain 77
Beal's Point 64
Beaver-Dam Brook 107
Bickford's Point 65, 81
Big Ben 109
Big Black Ledge 113
Big Head 105
Big Ledge 113
Big Pea Ledge 99, 104
Big Pot, The 66, 83
Birch Harbor 115
Birch Islands 85
Birch Point, (Machias Bay) 44
Birch Point, (Pembroke River) 34
Birch Point Flats 46
Bishop's Head 6
Black Head 60, 62
Black Ledges 42
Black Rock, (Eastport Harbor Entrance) 20
Black Rock, (Manan Ledges) 7
Blasket Point 89
Block-House Point 29
Bluff Head 29
Board Point 57
Bobby's Creek 98
Bog Brook Passage 30
Boisbubert Harbor 97
Boisbubert Island 98
Boisbubert Ledge 100, 102
Bootman's Head 23
Boundary Point 29
Bowl of the Ladle 66, 82
Brazils, The 7
Bridge's Ledge 36
Brick Kiln Cove 20
Brick-yard Point 29
Broad Cove 17, 18
Brothers, The 47, 50, 55
Browney Island 60, 74
Browney Island Ledges 75–76
Brown's Hill 29
Brown's Island, (Flat Island Passage) 78
Brown's Island, (Machias Bay) 43, 49

B.

Page.

Bryer's Island 6
Buchanan's Creek 91
Buchanan's Point 91
Buckman's Ledge 35
Buck's Harbor 43
Buck's Head 43
Buck's Head Ledges 43, 49
Buck's Neck 43
Bull-Dog, The 19
Bull Head Rip 7
Bull Rock 8
Bunker's Harbor 115
Bunker's Ledges 114
Burial Island 23, 25, 33, 35
Burk's Hill 86, 109
Burnt Point 110
Byrne's Head 29

C.

Calais, Town of 14, 30
Calf Island 54
Calf Point 54
Calton's Point 57
Camden Mills 89
Campobello Island 15–16, 21
Cape Split 66, 81, 84
Cape Split Harbor 66, 81–83
Cape Wash 41
Carrying-Place Cove, (Moos-a-bec Reach) 66
Carrying-Place Cove, (Pleasant Bay) 84
Carrying-Place Island 66
Casco Island 19
Cashe's Ledge 1
Castle, The 66, 81
Cates' Cove 40
Chair, The 98
Chamberly Island 87, 89
Chamcook Hills 27
Chance's Island 43
Chandler's Island 65
Chandler's River 57
Channel Rock, (Machias Bay) 44
Channel Rock, (Moos-a-bec Reach) 71
Channel Rock Light-house 44, 50
Characteristic Soundings and Bottoms on Jeffrey's Ledge 5
Charley's Point 16, 22
Chart of Currents in Gulf of Maine ..... facing 4
Chart of Moos-a-bec Reach ..... facing 64
Cherry Island 20
Cherryfield, Township of 109
Chitman's Cove 91
Chitman's Point 91, 98
Clam Cove 16, 27
Clam Cove Head 16, 27
Clarke's Ground 7
Clarke's Ledge, (St. Croix River Entrance) 30
Clarke's Ledges, (Pembroke River Entrance) 35, 37
Clarke's Ledges, (Prospect Harbor) 113, 114
Cobscook Bay 17, 33–37
Cobscook River 17, 34
Cod's Head, The 58
Coffin's Point 88
Coggins' Cove 35
Coggins' Head 34, 36
Cole's Creek 89
Cole's or Hardwood Point 88
Collins' Mountain 52
Columbia, Village of 86
Comstock Point 33
Cone Island 60, 79, 84
Cone Island Passage 79–80
Constable, The 7
Cooper's Island 34

C.

	Page.
Cooper's Island Ledges	34, 35, 37
Corn Ledge	76
Cow Point	51
Cow Yard, The, (Head Harbor)	62
Cranberry Island	88
Cranberry Point, (Lubec Narrows)	16, 22
Cranberry Point, (Prospect Harbor)	112
Crawley's Shoal	7
Crocker's Point	45
Cross Island	42
Cross Island Ledge	46
Cross Island Narrows	42, 49
Crumple Island	60, 74
Cultivator Shoal	2
Cummings' Cove	74–75
Cummings' Ledge	68
Cummins' Cove	16, 27
Cummins' Head	16
Currant Island	99
Currant Island Passage	99
Current Chart—Gulf of Maine	facing 4
Currents between Cape Sable and Cape Cod	13–14
Currents on George's Bank	4
Curry Cove	20
Cutler, Town of	40

D.

Dangers:

Bay of Fundy and Approaches, 7–9; Bayley's Mistake, 38;—

Cape Split Harbor, 82–83; Cross Island Narrows, 49;—

Douglass Island Harbor, 104, 105; Dyer's Bay, 107–108;—

Eastport Harbor, 20, 23–25; Englishman's Bay, 58–59, 60–61;—

Fisherman's Island Passage, 75–77; Flat Island Passage, 78–79;—

Gouldsboro' Bay, 111–112;—

Harrington River, 88;—

Little Kennebec River, 52–53; Little River, 40–41;—

Machias Bay and River, 45–46, 48, 49; Moos-a-bec Reach, 66–69, 70–72, 73; Moose River, 39;—

Narraguagus Bay, 92, 93, 94–95;—

Pembroke River, 35–36, 36–37; Pigeon Hill Bay, 99–100, 100–101, 101–102, 102–103, 104; Prospect Harbor, 113, 114;—

St. Croix River, 30–31.

Daniels' Island	65
Dark Cove	6
Dave Leighton's Ground	83, 94–95, 100
Davis' Point	41
Day's Head	45
Day's Point	45
Day's Point Flats	45, 46
Deep Cove, (Campobello)	16, 22
Deep Cove, (Moose Island)	17
Deep Hole Point	57
Deep-Water Passage	70
Deer Island, (Little Machias Bay Entrance)	41
Deer Island, (Passamaquoddy Bay)	16–17
Deer Island, or Western Passage into Passamaquoddy Bay	17
Deer Island Point	16
Deer Point, (Campobello)	15
Deer Point, (Passamaquoddy Bay)	16
Denbow's Point	34
Dennison's Point	41
Dennysville, Town of	17, 34

Descriptions:

Back Bay, 89–91; Bay of Fundy, 6; Bayley's Mistake, 38;—

Cape Split Harbor, 81; Cobscook Bay, 33–37; Cone Island Passage, 79; Cross Island Narrows, 49;—

Dyer's Bay, 106–107;—

Eastport Harbor, 18–20, 21–23; Englishman's Bay, 54–58, 59–60;—

Fisherman's Island Passage, 74–75; Flat Bay, 89; Flat Island Passage, 78;—

Gouldsboro' Bay, 109–110;—

Harrington River, 86–88; Haycock Harbor, 38; Head Harbor, 62;—

Indian River, 81;—

D.

Descriptions: Page.

Lakeman's Harbor, 61–62; Little Kennebec River, 50–52; Little Machias Bay, 41–42; Little River, 39–40;—

Machias Bay, 42–45, 47–48; Moos-a-bec Reach, 65–66; Moose River, 38;—

Narraguagus Bay, 90–91;—

Passamaquoddy Bay, 14–17, 27–28; Pembroke River, 33–37; Pigeon Hill Bay, 97–99; Pleasant Bay, 83–86; Prospect Harbor, 112–113;—

St. Croix River, 28–30; Steel-Coat Harbor, 62;—

Western Channel into Machias Bay, 47–48.

Devil's Head, The	29
Diamonds, The	7
Divide, The: (Machias River,) 45; (Pembroke River,) 33, 35; (St. Croix River,) 29.	
Dochet Island	29
Dochet Island, Little	29
Dochet Island Sunken Ledge	31
Dock Island	84
Dog Island	17, 30
Dog Island Point	30
Dogfish Rock	53
Donovan's Cove	65
Double-Headed Island	42
Douglass Island Harbor	99, 104–106
Douglass Island Ledge	104, 105
Douglass Islands	91, 99
Doyle's Island	65, 81
Drisco Island	74, 78
Drisco Ledges	71, 73
Duck Islands	16, 22
Duck Ledges	65, 75, 76, 78, 79
Duck Point	16
Dudley Island	23
Dunn's Beach	15
Dyer's Bay	106–109
Dyer's Bay Ledges	108, 111
Dyer's Cove or Bay, (Pleasant Bay)	86
Dyer's Harbor	107
Dyer's Island	84, 87, 91
Dyer's Island Eastern Ledge	87, 88, 93
Dyer's Island Ledge	89, 92, 93
Dyer's Island Narrows	86, 91
Dyer's Neck	106, 109
Dyer's Point	106, 109

E.

Eagle Hill	107
Eagle Island	85
East Bay	34
East Point	34
East Quoddy Head	15, 18, 19
East Quoddy Head Light-house	15, 18, 19, 27
East River	81
East Rock	19
Eastern Branch: (Little Kennebec River,) 52; (Machias River,) 45; (Narraguagus Bay,) 91.	
Eastern Flats	80
Eastern Harbor	49
Eastern Head, (Little River)	40
Eastern Head, (Moose River)	38
Eastern Head Ledge, (Little River)	40
Eastern Head Ledges, (Moose River)	39
Eastern Island	107–108, 109
Eastern Island Ledges	108
Eastern Kennebec River	52
Eastern Knubble	39
Eastern Ledges	60–61, 70
Eastern Machias, Village of	45
Eastern Passage into Harrington River	86
Eastern Passage of Pigeon Hill Bay	99
Eastern Point	30
Eastern Sheep Island	107
Eastport, Town of	17, 20, 22
Eastport Bridge	17
Eastport Harbor	18–27
Egg Rock	96, 98, 99, 100, 102, 103
Elliott's Flats	31
Emm's Rock	67

E.

Page.

Englishman's Bay ... 54–63
Englishman's River ... 56
Estes' Head ... 17, 23
Etang Harbor ... 18

F.

Falls, The ... 34
Fan Island ... 51
Farnsworth's Point ... 57
Feather-bed Island ... 45
Fellows' Island ... 57
Fellows' Point ... 57
Fenno's Dike ... 45
Fessenden's Ledge ... 68, 77
Fickett's Point ... 91
Fippenies Ledge or The Fippenies ... 4
Fisherman's Island ... 60, 74
Fisherman's Island Passage ... 74–78
Five Islands ... 87
Five Islands Cove ... 87
Flake Bar ... 59
Flake Point ... 59
Flat Bay ... 87, 89
Flat Island ... 78
Flat Island Ledges ... 78
Flat Island Passage ... 78–79
Flint Island ... 84, 90
Flying Place, The ... 64, 75
Fog-Signals:
Avery's Rock Light-house, 44;—Gannet Rock Light-house, 7;—Libbey Island Light-house, 43, 54; Little River Light-house, 39;—Machias Seal Island Light-houses, 9, 46;—Petit Manan Light-house, 94, 98; Pond Island Light-house, 90;—West Quoddy Head Light-house, 18.
Fort Island ... 85
Foss' Point ... 52
Foster's Island, (Harrington River) ... 87, 89, 91
Foster's Island, (Machias Bay) ... 48
Foster's Island Ledge ... 48
Foster's Island Point ... 48
French-House Island ... 64
Frenchman's Point ... 9
Friar, The ... 16, 23
Friar's Bay ... 16, 23
Friar's Head ... 16, 23
Friar's Roads ... 14, 17, 18
Frost's Cove ... 28
Frost's Ledges ... 30

G.

Gangway Ledge, (Moos-a-bec Reach) ... 70, 73
Gangway Ledge, (Pembroke River Entrance) ... 35
Gannet Rock ... 7
Gannet Rock Light-house ... 7
Garden Point ... 110
Garnett's Head ... 34
General Directions:
For vessels entering the Bay of Fundy, 9–10; for vessels bound from the Bay of Fundy to the westward, 10–12; for vessels bound from Cape Sable to the westward, 12–13.
General Remarks on the Approaches to the New England Coast from Seaward ... 1–6
General Remarks on Pleasant Bay ... 86
George's Bank ... 2–4
George's Bank, Currents on ... 4
George's Shoal or The Georges ... 1–2, 3
Gibbs' Island ... 85
Gilchrist's Rock ... 67
Gin Cove ... 28
Gleason's Cove ... 27
Good's Point ... 107
Goose Cove ... 51
Goose Cove Point ... 51
Goose Island ... 34
Goose Island Ledge ... 35, 37
Goose Islands ... 65, 81
Goose Rock ... 51, 53
Gouldsboro', Town of ... 110
Gouldsboro' Bay ... 109–112
Gouldsboro' Harbor ... 110
Gove Point ... 34

G.

Page.

Grand Manan Bank ... 9
Grand Manan Channel ... 10
Grand Manan Island ... 6
Great Cove, (near Englishman's Bay) ... 54
Great Cove, (Mason's Bay) ... 57
Great Duck Pond ... 16, 22
Great Head, (Englishman's Bay) ... 56
Great Head, (Little River) ... 39
Great Marsh Bay ... 110
Great Nash's River ... 86
Great Ram Island ... 74
Great Spruce Island ... 55, 60
Great Wass Island ... 60, 64, 75
Green Island, (Eastport Harbor) ... 19
Green Island, (Flat Island Passage) ... 66, 79
Green Islands, (off Grand Manan) ... 7
Green Mountain ... 106, 109
Grey's Beach ... 51
Guard's Point ... 85
Gull Rock, (Broad Cove—Eastport) ... 25, 36
Gull Rock, (off East Quoddy Head) ... 19, 20
Guptill's Point ... 110

H.

Half-Tide Ledge:
(Dyer's Island Narrows,) 88, 89, 92, 93; (Little Kennebec River,) 52; (St. Croix River,) 31.
Half-Tide Rock, (Pembroke River) ... 34
Half-Tide Rock, (Pigeon Hill Bay) ... 100
Half-Tide Rocks, (Pigeon Hill Bay) ... 100, 102, 104
Halifax Island ... 55
Harbor de Lute ... 15, 20
Harbor Ledge ... 114
Hardwood Island ... 65, 75
Hardwood Island Ledge ... 75, 77
Hardwood Point ... 88
Hardwood or Cole's Point ... 88
Hardy's Point ... 35
Hardy's Point Ledge ... 36
Hardy's Upper Point ... 36
Harrington, Village of ... 88
Harrington River ... 86–89
Harvey's Ledge ... 53
Hay Creek ... 81
Haycock Harbor ... 38
Head, The ... 62
Head Harbor, (Campobello) ... 15, 21
Head Harbor, (Englishman's Bay) ... 60, 62
Head Harbor Island, (Campobello) ... 15
Head Harbor Island, (Englishman's Bay) ... 54, 60, 64
Head Harbor Light-house ... 55, 59, 63, 80
Heckman's Point ... 30
Hemlock Island ... 85
Herring Bay ... 15, 21
Herring Bay Head ... 15
Hersey's Cove ... 35
Hersey's Head ... 35
Hersey's Point ... 35
Hersey's Upper Head ... 35
Hersey's Upper Head Ledge ... 35
Hickey's Island ... 51
Hickey's Island Ledge ... 52
Hickey's Island Point ... 54, 58
Hicks' Creek ... 65
Hog Island:
(Little Kennebec River,) 52; (Machias Bay,) 44; (Pembroke River,) 34.
Hog Island Ledges ... 44
Holmes' Bay ... 44
Holmes' Neck ... 44
Holmes' Point ... 44
Holmes' Point Flats ... 44, 46
Holway's Point ... 52
Hooper's Point ... 44
Hope Island ... 51
Hopkins' Point ... 65
Horse Heads, The ... 91, 99
Horse Ledge ... 67–68
Howard's Bay ... 43
Howard's Mountain ... 43
Howard's Point ... 43
Hoyt's Head ... 45
Humpback Mountain ... 86, 109

I.

Page.

Ice:
Dyer's Bay, 112;—
Eastport Harbor, 38; Englishman's Bay, 63;—
Gouldsboro' Bay, 112;—
Little Machias Bay, 50; Little River, 41;—
Machias Bay, 50; Moos-a-bec Reach, 80;—
Narraguagus Bay, 97;—
Pigeon Hill Bay, 106.
Indian Island ... 17, 20
Indian River, (Moos-a-bec Reach) ... 65, 81
Indian River, (Passamaquoddy Bay) ... 17
Indian River Settlement ... 81
Inner Bar ... 94, 103
Inner Bar Ledge ... 103
Inner Bar Passage ... 96, 102
Inner Harbor, (Head Harbor) ... 62
Inner Harbor, (Prospect Harbor) ... 112
Inner Sand Island ... 74, 78

J.

Jackson's Ledge ... 83, 94, 99, 100
Jeffrey's Bank ... 4
Jeffrey's Ledge ... 4–5
Jerry's Ledge ... 105
Jetteau's Point ... 110
Jim's Head ... 38
Joe Dyer's Point ... 91, 98
Joe's Point ... 29
Johnson's Bay ... 22
Johnson's Cove ... 17, 27
Johnson's Mountain ... 51
Johnson's Point ... 51
Jones' Ground ... 9
Jonesboro', Township of ... 51
Jonesboro', Village of ... 57
Jonesport, Township of ... 58
Jonesport, Village of ... 60, 64
Jordan's Delight ... 83, 90, 95
Jordan's Delight Ledge ... 83, 90, 95, 100
Joy's Bay ... 110
Joy's Cove ... 110
Jumper's Ledge ... 58

K.

Kelly's Point, (Englishman's Bay) ... 54, 64
Kelly's Point, (Head Harbor) ... 62
Kemp's Folly ... 90
Kendall's Head ... 17, 27
Kennebec Bay ... 52
Killwood Point ... 62
Knight's Point ... 81
Knight's Point Flats ... 31
Knips' Point ... 57

L.

Ladle, The ... 66, 82, 83
Lake Utopia ... 17
Lakeman's Harbor ... 56, 61–62
Lakeman's Island ... 56
Larrabee's Basin ... 52
Larrabee's Cove ... 44
Larrabee's Point ... 52
Leadurny Point ... 22
Ledge, The ... 30, 31
Ledge, The, Settlement of ... 30
Leighton's Head ... 34
Leighton's Ledge ... 67
Leighton's Point ... 34
Letite Passage ... 14, 16
Lewis' Cove ... 28
Libbey Island Light-house ... 42–43, 50, 54–55, 63
Libbey Islands ... 6, 42–43, 54–55
Libbey's Point ... 45
Liberty Point ... 21
Liberty Point Ledge ... 24
Life-Saving Stations:
Browney Island, 80;—
Cross Island, 50;—
Petit Manan Island, 97;—
West Quoddy Head, 27.
Lily Cove ... 88
Lincoln's Head ... 34
Little Black Ledge ... 113

L.

Page.

Little Boisbubert Harbor ... 98
Little Boisbubert Island ... 98
Little Dochet Island ... 29
Little Drisco Island ... 74
Little Duck Pond ... 16, 22
Little Head ... 40
Little Hen Island ... 57, 58
Little Kennebec River ... 50–54
Little Ledge ... 67, 71, 72
Little Machias, Village of ... 41
Little Machias Bay ... 41–42
Little Mark Island ... 57, 58
Little Mink Island ... 85
Little Pea Ledge ... 99
Little Ram Island ... 74
Little River, (Coast of Maine) ... 39–41
Little River, (Passamaquoddy Bay) ... 27
Little River Head ... 39
Little River Island ... 39
Little River Light-house ... 39, 41
Little Sail Rock ... 23
Little Sheep Island ... 64
Little Spruce Island ... 55, 60
Little Spruce Island Ledge ... 55
Liverpool Rock ... 9, 46
Lobster Island ... 110
Lobster Rock ... 53
Lobster Rocks ... 100, 102, 104
Long Creek ... 65
Long Eddy Point ... 6
Long Island ... 34
Long Ledge:
(Off Grand Manan,) 8; (Little River,) 40, 41; (Moos-a-bec Reach,) 71, 73.
Long Ledge Cove ... 40
Long Point, (near Little River Entrance) ... 39
Long Point, (Narraguagus Bay) ... 92
Long Point Ledge ... 92
Lookout, The ... 40
Look's Bay ... 57
Look's Cove ... 85
Look's Head ... 57
Look's Point ... 57
Lower Middle Ground, (Lubec Narrows) ... 22, 24
Lower Middle Ground, (Narraguagus Bay) ... 92
Lower Wass Cove ... 85
Lubec, Town of ... 22
Lubec Flats ... 24
Lubec Mining Company ... 34
Lubec Narrows ... 21
Lubec Neck ... 22

M.

Machias, City of ... 45
Machias Bay ... 42–50
Machias River ... 44–45
Machias Seal Island ... 8–9, 45–46
Machias Seal Island Light-houses ... 9, 45–46, 50
Machiasport, Town of ... 42, 44
Macmaster Island ... 19
Mac's Cove ... 54
Magaguadavic River ... 17
Major's Island ... 33
Major's Island Ledge ... 37
Man Island ... 60, 62
Manan Ledges ... 7
Margie Rock ... 25
Mark Island, (Eastport Harbor) ... 22–23
Mark Island, (Moos-a-bec Reach) ... 60, 63
Mark Point ... 30
Mark Point Light-house ... 30, 32
Marsh Cove Point ... 110
Marshall's Point ... 45
Marstin's Mountain ... 51
Marstin's Point ... 51
Mason's Bay ... 56
Mason's Bay Ledge ... 58
Mayhew's Mountain ... 52
Mehollan Point ... 10, 22
Meserve's Head ... 45
Meserve's Point ... 45
Middle Ground, The:
(Machias Bay,) 46; (Pembroke River,) 35; (St. Croix River,) 31.

M.

Page.

Middle Ledges ... 87, 88, 93
Middle River ... 45
Middle Rock ... 45, 47
Middle Shoal ... 8
Mill Cove, (Campobello) ... 15, 21
Mill Cove, (Passamaquoddy Bay) ... 28
Mill Creek:
(Englishman's Bay,) 58; (Harrington River,) 88; (Moos-a-bec Reach, (65.)
Mill Point ... 28
Mill River ... 89
Millbridge, Town of ... 91
Millbridge, Township of ... 91, 97
Miller's Creek ... 52
Mink Island ... 42, 49
Mistake Island ... 55, 59, 62
Mistake Point ... 60, 62
Mitchell's Point ... 27
Molasses Rock ... 20
Money Island, (Head Harbor) ... 62
Money Islands, (Gouldsboro' Bay) ... 110
Moos-a-bec Bar ... 67
Moos-a-bec Light-house ... 55, 59, 63, 80
Moos-a-bec Reach ... 63–80
Moose Cove ... 38–39
Moose Island, (Moos-a-bec Reach) ... 65, 81
Moose Island, (Passamaquoddy Bay) ... 17, 23, 27
Moose Neck ... 66, 81
Moose River ... 38–39
Moose Rock ... 71
Morton's Rock ... 23
Moulton's Ledge ... 94, 101, 102, 108, 111, 111–112
Mount Simpson ... 27
Murr Ledges ... 7–8, 46

N.

Narraguagus Bay ... 90–97
Narraguagus Light-house ... 90, 97, 99, 106
Narraguagus River ... 91
Narrows, The:
(Englishman's Bay,) 57; (Gouldsboro' Bay,) 110; (Little River,) 40; (Lubec,) 21; (Pleasant Bay,) 84.
Narrows Islands ... 84
Nash's Harbor ... 84
Nash's Harbor Island ... 84
Nash's Harbor Point ... 84
Nash's Island ... 66, 79, 84
Nash's Island Light-house ... 66, 79, 80, 84
Nash's Point ... 88
Navy Island ... 28
Navy Island Reef ... 28, 31
Newbury Point ... 57
Night-Cap, The ... 85
Nipple, The ... 64, 67
North Ledge, (Dyer's Island Narrows) ... 89, 93
North Perry, Village of ... 28
North Point Ledge ... 93
North Rock, (off Grand Manan) ... 9
North Rock, (near The Wolves) ... 19
North Shoal ... 9
Northeast Head ... 17, 28
Northern or Inner Bay ... 97
Northern Harbor ... 42
Northwest Harbor ... 17, 28
Northwest Head ... 17, 28
Northwest Shoal ... 31
Norton's Island, (Moos-a-bec Reach) ... 65, 75
Norton's Island, (Pleasant Bay) ... 69, 84
Norton's Island Ledges ... 75, 76
Norton's Ledge or Reef ... 69, 83, 84, 86, 89, 93
Nova's Rock ... 67, 72

O.

Oak Bay ... 29
Oak Point ... 29
Oaks Point ... 89
Old Bachelor, The ... 76
Old Bull, The ... 103, 108
Old House Point ... 65
Old Man, The, (Little Machias Bay) ... 42
Old Man, The, (Prospect Harbor) ... 113, 114
Old Proprietor, The ... 7, 10
Old Woman, The ... 113, 114

O.

Page.

Oliver Lord's Point ... 88
One Bush Island ... 64
Otter Head ... 39
Outer Bar ... 94, 102
Outer Bar Passage ... 96, 102
Outer Harbor ... 112
Outer Sand Island ... 74, 78
Over's Cove ... 107
Owen's Head ... 15

P.

Paddy's Ledge ... 25, 26
Page Rock ... 25
Parrit's Cove ... 110
Parrit's Point ... 110
Parker's Bar ... 56, 61
Parker's Head ... 56
Parker's Point ... 107
Partridge's Island ... 90
Passamaquoddy Bay ... 6, 14–17, 27–28
Patterson's Point ... 91
Pemaquan Bay ... 33–37
Pemaquan Lake ... 37
Pemaquan River ... 37
Pembroke, Town of ... 17, 33
Pembroke Iron Works ... 33
Pembroke River ... 17, 33–37
Pendleton Island ... 17, 19, 28
Perry, Town of ... 17, 27
Perry Harbor ... 27
Petit Manan Bar ... 102
Petit Manan Island ... 9–10, 94, 97–98
Petit Manan Light-house ... 94, 97, 98, 106
Petit Manan Neck ... 98, 106
Petit Manan Outer Bar ... 102
Petit Manan Point ... 98, 106
Petit Manan Reef ... 94, 101, 105, 111
Petty's Point ... 113
Pierce's Point ... 51
Pig Island ... 64
Pigeon Hill ... 90, 97
Pigeon Hill Bay ... 97–106
Pilot's Point ... 110
Pinkham's Bay ... 107
Pinneo's Point ... 87, 89
Platt's Bank ... 5–6
Pleasant Bay ... 83–86
Pleasant Point ... 27
Pleasant River ... 85
Plummer's Island ... 66, 78
Plummer's Island Ledge ... 78, 79
Poet's Harbor ... 84
Poet's Island ... 84
Point Francis ... 110
Point of Main ... 43, 50
Pomp's Island ... 65, 75
Pond Cove ... 56
Pond Cove Island ... 56
Pond Island ... 90, 99
Pond Island Ledge ... 92, 95, 104
Pond Island Light-house ... 90, 97, 99, 106
Pope's Folly ... 19, 22–23
Pope's Shoal ... 20
Porcupine Island ... 51
Pot, The ... 66, 83
Pot Head ... 44
Potato Island ... 84
Prince's Cove ... 23
Proprietor, The ... 7
Prospect Harbor ... 112–115
Prospect Harbor Light-house ... 112–113, 115
Prospect Harbor Point ... 112–113
Pulpit Rock ... 47, 55

Q.

Quaker Head ... 42
Quoddy Roads ... 22

R.

Ram Island:
(Machias Bay Approaches,) 47, 55; (Mason's Bay,) 57; (Moos-a-bec Reach,) 66.
Ram Island Ledge ... 69
Ram Island Passage ... 52–53

R.

Page.

Ram Islands, (Fisherman's Island Passage) ---- 74, 78
Rams, The ---- 7
Ramsdell's Cove ---- 85
Randall's Point ---- 44
Raspberry Island ---- 85
Raven's Head ---- 29
Ray's Point ---- 87, 89
Ray's Point Ledges ---- 88
Razor Island ---- 34
Red Beach, Village of ---- 29
Red Head ---- 34
Red Island ---- 34
Red Rock Point ---- 56–57
Reef Point ---- 85
Reynolds' Bay ---- 65–66
Reynolds' Point ---- 85
Richards' Point ---- 85
Rim Point ---- 45
Ripley's Cove ---- 87
Ripley's Islands ---- 87
Ripley's Neck ---- 84, 87
Ripley's Point ---- 84, 87
Roaring Bull, The, (off Grand Manan) ---- 7
Roaring Bull Ledge ---- 114
Robbinston, Village of ---- 28
Rodgers' Bar ---- 58, 61
Rodgers' Island, (Englishman's Bay) ---- 57, 58
Rodgers' Island, (Pembroke River) ---- 33
Rodgers' Island Point ---- 58
Rodgers' Point ---- 57, 58
Rogers' Point ---- 110
Roque's Island ---- 56
Roque's Island Harbor ---- 56, 61–62
Roque's Island Narrows ---- 56
Rouen Island ---- 20
Round Island ---- 44
Round Island Flats ---- 46
Round Rock ---- 24

S.

Sail Rock ---- 22, 23
Sailing Directions:
Bayley's Mistake, 38;—Cape Split Harbor, 82, 83; Cone Island Passage, 80; Cross Island Narrows, 49;—Douglass Island Harbor, 105–106; Dyer's Bay, 108, 109;—Eastport Harbor, 20–21, 25–26; Englishman's Bay, 59, 61;—Fisherman's Island Passage, 77–78; Flat Island Passage, 79;—Gouldsboro' Bay, 111, 112;—Harrington River, 88–89; Head Harbor, 62;—Little Kennebec River, 53–54; Little River, 40, 41;—Machias Bay and River, 47, 48–49; Moos-a-bec Reach, 69–70, 72–73, Moose River, 39;—Narraguagus Bay, 92–93, 95–96;—Pembroke River, 36, 37; Pigeon Hill Bay, 100, 101, 102, 103, 104; Prospect Harbor, 113–114;—St. Croix River, 31–32.
St. Andrew's, Village of ---- 28
St. Andrew's Harbor ---- 28
St. Andrew's Island ---- 28
St. Andrew's Light-house ---- 28
St. Andrew's Point ---- 28
St. Croix Island ---- 29
St. Croix Light-house ---- 29, 32
St. Croix River ---- 14, 28–33
St. Mary's Ledge ---- 8
St. Stephen's, Town of ---- 30
Sally Islands ---- 107–108, 109
Salt Island ---- 43–44
Sanborn's Cove ---- 44
Sanborn's Point ---- 44
Sand Cove, (Gouldsboro' Bay) ---- 109
Sand Cove, (Prospect Harbor) ---- 112
Sand Cove Point ---- 109
Sand Island, (Eastport Harbor) ---- 19
Sand Islands, (Fisherman's Island Passage) ---- 74, 78
Sand Ledge ---- 67, 72
Sand Point ---- 29

S.

Page.

Sand Point Shoal ---- 31
Sandy Cove ---- 87
Sandy Island ---- 19
Sandy Ledge ---- 19
Sandy Point ---- 39
Sawyer's Cove, (Mason's Bay) ---- 57
Sawyer's Cove, (Moos-a-bec Reach) ---- 64
Sawyer's Creek ---- 64
Sawyer's Island ---- 64
Sawyer's Ledge ---- 71
Scabby Islands ---- 47, 50, 55
Schoodic, Peninsula of ---- 115
Schoodic Harbor ---- 115
Schoodic Head ---- 106, 109
Schoodic Hills ---- 9
Schoodic Island ---- 115
Schoodic Ledge ---- 115
Schoodic Point ---- 115
Schooner Brook Head ---- 39
Schooner Cove ---- 15, 21
Schooner Point ---- 107
Scotch Island ---- 42
Scott Head ---- 15
Sea-Duck Rock ---- 74, 76
Sea-Horse Rock ---- 75
Sea-Shore Ledge ---- 46, 48
Sea-Wall Point ---- 51
Seal Cove, (Cross Island Narrows) ---- 49
Seal Cove, (Douglass Island Harbor) ---- 104
Seal Cove Ledge, (Cross Island Narrows) ---- 49
Seal Cove Ledge, (Douglass Island Harbor) ---- 104, 105
Seal Island, (Machias) ---- 8–9
Seal Island Passage ---- 10
Seal Ledge ---- 111
Seal Rock ---- 57, 58
Seavey's Cove ---- 85
Seavey's Point ---- 85
Seguin Island ---- 60, 64
Seguin Ledge ---- 70, 73
Seguin Passage ---- 64, 70–73
Seward's Neck ---- 22, 33
Shabbit Island ---- 65, 78
Shackford's Head ---- 17, 23
Shackford's Ledge ---- 35, 37
Shag Ledge, (Gouldsboro' Bay) ---- 111
Shag Ledge, (Little Kennebec River Approaches) ---- 50, 52, 55, 58
Sheep Island, (Moos-a-bec Reach) ---- 66
Sheep Island, (Pleasant Bay) ---- 84, 85
Sheep Islands:
(Dyer's Bay,) 107; (off Kelly's Point,) 64; (Moos-a-bec Reach,) 65, 75.
Sheldrake Island ---- 65
Ship-Stern Island ---- 84, 90
Shoppe's Island ---- 56
Shoppe's Point ---- 56
Shorey's Cove ---- 56
Shot Islands ---- 55
Simms' Rock ---- 61, 94, 101, 105, 111
Slate Cove ---- 74
Slate Island ---- 75
Small's Cove ---- 33–34
Small's Head ---- 35
Small's Island ---- 35
Small's Point Ledges ---- 36
Smith's Point ---- 52
Snare Cove ---- 81
Snare Creek ---- 81
Snow's Rock ---- 67, 71
Snug Cove ---- 16, 23
South Bay ---- 34
Southeast Ledge ---- 8
Southeast Rock ---- 94, 101, 105, 111
Southeast Shoal ---- 8
Southern or Outer Bay ---- 97
Southwest Head ---- 8
Southwest Ledge, (Machias Bay Approaches) ---- 46
Southwest Ledge, (Moos-a-bec Reach) ---- 71
Sow and Pigs, The ---- 113, 114
Spar Island ---- 51
Sprague's Neck ---- 43
Spruce Cove ---- 52
Spruce Cove Ledge ---- 52

S.

Page.

Spruce Cove Point ... 52
Spruce Island, (Eastport Harbor) ... 19
Spruce Island Gut ... 55
Spruce Island Narrows ... 56
Spruce Islands, (Englishman's Bay) ... 55, 60
Spruce Point, (near Frenchman's Bay) ... 115
Spruce Point, (St. Croix River) ... 29
Spruce Point Light-house ... 29, 32
Squiers' Point ... 56
Squiers' Point Ledge ... 56, 58
Stanel Point ... 17
Stanley's Cove ... 107
Stanley's Ledge ... 75, 78
Stanley's Point ... 107
Starboard Island ... 43, 48
Starboard Island Ledge ... 48
Steel-Coat Island ... 60, 62
Steel-Coat Harbor ... 60, 62
Steel Harbor Island ... 60, 62
Stellwagen's Shoal Ground ... 2–4
Steuben, Township of ... 97
Steuben, Village of ... 110
Steuben Harbor ... 110
Stevens' Island ... 74, 78
Stevens' Point ... 110
Stoddard's Point ... 36
Stone Head ... 43, 48
Stone Island ... 43, 48
Stone Island Ledge ... 48
Strout's Island ... 87
Strout's Island Ledges ... 87, 88, 93
Strout's Point ... 90

T.

Tabbott's Cove ... 82
Tabbott's Island ... 68
Tabbott's Ledge ... 68–69
Tabbott's Narrows ... 66
Tenney's Cove ... 57
Tenney's Creek ... 57
The Big Pot ... 66, 83
The Brazils ... 7
The Brothers ... 47, 50, 55
The Bull-Dog ... 19
The Castle ... 66, 81
The Chair ... 98
The Cod's Head ... 58
The Constable ... 7
The Cow Yard ... 62
The Diamonds ... 7
The Devil's Head ... 29
The Divide:
(Machias River,) 45; (Pembroke River,) 33, 35; (St. Croix River,) 29.
The Falls ... 34
The Fippenies or Fippenies Ledge ... 4
The Flying Place ... 64, 75
The Friar ... 16, 23
The Georges or George's Shoal ... 1–2, 3
The Head ... 62
The Horse Heads ... 91, 99
The Ladle ... 66, 82, 83
The Ledge, (St. Croix River) ... 30, 31
The Ledge, Settlement of ... 30
The Lookout ... 40
The Middle Ground:
(Machias Bay,) 46; (Pembroke River,) 35; (St. Croix River,) 31.
The Narrows:
(Englishman's Bay,) 57; (Gouldsboro' Bay,) 110; (Little River,) 40; (Lubec,) 21; (Pleasant Bay,) 84.
The Night-Cap ... 85
The Nipple ... 64, 67
The Old Bachelor ... 76
The Old Bull ... 103, 108
The Old Man, (off Machias Bay) ... 42
The Old Man, (Prospect Harbor) ... 113, 114
The Old Proprietor ... 7, 10
The Old Woman ... 113, 114
The Pot ... 66, 83
The Proprietor ... 7
The Rams ... 7
The Roaring Bull ... 7
The Sow and Pigs ... 113, 114

T.

Page.

The Tinker ... 7
The Virgin's Breasts ... 64, 67
The Whale ... 95, 98, 99, 100, 102, 103
The White Horse ... 19
The Wolves ... 18–19
Thornton's Point Ledge ... 49
Three Islands ... 7
Three Kent Islands ... 7
Thrumbcap Island ... 20
Tibbetts' Rock ... 69, 92, 95, 99, 101
Tide Mill Creek ... 57
Tides:
Eastport Harbor, 27; Englishman's Bay, 63;—Moos-a-bec Reach, 80;—Pembroke River, 37; Prospect Harbor, 115;—St. Andrew's Harbor, 33.
Timber Cove, (Gouldsboro' Bay) ... 110, 111
Timber Cove, (Harrington River) ... 87–88
Tinker, The ... 7
Todd's Head ... 17
Todd's Point ... 30
Todd's Wharf ... 32
Trafton's Island ... 91
Trafton's Island Ledge ... 92, 95
Transport Ledge ... 40, 41
Transport Point ... 40
Treat's Island ... 23, 27
Tucker's Creek ... 110
Tumble-down Dick ... 85
Tunk Mountains ... 86, 89, 109
Two-Hour Rock ... 35

U.

Union Wharf ... 25
Upper Middle Ground ... 92
Upper Narrows ... 85
Upper Wass Cove ... 85

V.

Val's Point ... 110
Variation of the Compass:
Dyer's Bay, 109;—East Quoddy Head, 27; Englishman's Bay, 63;—Gouldsboro' Bay, 112;—Harrington River, 89;—Little Kennebec River, 54; Little River, 41;—Machias Bay, 50; Moos-a-bec Reach, 80;—*Narraguagus* Bay, 97;—Pembroke River, 37; Pigeon Hill Bay, 106; Pleasant Bay, 89; Prospect Harbor, 115;—St. Andrew's Light-house, 33;—West Quoddy Head, 27.
Views:
Eastport Harbor, facing page 19; Englishman's Bay, facing 51;—Frenchman's Bay, facing 114;—Head Harbor, facing 64;—Little Kennebec River, facing 51; Little River, facing 39;—Machias Bay, facing 43; Moos-a-bec Reach, facing 64;—Narraguagus Bay, facing 91;—West Quoddy Head, facing 21;—Winter Harbor, facing 114.
Virgin Islands ... 64
Virgin's Breasts, The ... 64, 67

W.

Wallace's Ledge ... 8
Wall's Point ... 110
Ward's Cove ... 109
Warwig Creek ... 29
Wass Point ... 85
Weir Ledges ... 110
Welchpool, Village of ... 15, 23
West Bay or Gouldsboro' Harbor ... 110
West Ledge ... 8
West Lubec, Village of ... 34
West Quoddy Head ... 18, 21
West Quoddy Head Light-house ... 18, 21, 27
West River ... 85, 81

W.

	Page.
Western Bar	22, 24
Western Branch of Mason's Bay	58
Western Channel into Machias Bay	47–49
Western Egg Rock	75
Western Head	42
Western Sheep Island	107
Whale, The	95, 98, 99, 100, 102, 103
White Horse, The	19
White Island	19
White's Point, (Head Harbor)	62
White's Point, (Pleasant Bay)	86
Whiting, Town of	17
Whiting's Passage	65, 81
Willard's Cove	41
Williams' Point	110
Wilson's Harbor	20
Wilson's Head	19
Windmill Point	15, 20
Winter Wharves, (Pembroke River)	35, 36

W.

	Page.
Wohoa Bay	65
Wolves, The	18–19
Wolves Light-house	18–19
Woodruff's Dike	44
Woods Pond Point	98
Wormell's Ledges	24

Y.

Yeaton's Cove	107
Yeaton's Point	107
Yellow Birch Head	106–107
Yellow Birch Reef	108
Yellow Head	43
Yellow Island	43
Yellow Ledge	8
Yo-ho Cove	51
Yo-ho Ledge	53
Yo-ho Point	51
Young's Point	109

ATLANTIC COAST PILOT.

PASSAMAQUODDY BAY TO SCHOODIC.

GENERAL REMARKS

ON THE APPROACHES TO THE NEW ENGLAND COAST FROM SEAWARD.

Vessels approaching the coast of New England from the eastward must beware of the two dangerous banks which lie off the coast of Massachusetts, known as Cashe's Ledge and George's Bank. The former has four fathoms and the latter but two fathoms.

Cashe's Ledge lies to the eastward of Cape Ann, seventy-nine miles distant, and its geographical position as determined by Commander (afterwards Rear-Admiral) C. H. Davis, U. S. N., Assistant in the Coast Survey, is

Latitude	**42° 56′ 0″ N.**
Longitude	**68° 51′ 30″ W.**

Cashe's Ledge.

Its shoalest part is a flat white rock, about one hundred yards in diameter, having on it from four to seven fathoms, and known as *Ammen's Rock*. Soundings varying from eleven to thirty fathoms are found in a line **N.** by **E.** from this rock for a distance of thirteen miles, and **S.** by **W.** about six miles. The whole length of the shoal between the lines of twenty-five fathoms is sixteen miles. The following bearings and distances will be found useful:

	Miles.
Matinicus Rock Light-houses bear N. by E. ½ E.	51
Monhegan Light-house N. ½ W.	53
Cape Elizabeth Light-houses NW. ⅜ N.	69
Cape Ann (Thatcher's Island) Light-houses W. ¼ N.	78
Boston Light-house W. ½ S.	98
Cape Cod (Highland) Light-house SW. by W. ½ W.	76
Cape Sable (southern extremity of Nova Scotia) E. ⅜ S.	145

Recent examinations on this shoal by Lieutenant Commander C. D. Sigsbee, U. S. N., Assistant in the Coast Survey, have resulted in the discovery of *another rock, with five fathoms*, four miles to the southwestward of Ammen's Rock. Its geographical position is

Latitude	**42° 52′ 40″ N.**
Longitude	**68° 54′ 30″ W.**

A vessel leaving Cape Sable and steering **W. ½ N.** for Cape Ann would cross the southern end of Cashe's Ledge in ten or twelve fathoms. To avoid it steer **W.** from Cape Sable until in Latitude 42° 41′ N., Longitude 69° W., when steer **W.** by **N. ¼ N.** for Cape Ann.

George's Shoal, or *The Georges*, as it is often called, is a very dangerous shoal, composed of sand ridges, some of which have but two fathoms water upon them. It lies one hundred miles to the eastward of Cape Cod,—the shoalest part being in

Latitude	**41° 39′ 30″ N.**
Longitude	**67° 42′ 15″ W.**

George's Shoal.

This spot has *two fathoms upon it* according to the latest surveys. The main body of the shoal is triangular in shape, and is composed of a number of narrow ridges with good water between them. Its northern extremity is in Latitude 41° 47′ N., Longitude 67° 46′ 30″ W., and has four and a half fathoms upon it. Its southern end is in Latitude 41° 34′ N., Longitude 67° 37′ W., and has upon it eight fathoms. Its western end is in Latitude 41° 11′ 20″ N., Longitude 68° 26′ W., and has upon it five and a half fathoms.

George's Shoal. The shoalest spot on George's Shoal lies near its eastern end, nearly midway of its length. Six miles **N.** by **W.** ¼ **W.** from it is *another spot with thirteen feet upon it,* in

Latitude ---------- 41° 44′ 10″ **N.**
Longitude ---------- 67° 48′ 35″ **W.,**

and is three miles to the southward of the north point of the shoal. The above positions make the main body of the shoal fifteen miles long in a **N.** by **W.** and **S.** by **E.** direction, and about three miles wide; while the width of the bank is not less than seventy miles in a **NE.** and **SW.** direction.

Master Robert Platt, U. S. N., Assistant in the Coast Survey, during his Current explorations on this bank in 1877 discovered *a spot with eight fathoms,* in Latitude 41° 24′ 20″ N., Longitude 68° 11′ W., which he thinks may be a prolongation of Cultivator Shoal, six miles to the northward. This supposition is strengthened by the existence of soundings of *ten, eleven,* and *fifteen fathoms* to the southward of this eight-fathom shoal, but which have always been considered detached shoals on George's Bank.

Cultivator Shoal, as now shown upon the charts, has three fathoms upon it, and lies twenty miles **W.** ½ **N.** from the shoalest part of The Georges. From its shoalest part

	Miles
Matinicus Rock Light-houses bear S. ¼ **W.** ----------	131
Monhegan Light-house N. ½ **W.** ----------	136
Seguin Light-house N. by W. ¼ **W.** ----------	142
Cape Elizabeth Light-houses N NW. ----------	145
Cape Ann (Thatcher's Island) Light-houses NW. ½ **W.** ----------	122
Cape Cod (Highland) Light-house NW. by W. ¾ **W.** ----------	88
Monomoy Point Light-house W. ⅝ **S.** ----------	82
Davis' South Shoal W. by S. ¾ **S.** ----------	87

This shoal was so named from the ship "Cultivator," which struck upon it when drawing twenty-two and a half feet.

The shoal ground of The Georges, above referred to as George's Bank, is seventy-five miles long in a **NE.** and **SW.** direction; fifty miles wide in an **E.** and **W.** direction near the middle of the bank; and sixty miles wide in the same direction at its southern end. Five and a quarter fathoms is found forty-one miles **SW.** by **W.** from the shoalest spot (two fathoms) on the main shoal; ten fathoms twenty-eight miles **SW.** ¾ **W.** from the same spot; nine fathoms thirteen miles **SW.** by **W.** from it; eight fathoms seventeen miles **E.** from it; nine fathoms fourteen miles **E NE.** from it; ten fathoms fourteen miles **N.** by **E.** from it; and eight fathoms (as developed by Master Platt) twenty-six miles **SW.** by **W.** ¾ **W.** from it. The five-fathom spot is in Latitude 41° 11′ N., Longitude 68° 25′ W., and is close to the southwestern extremity of the shoal ground. The southernmost ten-fathom spot is in Latitude 41° 20′ N., Longitude 68° 10′ W. The nine-fathom spot on the western side of the shoal is in Latitude 41° 31′ N., Longitude 67° 55′ 15″ W. The eight-fathom spot is in Latitude 41° 43′ 15″ N., Longitude 67° 21′ W. The nine-fathom spot on the eastern side of the shoal is in Latitude 41° 47′ 10″ N., Longitude 67° 27′ W. The ten-fathom spot north of the shoal is in Latitude 41° 54′ N., Longitude 67° 45′ W. The eight-fathom spot, discovered by Master Platt, has been already mentioned, and its latitude and longitude given.

George's Bank.

The general name *Stellwagen's Shoal Ground* has been given, though erroneously, to George's Bank, and must not be confounded with **Stellwagen's Bank**, which lies between Cape Ann and Cape Cod, off the entrance to Massachusetts Bay. (See Approaches to Boston Harbor.)

George's Shoals were surveyed in 1821, under the direction and at the expense of E. M. Blunt, Esq., of New York City. As little as three feet at low water was reported as the result of this survey on the shoal, and the opinion was expressed that, at a low run of tides, the sand was bare. The sea, however, was too heavy to determine anything with accuracy. Old fishermen, also, familiar with the bank, report it as occasionally bare.

The following extracts are made from the report of this survey:

"On the eastern edge of the shoal, even in calm weather, (unless it be high or low water,) the tides run with great rapidity, and form considerable breakers when setting to the westward, and a large water-fall when setting to the eastward.

"The breakers on this shoal are very heavy, and when there is sufficient sea to endanger a vessel, they may be seen some miles and heard at a very considerable distance, and as the shoalest part is not more than a cable's length inside, and no danger near it, a vessel might avoid it.

"At anchor at different places and on different days, we determined the set and strength of the tides and, as nearly as possible, their rise and fall. Their rise is from six to nine feet. They set around the compass every tide; setting **SE.** nearly, at full moon, and running from one to four knots per hour at a mile's distance from the breakers. The mean rate, however, is materially varied by the winds; they set strongest at **W SW.** and **E NE.**, and which is undoubtedly the strength of the flood

and ebb. From these causes and variety in the tides arises a principal danger in approaching the Shoals. When under way about the Shoals, in a few hours' time we found ourselves drifted far out of our reckonings. * * By allowing for the sets of the tides as ascertained at anchor, the observations and reckonings agreed very nearly. Should any vessel fall in with the Shoals, a knowledge of the course and strength of the tides would be of the greatest importance. *George's Shoal and Bank.*

"The bottom of the bank is of such a narrow character that it is difficult for a vessel to ascertain her situation by it. We often found a great variety of soundings in a very short distance, such as sands of various colors, and differently mixed, coarse and fine, gravel, pebbles of various colors, stones, sponge, and shells.

"Notwithstanding this variety, some idea of the general character of the soundings may be useful. To the westward of the Shoals, and at some distance from them, the bottom is coarse sand and gravel of all colors; to the northwestward, a mixture of white, black, and yellow sand; to the northeastward, chiefly gravel and pebbles; to the eastward, fine white and yellow sand; and in Latitude 41° 57′ N. and Longitude 68° 40′ W., some white moss; to the southeastward, fine white and yellow sand.

"As the Shoals are approached, in whatever direction, the soundings become coarse, and are frequently mixed with shells of different kinds. Near the shoal much of the bottom is pebbles; and to the eastward of the largest and most dangerous shoal there are stones of the size of hen's eggs, with moss and sponge on some of them. Near the southeast point are from fifteen to twenty fathoms; a prevailing character of the soundings is green shells, and chiefly of the species usually called sea-eggs. If a vessel be far enough to the southward to avoid danger she will have no shells. The quality of the soundings, as far as we were enabled to survey the bank, will be best understood from the chart, where they have been carefully rated.

"The holding-ground is not good. But the vessels employed in the survey, by having a long scope of cable, rode out a considerable gale of wind for twenty-two hours, on the eastern side of the main shoal and to the windward of it. At this time the sea broke very high in ten fathoms of water."

In 1837 this shoal was resurveyed by Lieutenant (afterwards Rear-Admiral) Charles Wilkes, and others, in the U. S. brig "Porpoise." His survey differs materially from that of Mr. Blunt, both in the depth of water found on the shoal and in the position of the shoalest part. Lieutenant Wilkes says:

"The shoalest water found on any part of the bank was two and a half fathoms, or fifteen feet, reduced to low water; and this is only to be found in two small places, viz:

Latitude	**41° 40′ 13″ N.**
Longitude	**67° 44′ 10″ W.**
Latitude	**41° 40′ 33″ N.**
Longitude	**67° 44′ 30″ W.**

"The whole of the shoal is composed of hard sand-spits; fine sand on the shoalest places, and coarser as the water deepens, until it becomes large pebbles without sand.

"The rise and fall of tides is seven feet, extremely regular,—the first part of the flood setting **N NW.**, the latter part **N.** by **E.**, and ebb **S SE.** and **S.** by **W.** The flood runs four and a half hours, ebb five and a half hours; greatest velocity two and six-tenths of a mile, from half an hour to two hours in changing, going round with the sun on from **N.** by way of **E.** The wind has but little effect on the velocity. High water at full, and change at $10^h\ 30^m$."

By comparing Lieutenant Wilkes' report with that of Mr. Blunt, made in 1821, we learn, either that the former did not find the shoalest water on the bank, or that the depth of water varies in different years, as well as the position of the shoal. That the shoal shifts its position from time to time is generally believed by the fishermen.

The variation of the compass on The Georges, or in their vicinity, is, for 1879, **12° 45′ W.**

In coming from the southward for George's Bank you will get soundings in Latitude 40° 4′ N., if on the southwestern part of the bank. (Should you not get soundings in Latitude 40° 30′ N., you may be certain that you are to the eastward of the shoal, and must direct your course accordingly, to clear it. The first soundings will then be in from sixty to seventy-five fathoms.) When steering to the northward the water will shoal gradually to twenty fathoms, in Latitude 41° 20′ N. This depth of twenty fathoms extends for a distance of ten or twelve leagues east or west.

Later examinations by Commander Jno. A. Howell, U. S. N., Lieutenant Commander C. D. Sigsbee, U. S. N., and Master Robert Platt, U. S. N., Assistants in the Coast Survey, while they have developed few new features of importance in the depths on this shoal, have resulted in a more accurate delineation of the shape and extent of the bank and of the character of the bottom; and Master Platt's Current observations, hereto appended, are of themselves a valuable addition to our knowledge of this dreaded shoal. These observations were made, under the direction of the Superintendent of the Coast Survey, during the summer and autumn of 1877, and their importance to navigation cannot be too highly estimated.

Currents on George's Bank. In his report to the Superintendent, Master Platt calls attention to a characteri., c sounding of *eleven fathoms* near the eastern edge of George's Bank. It is in Latitude 41° 34′ 30″ N., Longitude 67° 25′ W., and has depths of from twenty to twenty-five fathoms close to it on the east, from fifteen to seventeen on the south, and from sixteen to twenty fathoms on the west. The bottom is "shells and pebbles." Striking soundings on this spot:

	Miles.
The thirteen-feet spot on the Northern end of George's Shoal bears NW. $\frac{1}{8}$ W.	19
The shoal of The Georges (twelve feet) NW. $\frac{7}{8}$ W.	16
Southern end of The Georges W. $\frac{1}{2}$ N.	10
Asia Rip (Nantucket Shoals) W. by S. $\frac{1}{4}$ S.	100
Davis' South Shoal Light-vessel W. $\frac{1}{2}$ S.	118
Nantucket (Great Point) Light-house W. $\frac{3}{4}$ N.	121
Cape Cod (Highland) Light-house NW. by W. $\frac{1}{2}$ W. Westerly	123
Cape Ann (Thatcher's Island) Light-houses NW. $\frac{1}{2}$ W.	157

From the report of Master Platt to the Superintendent of the Coast Survey, the following extracts in regard to this bank are made:

"At Stations Nos. II and III (see Current Chart facing this page) we particularly noticed the tidal swell, which made up regularly with each flood-tide and subsided with the ebb. I have spoken with the masters of several fishing vessels upon this subject, and they all informed me that 'they had always noticed it, but had'—strange to say—'attributed it to the fog!'"

"At Station No. III we were also surrounded, during the strength of the flood and ebb, with strong and well-marked tide-rips, which disappeared at slack water." These tide-rips (see Current Chart) are very alarming when first seen, as they look like the breakers in shoal water. Master Platt says, in reference to them:

"When in Latitude 42° N., Longitude 66° 30′ W., we saw what looked like shoal water or breakers ahead, but, on sounding, found one hundred and seventeen fathoms. We drifted along with the current until we came among these apparent breakers, and found them to be caused by a very heavy tide-rip. The sea was so high and 'coaming' that we were obliged to reduce sail, three-reef the mainsail, and haul the boom well out to save our mainmast. These heavy tide-rips are nearly always well marked, and a stranger coming among them, especially at night, would be apt to be very much alarmed. I would therefore suggest that their approximate positions be marked upon our charts. They extend between Latitudes 42° N. and 43° N., and from Longitude 66° 30′ W. to 68° 30′ W., are from twenty to forty miles long and at least ten miles wide."

Jeffrey's Bank. Jeffrey's Bank, upon which the shoalest sounding yet found is thirty-seven fathoms, lies about seventy miles **E SE.** from Cape Elizabeth, on the coast of Maine, and one hundred and thirty miles to the westward of Cape Sable. It lies about **E NE.** and **W SW.**, and is about eleven miles long. The shoalest water (thirty-seven fathoms) is near the western end of the bank.

The following bearings and distances may be useful to navigators coming from sea and striking soundings on Jeffrey's Bank:

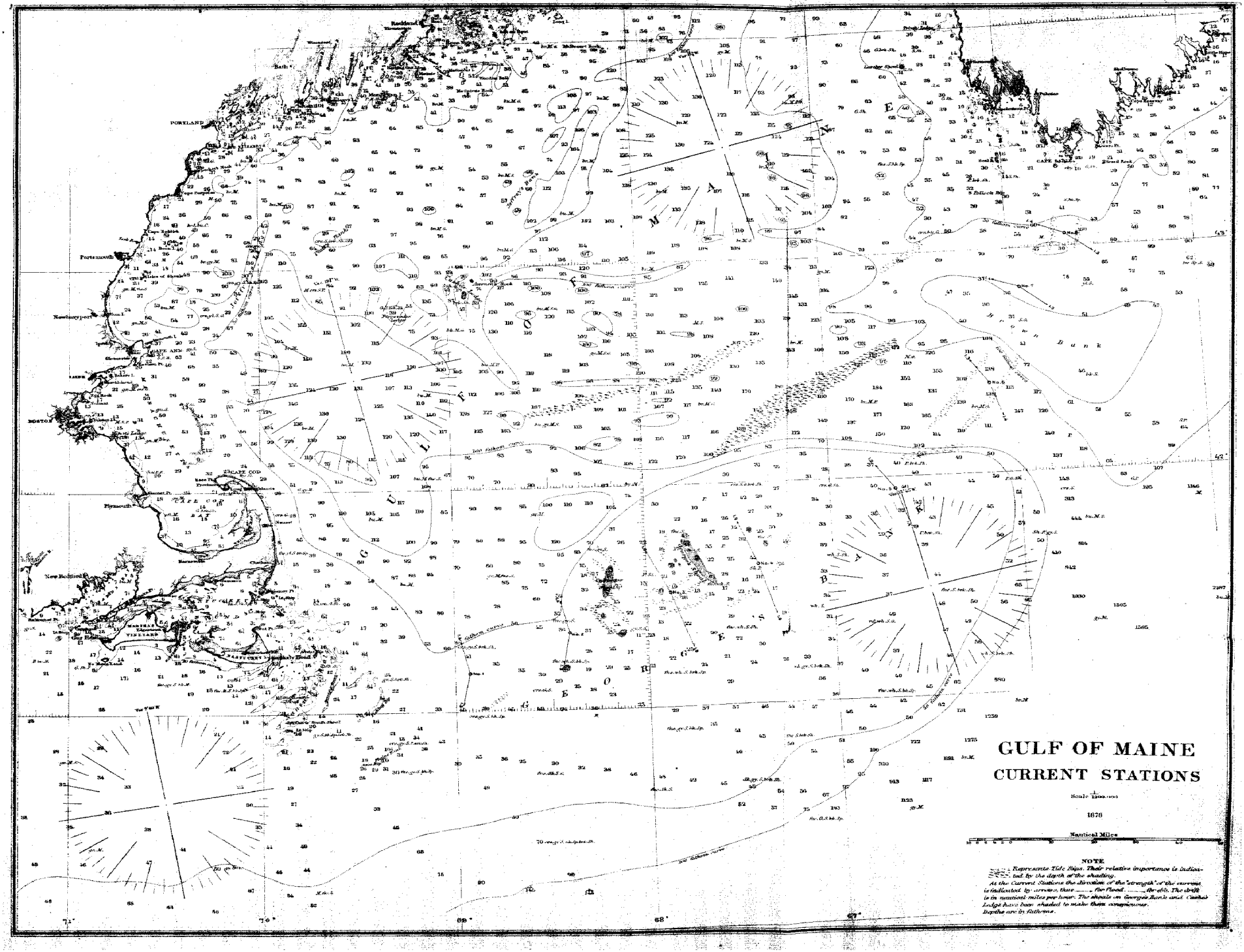
	Miles.
Cape Sable and Seal Island Light bear E. by S. $\frac{1}{2}$ S.	130
Mount Desert Rock Light NW. $\frac{1}{2}$ N.	38
Cape Elizabeth Lights W NW.	71
Cape Ann (Thatcher's Island) Lights W. by S.	99
Boston Light W. by S. $\frac{3}{8}$ S.	120
Cape Cod (Highland) Light SW. $\frac{7}{8}$ W.	104

From the eastern end of the bank Matinicus Rock Light-houses bear **NW.** by **N.** $\frac{3}{4}$ **N.**, distant twenty-five miles; while from its western end they bear **N.**, distant twenty-six miles.

Fippenies Ledge. *The Fippenies* or Fippenies Ledge is a small bank to the westward of Cashe's Ledge, and has thirty-nine fathoms, "gravel, sand, and broken shells." It has a diameter of five miles, lies between fifteen and twenty miles **W.** from Sigsbee's five-fathom rock on Cashe's Ledge, twenty-five miles **S.** by **E.** $\frac{3}{4}$ **E.** from Platt's Bank, and thirty-nine miles **SE.** by **S.** from the northern extremity of Jeffrey's Ledge.

From the centre of Fippenies Ledge, Cape Ann (Thatcher's Island) Light-houses bear **W.** $\frac{3}{4}$ **N.**, fifty-eight miles; Cape Cod (Highland) Light-house **SW.** $\frac{3}{4}$ **W.**, fifty-seven miles; and Davis' South Shoal Light-vessel **SW.** by **S.** $\frac{1}{2}$ **S.**, one hundred and fifteen miles distant.

Jeffrey's Ledge. Jeffrey's Ledge, an extensive shoal, (not to be confounded with Jeffrey's Bank,) lies off the coasts of Massachusetts and New Hampshire, is forty miles long **NE.** and **SW.**, and has from eighteen to forty fathoms upon it. Its southern end, five miles from Cape Ann,


GULF OF MAINE
CURRENT STATIONS
Scale 1:200,000
1878
Nautical Miles
NOTE
Represents Tide Rips. Their relative importance is indicated by the depth of the shading.
At the Current Stations the direction of the "strength" of the current is indicated by arrows, thus ——— the Flood, ——— the ebb. The drift is in nautical miles per hour. The shoals on Georges Bank and Cashes Ledge have been shaded to make them conspicuous.
Depths are in fathoms.
Portland
Portsmouth
Newburyport
Boston
Plymouth
New Bedford
Cape Cod
Nantucket
Martha's Vineyard
Cape Elizabeth
Cape Ann
Cape Sable
Georges Bank
Browns Bank
Jeffreys Ledge
Cashes Ledge
Platts Bank
Stellwagen Bank
Middle Ground
Fippennies Ledge
Tillies Bank
Outer Cashes
Inner Cashes
Eastern Point
Thatchers Island
Isles of Shoals
Boon Island
Cape Porpoise
Cape Neddick
Nubble
Whaleback
Cape Ann
Straitsmouth
Thacher Island
Eastern Point
Gloucester
Salem
Marblehead
Nahant
Minots Ledge
Scituate
Duxbury
Gurnet
Cohasset
Hull
Boston Light
Boston Harbor
Hingham
Weymouth
Quincy
Dorchester
Roxbury
Charlestown
Chelsea
Winthrop
Lynn
Saugus
Malden
Medford
Somerville
Cambridge
Brookline
Newton
Wellesley
Dedham
Milton
Braintree
Weymouth
Hingham
Cohasset
Scituate
Marshfield
Duxbury
Kingston
Plymouth
Sandwich
Barnstable
Yarmouth
Dennis
Harwich
Chatham
Orleans
Eastham
Wellfleet
Truro
Provincetown
Race Point
Peaked Hill Bars
Monomoy Point
Nantucket
Siasconset
Great Point
Tuckernuck
Muskeget
Gay Head
Cuttyhunk
Martha's Vineyard
Edgartown
Vineyard Haven
Oak Bluffs
Menemsha
Chilmark
West Chop
East Chop
Woods Hole
Falmouth
Waquoit
Hyannis
Osterville
Centerville
Marstons Mills
Cotuit
Mashpee
Sandwich
Buzzards Bay
Wareham
Onset
Marion
Mattapoisett
Rochester
Fairhaven
New Bedford
Dartmouth
Westport
Gay Head
Cuttyhunk
Elizabeth Islands
Naushon
Pasque
Nashawena
Penikese
Gosnold
Vineyard Sound
Nantucket Sound
Muskeget Channel
Nantucket Shoals
Great South Channel
Stellwagen Bank
Jeffreys Ledge
Cashes Ledge
Platts Bank
Middle Ground
Fippennies Ledge
Tillies Bank
Outer Cashes
Inner Cashes
Georges Bank
Browns Bank
Northeast Channel
Eastern Channel
Western Channel
Gulf of Maine
Bay of Fundy
Grand Manan
Brier Island
Digby
Annapolis
Yarmouth
Shelburne
Lockeport
Liverpool
Mahone Bay
Lunenburg
Halifax
Canso
Sydney
Louisburg
Cape Breton
Prince Edward Island
Charlottetown
Pictou
Northumberland Strait
Miramichi Bay
Chaleur Bay
Gaspe
Gaspe Bay
Cape Gaspe
Cape Rosier
Forillon
Percé
Bonaventure Island
Magdalen Islands
Cape Breton Island
Sable Island
Sable Island Bank
Western Bank
Emerald Bank
LaHave Bank
Roseway Bank
Baccaro Bank
Brown Bank
Scotian Shelf
Laurentian Channel
Anticosti Island
Gulf of St. Lawrence
Strait of Belle Isle
Newfoundland
St. Pierre
Miquelon
Fortune Bay
Placentia Bay
Trinity Bay
Conception Bay
St. John's
Cape Race
Cape Pine
Cape St. Mary's
Burin Peninsula
Grand Bank
Virgin Rocks
Flemish Cap
Orphan Knoll
Hatton Bank
Rockall
Rockall Bank
Porcupine Bank
Porcupine Seabight
Rockall Trough
Hebrides
Ireland
Scotland
Iceland
Greenland
Labrador
Hudson Strait
Davis Strait
Baffin Island
Frobisher Bay
Cumberland Sound
Resolution Island
Nain
Hopedale
Okak Islands
Hebron
Ungava Bay
Hudson Bay
James Bay
Moosonee
Moose River
Albany River
Attawapiskat
Fort Severn
Churchill
Port Nelson
Nelson River
Winisk
Severn River
Sutton Islands
Belcher Islands
Coats Island
Southampton Island
Repulse Bay
Melville Peninsula
Foxe Basin
Foxe Channel
Prince of Wales Island
Somerset Island
Boothia Peninsula
Gulf of Boothia
Committee Bay
Chesterfield Inlet
Rankin Inlet
Whale Cove
Arviat
Baker Lake
Dubawnt Lake
Kazan River
Thelon River
Great Slave Lake
Great Bear Lake
Mackenzie River
Mackenzie Delta
Beaufort Sea
Amundsen Gulf
Victoria Island
Banks Island
Prince Patrick Island
Melville Island
Parry Channel
Barrow Strait
Lancaster Sound
Jones Sound
Ellesmere Island
Axel Heiberg Island
Ellef Ringnes Island
Amund Ringnes Island
Cornwallis Island
Devon Island
Somerset Island
Prince of Wales Island
Victoria Island
Banks Island
Prince Patrick Island
Melville Island
Parry Channel
Barrow Strait
Lancaster Sound
Jones Sound
Ellesmere Island
Axel Heiberg Island
Ellef Ringnes Island
Amund Ringnes Island
Cornwallis Island
Devon Island
71°
70°
69°
68°
67°

is in Latitude 42° 37′ 45″ N., and extends from Longitude 70° 23′ 20″ W. to 70° 28′ 30″ W., showing the ledge to be over five miles wide at this point. Its southwestern extremity is four miles and a half E. by S. ½ S. from Thatcher's Island Lights. The northern end of the ledge is in Latitude 43° 11′ N., Longitude 70° W., and from it Cape Elizabeth Light-houses bear N. ¾ W., twenty-five miles; Portsmouth Entrance W., thirty-two miles; and Thatcher's Island Light-houses SW. ⅔ W., forty-two miles distant. *Jeffrey's Ledge.*

Characteristic Soundings and Bottoms on Jeffrey's Ledge.—*A vessel bound from Seguin to Cape Ann* will cross the tail of the ledge close to its southwestern end, meeting the bank in Latitude 42° 42′ N., and crossing it in Latitude 42° 40′ 30″ N. When she falls in with it, if the course from Seguin has been made good, she will be five miles NE. by E. ¾ E. from Thatcher's Island Light-houses, and will have from twenty-eight to thirty fathoms. The bottom, on coming on to the bank, will change from "grey mud" to "stones and broken shells;" and when on the bank it will be "fine grey and black sand." Should the vessel be to the eastward of her course, she will have from thirty-four to forty-five fathoms, "blue clay," near the edge of the bank; changing, on striking the shoal, to "mud and fine grey and red sand." Soundings will be in from twenty to forty fathoms, and she will cross the bank, if she continues her course, in from twenty-three to twenty-six fathoms, "grey sand" and "grey and black sand."

Such a vessel, bound from Seguin to Cape Ann in thick weather, getting soundings in from forty to forty-five fathoms, "blue clay," on the northwestern edge of Jeffrey's Ledge, and then changing to thirty and thirty-seven fathoms, "mud, fine grey and red sand," will know that she is to the eastward, and Cape Ann Light-houses bear W. by S. ¾ S., from seven to ten miles distant.

If she is to the westward of her course she will not hit the ledge at all.

A vessel bound from Eastport to Cape Ann, if she steers a straight course W SW., will meet the ledge in Latitude 42° 49′ N. and Longitude 70° 14′ W., and will have forty-two fathoms, "fine grey and black sand." In crossing it she will have from twenty-eight to thirty fathoms. The bottom will vary from "coarse and fine grey and red sand, with black specks," to "coarse white and yellow sand and black pebbles." She will then drop off into forty-five fathoms, "blue clay," and shoal again to thirty fathoms, "fine grey and red sand mixed with mud." This shows that she is crossing the southwestern end of the ledge, and she will leave it, in twenty-nine fathoms, four miles E NE. from Thatcher's Island Light-houses.

Should a vessel in thick weather get soundings on the edge of the ledge, in fifty-three fathoms, "fine grey and black sand," and change to "fine grey sand and red gravel," she is to the southward of her course, and should steer W. by S. ½ S. for Thatcher's Island Light-houses.

A vessel bound from the Bay of Fundy to Cape Ann crosses Jeffrey's Ledge in Latitude 42° 46′ N., Longitude 70° 16′ W., in a W. by S. ½ S. direction. The soundings on its eastern edge will be fifty-three fathoms, "fine grey and black sand," and will change to thirty-two fathoms, "fine grey sand and red gravel." The soundings on the ledge will vary from twenty-four to thirty fathoms; and when the shoal is crossed Cape Ann Light-houses will bear W. by S. ½ S., four miles distant.

A vessel bound from Cape Sable to Cape Ann will cross the ledge in Latitude 42° 39′ N., meeting it in Longitude 70° 22′ W. and leaving it in Longitude 70° 28′ 30″ W. When the bottom changes to "grey" or "dark mud" she is over the bank, and Thatcher's Island Light-houses bear W. ½ N., distant four miles.

Lieutenant (now Rear-Admiral) Alexander Murray, U. S. N., Assistant Coast Survey, surveyed this ledge in 1858–59, and had the following depths:

Thatcher's Island Light-houses bearing SW. by W. ½ W., three miles distant, twenty-one fathoms; same lights bearing W. by S. ¾ S., six miles and three-quarters, twenty fathoms; with Thatcher's Island Light-houses bearing SW., fifteen miles and three-quarters, and White Island Light-house (Isles of Shoals) NW., fourteen and a quarter miles distant, eighteen fathoms. His distances, however, are only approximate.

This ledge has been lately re-examined by Master Robert Platt, U. S. N., and Lieutenant Commander C. D. Sigsbee, U. S. N., Assistants in the Coast Survey, and its depths and outlines well determined. (See "Sailing Chart of the Atlantic Coast from Cape Sable to Cape Hatteras," published by the U. S. Coast Survey.)

In the course of his survey Master Platt discovered and carefully examined Platt's Bank, (named after the discoverer,) which lies about sixteen miles to the eastward of the northern end of Jeffrey's Ledge, and about thirty miles to the westward of Cashe's Ledge. (Measurements taken to the centre of the bank.) It has twenty-nine fathoms, "coarse sand and broken shells," and is nine miles long in an E. by S. and W. by N. direction, and about four miles wide N. and S. *Platt's Bank.*

The eastern extremity of Platt's Bank is in Latitude 43° 7′ 30″ N., Longitude 69° 30′ W.; its western extremity is in Latitude 43° 8′ N., Longitude 69° 42′ W.; and from its centre

	Miles.
Cape Sable Light-house bears E. $\frac{7}{8}$ S.	179
Mount Desert Rock Light-house E. by N. $\frac{7}{8}$ N.	83
Matinicus Rock Light-houses NE. by E.	52
Monhegan Light-house NE. $\frac{3}{4}$ N. Northerly	40
Seguin Light-house N. $\frac{3}{4}$ E. Nearly	35
Cape Elizabeth Light-houses NW. by N. $\frac{1}{2}$ N.	37
Boon Island Light-house W. by N. $\frac{3}{8}$ N.	38
Isles of Shoals (White Island) Light-house W. $\frac{3}{8}$ N.	46
Cape Ann (Thatcher's Island) Light-houses W. by S. $\frac{5}{8}$ S.	52
Cape Cod (Highland) Light-house SW. by S.	68
Davis' South Shoal Light-vessel S SW. Southerly	133
North end of Cultivator Shoal (three-fathom spot) S. by E. $\frac{3}{4}$ E.	110
Fippenies Ledge S. by E. $\frac{3}{4}$ E.	25
Shoal spot (thirteen feet) on north end of George's Shoal SE. by S. $\frac{1}{2}$ S.	117
Cashe's Ledge (Sigsbee's rock) SE. $\frac{1}{4}$ E.	35
Cashe's Ledge (Ammen's Rock) SE. $\frac{3}{4}$ E.	36

BAY OF FUNDY.

The entrance to this great bay lies between **Bryer's Island** (a small island off the southwestern end of Nova Scotia) and **Libbey Island**, which lies close in with the entrance to Machias Bay on the coast of Maine. The geographical position of Bryer's Island is

Latitude.....44° 14′ 57″ N.
Longitude.....66° 23′ 40″ W.,

while that of Libbey Island is

Latitude.....44° 34′ 5″ N.
Longitude.....67° 22′ 2″ W.,

the distance between the two islands being forty-six nautical miles. The bay is deep, and, as a general rule, its shores are bold-to. The tidal current runs with great velocity; and the frequent changes of weather, the set and changes of currents, and the thick and long-continued fogs, are apt to confound the seaman, however experienced he may be or however good his judgment. At the head of the bay the rise of tide is from fifty to sixty feet, the flood coming in, generally, in three immense "*bores*," as they are called, or tidal waves. The currents are often perplexing, and always swift.

Fortunately there are many safe and commodious harbors on the shores of this bay to which vessels may resort in case of necessity, even without a pilot. For accurate and detailed directions for these harbors, we cannot do better than to refer the seaman to the book of directions which accompanies the British chart of these localities.

Near the southwestern end of the Bay of Fundy, and on its north shore, lies the entrance to **Passamaquoddy Bay**, an extensive bay opening from the northern shore about thirty miles to the eastward of Libbey Island. With the St. Croix River, which flows into it, this bay separates the territories of Great Britain from the United States.

Grand Manan. In the entrance to the Bay of Fundy lies the island of Grand Manan, belonging to Great Britain, which, as it lies so near our own coast, and is often resorted to by both coasters and fishermen, demands a short description in this place. It has several good harbors of refuge. From West Quoddy Head (on the mainland) its nearest point, which is on the northwestern side, is distant five miles and three-quarters. "The soil is generally considered to be good, and the inhabitants are enabled to raise from it the productions of the neighboring shores." The trees are fir, beech, birch, maple, pine, &c., and are of a good size.

The western shores are very straight and uniform; consisting of cliffs which rise to the height of from one hundred and eighty to four hundred feet above sea level. On this side there are no harbors, with the exception of **Dark Cove**, which lies four miles to the southwestward of the north point of the island, called Bishop's Head. This cove affords shelter only for the smallest vessels, and for them only after two-thirds flood. But there is good water in it after having crossed the bar.

Along the western shore of Grand Manan, as far as **Southwest Head**, there are three, four, five, and six fathoms close to the land, deepening to thirteen, thirty, and forty fathoms at half a mile off, and thence, rapidly, to forty-five and fifty fathoms at the distance of a mile. The flood-tide setting to the northward and the ebb setting to the southward, follow the direction of this coast. At spring-tides the velocity of the tidal current ranges from two and a half to three knots an hour.

Bishop's Head. Bishop's Head, as above-mentioned, forms the northern end of Grand Manan, and its western extremity is called **Long Eddy Point**. The head is abrupt and bold, having, at the distance of a quarter of a mile from shore, a depth of from thirty to forty fathoms;—the land behind it rising to a height of three hundred and fifty feet. It is reported that the British government intends to erect a light-house on this head.

The eastern shores of Grand Manan are much lower than the western, and are much indented. Many small islands lie off that coast; between and among which are several excellent harbors, where, with a local pilot, the largest vessels may anchor with safety. For descriptions of the various harbors on the eastern side we must again refer to the English book of directions. This work is accurate, and its descriptions are very plain and terse.

DANGERS

IN THE ENTRANCE TO THE BAY OF FUNDY AND VICINITY OF GRAND MANAN.

Many dangerous ledges and shoals lie in the entrance to this bay off Grand Manan, and render a near approach to that island, especially in thick weather, very dangerous for strangers. The principal of these shoals lies to the southward and southwestward of the island, the western shores being, as above remarked, bold-to. There are also many dangers off the eastern shore,—a description of which does not, however, come within the scope of this work. Of the rocks to the southward the most important are collectively known as the Manan Ledges, and an accurate description of them is given by the English naval officers who surveyed them. The following extracts are made:

Manan Ledges.

"They consist of **Black Rock**, the northeasternmost, which is ten feet out at high water; **The Brazils**, which are out only at the low spring-tides; **The Tinker**, or northwesternmost rock, which is dry at mean low water; **The Diamonds**, awash at low spring-tides; **Crawley Shoal**, which has eighteen feet at low water; **The Rams**, or westernmost rock; **The Proprietor**, which is just seen at low water, but has foul ground extending nearly three-quarters of a mile to the southward from it; and The Old Proprietor, the southernmost and outermost of these dangers, which is out at half-tide. Over and through the channels among these rocks there is a rapid tidal current of from four to six knots an hour, the flood running to the eastward and northeastward and the ebb southwestward and westward. For a considerable distance southeastward from Black Rock is a very heavy tide-rip, on the ebb, known as *Bull Head Rip*. These ledges should therefore have a wide berth, and strangers should very carefully avoid being drawn into either of the passages among them. To go clear of the southernmost of these dangers keep Southwest Head of Grand Manan well open to the southward of the south point of Three Islands, bearing **NW.** by **W.** During an easterly wind the tide-rips are impassable."

"The Old Proprietor, as before observed, is the outermost and most dangerous of the Manan Ledges. It dries at half-ebb, covers a space of half an acre at low water, and, when covered, the tide sets strongly over it. There are from twenty-five to thirty-five fathoms a quarter of a mile to the southward of it. When upon it, Gannet Rock Light-house will bear **W.** by **S.**, five miles and two-thirds distant; Black Rock **N.** by **E.**, three miles and two-thirds; and the south point of Three Islands **NW.** by **W.** $\frac{1}{2}$ **W.**, four miles distant. The narrow ridge of foul ground running southward from The Proprietor, upon which are from two to four fathoms, is one-quarter of a mile to the westward of The Old Proprietor.

The Old Proprietor.

"Clarke's Ground, a rocky shoal of six and seven fathoms, over which the ebb creates a heavy rippling, lies a mile and a half **NE.** by **E.** $\frac{3}{4}$ **E.** from The Old Proprietor; and another, called *The Roaring Bull*, whereon is six or eight fathoms, is said to lie three or four miles to the eastward of it. There is usually a heavy and dangerous ripple over this shoal.

Clarke's Ground.

"Three Islands, or the **Three Kent Islands**, as they are sometimes called, are low and ledgy. The eastern side of the largest is bold to the rocks, which are at all times visible. About three-eighths of a mile off the northwestern side is a ledge named *The Constable*, dry at low water. Under the lee of these and the **Green Islands** anchorage may occasionally be obtained in from seven to fourteen fathoms. There is, however, *a small spot of three and a quarter fathoms*, half a mile off the middle of the western side of the Three Islands, which must be avoided.

Three Islands.

"The Murr Ledges, very dangerous rocks, which obstruct the approaches to the bay under Grand Manan, are formed by a number of detached ledges lying to the westward of Manan Ledges, and to the southward of Southwest Head of Grand Manan. They are surrounded and separated by deep water, and, in some cases, wide channels. But no stranger should attempt any of the passages among them. The flood sets to the eastward, and the ebb to the westward, over and among the dangers, with a velocity of three and four knots an hour. The easternmost of the Murr Ledges is called Gannet Rock; the southernmost, St. Mary's Ledge; the westernmost, Long Ledge; and the northernmost, Wallace's Ledge.

Murr Ledges.

"Gannet Rock is a small rock about twenty-five feet above water at high tide, with many sunken rocks and ledges about it. It lies about three miles and a half **S SW.** from the south point of the Three Islands. The ledges and sunken rocks in the vicinity always break. There is a light-house on the Gannet, which shows a brilliant white light, flashing three times in every minute, and visible about twelve miles. The tower is painted in vertical black and white stripes, and its geographical position is

Gannet Rock and Light-house.

Latitude	**44° 30′ 40″ N.**
Longitude	**66° 46′ 48″ W.**

"A gun is fired in reply to signals during foggy weather. The light, from its proximity to several very dangerous ledges and shoals, ought not to be run for. It is mainly intended to give timely warning to vessels which are, by the rapid tides in the vicinity and ignorance of their position, in danger of being wrecked.

"Vessels should not, except in cases of extremity, attempt to run in between this rock and The Old Proprietor, as there are some dangers in the way. The bottom is rocky and the tidal current is very swift."

Gannet Rock Light-house bears from

	Miles.
The Old Proprietor, W. by S.	5 2/3
Southwest Head of Grand Manan, SE. by S. ½ S.	7 ¼
Wallace's Ledge, SE. by E.	4 ¼
St. Mary's Ledge, E. by N. ¾ N.	2 ¾
Machias Seal Island Light-houses, E. by S. ⅓ S.	13 ¾

"St. Mary's Ledge, the southernmost of the Murr Ledges, is very small, and bare, except at 'high water of spring tides.' All around it and close-to are from five to nineteen fathoms.

St. Mary's Ledge. From Gannet Rock Light-house it bears **W.** by **S.** ¾ **S.**, distant two miles and three-quarters,—the depths between it and the Gannet varying from twelve to twenty-five fathoms. From **Yellow Ledge**, which is about ten feet above high water, it bears **SE.** by **E.** ¼ **E.**, three-quarters of a mile distant. There is *a four feet rock* between them, which breaks with a moderate swell.

"Long Ledge, the westernmost of these dangers, lies in a **N NE.** and **S SW.** direction, is a mile and a half long and four hundred yards broad, and is separated from Yellow Ledge by a deep channel a third of a mile wide. Its northern part is just uncovered at high water; but on

Long Ledge. its southern half are patches of from six to fifteen feet, and some which are awash at low water. Quite near its western side are soundings ranging from ten to eighteen fathoms. Between Wallace's Ledge and the northern end of Long Ledge lies a small, bold rock, called **West Ledge**, just visible above water at high spring tides.

Wallace's Ledge. "Wallace's Ledge, the northernmost of the Murr Ledges, is bare at half-ebb. It is small, and has from six to twelve fathoms close to it and all around it. When you are on this rock you will be four miles and a quarter **NW.** by **W.** from Gannet Rock Light-house; three-quarters of a mile **N.** by **E.** ½ **E.** from West Ledge; four miles south of Southwest Head of Grand Manan; and nine miles and three-quarters **E.** ⅔ **S.** from the lights on Machias Seal Island.

"There is a clear channel, with from ten to twenty-two fathoms, between Wallace's Ledge and Southwest Head of Grand Manan; but between it and Machias Seal Island are four dangerous rocks that must be very carefully avoided. They are named, respectively, Bull Rock, Middle Shoal, Southeast Ledge, and Southeast Shoal.

"Bull Rock is a small rock, with two feet at low water, and lies nearly seven miles **W.** by **N.** ⅛ **N.** from Gannet Rock Light-house. There is from nine to twenty-three fathoms all

Bull Rock. around it, and consequently it may generally be discovered by the breakers. From Southwest Head of Grand Manan it bears **SW.** by **S.**, six miles; from Machias Seal Island lights it bears **E.** by **S.** ½ **S.**, six miles and three-quarters; and it is three miles to the westward of the westernmost of the Murr Ledges, with soundings of from fifteen to twenty-seven fathoms between the two.

Middle Shoal. "Middle Shoal is likewise a very small ledge, with deep water all around it, and has eighteen feet at low water. There is generally a rippling of the sea in its vicinity, and in heavy weather it always breaks. It bears from Bull Rock **N NW.**, four miles and three-eighths; **W.** by **S.** from Southwest Head, a little over five miles; and **E NE.**, five miles and one-eighth from Machias Seal Island lights.

"Between this shoal and Grand Manan there is a clear passage; and also between it and Bull Rock, but the channel between it and Machias Seal Island is obstructed by the North Rock and North Shoal.

Southeast Ledge. "Southeast Ledge has five fathoms upon it, with a rocky bottom. There is quite a tide-rip on it, but it breaks only in heavy weather. From Yellow Ledge it bears **W.** ¼ **S.**, six miles and one-third; from Bull Rock **SW.** ½ **W.**, three miles and three-quarters; and from Machias Seal Island lights **SE.** ½ **S.**, five miles and three-quarters distant.

"Southeast Shoal is a very dangerous patch, with seven and eight feet upon it at low water; is small, steep-to, and breaks if there is any sea. It bears **SE.** from Machias Seal Island

Southeast Shoal. Light-houses, a mile and a quarter distant. There are soundings of from fifteen to thirty fathoms between the shoal and the island, except in *one small spot, which has twelve feet upon it*, and which is a quarter of a mile from the island. The flood runs **NE.** by **N.** over this shoal, and the ebb **SW.** by **S.**, at the rate of three knots an hour."

Although the above descriptions have been given for guidance in cases of emergency, it is strongly urged upon strangers not to attempt to pass through any of these inside channels, but to keep outside, clear of all the above-described dangers.

Machias Seal Island, called on our charts simply **Seal Island**, is a small, low, rocky islet about four hundred yards long, a hundred and fifty yards broad at its widest part, and about twenty feet

above high-water mark. Near the centre of the island stand two white light towers, one hundred and sixty feet apart, and bearing **E SE.** and **W NW.** from each other, which show two fixed white lights from a height, respectively, of fifty-four and fifty-eight feet above sea level. These lights are visible about fifteen miles, and are intended as leading lights for clearing the Murr Ledges and the other dangers to the southward of Grand Manan. Their geographical position is

Machias Seal Island and Light-houses.

Latitude	44° 30′ 7″ **N.**
Longitude	67° 6′ 5″ **W.**

Vessels standing to the northward, with these lights to the westward, distant about five miles, must go about as soon as the two lights come in range, to avoid the Murrs. "A gun is fired every four hours during a fog, as a warning to vessels." This is an entirely insufficient precaution. There should be either a powerful steam-whistle or an air-trumpet on this island, or else the gun should be fired with great frequency.

"From these light-houses

	Miles.
Southeast Shoal bears SE.	1 1/4
Southeast Ledge SE. 1/2 S.	5 3/4
St. Mary's Ledge E. 2/3 S.	10
Southwest Head E. by N. 1/2 N.	10 1/4
Middle Shoal E NE.	5 1/8
North Shoal N. 1/2 E.	1 5/8

"Three miles and a half **W.** of the Seal Island Light-houses lies a rock which has caused the wreck of several vessels. It was seen by Captain Johnston, of the ship 'Liverpool,' (trading to St. Johns,) in 1834, and is said to be well known to the regular traders and pilots. We propose to name this **Liverpool Rock.**

"North Rock is about four feet out at high spring tides. It is situated on the middle of a shoal of twenty-one feet, and bears **NE.** by **N.** from the Seal Island lights, two miles and a quarter distant. The shoal around the North Rock is about one-third of a mile in extent, and lies in an **E SE.** and **W NW.** direction. Around it the soundings range from six to fourteen fathoms close-to, and there is always a tide-rip in the neighborhood. There are from fifteen to forty-six fathoms in the channel between North Rock and the ledge extending from the north end of Seal Island.

North Rock.

"North Shoal breaks in heavy weather; is very small, has seven or eight feet on it, and the depths around it vary from nine to twelve fathoms. From Seal Island Light-houses it bears **N. 1/2 E.**, a mile and five-eighths distant, and from North Rock **W.** by **S.**, a little over one mile distant. Between this shoal and Machias Seal Islands the depths range from twenty to fifty fathoms; and between it and North Rock they vary from fifteen to twenty-five fathoms. All around and over this shoal there is always a rippling sea.

North Shoal.

"Grand Manan Bank has soundings over it varying from twenty-four to thirty and forty fathoms, and makes a tide-rip of very great extent. The current of flood sets over it in a north-easterly direction, and the ebb sets to the southwestward. The velocity is equal on both tides,—being about a mile and a half an hour." The shoalest part of the bank, "on which is a depth of twenty-four fathoms, is situated in Latitude 44° 14′ 30″ N., Longitude 67° 3′ W., or fifteen miles and three-quarters **S. 1/4 W.** from Machias Seal Island Light-houses. Around it the depths soon increase from forty to forty-six, sixty and seventy fathoms."

Grand Manan Bank.

Off the southwestern end of Nova Scotia the water deepens rapidly,—fifty fathoms being found thirteen miles to the westward of **Frenchman's Point.** Between this part of the coast and the one hundred-fathom line is embraced what is known as Jones' Ground, a fine fishing-ground for codfish, etc. It extends, in Latitude from 43° to 44° 25′ N., and in Longitude from 66° 20′ to 67° **W.**; and affords fine fishing for the larger cod and halibut.

Jones' Ground.

GENERAL DIRECTIONS

FOR THE GUIDANCE OF VESSELS ENTERING THE BAY OF FUNDY.

"Ships navigating this bay have to encounter an atmosphere almost constantly enveloped in thick fog, tides setting with great rapidity over the rocks and shoals with which it abounds, and a difficulty of obtaining anchorage on account of the depth of water. Under these circumstances, the greatest care and coolness is requisite in order to prevent disaster."

The usual course pursued by vessels from Europe on approaching this dangerous bay with a westerly wind is, when off Cape Sable, to make the coast of Maine in the vicinity of the Schoodic Hills (which are on the eastern side of the entrance to Frenchman's Bay) or Petit Manan Island, (which

General Directions--Bay of Fundy.

lies off Gouldsboro' Bay.) The latter has a fine light-house on it. You can pass with greater safety to the westward of Grand Manan than to the eastward, and can have shelter, if necessary, in the many harbors on the coast of Maine.

"Between Grand Manan and the coast of Maine the passage is free from danger. Vessels beating through generally stand from side to side, particularly in fogs. The soundings vary from twelve to fifty fathoms. The shores on both sides are bold, and the tidal currents regular and strong." It may be well to remark, in this connection, that the fogs often hang close in with the Maine coast, between Machias Bay and West Quoddy Head,—extending like a wall about one-third of the way across the **Grand Manan Channel**, while the rest of the passage is entirely clear. Vessels which are clear of it, and are beating through, stand boldly up to the eastern edge of this fog, as though it were the coast-line, and go about as their jib-booms enter it. A vessel coasting to the eastward, and caught in one of these fogs close in with the shore, will often find it to her advantage to stand boldly over toward Grand Manan, when, in many cases, she will come out and find a clear channel to East Quoddy.

"When steering between Grand Manan and Bryer's Island, the utmost caution is requisite during thick weather, as vessels are frequently drawn among the islands and ledges to the southward of Manan by the flood, which sets directly on them. The most dangerous of these is *The Old Proprietor*, (see page 7,) which at low water is bare for the space of half an acre. When the wind, therefore, veers at all to the southward, you had better make for Eastport or St. John, or you may secure an anchorage in Grand Passage or St. Mary's Bay; for it seldom blows from the southward over eighteen hours without bringing on a fog."

The channel between Grand Manan and the coast of Maine is recommended as the best and safest passage up the Bay of Fundy. It is decidedly most advantageous with the prevailing winds, which are from the westward.

The direction of the winds here, and on the coast of Nova Scotia, is from **W SW.** to **SW.**, and they are nearly as steady as trade-winds; excepting that during the summer months they are rather more southerly, and accompanied, with little intermission, by fog. It is, therefore, recommended to vessels bound up either shore of the bay not to leave an anchorage without making arrangements for reaching another before dark or the approach of a fog. With a **SW.** wind it often happens that you are enveloped in it unawares. It is best not to keep at sea during night, if it can be avoided. With a **NW.** wind the fog is soon dispersed.

The tides are very rapid, but regular; and, although the wind against them alters the direction of the rippling and sometimes makes it dangerous, it has little or no effect upon the direction of their set. The flood sets from Cape Sable to the northwestward, through the **Seal Island** and **Bald Tusket** passages, at the rate of two or three knots, after which its rate increases to four or five knots. Thence it takes the direction of the shore and flows past Cape St. Mary, and then toward Bryer's Island. Between Bryer's Island and the opposite northern coast, and for some distance up the bay to the eastward, the first of the flood sets strongly to the northward, (nearly **N.**,) so that it is extremely dangerous for a vessel to run in the night, or during thick weather, from any port of the southern to the northern shore without making a large allowance for the set of the tidal current and *keeping the lead constantly going.*

GENERAL DIRECTIONS

FOR VESSELS LEAVING THE BAY OF FUNDY AND BOUND TO THE WESTWARD.

I. ***From West Quoddy Head to Penobscot Bay.***—When abreast of the light-house on West Quoddy Head, (bearing **NW.** by **N.**, five-eighths of a mile distant,) steer **SW. ¾ W.** until Little River Light-house bears **W. ½ N.**, about eight miles off; then steer **W.** by **S. ¾ S.** for Matinicus Rock; and when up with the rock follow the directions for Penobscot Bay.

The distance from West Quoddy Head to Matinicus Rock is about one hundred and four miles.

Or, when abreast of West Quoddy Head and about two miles off, steer **W SW.**, which will carry you safely along the coast, and you should make the rock to the northward of your course.

In sailing the above courses you will make and pass to the southward of the lights on Little River Island, Libbey Island, Head Harbor Island, Petit Manan, Baker's Island, and Saddle-Back Ledge; and to the northward of Machias Seal Island Light-houses and the light on Mount Desert Rock.

General Directions---Bay of Fundy to Boston.

II. ***From West Quoddy Head to Cape Elizabeth.***—Steer **W SW.** from abreast of West Quoddy Head until abreast of Matinicus Rock, and then **W.** ¾ **N.** for Cape Elizabeth. When within about five miles of the cape, follow the directions for approaching and entering Portland Harbor. Over these courses the distance from West Quoddy to Cape Elizabeth is one hundred and sixty-six miles. From Matinicus Rock to the cape is sixty-two miles.

In sailing the above courses you will make and pass to the southward of the following lights: Little River, Libbey Island, Head Harbor, Petit Manan, Baker's Island, Saddle-Back Ledge, Matinicus Rock, Monhegan, Seguin and Half-Way Rock; and to the northward of Machias Seal Island and Mount Desert Rock.

III. ***From West Quoddy Head to Cape Ann.***—From abreast of West Quoddy Head steer **W. SW.** for Cape Ann Light-houses. This course will pass about five miles to the southward of Matinicus Rock; and, if the course is made good, Thatcher's Island lights will be directly ahead. The whole distance is two hundred and four miles. After passing Matinicus Rock no lights will be seen until Cape Ann is made.

IV. ***From West Quoddy Head to Boston, outside of Mount Desert Rock.***—The course **SW.** by **W.** ¼ **W.** from Quoddy Head passes three miles outside of Mount Desert Rock. When abreast of it, steer **W.** by **S.** ⅛ **S.** for Boston; or **W.** by **S.** ¾ **S.** for Cape Ann. The distance from Quoddy Head to Mount Desert Rock is seventy-two miles, and from the rock to Boston one hundred and fifty-eight miles;—giving a total distance of two hundred and thirty miles.

On the above courses the following lights will be made and passed: Little River, Machias Seal Island, Libbey Island, Head Harbor Island, Mount Desert Rock, Thatcher's Island, Eastern Point, Baker's Island, (Salem Entrance,) Egg Rock, (Nahant,) Minot's Ledge and Boston.

On a clear night Matinicus Rock lights may possibly be seen, but the above courses pass thirteen miles to the southward of them.

V. ***From West Quoddy Head to Boston, inside of Mount Desert Rock.***—This is a very commonly used passage. It is usually adopted by vessels bound to Cape Ann, and the course is **W SW.** from Quoddy Head. When within two miles of the cape lights, steer **SW.** ¼ **W.** for Point Allerton, or **SW.** by **W.** for Long Island light; if bound in either by the Main Ship Channel or the Broad Sound Channels. The whole distance from West Quoddy Head to Boston is two hundred and twenty-five miles.

On the above courses the light-houses on the coast will be made and passed in the following order: Little River, Machias Seal Island, Libbey Island, Head Harbor Island, Petit Manan, Baker's Island, (Mount Desert,) Mount Desert Rock, Matinicus Rock, Thatcher's Island, Eastern Point, Baker's Island, (Salem Entrance,) and Egg Rock.

VI. ***From West Quoddy Head to Cape Cod.***—From the given position steer **SW.** by **W. Southerly** for Highland Light-house; which course passes outside of Mount Desert Rock and, if made good, brings you up with the light-house. The distance is two hundred and fifteen miles, and the following lights are passed in order: Little River, Machias Seal Island, Libbey Island, Head Harbor Island and Mount Desert Rock.

VII. ***From the Bay of Fundy to Penobscot Bay, passing between Grand Manan and Nova Scotia.***—When off the entrance to St. John Harbor, with Partridge Island Light-house bearing **N.** by **E.** ½ **E.**, five miles distant, and in twenty-two fathoms, steer **SW.** until Gannet Rock light bears **W.** by **N.** ½ **N.**, six miles distant, and then **W.** by **S.** ¼ **S.** for seventy-two miles, to Mount Desert Rock. Pass a couple of miles to the southward of this rock, and steer **W.** ½ **S.** until Matinicus Rock lights are made, when follow the directions given for Penobscot Bay. From Gannet Rock to Matinicus Rock the distance by the above courses is one hundred and seventy-eight miles.

VIII. ***Or, to pass through the Manan Channel between Grand Manan and the coast of Maine.***—From the position given above (off St. John) steer **W.** by **S.** ½ **S.** until abreast of West Quoddy Light-house, and then **W SW.** until up with Matinicus Rock. The whole distance is one hundred and forty-four miles. Between St. John and Matinicus you should make and pass the following lights: Point Lepreau, The Wolves, Swallow-Tail, East Quoddy, West Quoddy, Little River, Machias Seal Island, Libbey Island, Head Harbor, Petit Manan, Baker's Island and Mount Desert Rock.

IX. ***From the Bay of Fundy to Cape Ann, passing between Grand Manan and Nova Scotia.***—From off St. John, as above, steer **SW.** until Gannet Rock Light-house bears **W.** by **N.** ½ **N.**, distant

General Directions---Bay of Fundy to Boston.

six miles, and then W. by S. ¼ S. for Mount Desert Rock. When abreast of the rock, steer W. by S. ¾ S. for Cape Ann Light-houses. From St. John entrance to Gannet Rock is forty-six miles; from Gannet Rock to Mount Desert Rock is seventy-two miles; and from Mount Desert Rock to Cape Ann is one hundred and thirty miles. The whole distance from St. John to Cape Ann is two hundred and forty-one miles.

X. ***Or, to pass through the Manan Channel between Grand Manan and the coast of Maine and steer for Cape Ann.***—Steer W. by S. ½ S. until abreast of West Quoddy Head; then steer W SW., and follow the directions for vessels bound from West Quoddy to Cape Ann.

XI. ***From the Bay of Fundy to Boston.***—Steer SW. as before, from off St. John, until Gannet Rock light bears W. by N. ½ N., distant six miles, and then W. by S. ¾ S. for Boston. The distance from off Gannet Rock to Boston Entrance is about two hundred and twenty-seven miles.

Or, steer W. by S. ¼ S. from off Gannet Rock for Mount Desert Rock, and when abreast of it steer W SW. for Boston.

Or, when abreast of Mount Desert Rock steer W. by S. ¾ S. for Cape Ann, and, when abreast of the lights, SW. ¼ W. for Point Allerton, or SW. by W. for Long Island Light-house.

XII. ***From the Bay of Fundy to Cape Cod.***—The direct course from the position given above (six miles E. by S. ½ S. from Gannet Rock) leads directly over *Ammen's Rock* on Cashe's Ledge. To avoid this rock, steer from the above position SW. by W. ¾ W. for one hundred and thirty-four miles. When past Cashe's Ledge, steer SW. by W. for Highland Light-house, which you will make a little to the westward of the course. From Gannet Rock to Cape Ann the distance in a straight line is two hundred and eleven miles, and from Cape Ann to Cape Cod (abreast of the Highlands) forty-two miles.

Vessels using the Manan Channel must steer W. by S. ½ S. until abreast of West Quoddy light, and then follow the directions for sailing between West Quoddy and Cape Cod.

The above sailing directions give only outside courses. Coasting vessels rarely follow them, but use the inshore passages among the islands which fringe the coast of Maine. For coasting directions see descriptions and sailing lines between West Quoddy Head and the various harbors on the coast of Maine, given in another part of this volume.

GENERAL DIRECTIONS

FOR VESSELS LEAVING CAPE SABLE AND BOUND TO THE WESTWARD.

I. ***From Cape Sable to West Quoddy Head.***—When abreast of Seal Island Light-house, bearing NE. by E. ½ E., and about five miles distant, steer N NW. for Libbey Island Light-house. The distance between the two is ninety miles. On this course, when Machias Seal Island lights bear E. ¾ S. and you are about six miles from Libbey Island, steer NE. by E., twenty-four miles, through the Manan Channel. This will bring you up with the head. It is not considered safe for strangers to attempt the passage between Grand Manan and Nova Scotia; but the following courses are given:

II. ***From Cape Sable to East Quoddy Head, outside of Grand Manan.***—When abreast of Seal Island, as before, steer N NW. forty-eight miles, and then NE. by N. ¾ N. On this last course Gannet Rock light will be made to the northward, nearly seven miles distant. Swallow-tail light will also be made on the port bow, and the course passes eight miles to the eastward of it. When past the Swallow-tail, steer NW. ¾ W. for East Quoddy.

But, it must be borne in mind that this passage, owing to the velocity and conflicting nature of the currents, the frequent fogs and many dangerous obstructions, is in the highest degree unsafe for strangers. To such it is recommended to use the Manan Channel, between Grand Manan and the coast of Maine, following the directions given above, and on the preceding page. In this connection see also the General Remarks on page 10.

III. ***From Cape Sable to Penobscot Bay.***—Vessels from Europe bound to Penobscot Bay should make Matinicus Rock light. In fine weather they may safely pass between Seal Island and Pollock Rip by following these directions: When Cape Sable light bears N., distant seven miles, steer W. by N. ½ N. until Seal Island light bears NE. by E. ½ E., nine miles distant; when NW. by W. ½ W. will bring you up with Matinicus Rock. The whole distance is one hundred and forty-four miles.

Or, when Cape Sable light bears NE. by N. ½ N., distant eleven miles, steer NW. by W. ½ W., which course will make the lights on Matinicus Rock.

In heavy weather, to pass outside of Pollock Rip and steer for Penobscot Bay.— When Cape Sable light bears **N.**, eleven miles distant, steer **W.** by **N.** thirty-three miles, which clears the Rip; then steer **NW.** by **W.** for Matinicus Rock. ***General Directions---Cape Sable to the Westward.***

IV. ***From Cape Sable to Cape Elizabeth.***—The bearing of Cape Elizabeth lights from the light on Cape Sable is **W.** by **N.** $\frac{3}{4}$ **N.**; but this course cannot be steered. If intending to go inside of Pollock Rip you should, when Cape Sable Light-house bears **N.**, distant seven miles, steer **W NW. Westerly**, which will carry you up to the lights.

Or, to pass to the southward of the Rip; when Cape Sable bears **N.**, distant eleven miles, steer **W.** by **N.** as before, and continue this course forty-five miles; then steer **NW.** by **W.** $\frac{3}{4}$ **W.** for the cape lights. The whole distance is a little over two hundred miles.

V. ***From Cape Sable to Cape Ann.***—When Cape Sable light bears **N.**, seven miles distant, steer **W.** $\frac{1}{4}$ **N.** fifty miles, until past Cashe's Ledge, and then **W.** by **N.** $\frac{1}{4}$ **N.** for the cape lights. The whole distance by these courses is two hundred and twenty-two miles. The direct course from light to light leads directly over *Ammen's Rock*, and the courses above given are laid to avoid it.

VI. ***From Cape Sable to Boston.***—With Cape Sable light bearing **N.**, distant seven miles, steer **W.** $\frac{1}{4}$ **N.** two hundred and forty miles, which will make Boston Light-house. Or, follow the course for Cape Ann, and when off that cape steer **SW.** $\frac{1}{4}$ **W.** for Point Allerton, or **SW.** by **W.** for Long Island light.

VII. ***From Cape Sable to Cape Cod.***—When Cape Sable light bears **N.**, distant seven miles, steer **W.** $\frac{1}{2}$ **S.**, which course, if made good, passes a little to the southward of the light, which will be made to the northwestward. The whole distance is two hundred and twelve miles. (See also pages 1 and 4–5) for references to Cashe's Ledge and Jeffrey's Ledge, on the courses of vessels bound from Cape Sable to Boston and Cape Ann.

CURRENTS

BETWEEN CAPE SABLE AND CAPE COD.

The necessity for reliable information upon this subject has long been impressed upon navigators; and in 1877, the Superintendent of the U. S. Coast Survey directed Master Robert Platt, U. S. N., to proceed in the schooner "Drift" (a vessel built and specially fitted for the purpose) to the Gulf of Maine, and make a full series of close observations on the direction and velocity of the currents, especially in the channel south of The Georges. Captain Platt's observations, which were copious and thorough, and made with the aid of the most modern appliances for Current observations, were reduced and discussed by Prof. Henry Mitchell, Assistant U. S. Coast Survey, and the results of his discussion are given below in the following abstract from a "Notice to Mariners," published by the Coast Survey March 7, 1878.

"The simplest statement that can be made respecting these currents is" embodied in "the following General Rule:

"Between Nantucket Shoals and Cape Sable the ebb current runs to the southward during the first four and a half hours after the southing or northing of the moon. The average rate of the current each way over the entire distance is one knot an hour, but is unequally distributed,—being greater than one knot over shallow ground and less through the deep channels. The time of turning on George's Bank corresponds nearly with the time of high and low water at Boston and Portland; but in the channel to the westward of the bank it is later, and in that to the eastward earlier, by about half an hour.

"The following table gives the directions and rates of the tidal currents for four divisions of the belt examined between Nantucket Shoals and Cape Sable:

TABLE I.

Locality of Station.	Time of turning after Moon's Transit.		First Quarter.		Greatest—			Third Quarter.		Remarks.
	Flood to Ebb.	Ebb to Flood.	Set.	Drift.	Time after Moon's Transit.		Set.	Drift.	Set.	Drift.	
	h. m.	h. m.		Knots.	h. m.	h. m.		Knots.		Knots.	
Great South Channel, (between Nantucket Shoals and George's Bank.)	11 55	.....	S. $\frac{1}{2}$ W.....	0.94	2 37	.....	S. by W. $\frac{1}{2}$ W.	1.30	W SW.....	0.94	Ebb.
	.....	5 37	N. $\frac{1}{2}$ W.....	1.02	.....	8 43	N. $\frac{1}{2}$ W.....	1.41	N. by W....	0.86	Flood.
George's Bank, (Southern Slope.)	11 19	.....	SE.....	1.60	2 1	.....	S. $\frac{1}{2}$ E.....	1.90	S SW.....	1.40	Ebb.
	.....	5 7	NW. $\frac{1}{2}$ W.....	1.60	.....	8 13	N. by W....	1.90	NE.....	1.40	Flood.
Great Eastern Chan'l, (between George's Bank and Brown's Bank.)	11 14	.....	SE.....	1.00	1 56	.....	S. $\frac{1}{2}$ E.....	1.40	S SW.....	1.20	Ebb.
	.....	5 2	NW. $\frac{1}{2}$ W.....	1.10	.....	8 8	N NW.....	1.30	N. $\frac{1}{2}$ E.....	1.00	Flood.
Northern Channel, (between Brown's Bank and Cape Sable Bank.)	10 50	.....	SE.....	1.25	1 32	.....	SE. $\frac{1}{2}$ S....	1.27	S. by E....	1.00	Ebb.
	.....	4 36	W. by N....	1.00	.....	7 44	NW. by W...	1.38	W NW.....	1.00	Flood.

Currents in Gulf of Maine.

"The times given in the above table are subject to variations of twenty-two minutes each way, and the velocities of the currents to variations up to one-fifth, by reason of the tidal inequalities.

"If the navigator has the '**Tide Tables for the Atlantic Coast,**' issued from the U. S. Coast Survey Office, and in which high water for Boston is given for every civil day of the year, the following table will be more convenient and accurate in practical use, since no corrections of time are required for the tidal inequalities. In this table the hours at the heads of the columns are tidal hours, or twelfths of the time between any two following high waters,—one high water being assumed to occur at **0 h.**, the next at **12 h.** The rates given are those for an ordinary tide of 9. 8 feet range at Boston, and must be increased or diminished with the tide from neap to spring, and from spring to neap:

TABLE II.

RATE AND DIRECTION OF CURRENT FOR EACH TIDAL HOUR AFTER TIME OF HIGH WATER AT BOSTON.

Locality.	0h		Ih		IIh		IIIh	
	Rate, Knots.	Direction.	Rate, Knots.	Direction.	Rate, Knots.	Direction.	Rate, Knots.	Direction.
Great South Channel*	0.3	NE. by N.	0.6	SE. by E. ½ E.	1.0	S. ½ W.	1.3	S. by W. ½ W.
George's Bank	0.8	E.	1.5	SE.	1.8	S SE.	1.9	S. by W.
Great Eastern Channel	0.6	E. by S.	0.9	SE.	1.3	S SE.	1.4	S. ½ E.
Northern Channel	0.7	E. by N.	1.2	SE.	1.3	SE. ½ S.	1.2	SE. by S. ½ S.
	IVh		Vh		VIh		VIIh	
Great South Channel*	1.2	S. by W. ½ W.	0.9	S. by W. ½ W.	0.3	SW. ½ S.	0.5	NW. by W.
George's Bank	1.6	SW.	1.2	SW.	0.8	W. by S.	1.4	NW. by W.
Great Eastern Channel	1.3	SW.	1.0	SW.	0.3	W SW.	1.0	NW. by W.
Northern Channel	1.0	S. by E.	0.6	S.	0.3	W. by S.	0.9	W. by N.
	VIIIh		IXh		Xh		XIh	
Great South Channel*	1.0	N. ½ W.	1.3	N. ½ W.	1.3	N. ½ W.	0.9	N. ½ W.
George's Bank	1.7	NW. by N.	1.8	N. by E.	1.6	N NE.	1.2	NE. by E.
Great Eastern Channel	1.2	NW. ½ N.	1.3	N NW.	1.2	N. by E.	0.7	NE.
Northern Channel	1.3	NW. by W.	1.1	NW. by W.	0.9	N NW.	0.5	N. by E.

The importance of a knowledge of the times and direction of the currents in this vicinity cannot be overestimated; and in his report to the Superintendent of the Coast Survey, Master Platt gives an example of the advantage possessed by knowledge over ignorance. He says:

"We saw a brig trying to work to the northward, and she remained in sight for thirty-six hours,—having unfortunately tacked every time just when she should not. Her master evidently did not know anything about the set of the currents, or he would have soon worked out of sight. On the other hand, we, who were familiar with the set and drift, worked from Station No. III to No. IV—a distance of twenty-four miles—in two tacks, with the wind dead ahead."

PASSAMAQUODDY BAY.

This is a large and deep bay of irregular shape, lying between the province of New Brunswick and the State of Maine, and receives the waters of several rivers, the principal of which is the St. Croix. The bay lies **NE.** and **SW.**, is bounded on the north and northeast by the shores of New Brunswick, on the south by Deer Island, and on the west by the State of Maine. It is about ten miles long, and varies in width from three to five miles. Deer Island separates it from **Friar's Roads,** (the summer harbor of Eastport;) and between that island and Campobello Island leads the principal entrance to the bay. There is another channel leading between the northeastern end of Deer Island and the New Brunswick shore, which is called the **Letite Passage;** but, though more direct, it is neither so wide nor so deep as the main channel.

The St. Croix River, forming part of the boundary between the United States and the British Possessions, runs in a northerly direction for thirteen miles to the town of **Calais,** which stands on its western bank. This town is the principal centre of the lumber-trade, and ships annually many millions of feet of all kinds of dressed and undressed lumber.

Beside Deer Island, several other islands lie off the mouth of Passamaquoddy Bay. Of these, the principal are Campobello Island, (belonging to Great Britain,) which lies just to the southward of Deer Island and forms the shelter to Friar's Roads from easterly winds; and Moose Island, (belonging to the United States,) on which is situated the town of Eastport. There are also many smaller islands, which will be described in place.

*Channel between The Georges and Nantucket Shoals.

Campobello Island is nearly eight miles long, and about two miles and a half wide at its widest part, (which is opposite Eastport.) It lies in a **NE.** by **N.** and **SW.** by **S.** direction, forming the eastern shores of the harbor of Eastport. Its extreme southern end, called **Liberty Point,** is a round, rocky head of peculiar appearance, (in reality a small island,) lying about fifty yards from shore, and is tolerably bold. The land behind it rises to a considerable height and is well wooded.

Campobello Island.

The northern point of Campobello Island, called **East Quoddy Head,** is a high bluff head-land, and runs off into a long point, from which extend in a line a number of rocky islets for the space of half a mile in an **E.** by **N.** direction. Near the extreme eastern point of the island is built the light-house, which is called **East Quoddy Light-house,** a white tower, showing a fixed white light from a height of sixty-four feet above the sea. Its geographical position is

Latitude ..... **44° 57′ 28″ N.**
Longitude ..... **66° 54′ 00″ W.**

Head Harbor.

Vessels bound into Eastport by the main or middle passage pass to the northward of this light-house, and may go within a cable's length of it with safety; but vessels bound into Head Harbor by the northern entrance leave it to the northward, and pass between the head and Head Harbor Island. This entrance to Head Harbor lies between the light-house and the northern shores of that island, is a quarter of a mile wide, and has deep water and good holding-ground. The southern entrance leads along the southern and western shores of Head Harbor Island, between them and the eastern shore of Campobello; and is not safe. From East Quoddy Light-house

	Miles.
Fish Head (the easternmost point of Grand Manan) bears S. by E. ½ E.	13
The southernmost of The Wolves E SE.	7
The northernmost of The Wolves E. ½ S.	**nearly** 8
Point Lepreau E. ½ N.	19 ½
Entrance to Beaver Harbor E. by N. ½ N.	18
The top of White Horse Island NE.	**about** 3
Spruce Island between N. by W. ½ W. and NE. by E. ½ E.	**nearly** 1
Black Rock NW. by W. ½ W.	⅞
Casco Island W. ½ N.	1 ¼

Head Harbor Island.

Head Harbor Island is a high, woody island, which lies a quarter of a mile **S SW.** from East Quoddy Light-house and the same distance from the east shore of Campobello. It is of irregular shape, lies nearly **N.** and **S.**, and is about half a mile long. With Quoddy Head and the eastern shores of Campobello it forms a good harbor of refuge, called Head Harbor, with from four to ten fathoms of water.

On the eastern shore of Campobello, a little over three-quarters of a mile below Head Harbor, is **Mill Cove,** a wide and deep cove, affording shelter in westerly winds, but obstructed by *a three feet rock nearly in the middle of the entrance.* It has from three to six fathoms at the anchorage.

Scott Head.

All the eastern shores of Campobello are high, bold, rocky and wooded. The settlements are on the western shores, opposite Eastport and Lubec. Scott Head, nearly two miles and three-quarters below East Quoddy Head, is a high, woody hill, bold and steep-to, with black, water-worn, rocky cliffs to seaward. Three-quarters of a mile below this head is **Schooner Cove,** a small cove, with six fathoms at the anchorage, and affording shelter in west and northwest winds.

Herring Bay Head.

Two and a third miles **SW.** of Scott Head, and nearly three miles **NE.** of Liberty Point, is Herring Bay Head, the northern headland of a large and wide bay, called **Herring Bay.** The head is bluff, steep, and crowned with spruce and fir; and the bay is a mile and a quarter wide, and makes in for over half a mile, with good water. It affords good shelter in northerly winds, but is open to seaward. Vessels may anchor in from two to eight fathoms, according to draught.

Owen's Head is half a mile **NE.** from Liberty Point; and is the high wooded land which shows over Liberty Point when viewed from the southward. In fact, all of this coast is bold, rocky and wooded.

On the western side of Campbello Island the first point of any importance below East Quoddy Head is **Windmill Point.** This is a long point, two miles and a half **W SW.** from East Quoddy Light-house, and forms the northern point of entrance to a very capacious and well-sheltered harbor, called Harbor de Lute. It is of moderate height, steep and bold-to, and is crowned with scrubby trees and bushes.

Harbor de Lute.

Harbor de Lute is an excellent harbor, much used by coasters;—having good water, and being completely sheltered from all winds. Its entrance, between Windmill Point and Bald Head, is seven-eighths of a mile wide and entirely unobstructed. The arm of the bay which forms the harbor runs to the southward well up into the land, and in all winds affords excellent anchorage.

Bald Head, the southern point of the entrance to Harbor de Lute, is a high, precipitous, rocky head, with a few stunted firs dotting its surface. It is very bold, having five fathoms close to the shore. One mile and an eighth below it we come to a low, rocky point, covered with a thick growth of spruce and fir. This is **Deer Point,** the northern point of entrance to Friar's Bay. Just to the northward of it is the settlement of **Dunn's Beach,** and just to the southward, on the north shores of Friar's Bay, is the village of **Welchpool.**

Friar's Bay is a mile wide, and forms an excellent anchorage with a depth of from four to ten fathoms. On the north shore is the English settlement of Welchpool. Friar's Head, the southeastern headland of this bay, is a high hill, presenting a precipitous, rocky face to the northward and eastward, but sloping gently away to the southward to the water's edge. The surface is grassy, with two or three fir trees at wide intervals dotting its surface and a few clinging to the brink of the precipice. At the bottom of this precipice, on the north side, stands a very peculiar looking gray rock, from which the head takes its name. It formerly bore a slight resemblance to the figure of a man wearing a hood, and was called, as now, **The Friar.** The name remains; but a shot from Fort Sullivan having knocked the top from the rock, what remains, though sufficiently remarkable, bears little resemblance to a friar. At the southern edge of the hill is a group of houses. Friar's Head, like all of the headlands of Campobello, is very bold-to.

Friar's Head.

On the south side of this head is **Snug Cove**, a small and shallow cove of little importance. Both this cove and Friar's Bay have shingly beaches.

Half a mile below Snug Cove is Mehollan Point, a long, grassy point of moderate height, presenting sandy, water-worn faces to the southward and westward; and having groups of houses upon it. It is the eastern point of the entrance to Lubec Narrows from the northward. A few hundred yards to the southward of it is **Charley's Point**, a low, grassy point, with sandy faces, fenced to the edge of the water. It is fertile and under cultivation, and groups of houses occupy its higher slopes. Indeed, nearly all of the western shores of Campobello are fertile, thickly settled, and present during the summer a beautiful appearance.

Mehollan Point.

On the southern side of Charley's Point makes in a large but shallow cove, called **Deep Cove**, which extends to the southward nearly a mile, to a moderately high, steep and almost entirely bare point, called Cranberry Point. There are one or two dwellings on its higher grounds, and a couple of fish-houses on the shore at its base. On its southeastern side is a shallow cove, called **Little Duck Pond**, off the mouth of which lie a number of islets, called **Duck Islands**, with ledges extending in a southerly direction for a quarter of a mile. At low water it is bare from Little Duck Pond to these ledges, a distance of half a mile. Duck Islands are small, rocky, crowned with a sparse growth of stunted fir and surrounded by fish-weirs.

Cranberry Point.

Half a mile to the southward of Little Duck Pond is a long, low, rocky point, called Duck Point, separating Little Duck Pond from **Great Duck Pond**, a large but shallow cove, full of shoals, making into the southern shores of Campobello west of Liberty Point. This cove is nearly a mile wide and half a mile long. Duck Point is shoal in its approaches,—the dry flats and ledges extending from it nearly six hundred yards. In fact, all of the southern shore of Campobello is very shoal;—a very narrow channel, with about five feet at low water, being the deepest from Quoddy Head through The Narrows.

Duck Point.

Deer Island. Deer Island is, next to Campobello, the largest in Passamaquoddy Bay,—being about six miles long and three broad in its broadest part. It extends in a **NE.** and **SW.** direction nearly across the whole width of the bay, (protecting it from southerly winds,) and lies a little to the northward and a mile and three-quarters to the westward of Campobello. Between this island and Campobello lies the main entrance to Eastport Harbor and Passamaquoddy Bay.

Deer Island is irregular in shape, with many curves and indentations on its western shore. Its southern point, called Deer Point or **Deer Island Point**, is a long, narrow and rocky projection, low and bare of trees, which extends to the southward to within half a mile of Moose Island. It is very bold, but vessels dare not approach it on the flood-tide, as the tidal current from the main channel, meeting that which comes up through Friar's Roads from The Narrows, causes a whirlpool of such strength as to sink small boats and turn a vessel of one hundred tons completely around.

Deer Point.

The shores of Deer Island are generally high and rocky. The surface is diversified with high hills, (sometimes wooded and sometimes barren,) and fertile, cultivated valleys between them, and is pretty thickly settled. Its western shores only will be described, the eastern coast not coming within the province of this work. Off its northern end lie a number of islets, which form, with the eastern coast, the channel into Passamaquoddy Bay and the St. Croix River, called the **Letite Passage.**

On the western shore, about a mile and a half above Deer Point, is a fine cove with a smooth beach, called Cummins' Cove, which affords good anchorage in from two to three fathoms to vessels caught by adverse winds or tides. The entrance is clear, there being no ledges or shoals in the way. This cove may be recognized by the large sand cliff on its northern side, with a few firs clinging to its perpendicular face, behind which is a high, steep, rocky head crowned with fir, but bare of all other growth, the surface being mostly bare rock. The shores of the cove are nearly level and well cultivated, and there is here a small settlement.

Cummins' Cove.

Cummins' Head is a high, steep, rocky head, with stunted firs dotting its surface and sides, and is just above the north point of the entrance to Cummins' Cove.

Clam Cove is the next above Cummins' Cove, from which it is a little over a mile distant. It is large,—affording secure anchorage in from two to three fathoms, sheltered from all winds, and is an excellent winter harbor. Its northern point is a rocky, wooded head, bold-to, and covered with scrubby fir, called **Clam Cove Head**, and forms the northwestern extremity of Deer Island.

Beyond Clam Cove Head is **Northwest Head**, on the northern side of which is an excellent anchorage with water sufficient for large vessels, called Northwest Harbor, and which affords shelter in all winds. It lies on the north shore of Deer Island, and is the only shelter on that side until you come to the northeast point, where a cove is formed between **Northeast Head** and **Pendleton Island**,—a small island lying to the northward of the head. The bottom is rocky, however; and it is not so good an anchorage as may be found at Northwest Harbor. Pendleton Island is nearly two hundred feet high near its southern end; Northeast Head is two hundred and fifty feet; and the highest head south of Clam Cove (between it and Deer Point) is three hundred feet. **Northwest Harbor.**

The eastern shores of Deer Island are high, steep and rocky, and are covered with a scattered growth of fir and spruce.

Moose Island, which belongs to the United States, lies to the southwestward of Deer Island and to the westward of Campobello. Between the latter and Moose Island is the large roadstead known as **Friar's Roads**, the summer harbor of Eastport, and between Moose and Deer islands lies the entrance to the **Deer Island** or **Western Passage** into Passamaquoddy Bay and the St. Croix River. **Moose Island.**

Moose Island lies **N NW.** and **S SE.**, is about three miles long and of a very irregular shape,—its western shores being very much cut up by large coves and indentations, and its eastern shore also somewhat indented. The town of **Eastport**, the most easterly settlement in the United States, occupies its southeastern end. Its northern end is called **Kendall's Head**, and is a high, bare hill, fringed with a thick growth of scrubby spruce and fir at its eastern end, where it shows a sandy, water-worn face of considerable height, and ends in a low, rocky and wooded point. A narrow and very shallow passage leads between the northern shore of Moose Island and the mainland into Cobscook Bay and Pembroke River. It is crossed by a bridge which connects the island with the mainland.

Just to the southward of Kendall's Head is **Johnson's Cove**, a large and deep cove, affording excellent anchorage, free from the strong currents of the roadstead. It has a smooth, handsome beach, and the land at its head is low, smooth and cultivated. Good anchorage is had in this cove in seven fathoms.

Todd's Head, the most easterly point of Moose Island, lies a mile and a half below Kendall's Head, and is part of the town of Eastport. It is a bluff, precipitous, rocky head, about thirty feet high, with an earthwork just back of it.

Dog Island lies a little to the northward of Todd's Head, just to the southward of Johnson's Cove, and is a rocky islet, bare of trees, but with a few scrubby bushes upon it. The high land behind it, which forms the southern end of Johnson's Cove, appears as a high, sandy bluff fringed with birch, and having its slopes covered with small fir and spruce. **Dog Island.**

The southern point of Moose Island, called **Estes' Head**, is a bluff, rocky headland, having its summit crowned with small fir. About a mile to the northward of it, on the eastern shore of Broad Cove, is a low, rocky point, with a few trees on the back part, called **Stanel Point.** High land rises behind it, and about three-quarters of a mile to the westward of it is a large, high and bluff head, with its summit covered with stunted fir, and called **Shackford's Head.** On its south side this head shows a low, water-worn face, and between it and Estes' Head lies Broad Cove, the real harbor of Eastport.

Broad Cove is a large and deep cove, almost entirely unobstructed, and affording excellent anchorage, with good holding-ground, in all winds and at all seasons of the year, and sufficient water to float the largest vessels. It is very commodious and safe, and a stranger may enter at any time. **Broad Cove.**

On the north side of Shackford's Head makes in a deep bight, known as **Deep Cove**, which is, however, of but little importance. Hence, to the northern end of the island, the western shore is deeply indented by large but shallow coves, also of little importance. The passage between Moose Island and the mainland is dry at low water, and navigation is closed by a large covered bridge, painted white, which connects Eastport with the town of **Perry**, on the main. This is called **Eastport Bridge.**

To the westward of Moose Island the great **Cobscook Bay** makes into the land, receiving the waters of the **Pembroke** and **Cobscook** rivers, which, with their several branches, penetrate the land for fifteen or sixteen miles in every direction, and lead to the towns of **Pembroke, Dennysville** and **Whiting.** These rivers are shoal and the navigation dangerous without an experienced pilot. They will be described in their proper places.

Indian Island is of moderate height, and lies off the southeastern end of Deer Island, and about half a mile to the southeastward of Deer Point. It lies **N NE.** and **S SW.**; is about a mile long, and thickly settled. Its northern end is covered with a growth of spruce and fir trees, but the rest of the island is grassy, and in some places cultivated. There is a small grassy island, with two houses on it, close to its southern end. **Indian Island.**

The channel between Indian Island and Deer Island is called **Indian River.** There is not less than eleven fathoms through it, and it is almost entirely unobstructed; but the tidal current runs with great velocity, and it is not safe for strangers to try this passage on account of the dangerous whirls off Deer Point.

Besides the St. Croix River, several streams flow into the northern part of Passamaquoddy Bay. Of these the most important is the **Magaguadavic**, which drains the land from **Lake Utopia** (whose outlet it is) to the bay. There is considerable trade to this river. (For description of this portion of Passamaquoddy Bay see the book of Sailing Directions accompanying the charts of the British Admiralty.)

EASTPORT HARBOR.

This commodious and excellent harbor is situated at the southern end of Passamaquoddy Bay. It has two entrances;—the main passage lying between Campobello and Deer Island, and the southern (through Lubec Narrows) opening between the southern end of Campobello and West Quoddy Head, the easternmost point of the seacoast of Maine. The latter entrance is, however, fit only for light-draught vessels. The light-house which marks the main entrance to Eastport Harbor is situated on East Quoddy Head, which is the northern point of Campobello Island, and appears as a high, bluff headland, running off into a long point, from which extend a number of rocky islets in an E. by N. direction for nearly half a mile. Near the extreme eastern point of the outer island is built the light-house, which is called East Quoddy Light-house. It is a white, hexagonal tower, thirty-four feet high, is surmounted by a red lantern, and shows a fixed white light from a height of sixty-four feet above the sea, visible fifteen miles. Its geographical position is

East Quoddy Head and Light-house.

Latitude	**44° 57′ 28″ N.**
Longitude	**66° 54′ 0″ W.**

The keeper's house stands back of the light-house, and is painted white; and a flag-staff, upon which is shown the red ensign of England, appears behind the house.

West Quoddy Head, upon which is built the light-house marking the southern entrance to Eastport Harbor, is high and wooded; but the light-house is located on a plateau much lower than the summit, bare of trees, and presenting cliff-like faces to seaward. Two bare reefs of rocks lie off the point. West Quoddy Light-house is a brick tower, painted red and white in horizontal stripes. The keeper's dwelling is a white building connected with the tower, and a wooden building in front of the light-house contains the apparatus for sounding a steam-whistle. The light-tower is fifty-five feet high, and shows a fixed white light, of the third order of Fresnel, from a height of one hundred and thirty-three feet above the sea. The geographical position is

West Quoddy Head and Light-house.

Latitude	**44° 48′ 54″ N.**
Longitude	**66° 57′ 1″ W.**

Fog-signal. A steam-whistle is sounded in foggy weather, giving blasts of eight seconds' duration at intervals of fifty-two seconds.

The southern entrance to Eastport leads between West Quoddy Head and Liberty Point, the southernmost point of Campobello. The channel is narrow and full of shoals, and at The Narrows opposite Lubec the whole passage is but a little over one-eighth of a mile wide. Not more than five feet can be carried through this channel at low water. It is therefore only used by large vessels at the top of the tide.

The summer harbor of Eastport is known as Friar's Roads, and is situated between Campobello Island and Moose Island, upon which is built the town of Eastport. It is sufficiently safe in summer weather and very commodious, but the water is very deep, (from twelve to fifty fathoms,) except close to the shores, and the tides run with considerable velocity. It is also exposed to the NE. winds which sweep down the open passage between Deer Island and Campobello Island; and in a gale, the Roads are untenable. In such cases, and in winter weather, vessels make **Broad Cove**, which lies on the south side of Moose Island and forms the real harbor of Eastport. It is a large and deep cove, affording excellent anchorage, with good holding-ground in all winds and in all seasons of the year; and is very commodious and safe,—strangers being able to enter at any time.

Friar's Roads.

In approaching Eastport Harbor from the eastward, and intending to enter by the Main Channel, the first prominent objects visible are three or four islands known as The Wolves. These are rocky islets from sixty to one hundred feet in height, and covered with spruce trees, situated about eight miles to the eastward of East Quoddy Head, and about five miles to the southward of **Etang Harbor**, on the coast of New Brunswick. They are very dangerous, although bold-to, and are especially dreaded by vessels bound to and from St. John and other ports in the Bay of Fundy in thick weather.

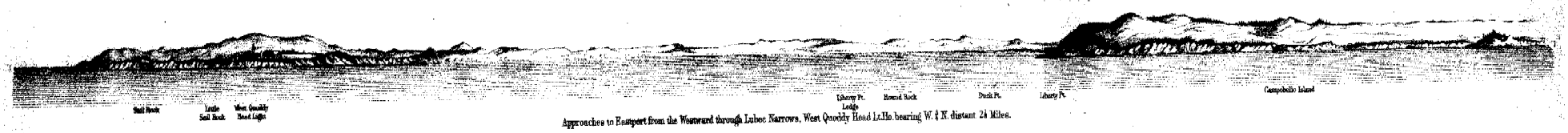
The Wolves.

Wolves Light-house. To assist navigation as much as possible, a light-house has been placed on the southernmost of The Wolves, and shows a revolving white light from a height of one hundred and eleven feet above the sea. It revolves once in a minute and a half, and is visible in clear weather sixteen miles. It is not safe to pass between The Wolves even in fair weather, as there are many rocks and shoals in the passage, and the currents are dangerous.

From the light-house

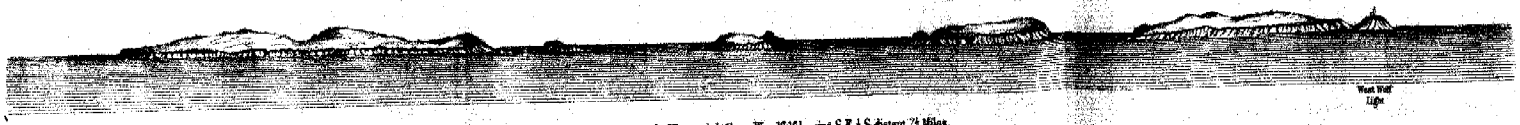
	Miles.
The entrance to St. John Harbor bears E. ¼ N.	**about 30**
Point Lepreau E. by N. ¼ N.	**13½**
The entrance to Beaver Harbor N. by E. ½ E.	**nearly 7**
The entrance to Etang Harbor N. by W. ¼ W.	**6½**
The light-house at the entrance to Bliss' Harbor (on the N. side of Letite Passage) NW. by N. ½ N.	**7**
The White Horse NW. ¼ N.	**6½**
East Quoddy Head Light-house NW. by W. ½ W.	**a little over 7**
Bishop's Head, or Long Eddy Point, (the N. end of Grand Manan) SW. by S. ¼ S.	**8¾**
Swallow-tail Light-house S. by W. ¼ W.	**10¼**

2



Approaches to Eastport from the Westward through Lubec Narrows, West Quoddy Head Lt.Ho.bearing W. ¼ N. distant 2¼ Miles.

Approaches to Eastport by the Main Channel, East Quoddy Lt.Ho.bearing E. ¼ N.distant 3¼ Miles.



The Wolves,from the Westward, Lt.Ho. on West Wolf bearing S.E. ¼ S.distant 2¼ Miles.

From the north end of the northernmost of The Wolves

	Miles.
The entrance to St. John Harbor bears E. ..... about	26
Point Lepreau E. ½ N.	11
The entrance to Beaver Harbor N.	4½
The entrance to Etang Harbor NW. ¼ N.	5¾
The middle of Letite Passage NW. by W. ⅝ W.	7
The White Horse W. by N. ⅞ N. ..... a little over	7
East Quoddy Head Light-house W. ½ N. ..... nearly	9
Bishop's Head SW. ¾ S.	11¾
Swallow-tail Light-house SW. by S. ¾ S. ..... a little over	13

After passing The Wolves the shores of Campobello will appear high, bluff, rocky and wooded. On approaching the island, East Quoddy Head will appear to the westward; and to the northwestward a high, bluff, rocky islet, entirely destitute of trees, and which will show as a white rock, owing to a peculiar white place near its southwestern end. This is The White Horse, one of the most remarkable land-marks in this vicinity. It bears from the light on The Wolves **NW. ½ N.**, six and a half miles distant, and from East Quoddy Light-house **NE. ¼ E.**, about two and a half miles distant; and cannot be mistaken,—being bare of trees, while all the islets about it are covered with them. It therefore serves as an excellent land-mark for both this and the Letite Passage. The water is deep on its southern and western sides, but to the eastward lies *East Rock*, with one foot at low water, about two hundred yards from the eastern end of the island. East Quoddy Light-house open to the northward of The White Horse clears East Rock on its north side, and White Island open to the southward of The White Horse clears the danger on its southern side. **The White Horse.**

North Rock, with one foot of water, lies **N. ¾ W.**, half a mile from the western end of The White Horse, and has deep water close-to all around it.

East Quoddy Head is rocky, precipitous, and covered with a stunted growth of fir and spruce. The light-house, a conspicuous object, is built upon a rocky islet just clear of the head, and about thirty feet high. The tower being thirty-four feet in height, the light is therefore shown from a height of sixty-four feet above the sea, and is fixed white, visible fifteen miles. Leave it to the southward, and a number of small islets on the starboard hand or to the northward, and steer a course about **SW.**, hugging the Campobello shore. Of these small islands **Spruce Island** is the southernmost as we pass Quoddy Head. It is a small rocky islet covered with a stunted growth of spruce. **White Island**, which lies about half a mile to the northward of it, is also of moderate height and covered with a thick growth of stunted spruce. **Sand Island**, lying to the westward of Spruce Island and close to it, is a low sandy islet nearly bare, but having one or two houses upon it.

Passing to the southwestward, after rounding Quoddy Head, there will be seen to the westward, about a mile off, a rocky island covered with a growth of small fir and spruce, and called Casco Island. Seen from the eastward it appears as a high, bare, rocky and precipitous head of peculiar shape; but its southwestern end is low and sandy. This island is very bold-to on its northern and southern sides, seventeen fathoms being found within one hundred yards of its shores. There are, however, *two detached ledges* nearly equidistant from the western end of the island and close to it; and to clear them to the westward the rule is to bring the centre of The White Horse between Spruce and Sandy islands. *Gull Rock*, also, (see page 20,) lies half a mile **E. by N. ¼ N.** from its northeastern point, and there is *a rocky ledge* inshore of that. **Casco Island.**

Before rounding East Quoddy Head there appears to be no passage open except the Letite Passage,—all progress being apparently shut off by the high, bluff, rocky shores of Deer Island, which, with the islands of **Pendleton** and **Macmaster** on the north, and Moose Island and Indian Island on the south, nearly shut off all ingress to Passamaquoddy Bay. The eastern shores of Deer Island are covered with a scattered growth of stunted fir and spruce. After rounding East Quoddy Head you will immediately open the entrance to Friar's Roads, and the city of Eastport will appear directly ahead; Indian Island will appear to the westward, and the course leads directly for the city. On this course you will first pass, on the Campobello side, a bluff, precipitous head, whose summit is covered with grass and its sides clothed with stunted fir clinging to the cliffs. This is called Wilson's Head. It is just below East Quoddy, and on its western side is settled,—having houses and groups of houses close to the shore. Off Wilson's Head there lies, close in with the shore, a peculiar-looking rock called **The Bull-Dog.** It is covered at half-flood, and when out of water bears some resemblance to a bull-dog. **Wilson's Head.**

On the northeastern side of the channel, after passing Casco Island, you will approach a small rocky island of moderate height, and covered with the usual growth of small fir and spruce. This is Green Island, lying about three-eighths of a mile **W SW.** from Casco Island, and nearly three-eighths of a mile from the Campobello shore. There is good water between it and Casco Island, but the bottom is broken, and there are some bad rocks in the passage which render it unfit for strangers to attempt. **Green Island.**

About a quarter of a mile to the westward of Green Island will be seen two large rocks, connected at low water, and variously known as **Sandy Ledge** and **Sandy Island.** About three hundred and fifty yards southwest of Sandy Ledge will be seen an island of moderate height and about an eighth of a mile long, called Pope's Folly, with a small bare rock off its southern end, and a ledge with fourteen feet water about an eighth of a mile southeast of the island. Pope's Folly lies **N NE.** and **S SW.**, nearly in the middle of the passage between Deer Island and Campobello, and there is good water on both sides of it. Its western shores are quite bold, but the eastern side is shoaler, and the approach to it is further obstructed by the ledge mentioned above. **Pope's Folly.**

On the Campobello shore, nearly abreast of Pope's Folly, lies **Wilson's Harbor**, which will be noticed as a small but deep cove making in on the south side of Wilson's Head. It is of little importance, except as a temporary anchorage in light winds or with a head tide. Half a mile below it is Windmill Point, which will appear as a long, low, rocky point, covered with grass and bushes; and forms the north side of the entrance to **Harbor de Lute.** There are two small anchorages on its eastern side, called, respectively, **Curry Cove** and **Brick Kiln Cove.** Windmill Point is quite bold, but dangerous to approach on high runs of tides unless the current is favorable, for the set of flood on spring tides is at the rate of seven knots an hour.

Windmill Point.

On the western side of the passage, opposite to Windmill Point, is Indian Island, before described (see page 17) as an island of moderate height, lying off the southeastern end of Deer Island, a little less than half a mile from Deer Point. Seen from the northeastward it appears to be covered with a growth of spruce and fir; but as it is passed it will be perceived that this is the case only on the northern end,—the rest of the island being grassy, and in some places cultivated. It is well to give Indian Island a berth on coming in, as the flood-tide from The Narrows, meeting that coming through the Main Channel, is apt to cause rips and whirls sufficiently strong to embarrass the mariner.

Indian Island.

The two small islands lying off the southeastern point of Indian Island are **Thrumbcap Island** and **Cherry Island.** The former, which is incorrectly called **Rouen Island**, is the more northerly of the two, and is a small, round, high, grassy islet, with precipitous rocky faces, and a few spruce clinging to its sides. It lies nearly three hundred yards from the eastern shore of Indian Island; and there is no passage between the two,—a reef of rocks extending across from the latter.

Cherry Island lies nearly a quarter of a mile to the southward of Thrumbcap Island and nearly three hundred yards from the southeastern point of Indian Island. It is a moderately high island, with precipitous rocky faces, and has the usual growth of stunted fir upon it.

Nearly one mile to the southward of Windmill Point is Bald Head, the southern point of entrance to Harbor de Lute, and opposite the city of Eastport. It is one hundred and thirty-six feet high, bluff, bold and precipitous, and has a few small firs dotting its surface. Five fathoms at low water are found close to the bluff.

Bald Head.

The city of **Eastport** is situated on the eastern shore of Moose Island, near its southern end,—its wharf-line forming the western shore of Friar's Roads. The best anchorage in these roads for light-draught vessels is close in with the wharves and exactly opposite to the end of the street leading up to the custom-house. Our experience has been that vessels are apt to foul their anchors in any of these anchorages in Friar's Roads unless great care is taken and the anchor frequently sighted. For a safe anchorage, Broad Cove on the American, or Harbor de Lute on the English, side is resorted to.

DANGERS

IN APPROACHING AND ENTERING EASTPORT HARBOR.

By the Main Entrance from the Eastward, through the Bay of Fundy.—If passing to the southward of The Wolves, the revolving light will act as a guide to prevent all danger of running upon them, and thence the passage is clear until up with East Quoddy Head. But if passing to the northward of these islands, great care must be taken to avoid being set on the northernmost island in thick weather. The current of ebb sets directly toward the island, and unless you can get hold of East Quoddy light it is not safe in foggy weather to attempt to pass them closely to the northward. A small rock which lies a short distance from the northeastern end of the northernmost of The Wolves is called **Molasses Rock.** It is bare, and not dangerous except in thick weather.

After passing East Quoddy Head the first danger met with is Black Rock, sometimes called **Gull Rock**, but in reality two bare rocks, lying north and south of each other and close together. Black Rock is quite bold, and can always be seen and avoided except in thick weather. It bears from East Quoddy light **NW. ¾ W.**, nearly a mile, and from the southern end of Spruce Island **SW.** by **W. ¾ W.**, about five-eighths of a mile distant.

Black Rock.

After passing Black Rock there are no dangers in this passage until abreast of Pope's Folly,—both shores being exceedingly bold-to and the channel absolutely free from shoals. But, about one-eighth of a mile **SE.** by **S. ¼ S.** from the southern end of that island lies a ledge, called Pope's Shoal, with fourteen feet of water upon it, (see page 19.) It is not buoyed, but is seldom approached except by vessels beating to windward, as with a fair wind they generally keep the Campobello shore.

Pope's Shoal.

After passing this ledge there are no dangers whatever; but strangers may stand boldly in to the anchorage in Friar's Roads. It may be remarked, however, that without a fair wind of considerable strength it will be impossible to enter or leave this passage against tide.

SAILING DIRECTIONS

FOR APPROACHING AND ENTERING EASTPORT HARBOR BY THE MAIN ENTRANCE.

I. ***Coming from the Eastward, through the Bay of Fundy.***—From Point Lepreau to East Quoddy Head the course is **W.**, and the distance a little over nineteen miles. The soundings are varied from twelve fathoms off Lepreau to fifty fathoms off Quoddy Head. This course continue

until East Quoddy light is brought to bear **SE.** by **S.** $\frac{1}{8}$ **S.**, and about half a mile off, when there will be sixty-six fathoms of water, and **SW.** by **W.** $\frac{1}{4}$ **W.** will lead safely to the anchorage off the city. Not less than fifteen fathoms will be found on these courses. The depth at the anchorage depends on the vessel's draught,—fair holding-ground being found anywhere between four and fifteen fathoms. *Sailing Directions--Eastport Harbor.*

The above courses pass a little over a mile to the northward of The Wolves; about a third of a mile to the southward of Spruce Island; and nearly six hundred yards to the eastward of Black Rock.

But if falling in with The Wolves, to the southward of them, when abreast of the light on the southernmost island, (which may be approached close-to,) steer **NW.** by **W.** $\frac{1}{4}$ **W.** for East Quoddy Head light, passing to the northward of it. Then steer **W.** $\frac{1}{4}$ **N.** for the middle of Casco Island until Cherry Island (which is the southernmost islet off Indian Island) bears **SW.** by **W.** $\frac{1}{2}$ **W.**, when steer **SW.** by **W.** $\frac{1}{4}$ **W.** for the city.

II. ***Coming from the Southward, through the Grand Manan Channel.***—The eastern shores of Campobello Island are quite bold-to, and may be approached closely. In case of head winds or tides they afford good temporary anchorage, the principal of which are Herring Cove, Schooner Cove, Mill Cove and Head Harbor. From the southward, having passed through the Grand Manan Channel, keep along the Campobello shore until East Quoddy light bears **NW.** by **W.** $\frac{1}{4}$ **W.**, when run for it, passing to the northward of it about an eighth of a mile. When the southernmost point of Casco Island bears **W.** $\frac{1}{4}$ **N.**, steer for it until Cherry Island bears **SW.** by **W.** $\frac{1}{2}$ **W.**, when a **SW.** by **W.** $\frac{1}{4}$ **W.** course will lead safely in. No directions are needed to enter **Herring Bay.** Its shores are bold-to, and there are no obstructions. The same remarks apply to **Schooner Cove,** which, however, is much smaller than Herring Bay and does not afford much shelter. The largest vessels may anchor in either cove in moderate weather,—the depths varying from six feet to eight fathoms.

Mill Cove, which lies about a mile and an eighth above Scott Head, and just to the southward of Head Harbor Island, is obstructed by *a three feet rock, which lies nearly in the middle of the entrance,* and is not buoyed. It may be safely entered, however, by keeping either the northern or southern shore aboard, and affords good anchorage in three and a half fathoms.

Head Harbor, before described, (see page 15,) has two entrances;—one on the south side of the island, and the other on the north side, between the island and Quoddy Head. Both passages are unobstructed; and, as the shores on both sides are bold-to, the harbor may be entered with perfect safety by strangers, as there is not less than five fathoms in the channel, and excellent anchorage in the same water at the southwest end of the harbor.

SOUTHERN ENTRANCE TO EASTPORT, THROUGH LUBEC NARROWS.

This passage, which is only used at high water, leads between West Quoddy Head and Liberty Point, the southernmost point of Campobello. The entrance is a little over a mile wide, but the passage diminishes in width until at The Narrows, two miles and a half above, it is only about an eighth of a mile wide. It is full of shoals, and strangers should not attempt it without a pilot. Good anchorage may be found, by vessels waiting for the turn of tide, in Quoddy Roads, in from three to six fathoms, either under the south shores of Campobello or on the north side of Quoddy Head; but above the Roads the water is all shoal, and it is dangerous for strangers to attempt to pass.

The Narrows are formed by a narrow passage about nine hundred yards long, which leads between Lubec Neck on the west and the shores of Campobello on the east, and thence between Pope's Folly and Dudley Island, and Treat's Island and Friar's Head, into Friar's Roads. The whole distance from the entrance at Quoddy Head to Eastport is five miles.

In describing this entrance it is presupposed that the mariner comes through the Grand Manan Channel, between Grand Manan and the coast of Maine.

On approaching Eastport through this passage the first prominent object visible on the Maine shore is the **West Quoddy Head and Light-house.** light-house, painted red and white in horizontal stripes. What appears to be a bell-tower stands a little to the eastward of it, and the roof of the keeper's dwelling is just visible over the land. This is West Quoddy Head Light-house, on West Quoddy Head, the western point of the entrance to this channel. The head is high and wooded, with the exception of the summit, which has only dead stumps upon it; but the light-house is built on a sort of plateau, also bare, and much lower than the summit. Two bare reefs will be seen lying off the point.

The high, wooded land which appears just to the eastward of the light-house is **Campobello Island,** whose southern point, a peculiarly shaped round head, is called **Liberty Point.** Well to the westward, over the low land west of Quoddy Head, a group of houses and a church will appear on distant high land. This is part of the village of Lubec.

Lying well out from Quoddy Head will appear a very peculiar-looking, high, rocky islet, with two smaller ones to the eastward of it,—the former having two knubbles or domes upon it, which render it unmistakable. This is Sail Rock; very dangerous in thick weather, and even in clear weather requiring a berth of from one-half to three-quarters of a mile, owing to a whirlpool which exists to the eastward of it. This rock is said to resemble, when seen from a distance, a ship under sail, but we have never been able to perceive the likeness, (see view.) There is a good passage inside of Sail Rock, between it and the head, through which seventeen feet of water may be carried, but it is not advisable for strangers to attempt it.

Sail Rock.

As you approach Quoddy Head with the intention of rounding it and entering The Narrows, a peculiar nick in the rock is noticeable on the extremity of the head, to the northward of the light-house; but this is shut in when abreast of Sail Rock. When past the range of this rock and the light-house, Lubec, with its tall church-steeple, opens out to the eastward, and low islets appear in the range, extending nearly across the channel. These are, in reality, fish-weirs, from the Campobello shores, but they present the appearance of islets.

Just above the light-house, the cliffs on Quoddy Head are composed of a brownish stratified rock for a few hundred yards, and after that of the usual grey rock. The north side of the head is high, bold and bare; and on passing it a wide bay is opened, with cultivated and well-settled shores, extending up to The Narrows. This is Quoddy Roads, and is the common anchorage for vessels waiting for tide to go through The Narrows.

Quoddy Roads.

On the Campobello shore lie a number of islets called the Duck Islands. Long flats and shoals make off from them, and on these are built the fish-weirs, which extend from the Campobello shore over to the edge of the channel. The Duck Islands are small, rocky, and crowned with a sparse growth of stunted fir. The two large but shallow coves which indent the southern shore of Campobello Island on the northern side of the Roads are called, respectively, **Great** and **Little Duck** ponds.

Duck Islands.

The western shores of the Roads between the anchorage and Lubec are lower, more gently sloping, and are mostly cleared, cultivated and settled. After passing the anchorage, the course leads to the northward and westward, passing to the westward of a red buoy marked No. 2. This is on the *Lower Middle Ground*. After passing it, the course leads nearly for a large, square beacon, painted red and white, and having a barrel and spar on top, which is built on *Western Bar*. Pass to the eastward of this close-to. Lubec Neck, which will now be seen ahead, is a long peninsula, about a mile and a half in length, running in a northeasterly direction from the mainland, and on its extremity is built the town of **Lubec**. The neck is a high, smooth, gently sloping hill, and shows a grassy surface where it is not covered with houses. The most prominent object in the town is the Baptist church-steeple, which is exactly in the middle of the highest part of the hill and is the only spire in the town.

Lubec Neck.

The southeastern point of Lubec Neck is known as **Leadurny Point.**

The shores of Campobello from Liberty Point to Cranberry Point, two miles above, are rocky and barren, and in most cases thickly wooded with fir trees. Cranberry Point, however, is almost entirely bare, and without grass or other vegetation. It is of moderate height, somewhat steep, and has one or two houses on its higher ground and a couple of fish-houses on the shore at its base. On its north side the shore of Campobello curves in to the northeastward and then to the northwestward, forming a large but shallow cove opposite to the town of Lubec. This is called **Deep Cove**, and is of little importance. Its shores are of moderate height and sandy, with water-worn faces to the westward. Its north point, which forms the eastern shore of The Narrows, is called **Charley's Point**, and is low and grassy, with sandy faces, fenced to the edge of the water. The land is fertile and under cultivation; and groups of houses occupy the higher part of the point.

Cranberry Point.

Charley's Point is the most westerly point of Campobello, and is only about three hundred yards from the Maine shore. A few hundred yards to the northward of it is another long, grassy point, of moderate height, presenting sandy, water-worn faces to the southward and westward, and with groups of houses upon it. This is called **Mehollan Point.**

The city of **Eastport** is plainly visible when passing through The Narrows; but a group of islands lying between Lubec and Moose Island diminishes the width of the channel, which keeps the Campobello shore until abreast of Friar's Head.

Lubec is a beautiful little village, and has a considerable fishing interest. Passing it, you open a deep bay which extends to the southward for about a mile and a quarter along the western side of the neck, and behind the town. This is called **Johnson's Bay**, and is a very excellent anchorage, with from three to seven fathoms of water and good holding-ground. A good channel exists from Lubec across the mouth of this bay (and on the western side of the group of islands above mentioned) into Broad Cove or into Cobscook Bay.

The fertile, well-settled shores which appear on the western side of Johnson's Bay are those of **Seward's Neck**, which forms the southern point of the entrance to Cobscook Bay.

After passing through The Narrows the channel leads to the northward, and vessels may pass either between Dudley Island and Mark Island, or between Mark Island and the shores of Campobello. The latter channel is, however, much the narrower of the two, although quite safe. **Mark Island** (or Pope's Folly, as it is now called) is that small rocky and precipitous islet which lies about six hundred yards to the northward of Lubec and three hundred and fifty yards from the Campobello shore. It is covered with a sparse growth of spruce and fir. The channel

Pope's Folly.

between Pope's Folly and Dudley Island is a quarter of a mile wide, with from six to ten fathoms at low water; while on the other side (that is, between it and Campobello) it is not over a hundred and fifty yards between the lines of three fathoms. Either channel may, however, be safely used at high water.

Dudley Island. Dudley Island is a little over a quarter of a mile to the northwestward of Mark Island. Its southwestern end is high and rocky, but the rest of the island appears more fertile and has a thick growth of low foliage upon its slopes. It is half a mile from the Campobello shore, and on its north side is connected by fish-weirs with a large island, having bare, rocky summits and gently sloping shores, which appear to be cultivated. This is Treat's Island, two hundred and fifty yards north of Dudley Island; a little over half a mile south of Estes' Head, (the southernmost point of **Moose Island**;) and half a mile to the westward of Friar's Head, which is directly opposite to it. **Treat's Island.** Treat's Island is nearly half a mile long. There is a small settlement on its southern end, and its eastern face is in many places fertile and cultivated. A three-gun battery is built near its southeastern point, and the barracks and quarters on the hill behind it form prominent objects. The north end of the island is bare, except near the point, where there are a few scattered fir trees.

Burial Island. About two hundred yards to the northwestward of Treat's Island is Burial Island, low, covered with grass, and having three or four trees upon it. It lies in the entrance to Cobscook Bay; and there is no safe passage between it and Treat's Island.

Snug Cove, on the Campobello side, lies between Mehollan Point and Friar's Head, and is a very good anchorage for light-draught vessels.

Friar's Head. Friar's Head, as seen from the southward, will show a gently sloping, grassy surface, gradually rising to the northward and westward until it terminates in an abrupt rocky precipice. A few low trees are seen here and there on the slopes, and stunted firs cling to the edge of the precipice. **The Friar** is not seen until abreast of the head. **Friar's Bay**, the large and deep cove which forms the harbor of Welchpool, is seen as soon as the head is passed. There is good anchorage here, in from three to twelve fathoms, in all but northerly winds. The village seen on the north shore of Friar's Bay is the English settlement of **Welchpool.**

Shackford's Head. On the western side opens a wide passage between Treat's Island and Estes' Head, the southernmost point of Moose Island. This passage, which is half a mile wide, leads into **Broad Cove** or up into **Cobscook Bay.** If bound into Broad Cove, you must pass through this passage and steer up between Estes' Head and a high, bluff, rocky head, called Shackford's Head, showing low, water-worn faces to the southward, and which will appear about three-quarters of a mile to the westward of Estes' Head, forming the western point of entrance to Broad Cove. Its summit is covered with stunted fir and spruce.

Estes' Head. Estes' Head is a bluff, rocky headland, having its summit crowned with stunted fir. On its eastern side makes in a long but narrow and shoal cove, called **Prince's Cove.** Here the wharf-line of Eastport begins, and this is the southern end of the town.

DANGERS

IN APPROACHING AND ENTERING EASTPORT HARBOR BY THE SOUTHERN PASSAGE, THROUGH LUBEC NARROWS.

In approaching this harbor from the southward, about the time you make the light-house on Quoddy Head you will see to the northwestward, well in-shore, a black nun-buoy.

Morton's Rock. This is on Morton's Rock, which has four feet at lowest tides, and bears from **Boot-man's Head** (a high head with two humps on its summit, not to be mistaken) **NE.** by **E.** ½ **E.**, distant two miles. The buoy is of the second class, marked No. 1, and placed in sixteen fathoms about thirty yards to the southwestward of the rock. From this buoy Sail Rock bears **E.** by **N.** ½ **N.**, two miles and a half distant.

Sail Rock. After passing Morton's Rock no dangers are met with until you approach Quoddy Head, when a very peculiar-looking rocky islet will appear lying off the head. This is Sail Rock, already described (see preceding page) as a rocky islet, with two smaller rocks to the eastward of it, lying about four hundred yards **SE.** by **S.** ¼ **S.** from the light-house. A reef of sunken rocks joins it to the two rocks outside of it, but there is a good passage on its eastern side, between it and **Little Sail Rock**, which lies close in with the shore,—being about one hundred and twenty-five yards from the light-house. Sail Rock cannot be mistaken, on account of the two peculiar knubbles, like domes, upon it. It is a very dangerous obstruction in thick weather, and even in clear weather should receive a berth of from half to three-quarters of a mile, owing to a dangerous whirlpool existing to the eastward of it. This rock is said to resemble, when seen from a distance, a ship under sail, but we have never been able to perceive the likeness.

From Sail Rock, Liberty Point (the southern extremity of Campobello) bears NE. by E. Easterly, distant about a mile and a third.

After passing this rock there are no dangers on the western side of the entrance until after rounding Quoddy Head; but a vessel beating in through the Roads, or coming from the eastward and keeping the Campobello shore best aboard, must beware of a line of ledges which lie nearly N. and S. off the mouth of Great Duck Pond. There are several bare rocks among these ledges, the southernmost of which is called Liberty Point Ledge, and lies nearly three-eighths of a mile W. ¼ S. from Liberty Point, and a quarter of a mile from the nearest shore. From the centre of this rock West Quoddy Head Light-house bears about SW. by W. ¼ W., and is distant exactly one mile.

Liberty Point Ledge.

Liberty Point Ledge is surrounded by shoal water, and should receive a berth of nearly two hundred yards. There is a passage between it and the point, with good water, but it is not safe for strangers. About one hundred and seventy-five yards northwest of it lies another small bare rock; and two hundred yards N. of it still another, called Round Rock, which is the northernmost of the bare rocks on this reef. There is no passage among them,—sunken rocks occupying the whole extent of the ledge. Shoal water extends to the northward from Round Rock for about one hundred and fifty yards; and from the rock the extremity of Liberty Point bears E. by S. ¼ S., distant three-eighths of a mile.

Round Rock.

Great Duck Pond is full of shoals and is not fit for strangers.

On the western side, after rounding Quoddy Head, you must not stand too far to the westward inside the head, as Wormell's Ledges lie along its north shore at distances varying from an eighth to a quarter of a mile. They lie in a line E SE. and W NW., and are mostly bare at low springs. All of the large bight embraced between Lubec Neck and Quoddy Head is, in fact, full of shoals; and dry flats extend off to distances varying from three-eighths to seven-eighths of a mile from shore. Inasmuch as the same is true of the eastern side of this passage, (the ledges and flats extending off in some cases nearly half a mile from the Campobello shore,) it will be seen that the channel must be extremely narrow and unsafe. But in fact, during the summer season, fish-weirs, which extend out from both shores to the edge of the channel, serve as excellent marks to keep vessels off the flats, as their extremities are always on the edge of the deep water.

Wormell's Ledges.

To avoid Wormell's Ledges in beating to windward, do not stand to the westward of the northeastern point of Quoddy Head bearing SE. ½ S. As they are not buoyed, no other directions for avoiding them can be given. After passing them the channel becomes much shallower, and there will be seen ahead, against the land, a large, square, black beacon, with tripod on top; and a little to the eastward of this, and much nearer, a red spar-buoy. The buoy is on the Lower Middle Ground, and the beacon on Western Bar.

Lower Middle Ground, which has two feet upon it at extreme low tide, lies nearly in the middle of the Roads, and bears about N NW. from West Quoddy Head, distant three-quarters of a mile, and from Cranberry Point nearly S., distant one mile. The buoy is a red spar, marked No. 2, placed in good water on the western side of the shoal. The bottom is hard sand.

Lower Middle Ground.

The square, black beacon above mentioned is on the eastern end of Western Bar, mostly composed of sand and gravel, which makes out from the Lubec shore to the edge of the channel, a distance of about three-quarters of a mile. It is mostly dry at low water. The beacon, which is painted black, is surmounted by a tripod of the same color, and is placed in position to mark the extremity of Western Bar, and also the turning point of the channel. From this beacon the middle of Cranberry Point bears NE. by E ¼ E.; the buoy on Lower Middle Ground about S SE.; and Leadurny Point N. ¼ E., distant about one mile.

Western Bar.

On the eastern shore there are many flats and shoals, but they are mostly marked by fish-weirs. Large ledges extend off from the Duck Islands in a southerly direction, but they are always bare at low water and show themselves at all stages of the tide.

When abreast of the beacon on Western Bar the course changes to the northward; and, ahead, off Cranberry Point, a conical buoy of a whitish color will be seen. It is intended for a red buoy, but had not been painted for so long a time when we last saw it that it had bleached to a dirty white. The only use of this buoy, which is marked No. 4, is to keep vessels from approaching the fish-weirs too closely. There are no flats here other than those upon which the fish-weirs are built. At this point the channel turns more to the eastward, and passes to the eastward of a long flat, bare at half-tide, which makes off from the Lubec shore. It is nothing but a continuation of the flats which form Western Bar, and is sometimes called *Lubec Flats*. Its edge is not marked, but there is a black can-buoy placed off the northern end of the weir which occupies the northern part of the flats. The buoy marks the edge of the channel at this point.

After passing this buoy, the channel turns to the northward again, until you approach the southern entrance to The Narrows. The course through The Narrows is about N. for Pope's Folly, and there are no obstructions except *the bar at the northern end, which has six feet on it.*

When fairly through The Narrows the channel is clear, and you may pass on either side of Pope's Folly, only remembering not to approach it so closely on its eastern as on its western shore. Not

more than five feet of water (it must be remembered) can be carried through the southern passage to Eastport at low water; and it is, therefore, used by vessels of large draught only at high water, and with an experienced pilot. A pilot can always be obtained at the light-house by making the necessary signal. *Dangers--Eastport Harbor.*

In passing along the wharf-line of Eastport, if it be low water, vessels of heavy draught must beware of two sunken rocks which lie about one hundred and fifty yards from the wharf-line. The southernmost, called Page Rock, lies three hundred and seventy-five yards to the northward of Shackford's Cove, and has sixteen feet at mean low water. Margie Rock, which has fourteen feet, lies two hundred yards to the northward of Page Rock. These rocks were first determined in 1872, and are named after the vessels which first struck upon them. *Page and Margie rocks.*

From Page Rock **Union Wharf** bears **N NW.**

If bound into Broad Cove for anchorage, you may pass either to the eastward or westward of Dudley and Treat's islands, according as the wind favors. Passing to the eastward, the channel is clear; but in the western channel there are several dangers to be avoided. The first that will be met with after passing Dudley Island is called Paddy's Ledge, a bare rock, lying about three hundred and fifty yards off the Treat's Island shore and a quarter of a mile north of Dudley Island. It is tolerably bold-to, and forms the southern end of a large ledge lying along the western shore of Treat's Island, and which is bare at low water. This ledge is about three hundred yards long in a **N.** by **W.** and **S.** by **E.** direction, and, besides Paddy's Ledge, has several other bare rocks upon it. The principal of these is **Gull Rock**, lying about sixty yards to the northward of Paddy's Ledge, and surrounded by shoal water. There is, however, a good passage, with about four fathoms water, between this ledge and Treat's Island. None of these ledges are buoyed. *Paddy's Ledge.*

The northwestern point of Treat's Island is shoal to a distance of nearly a quarter of a mile, and at the western extremity of this shoal there is a small islet called Burial Island, low, and covered with grass, with three or four trees on it. There is a lone house here, and *a bare rock* lies off the northeastern end of the islet, which is not named. After passing Burial Island there are no dangers in the channel into Broad Cove. *Burial Island.*

SAILING DIRECTIONS

FOR APPROACHING AND ENTERING EASTPORT HARBOR THROUGH LUBEC NARROWS.

I. ***Coming from the Eastward, on the North Side of Grand Manan.***—When off Bishop's Head, with Quoddy Head Light bearing **W.** by **N.** ¼ **N.**, a little over seven miles distant, steer for it until Liberty Point bears **N.** by **E.** ½ **E.**, and you are within a mile of the light-house. At this point there will be from twenty-five to thirty fathoms, rocky bottom. The entrance to the Roads being now fairly open, steer **NW.** ½ **W.** for about a mile and a half, carrying not less than four fathoms. This will lead up to the red buoy on the Lower Middle Ground. Passing this buoy, if the tide is low, you should anchor in the bight north of Quoddy Head, in from three to five fathoms, and wait for high water. But if bound up and the tide is favorable, steer **N.** by **W.** ¼ **W.** for the black beacon on Western Bar, carrying not less than eight feet. You may go close to this beacon, leaving it to the westward, and when abreast of it haul up **N.** by **E.** for the conical buoy off Cranberry Point. On this course there will be not less than six feet. Pass to the westward of the buoy, close-to, and steer **NE.** ½ **N.**, passing to the eastward of the large fish-weir making off from the Lubec shore. On this course Lubec Flats are left well to the westward and there will be not less than seven feet. Continue past the weir, gradually hauling around it until heading **N.**, and when Lubec church-steeple bears **N NW.** and you are abreast of the black nun-buoy off the northern end of the weir, steer **N.** by **W.** about for the eastern end of the Lubec wharves. On this course there will be not less than nine feet water. When abreast of Leadurny Point, steer through The Narrows, heading about for Pope's Folly. The course is **N.** in the middle of the passage, and there will be from four to seven fathoms until the bar at the northern end of The Narrows is reached, which has six feet on it. There is a strong tide-way in The Narrows.

When through The Narrows, continue the course for Pope's Folly until within two hundred yards of it; when, if intending to pass to the eastward of the island, steer **NE.** ½ **N.** for a quarter of a mile, carrying seventeen feet water, or until the wharf on the south end of Treat's Island bears **NW.** by **N.** ½ **N.** Now steer **N.** by **E.** ¼ **E.** through the Roads up to the town. If intending to anchor off the town, keep close in along the wharf-line and anchor in from four to six fathoms, out of the strength

Sailing Directions---Eastport Harbor. of the tide. The best anchorage (as mentioned on page 20) for light-draught vessels is close in with the wharves, and exactly opposite to the end of the street leading up to the custom-house.

If intending to pass between Dudley Island and Pope's Folly, round the latter to the westward, keeping about a hundred yards from it, and in not less than four fathoms, and steer **N NE.**, past Dudley and Treat's islands, and anchor as before.

These courses pass half a mile to the southwestward of Liberty Point Ledge; half a mile to the eastward of Sail Rock; a little over three hundred yards to the eastward of Wormell's Ledges; about eighty yards to the westward of Lower Middle Ground; and to the eastward of Western Bar, close-to.

It must be remembered that all of the above courses are supposed *to be made good.*

II. ***Coming from the Southward, through Grand Manan Channel.***—Coming up the middle of the passage, as soon as Quoddy Head light is made, bring it to bear **N.** by **E.** ½ **E.**, and steer for it until within a mile, when haul off **NE.** by **E.** so as to pass well outside of Sail Rock. When the highest point of the rock is in range with the light-house, or when the latter bears **NW.** by **N.** ¾ **N.**, haul up **NE.** by **N.** ¾ **N.** and gradually round Quoddy Head until the Roads are well open. When the light-house bears **W.** ½ **S.** and is a little over half a mile distant, steer **NW.** ½ **W.** toward the red buoy on Lower Middle Ground, and when up with it proceed as above directed.

Or, continue the course **NW.** ½ **W.** until Quoddy Head Light bears **S.** by **E.** ½ **E.**, and then steer **N.** by **W.** ½ **W.**, with the light bearing **S.** by **E.** ½ **E.** This course will lead up to the beacon on Western Bar.

Coming along shore from the Westward, steer **NE.** ¼ **E.**, from off the mouth of Little River, until the highest part of Sail Rock is in range with the light-house, or until the light-house bears **NW.** by **N.** ¾ **N.**; when steer **NE.** by **N.** ¾ **N.** and proceed as before directed.

The above courses pass nearly half a mile to the southeastward, and about six hundred yards to the eastward, of Sail Rock; and well to the southward of Morton's Rock.

III. ***To come through The Narrows and enter Broad Cove.***—To enter Broad Cove from The Narrows, you may pass either to the eastward or westward of Dudley and Treat's islands, according as the wind favors. *If to the eastward,* continue the **N NE.** course from abreast of Pope's Folly (mentioned above) until past the southeastern point of Treat's Island, on which course there will be not less than six fathoms. Now gradually haul to the westward, steering about midway between Buckman's and Estes' heads, (or about **N.** ¼ **E.**,) until the northern end of Treat's Island bears **W.** by **S.** ¾ **S.** Now steer **NW.** ¾ **N.** toward Shackford's Head, passing Estes' Head in eight fathoms, and from a hundred to a hundred and fifty yards off; and when the cove is fairly open and you are within a quarter of a mile of the low sand-cliff on the southeastern extremity of Shackford's Head, steer **N.** ¼ **E.** into the harbor, and anchor at pleasure. There is not less than six fathoms on the above courses, from Pope's Folly to the cove.

Passing to the westward of Dudley and Treat's islands; when clear of The Narrows, steer **NW.** ¾ **N.** until past Dudley, and its northern point is brought to bear **E.** ⅛ **S.**, and in range with the middle of Friar's Head. The western point of the island should be about four hundred yards distant, and eight fathoms water will be found. Now haul up **N.** ¼ **E.** for the harbor, and continue this course to the anchorage.

Vessels using this passage pass about four hundred yards to the westward of Paddy's Ledge; about three hundred and fifty yards to the westward of Gull Rock; and an eighth of a mile to the westward of Burial Island.

In The Narrows the flood and ebb set nearly in the direction of the passage. Sailing vessels cannot pass through The Narrows against the tide, unless with a very strong fair wind.

There are no directions necessary for entering Johnson's Bay. There are from three to seven fathoms at the anchorage, and the ground is good.

It may not be out of place to remark here that, for vessels which do not wish to come along the coast, an **E NE.** course from Matinicus Rock will lead to West Quoddy Head. This course *made good* passes about two miles off the head.

LIGHT-HOUSES.

NAME.	Latitude.	Longitude West.		Fixed or Revolving.	Height above sea-level.	Distance visible in nautical miles.
		In arc.	In time.			
	° ′ ″	° ′ ″	h. m. s.		Feet.	
East Quoddy Head Light-house	44 57 28	66 54 0	4 27 36.0	Fixed.	64	13½
West Quoddy Head Light-house	44 48 54	66 57 1	4 27 48.1	Fixed.	133	18

TIDES.

Corrected Establishment at Eastport	$11^h\ 8^m$
Mean Rise and Fall of tides	18.1 ft.
Mean Rise and Fall of Spring tides	19.4 ft.
Mean Rise and Fall of Neap tides	16.3 ft.
Mean duration of Rise	$6^h\ 3^m$
Mean duration of Fall	$6^h\ 22^m$
Rise of highest tide observed	23.3 ft.

VARIATION OF THE COMPASS.

The magnetic variation for 1879 will be for East Quoddy Head **18° 32′ W.**, and for West Quoddy Head **18° 27′ W.**, with an approximate annual increase of **2′**.

LIFE-SAVING STATION.

The United States Government has established at West Quoddy Head a life-saving station, provided with boats and other necessary apparatus for the succor of vessels in distress.

SHORES OF PASSAMAQUODDY BAY FROM EASTPORT TO THE ST. CROIX RIVER.

Vessels from the vicinity of Eastport, bound for the St. Croix River or into Passamaquoddy Bay, go through the Main Channel between Deer Island and Campobello, pass to the westward of Indian Island, round Deer Point, and steer up between Moose and Deer islands. After passing Deer Point there will be seen on the western shore a high hill, called Kendall's Head, which is the northeastern extremity of **Moose Island.** It is bare on its summit, but fringed with a thick growth of scrubby fir and spruce at its eastern end, where it shows a sandy, water-worn face, ending in a low rocky point, thickly wooded. The large cove, with smooth sandy beach, which makes in on its southern side, is called **Johnson's Cove,** and is a most excellent anchorage. At the western end of the cove the shore is low and well cultivated. Vessels may anchor in seven fathoms at low water with but little tidal current. **Kendall's Head.**

Opposite to Kendall's Head, on the Deer Island shore, will be seen another cove, called Cummins' Cove, not so large as Johnson's, but affording good anchorage with an unobstructed entrance. It may be known by the large sand cliff on its northern side, with a few fir trees clinging to the perpendicular sides, behind which appears a high, steep, rocky head crowned with fir. The rest of the shores of the cove are nearly level and well cultivated, and there is a small settlement here. **Cummins' Cove.**

On passing Kendall's Head a wide passage is opened to the westward, between the northern shore of Moose Island and the mainland, leading into Pembroke River. About three-quarters of a mile above, it is crossed by a large covered bridge, painted white, which connects Moose Island with the mainland; but the passage is for the most part dry at low water. In the middle of the entrance lies Treat's Island, which at low water is joined to Moose Island by a dry sand spit. This island is half a mile long, with somewhat rocky shores, and should receive a berth to the westward of about a quarter of a mile. Its northern point, which is quite rocky, is called **Mitchell's Point,** and is only about an eighth of a mile from the mainland, which here extends to the southward into a long narrow point, called **Pleasant Point,** on which is a large Indian settlement. This settlement will appear as a cluster of small houses, with a church in the foreground, and, in a prominent position, a tall flag-staff bearing a white flag with a red cross and other devices undistinguishable from the channel. **Treat's Island.**

About a mile and a quarter above Cummins' Cove, on the Deer Island side, will be seen a rocky head, called **Clam Cove Head,** thickly covered with scrubby fir. It is the westernmost point of Deer Island, and on its southern side makes in a large cove, called Clam Cove, which is an excellent harbor, sheltered from all winds, with sufficient water for the largest vessels which resort hither, and is especially fitted for a winter harbor,—being free from ice. When abreast of it there will be seen on the western shore a large cove, called **Gleason's Cove,** and sometimes **Perry Harbor,** into which empties a small stream, called **Little River,** leading up to the village of **Perry.** This cove also affords anchorage, and is distant from Pleasant Point about one mile. **Clam Cove.**

When abreast of Clam Cove Head there will be seen a little to the eastward of **N.**, and about six miles off, the village of St. Andrew's. To the westward of the village opens the St. Croix River; to the eastward spreads away the great bay of Passamaquoddy; and behind it rise the **Chamcook Hills** to the bald summit of **Mount Simpson,**—six hundred and twenty-seven feet above the sea.

Northwest Head. Passing Clam Cove Head you will open Northwest Head on the Deer Island shore, which forms the southern side of **Northwest Harbor,**—an excellent harbor of refuge, with sufficient water for large vessels. From the head the shores of Deer Island stretch away to the northeastward for nearly four miles to **Northeast Head,**—two hundred and thirty-two feet high; and there is a small harbor contained between this head and **Pendleton Island,** which lies close to it.

Frost's Cove. On the western shore, a little over a mile above Gleason's Cove, is a small indentation, called Frost's Cove, which has good anchorage off its mouth in from four to six fathoms at low water. About a mile and a half above it is **Gin Cove,** very small, but with good anchorage; and a little over a mile above this is **Lewis' Cove,** upon the shores of which is the settlement of **North Perry.**

Navy Island. The low sandy island on the eastern shore, nearly abreast of Lewis' Cove, is Navy Island, sometimes called **St. Andrew's Island,** and lies at the entrance to the St. Croix River. It is a little over a third of a mile from St. Andrew's Point, and presents to the southward a white water-worn cliff about thirty-five feet high. Its southern half is entirely bare of trees, but a thick growth of low spruce occupies about half of its northern part. The northern point of the island is lower than the southern, and is in some places cleared and in others dotted with a thin growth of scrubby fir. It lies **NW.** and **SE.,** is about a mile long, and forms the western and southwestern shores of **St. Andrew's Harbor.** It is tolerably bold-to on its southwestern side; but on the harbor side the flats extend nearly over to the mainland, leaving but a narrow passage at low water. The channel to the northwestward of the island is very narrow at low tide,—the flats nearly joining,—but at high springs there is a depth of from three to four fathoms. The eastern channel is considered the best, and has been marked and buoyed. The wooden pyramid, painted white, and seen to the westward of the island, is the beacon on *Navy Island Reef;* and nearly opposite to this, on the Maine shore, is **Mill Point,**—the western point of entrance to the St. Croix River.

The village of **St. Andrew's,** which belongs to New Brunswick, is built on St. Andrew's Point, at the base of the great Chamcook Hills, whose slopes here, for nearly five miles, form the eastern shores of the St. Croix. It contains about twenty-eight hundred inhabitants, and its principal business is in lumber. The harbor has, in no place, more than from twelve to sixteen feet at low water, but is excellent and well sheltered. There is not more than one foot at low water in the channel, and it is in some places very narrow.

St. Andrew's Point. The land on St. Andrew's Point is very gently sloping and entirely under cultivation; but to the northward the hills increase gradually in height until an elevation of over six hundred feet is reached, at the top of Mount Simpson, the highest of the Chamcook Hills.

St. Andrew's Light-house. At the southeastern end of the village is built the light-house, called St. Andrew's Light-house, a low white tower, thirty-five feet high, standing upon a wharf, and showing a fixed white light, visible about ten miles. Its geographical position is

Latitude ..... **45° 4′ 10″ N.**
Longitude ..... **67° 2′ 50″ W.**

On the northern side of the eastern entrance to St. Andrew's Harbor, and about a mile to the eastward of St. Andrew's Point, is built another light-house, on a sand reef. It is a square, white tower, forty feet high, and shows a fixed white light, visible ten miles. Its geographical position is

Latitude ..... **45° 3′ 45″ N.**
Longitude ..... **67° 0′ 50″ W.,**

and it bears from St. Andrew's Light-house **SE. by E.** The eastern entrance to the harbor is between this light-house and the beacon on the eastern spit of Navy Island.

ST. CROIX RIVER.

This river empties into Passamaquoddy Bay at its southwestern end, separating the Province of New Brunswick from the State of Maine. Its entrance, between Navy Island on the east and Mill Point on the west, is about two miles wide; but it gradually contracts to a mile, which width it retains, as an average, to The Divide, about seven miles and a half above. There is good water in the channel below The Divide—the least depth being five fathoms at low water; but beyond this it rapidly shoals. Twelve feet can be taken up to The Ledge, and from six to eight feet to Calais, according as the northern or southern channel is used.

The course of the St. Croix from its mouth to The Divide is about **N. ¼ W.,** and the distance seven miles and a half. Here it branches,—the eastern branch forming what is called Oak Bay, continuing in about a **N. by E.** direction for a little over four miles; while the western branch, forming the main river, turns abruptly to the westward, and runs with many changes of course, for about five and a half miles, to the city of Calais. The latter is built upon the south bank, and the town of St. Stephen's, New Brunswick, on the north bank. The whole distance from the mouth of the river to Calais is thirteen miles.

Navy Island, the eastern point of entrance to the St. Croix, has been described above.

Mill Point. Mill Point, the western point, is steep and bold, forty-five feet high, and forms the northern point of entrance to a large but shallow cove called **Mill Cove,** where there is a small settlement. About a mile above the point, and nearly opposite to the village of St. Andrew's, is the village of **Robbinston,** with considerable trade in lumber and ship-building. The land is here of moderate height, slopes gently as it recedes from the river, and is nearly all under cultivation.

Joe's Point.

Exactly opposite to Robbinston, on the eastern bank of the river, and about a mile to the northward of Navy Island, is Joe's Point, or **Block-House Point**, as it was formerly called. It is a high, gently sloping, round point, mostly grassy, but dotted here and there with scrub fir. There was formerly a block-house upon it, whence its name.

The land at the base of the Chamcook Hills is level and well cultivated.

On the western shore, a mile above Robbinston, is **Brick-yard Point**, a high clay head with precipitous faces, and crowned with a thick growth of young birch and spruce. It is sometimes called **Byrne's Head**. There is a brick-yard here, close to the shore.

The channel now leads toward two small islands, called the Dochet Islands, one lying tolerably close to the west bank and the other almost exactly in the middle of the river. This latter is three miles and a half above Robbinston and fourteen miles above Eastport. The islands are called, respectively, Dochet and Little Dochet Island.

Dochet Island.

Dochet Island, sometimes, though incorrectly, known as **St. Croix Island**, has a light-house upon it, the lantern rising from the southern end of the keeper's dwelling. The island is of moderate height, with precipitous, sandy faces, to which, here and there, cling clumps of trees. The light-keeper's dwelling stands near the middle, and is a conspicuous object. The island is shoal in its surroundings, and must receive a good berth, whether you pass on its eastern or western side.

St. Croix Light-house.

St. Croix Light-house, on Dochet Island, is a lantern rising from the keeper's dwelling, both being painted white. The light is fixed, varied by flashes at intervals of thirty seconds; of the fifth order of Fresnel; shown from a height of seventy-one feet above the sea, and visible twelve nautical miles. Its geographical position is

Latitude	**45° 7′ 43″ N.**
Longitude	**67° 8′ 0″ W.**

Just before reaching Dochet Island the **Main Channel** passes to the eastward of **Little Dochet Island**, a small, rocky islet, with three or four fir trees upon it, lying close in with the western shore, about half a mile north of Brick-yard Point. It is about a mile below Dochet Island and about a quarter of a mile from the western shore.

The passage to the westward of Little Dochet Island is narrow, and not safe for strangers;—having several rocks in it.

On the western shore, nearly opposite to Dochet Island, is the settlement known as **Red Beach**. The shores are steeper in this vicinity and not so fertile—being mostly covered with a thick growth of scrubby trees. The trade is in plaster—for the manufacture of which several mills have been erected.

Sand Point.

On the eastern shore, just above Dochet Island, is a sandy point, presenting precipitous faces toward the river, with stunted fir trees clinging to them in a few places. This is called Sand Point It is not safe to approach, as a long spit extends a quarter of a mile from it toward the channel. Above this the eastern shores rise to a considerable height, varying from four to six hundred feet.

Devil's Head.

The usual course for vessels when past Dochet Island is to haul up about **N NW.** for Devil's Head, or **Boundary Point**, the most conspicuous object on the St. Croix River, and which can be seen from below Robbinston. It lies on the west bank of the river and on the south side of The Divide, and is a very steep hill, rising to a height of two hundred and fifty feet. At the river bank it terminates in a bold, bluff head, covered mostly with a growth of small fir and spruce; but on its southern side a portion is cleared and has a few houses upon it. It is quite bold, as is also all of the shore between Red Beach and the head. Here is formed **The Divide**;—the St. Croix turning abruptly to the westward, and a branch running nearly **N.** and **S.** for four miles and a half, forming what is called **Oak Bay**, a long and wide bay, with from two to eight fathoms in it, but of no special importance.

Into the eastern part of Oak Bay, near its mouth, empties a long, narrow and shoal creek, called **Warwig Creek**. The bay itself is easily recognized by a high, wooded hill, which appears in the middle of it.

Oak Point.

Opposite Devil's Head, on the north side of the St. Croix, and separating Oak Bay from the river, is a grassy point, bare of trees and of moderate height, with perpendicular faces, known as Oak Point. Its surface is somewhat flat and under cultivation, and a house and barn are visible from the river. On the same shore, three-quarters of a mile above Oak Point, is a high, precipitous, rocky head, called **Raven's Head**, or **Bluff Head**, the south face of which is as perpendicular as a wall. The head is covered with a thick growth of fir and other trees.

On the southern side, above Devil's Head, the shores are diversified,—being partly cleared and cultivated and partly wooded, the principal growth being small fir and spruce; while on the north shore, just above Raven's Head, is found low, grassy land, studded with small trees, and behind this rises a high, bare, white, rocky hill, destitute of either trees or grass. This is called **Brown's Hill**, or **Bald Hill**, and is a very remarkable object.

Spruce Point Light-house.

On **Spruce Point**, at the base of Brown's Hill, and about half a mile above Raven's or Bluff Head, will be seen a tower of open-work, painted brown, and surmounted by a lantern. This is Spruce Point Light-house, and shows a fixed white light from a height of thirty-two feet above high water. Its geographical position is:

Latitude	**45° 10′ 0″ N.**
Longitude	**67° 10′ 30″ W.**

The settlement called **The Ledge** is situated on the shore near Brown's Hill, and about one mile above Oak Point. The land is here rocky and barren, but there are several wharves for the convenience of vessels loading. Those desirous of lying afloat at low water must anchor, as above this point they will be obliged to lie aground at low tides.

Mark Point Light-house. At The Ledge, on what is called **Mark Point**, is another tower of open-work, also painted brown. It is called Mark Point Light-house, is serviceable as a guide to vessels passing The Ledge, and shows a fixed white light from a height of thirty-two feet above high water. Its geographical position is

Latitude ..... **45° 10′ 20 ″ N.**
Longitude ..... **67° 12′ 20″ W.**

It is under no circumstances safe for vessels to go above The Ledge without a pilot, as the narrow and dangerous reach called the **Bog Brook Passage** begins just above the settlement. Its course is about **SW.** and its length three quarters of a mile.

The Ledge. The Ledge itself, from which the settlement takes its name, is on the southern shore of the river, opposite to the settlement, and is covered only at high water. On its end is built a large wooden beacon supported on three piers, and a black spar buoy marks the point of the flats which lie off this ledge. Above this, on the southern shore, the land is mostly low, rocky and thickly wooded; while on the northern shore it is diversified with partly wooded and partly cultivated lands. Much of the higher land on the northern shore of Bog Brook Passage

Heckman's Point. is cleared and beautifully cultivated. The northern point, at the western end of the passage, is low and grassy, with sand faces fringed with trees, (mostly birch,) and is called Heckman's Point. Here the channel turns to the northward and westward,—the course being about **W NW.** Heckman's Point is about two miles below Calais. After passing it the southern shore of the river is high, cleared, gently sloping, dotted with orchards, and under fine cultivation. The northern shore is rocky, barren and thickly wooded.

Todd's Point. On the southern shore, about three-quarters of a mile above Heckman's Point, will be seen a thickly wooded point, called Todd's Point, rather low, with handsome houses upon it, and several wharves extending out towards the channel. Vessels load here with lumber during the winter, when the ice prevents their passage above. The steamer which runs from Eastport to Calais also stops here at low water, being unable to get up to her wharf.

The suburbs of **Calais** begin about a quarter of a mile above Todd's Point; and both this town and its opposite neighbor, **St. Stephen's,** are visible from here. They are connected by a covered bridge.

At Calais vessels must run alongside the wharves and lie aground. The wharves are built out almost to the edge of the channel on both sides,—the distance across between their ends being only from three hundred and fifty to four hundred feet. The river is here very narrow, and the channel still narrower, (there being no room for a vessel to swing at low water,) and there is great danger of being run into by the tows which are constantly moving up and down. It is, therefore, as above remarked, better to run alongside the wharves.

The immense lumber business, of which Calais is the centre, draws thither in the summer season a great number of coasters, most of whom, as above stated, rely upon steam for their safe conveyance to and from the town. A careful description and detailed sailing directions may, however, enable a vessel to save time (if not able to get a tow) by sailing up as far as The Ledge; and, if light, she may even go up to the town, provided she has an experienced pilot. In 1872, in our schooner, drawing ten feet, we beat through this passage and came safely up to Calais; but we would not advise this course to any vessel, unless, as before stated, she be of light draught and has an experienced pilot.

The tidal current runs with considerable velocity in the St. Croix, so that sailing vessels must always wait for a fair tide or a tow-boat. It is impossible, also, for strangers to go very far above The Divide on account of the narrowness of the channel, the ledges and flats which obstruct it, and the absence of buoys to properly mark the dangers. Pilots can always be obtained at Eastport, and vessels generally take a tow-boat between The Divide and the town.

DANGERS

IN APPROACHING AND ENTERING ST. CROIX RIVER FROM THE VICINITY OF EASTPORT.

On leaving Eastport, bound up the St. Croix, the first danger met with is Clarke's Ledge, which is bare at low water, lies about three hundred and seventy-five yards above Todd's Head and about one hundred yards from shore. It is not buoyed, and always shows itself. About a

Clarke's Ledge. quarter of a mile above it lies **Dog Island,** close in with the shore. Neither of these would be at all dangerous were it not for the *whirls off Deer Point,* which compel vessels to keep the Moose Island shore close aboard to avoid them. These whirls on spring tides extend two-thirds of the way across the passage between Deer Point and Dog Island; and mariners, in their anxiety to avoid them, are sometimes set upon **Dog Island Point.**

After passing Dog Island no dangers are met with until past Pleasant Point and up with Frost's Head, the southern point of the entrance to Gleason's Cove, when a black spar-buoy

Frost's Ledges. will be seen to the westward. This is on Frost's Ledges, which extend in a northeasterly direction from the head for a distance of nearly three-quarters of a mile. The buoy is marked No. 1, and is placed in fourteen feet water, on the eastern end of the reef. Vessels must not attempt to pass to the westward of it, as the reef is a dangerous one.

When past Frost's Ledges there are no more dangers until nearly up with Navy Island, when a pyramidal white beacon will be seen off the northwestern end of that island. This is on Navy Island Reef, or *Northwest Shoal*, as it is sometimes called, and is a guide for vessels entering or leaving St. Andrew's Harbor. It also serves to keep vessels off the reef when beating to windward in the St. Croix. ***Navy Island Reef.***

On approaching Dochet Island a black spar-buoy will be seen nearly in mid-river. This is on the southern end of The Middle Ground, and vessels using the main channel pass to the eastward of it; while those using the western channel pass to the westward. The Middle Ground is a long ledge, with three feet at lowest tides, and is composed mostly of gravel. The buoy is marked No. 3, is placed in soft, muddy bottom, in thirteen feet at lowest tides, and may be passed on either hand entering by the eastern or western channel. The ledge lies about a mile and a half **S.** ½ **E.** from Dochet Island, and is quite extensive, but is easily avoided while the buoy is in position. ***The Middle Ground.***

Passing the black buoy on The Middle Ground a red spar-buoy will be seen off the southern end of Dochet Island. This is on Half-Tide Ledge, which lies between a half and three-quarters of a mile to the southward of Dochet Island, and is bare at half-tide, as its name indicates. There is no passage between it and the island. The buoy is marked No. 2, placed in seven feet at lowest tides, on the southern end of the rock, and when in position, St. Croix Light-house bears **N.** by **E.** It may be approached within thirty yards. ***Half-Tide Ledge.***

On coming up with the northern end of Dochet Island there will appear to the westward and off the northern end of the island a red spar-buoy, marking the northern point of *the ledge which extends off in that direction.* It may be approached on its northern side within a few yards, but is colored red for the western passage.

In the western passage there is a red spar-buoy nearly in the middle, which marks a sunken rock with five feet at low water off Dochet Island, called *Dochet Island Sunken Ledge.* The buoy must be left to the eastward.*

Sand Point Shoal extends off from Sand Point a distance of a quarter of a mile, and is very dangerous,—principally because it is *not* marked by a buoy. Vessels to avoid it must, as soon as they can clear the red buoy on the northern end of Dochet Island, haul up for Devil's Head, running close to it. A buoy will be recommended to be placed upon this shoal. ***Sand Point Shoal.***

After passing Devil's Head there are no obstructions until The Ledge is approached, when a large wooden beacon will be seen on its northwestern end and a black spar-buoy to the eastward of it. The beacon is on The Ledge, is built of timber, and stands upon three piers, and is twenty-six feet high, a little narrower at the top than at the bottom. The Ledge extends off from the Maine shore of the river opposite to the settlement, and is covered only at high water. ***The Ledge.***

The black spar-buoy to the eastward of the beacon is on Elliott's Flats, which extend off towards the channel from the end of The Ledge. It is marked No. 5, and is placed in six feet at lowest tides, on the edge of the flats. After passing it there are no dangers until up with **Knight's Point,** at the western end of Bog Brook Passage. Here will be seen a black spar-buoy, which marks *Knight's Point Flats,*—extending off from the point to the edge of the channel, and bare at low water. The buoy is placed in six feet at lowest tides, and is marked No. 7. ***Elliott's Flats.***

All of these buoys are taken up in the winter; strangers should, therefore, never attempt to navigate the river in winter without an experienced pilot.

Beyond Knight's Point there are no buoys. It is not safe for vessels to go above The Ledge without a pilot.

SAILING DIRECTIONS

FOR APPROACHING AND ENTERING THE ST. CROIX RIVER FROM THE VICINITY OF EASTPORT.

It is best not to attempt to go up the St. Croix River without a pilot, who can always be found at Eastport or on Campobello. The usual course is to enter by the Main Channel, (between Deer Island and Campobello,)— the course in being **SW.** by **W.** ¼ **W.** until Cherry Island bears **N.**, when, if not intending to stop at Eastport, steer **NW.** by **W.** ½ **W.** for Dog Island until within a quarter of a mile of it, and Deer Point bears **N.** by **E.** ¼ **E.** Kendall's Head will now bear **NW.** by **N.** ½ **N.**; and you may steer for it, unless the tides are springs and the whirls farther to the westward than usual. In this latter case, pass Dog Island within two hundred yards, and keep the western shore aboard until past the danger. Under ordinary circumstances, however, the course given above leads clear of the whirls. Continue it until abreast of the middle of Johnson's Cove, and Deer Point bears **SE.** by **E.**, with the southern point of Indian Island just open to the southward of it. Now steer **N.** by **W.** past Kendall's Head, (passing about three hundred and fifty yards to the eastward of it,) and

* This buoy is not on the Buoy-List. It has probably been placed here by the pilots.

Sailing Directions--St. Croix River. continue this course until abreast of Gleason's Point, which is the northern point of entrance to Gleason's Cove. Upon these courses there is nothing less than eight fathoms water. Now steer **N.** ½ **W.** for St. Croix Light-house until nearly up with the black buoy on The Middle Ground. Pass to the eastward of this, and steer **N.** by **W.** ½ **W.** until past the island and clear of the red buoy off its northern end. (This buoy must be left to the southward by vessels using the Main Channel. It is painted red for the use of vessels entering by the western channel, and by them must be left to the eastward.) From Gleason's Point to this buoy there is not less than ten fathoms in the channel. When clear of this buoy, after passing Dochet Island, steer for Devil's Head, rounding it close-to. The course is between **N.** by **W.** and **N NW.** When abreast of the head, steer **NW.**, which course will lead up to The Ledge, three miles below Calais. Here anchor, if desiring to lie afloat at low water. From the red buoy off the northern end of Dochet Island to The Ledge the least water will be two fathoms.

If bound up to town and intending to go alongside the wharves; after passing the black buoy on Elliott's Flats, steer **SW.** through Bog Brook Passage, which is three-quarters of a mile long. When fairly through it, steer **W NW.** from abreast of Heckman's Point until up with **Todd's Wharf;** after which keep the middle of the river up to the city. The least water in the channel from The Ledge to Calais is eight feet, if in the channel on the St. Stephen's side;—that on the Calais side having only about six feet.

It is rarely that vessels do not have to beat either up the river or through the Bog Brook Passage. A wind which is favorable through the Passage is preferable, even though it necessitates beating to windward throughout the whole length of the river, for the strong current of flood will aid in accomplishing the distance from Navy Island to The Ledge in a short time; while on the other hand the channel in the Bog Brook Passage is so narrow that none but a smart sailing vessel can with safety attempt it, as one is scarcely under way on one tack before it is necessary to go about on the other. It is strongly recommended to strangers, however, to take a pilot before attempting the passage of this river. Tug-boats can always be had at Eastport and Calais for a tow either up or down the river, and most of the coasters avail themselves of these time-and-money-saving machines.

The courses given above pass three hundred yards to the eastward of Clarke's Ledge; two hundred yards to the eastward of Dog Island; one-third of a mile to the westward of Deer Point; about fifty yards to the eastward of Middle Ground buoy; the same distance to the eastward of the red buoy on Half-Tide Ledge; about twenty yards to the northward of the red buoy off the northern end of Dochet Island; about thirty feet to the northward of the black buoy on Elliott's Flats; and about twenty yards to the northeastward of Knight's Point buoy.

The St. Croix River at Calais is being improved by the Government, and it is proposed to deepen the channels over the bars.

From the anchorage at Eastport, steer **N.** by **E.** for Deer Point, and when abreast of Clarke's Ledge haul up **N.** by **W.** until abreast of Dog Island, when steer **NW.** by **N.** ½ **N.** and proceed as above directed.

These courses pass one hundred and fifty yards to the eastward of Clarke's Ledge, and nearly a quarter of a mile to the eastward of Dog Island.

A vessel coming down the St. Croix with a **SW.** wind, if caught by the flood tide above Deer Point, may go quite close to that point, (unless the whirls are too bad;) and when past it, the current of flood through Indian River will take her on the lee bow, and thus favored she may easily beat up to the anchorage off Eastport against the tide. This is often done by coasters whose captains are familiar with the currents or who have an experienced pilot on board.

LIGHT-HOUSES.

NAME.	Latitude N.	Longitude West.		Fixed or Revolving.	Interval of Flash.	Height above sea-level.	Distance visible in nautical miles.
		In arc.	In time.				
	° ′ ″	° ′ ″	h. m. s.		s.	Feet.	
St. Croix River Light-house...	45 7 43	67 3 0	4 28 32	F. V. F.	30	71	12
Spruce Point Light-house.....	45 10 0	67 10 30	4 26 42.0	Fixed.	.....	32	.....
Mark Point Light-house	45 10 20	67 12 20	4 26 49.3	Fixed.	.....	32	.....

No observations of tides in the St. Croix River have as yet been made by the Coast Survey. Mariners must, therefore, depend upon the Eastport tides and upon local information. If a vessel starts from Eastport to Calais with a fair wind on the first quarter of the flood, she will carry the current of flood with her all the way. If she has a head wind, she may start as soon as the tide turns; but if there be a strong fair wind and she starts at the turn of the tide, she will be apt to run out of it before reaching The Divide.

At St. Andrew's Harbor, according to the English surveys, it is high water on the days of full and change at $10^h\ 50^m$. The rise and fall of spring tides is from twenty-four to twenty-six feet; of neap tides, from twenty to twenty-two feet; and the mean rise and fall of tides, twenty-three feet.

At the anchorages in Passamaquoddy Bay the tidal current is scarcely perceptible; but it is said that the tide rises twenty-seven feet at The Ledge, with a very swift current.

VARIATION OF THE COMPASS.

The magnetic variation at St. Andrew's Light-house in 1879 will be about 18° 27′ W.

COBSCOOK BAY AND TRIBUTARIES.

This extensive bay, the entrance to which lies between Estes' Head and Seward's Neck, extends into the land about four miles in a westerly direction, where it sends off numerous branches. Its northern branch, called Pembroke River, or **Pemaquan Bay**, extends to the northwestward for three miles and a half to the town of Pembroke. Its western branch, called Cobscook River, runs to the westward a mile and a half, where it splits into two branches called, respectively, the North and South branches;—the former running to the northwestward about five miles, to the town of Dennysville, and the latter extending to the southward about five miles, to the town of Whiting.

The southern branch of Cobscook Bay, called South Bay, extends to the southward for six miles to West Lubec. There are other branches of little importance,—such as East Bay, on the northern side, just to the eastward of Pemaquan, and Straight Bay and Middle Bay, branches of the Cobscook River, which run to the southward between South Branch and South Bay. Of these branches Pemaquan Bay (or Pembroke River, as it is now called) is the only one of much commercial importance, or which can be entered without a pilot. Both the North and South branches of the Cobscook are shoal, and of exceedingly dangerous navigation. South Bay has good water, but is of little importance. No survey either of the shores or of the channels of Cobscook Bay and its branches has as yet been made; but such descriptions and directions as could be obtained by personal examination and information derived from the pilots are given below.

PEMBROKE RIVER.

The entrance to this river is five miles above Estes' Head,—lying between Garnett's Head on the east and Leighton's Head on the west. Between these two points it is a little over a mile wide, but rapidly contracts to a width of half a mile, which average width it keeps to Hersey's Head, two miles above. Above this head the river becomes still narrower, until, at the town of Pembroke, it is a mere creek.

Pembroke is about nine miles above Estes' Head. Considerable business is done here both in lumber and iron,—the **Pembroke Iron Works** causing also some trade in coal, which is brought here for their use. The channel is buoyed from the entrance to the Southwest Passage, at Estes' Head, up to the town, which is situated on the west fork of **The Divide**, while the Iron Works are on the eastern fork. It has about twenty-five hundred inhabitants.

Vessels bound up this river enter the **Southwest Passage** either by the Northern Channel (between Estes' Head and Treat's Island) or by the Western Channel, (between Dudley and Rodgers' Island.) The **Northern Channel** (which is used by those who come into Passamaquoddy Bay and Friar's Roads through the Main Entrance) is half a mile wide and quite deep, with steep shores on both sides. The **Western Channel** is used by those who come through Lubec Narrows.

Estes' Head has been already described on page 17 as a bold, bluff, rocky headland, with its summit crowned with stunted fir. It is the eastern point of entrance to Broad Cove. When abreast of it, Shackford's Head, the western point of the entrance to Broad Cove, will be seen to the northeastward, about seven-eighths of a mile distant. It is a large, high, bluff head, its top covered with stunted fir, and on its southern side a low point making out with a sandy, water-worn face.

Burial Island.

On the southern side of the passage, about two hundred yards to the northwestward of Treat's Island, is Burial Island, low and grassy, with a few scattered trees on it. It is five-eighths of a mile **SW.** by **S.** ¼ **S.** from Estes' Head; which is here the width of the channel. Well to the southwestward, and close in with the shore of Seward's Neck, lie **Rodgers'** and **Major's** islands; the former of moderate height, with its summit densely wooded with small fir and spruce, and the latter presenting a smooth, round appearance, with a few low trees on top. It is about a quarter of a mile to the northward of Rodgers' Island.

Comstock Point.

On the western side of the entrance, nearly opposite to Shackford's Head, (from which it bears about **SW.** nearly three quarters of a mile distant,) is Comstock Point, low, sandy, covered with a bushy growth of trees, and quite bold-to. It is the easternmost point of **Seward's Neck**, and here the shores of the neck make a long curve to the westward and then to the northward, forming a large cove, with good anchorage, called **Small's**

Description of Pembroke River.

Cove. A low, sandy islet, crowned with small, bushy trees, lies nearly in the middle of the entrance to this cove, and is called **Cooper's Island.** From it a long line of ledges, mostly bare at half-tide, extends off to the northward nearly half a mile. They are known as *Cooper's Island Ledges*, and are not buoyed.

At Small's Cove there is quite a settlement—in fact, the whole of the shores of Seward's Neck are thickly settled and well cultivated from Lubec Mills to Gove Point.

Goose Island.

When abreast of Shackford's Head, a low, grassy island, with two small houses upon it, will be seen ahead and about a quarter of a mile off. This is Goose Island, and lies about half a mile off the Moose Island shore, and on the south side of the entrance to a large but shallow cove on the western shore of that island. This cove is dry at low water, with bad ledges and shoals obstructing its entrance, and is of no importance. Goose Island lies about a mile to the southward of the western end of the passage between Moose Island and the mainland.

Gove Point.

On the western shore the northern point of Seward's Neck is called Gove Point. It is low, and its extremity is covered with spruce, fir, beech, etc. A long, steep, shingly beach skirts the shore for nearly the whole distance between Small's Cove and Gove Point. This beach is convenient for vessels to haul out and examine their bottoms, and is frequently used for that purpose. The land is cultivated almost to the water's edge.

Birch Point.

On the eastern shore, about a mile to the northward of Gove Point, and bearing from it about **N. by W.**, is Birch Point, the southernmost point of the mainland on this side. It is high, and has its southeastern slopes cleared and cultivated to the summit, which is crowned with trees, and is known as **Lincoln's Head.** To the southeastward it extends into a low, sandy head, covered with grass, and having a solitary hut upon it. The head is easily recognizable by the peculiar cut in the woods which crown its summit. A large barn stands on the southern end of Birch Point; and three-quarters of a mile off the point, in about an **E SE.** direction, is *Half-Tide Rock*, bare at half-tide.

South Bay.

On the western shore, after passing Gove Point, a large and deep bay is opened, running to the southward. This is called South Bay, and extends to the southward nearly six miles, to the village of **West Lubec.** A small, low, grassy islet, called **Razor Island**, lies in the middle of the entrance, and farther up the bay are seen two large wooded islands known as **Hog Island** and **Long Island.** All of the shores of this bay are thickly wooded. It has plenty of water, but is rarely used,—there being as yet no trade upon its shores. A little over three miles above its mouth, and on the western shore, is the site of the lead-mines of the **Lubec Mining Company**; and, we believe, there is some slight trade in lumber.

Cobscook River.

Cobscook River empties into Cobscook Bay about two miles to the westward of Gove Point and the same distance **W SW.** from Birch Point, the entrance lying between Leighton's Point on the north and **Denbow's Point** on the south. Four miles above the entrance is what is called **The Falls**, situated on the North Branch, and very dangerous on account of the strong set of the water over them on the flood tide. The town of **Dennysville** is situated about six miles above The Falls, and has some lumber trade; but none but those thoroughly well acquainted with the dangers of the approaches, or furnished with an experienced pilot, dare attempt to go up this river. At Dennysville the stream is a mere creek.

The dangers of the navigation of the branches of the Cobscook River are such that no insurance company will take a risk on a vessel engaged in this trade.

Red Island.

Just above Birch Point, on the northern side of Cobscook Bay, lies Red Island, about half a mile from the eastern shore. It is rocky,—the rocks being of a peculiar red color, like that of red gravel,—and the top of the islet has a few stunted bushes upon it. It is very bold to, except on its northwestern side, where a ledge, bare at half-tide, makes out for about one hundred yards.

East Bay.

About a mile above Red Island is the entrance to East Bay, which makes in to the northward, between **East Point**, on the eastern shore, and Garnett's Head, which latter separates the bay from the entrance to Pembroke River. There is good water in it, and it affords excellent anchorage, but is otherwise of no importance. Its northern shores show a grassy head, called **Red Head**, with cliffs of the color of red gravel, backed by a handsome grove of trees.

Garnett's Head.

Garnett's Head is a high hill, partly wooded, with most of its slopes under cultivation. Its southwestern point is wooded with small birch and other trees and is quite steep-to. A house and barn, widely separated, are seen on the cleared portion of the head.

Above the entrance to Cobscook River the western shores of Cobscook Bay are gently sloping and all under cultivation.

Leighton's Head.

Leighton's Head, or **Leighton's Point**, as it is sometimes called, is the western point of entrance to Pembroke River, and is composed of gently sloping cleared lands with one or two houses on it. It forms the northern point of Cobscook River entrance. Northward from this point the western shores of Pembroke River are low, smooth, cleared and cultivated.

Coggins' Head.

Coggins' Head, which lies on the eastern shore, (the first head above Garnett's,) presents a bluff face on the water side, and has a few scattered trees upon it. Here are built the lower wharves of the Pembroke Iron Works, which are used in winter, and by vessels whose draught does not admit of their going up to the Works.

Passing Coggins' Head, we open a long narrow cove, called Coggins' Cove, with straight shores, rather steep on the southern side, and lower and more gently sloping on the northern banks. The northern shores are formed by a low, well-wooded head, called **Hersey's Head**, from which the cove is sometimes called **Hersey's Cove.** It is about seven miles above Estes' Head, and here is the common anchorage. **Coggins' Cove.**

Just above Hersey's Head is Hersey's Point. It is only about twenty-five or thirty feet in height, but is a very prominent, rocky and precipitous bluff, dotted with scattered clumps of trees, and with its rocks overhanging the stream. It is sometimes called **Small's Head.** Opposite to it, on the western shore of the river, lies **Small's Island,** a low islet, partly wooded, with a wharf and a small fish-weir built out from it. The river here is about half a mile wide. **Hersey's Point.**

Half a mile above Hersey's Point is a low, rocky point, covered with a growth of scrub pine and fir, and called **Hersey's Upper Head.** A ledge makes off from it in a southwesterly direction.

About a mile above Hersey's Point the river branches at what is called **The Divide,**—the western branch running northwestward to the western end of the town of Pembroke, and the eastern branch northeastward up to the Iron Works. The point separating the two at The Divide is called **Hardy's Point.** The landing of the town of Pembroke is about a mile and a half above Hersey's Point, and here vessels lie aground alongside the wharves at half-tide.

DANGERS

IN APPROACHING AND ENTERING PEMBROKE RIVER.

I. ***From the vicinity of Eastport.***—Leaving the anchorage at Eastport, bound up the Pembroke River, there will be seen, when abreast of Buckman's Head, a red spar-buoy on the western side. This is on Buckman's Ledge, which has about two feet at low water, and extends off from the head in a southerly direction about two hundred yards. The buoy is placed in three fathoms, on the southern end of the ledge, and is marked No. 2. ***Buckman's Ledge.***

Passing it, the course leads for Estes' Head, which may be passed close-to, and a red spar-buoy will be seen off the southern face of Shackford's Head. This buoy, which is marked No. 4, is placed to mark the southern extremity of Shackford's Ledge, making off from the head in a **S SE.** direction. It is in three fathoms, on the southeastern side of the ledge, and after passing it a line of ledges will be seen on the western shore making off to the northward from Cooper's Island. These are the Cooper's Island Ledges, are mostly bare at half-tide, and extend along the shore of Seward's Neck for about three-eighths of a mile from Cooper's Island. They are not buoyed, but a buoy will be recommended to mark them. ***Shackford's Ledge.*** ***Cooper's Island Ledges.***

Passing these ledges another red spar-buoy will be seen a little over a mile to the northward, off the western end of Goose Island. This marks Goose Island Ledge, with three feet at lowest tides, and lying to the westward of Goose Island, on the eastern side of the channel. The buoy is placed in eighteen feet water on the *northern* side of the ledge; but a better position would be on the *western* or *channel end* of the shoal. Mariners beating to windward must bear in mind the position of this buoy. ***Goose Island Ledge.***

When past Goose Island the course turns more to the westward, past Gove Point on the south and Birch Point on the north, and over towards Red Island; and then turns to the northward towards Garnett's Head, the eastern point of the entrance to Pembroke River. On the western shore, south of this head, will be seen a black spar-buoy. This is on Clarke's Ledges, which lie about a quarter of the way from the western shore, and are out at half-tide. The buoy is the first black buoy met with in this passage,—is marked No. 1, and placed in three and a half fathoms on the eastern end of the ledges. ***Clarke's Ledges.***

Gangway Ledge, which lies **SW.** by **W.** from Garnett's Head and is awash at low water, is also marked by a black spar-buoy, (No. 3,) which must be left to the westward. It is placed **N NE.** of the shoal, in five fathoms, and may, therefore, be approached closely. ***Gangway Ledge.***

Two-Hour Rock is the next danger met with after passing Coggins' Head. It is out at one-third ebb, and lies on the western shore, a short distance below Hersey's Head. The buoy, which is black and marked No. 5, is in six feet water, on the edge of the rock, and must be left to the westward, as there is no passage between it and the shore. ***Two-Hour Rock.***

After passing Two-Hour Rock, a black spar-buoy will be seen to the northwestward. This is on the western end of The Middle Ground, which has two feet at low water. When in position the **Winter Wharves** bear from the buoy **N NE.**, and after passing this there are no dangers until up with Hersey's Upper Head, off which a red spar-buoy will be seen. This buoy is on the southwestern end of *Hersey's Upper Head Ledge*, which is covered at half-tide. The buoy is marked No. 8, placed in seven feet water, and must be left to the eastward. When past it, steer up for the eastern or western branch of the river. ***The Middle Ground.***

Hardy's Point Ledge. On approaching Hardy's Point a black spar-buoy will be seen to the southward of it, which marks the end of a half-tide ledge called Hardy's Point Ledge. The buoy is marked No. 9, bears about **S.** by **E.** from Hersey's Upper Head, and there is no passage between it and the point.

In the eastern branch, which leads up to the Iron Works, the eastern edge of the channel is marked by a red spar-buoy, which serves to keep vessels off *the flats making out from the eastern shore.* There are several buoys above Hardy's Point; as on *Bridge's Ledge* a black spar, No. 11, on *Small's Point Ledges* a red spar, No. 10, on *Hardy's Upper Point* a black spar, No. 13, and on *Stoddard's Point* a red spar, No. 12; but, as it is impossible for vessels to pass above Hardy's Point without an experienced pilot, and rarely without a steam-tug ahead, (and then only at high water,) mention of them is unnecessary.

All the buoys in the Pembroke above The Middle Ground are taken up in the winter.

SAILING DIRECTIONS

FOR APPROACHING AND ENTERING PEMBROKE RIVER.

I. ***From the vicinity of Eastport.***—Pass Estes' Head close aboard, and when abreast of it, steer **W.** by **N.**, which course continue for about half a mile, or until the sandy cliff on the south end of Shackford's Head bears **N.** ¾ **W.**, when steer **NW.** ¾ **N.**, (**NW.** by **N.** if the tide be flood,) which course will lead past Shackford's Head and up with Gove Point. On this course, when past Cooper's Island, the shore of Seward's Neck must not be approached nearer than five hundred yards, as there are *several sand-spits on that side,* over which the tide runs violently. *If intending to anchor in Small's Cove,* as soon as you have passed the northern end of Cooper's Island Ledges haul right into the cove. There is nothing in the way, and you may anchor at discretion in good water. *But if bound up river,* continue the **NW.** by **N.** course up to Gove Point, when steer **N NW.** for Red Island, passing it close-to. Keep close to it to avoid being set up into the Cobscook River by the very strong flood tide, which here runs with great velocity; and when abreast of **Eastern Point,** (the eastern point of entrance to East Bay,) steer **NW.** ¼ **N.** for Garnett's Head, which you must pass close-to. Always keep the eastern shore aboard in this vicinity, as the western shore is ledgy and shoal, as may be seen by the black buoys. When abreast of Garnett's Head, steer **NW.** by **W.** ¾ **W.**, and when a little above the head, haul up **NW.** ½ **W.** for the black buoy on Gangway Ledge. This course will pass to the westward of and close to a long point with a fish-weir on it, behind which the land rises to a high, steep hill, with clumps of trees upon it and a group of houses at its base. This is **Coggins' Head,**—(see page 34,) and here are built the **Lower** or **Winter Wharves** of Pembroke. Pass to the eastward of the Gangway buoy, about one hundred yards distant, and steer **NW.** ½ **N.**, leaving the black buoy on Two-Hour Rock to the westward; and when fairly opposite to Hersey's Head round to and come to anchor in from three to four fathoms. Above this, vessels, even of light draught, cannot go without lying aground at low water. *But, intending to go up as far as Hardy's Point,* continue the course up river, passing to the westward of the red buoy on Hersey's Upper Head Ledge. When up with the black buoy on Hardy's Point, and bound up to the Iron Works, steer between that buoy and the red one on the eastern side of the entrance.

DANGERS

IN APPROACHING AND ENTERING PEMBROKE RIVER.

II. ***Coming from the Southward, between Treat's Island and the mainland.***—To the northward of Lubec Narrows there are no dangers in this passage until past Dudley Island, near ***Paddy's Ledge.*** which is Paddy's Ledge, a bare rock, lying about three hundred and fifty yards off the Treat's Island shore and a quarter of a mile **N.** of Dudley Island. It is tolerably bold-to, and forms the southern end of *a large ledge bare at low water,* about three hundred yards long in a **N.** by **W.** and **S.** by **E.** direction, and which has, besides Paddy's Ledge, several other bare rocks upon it. The principal of these is *Gull Rock,* lying about sixty yards to the northward of Paddy's Ledge, and surrounded by shoal water. There is, however, a good passage, with about four fathoms of water, between this ledge and Treat's Island; but neither ledge is buoyed.

The northwestern point of Treat's Island is shoal to the distance of nearly a quarter of a mile. At the western end of this shoal there is a small island, called **Burial Island,** (see page 25.) It is low, covered with grass, and has three or four trees and a single house upon it. *A bare rock, not named, lies to the northeastward of it.*

Dangers--Pembroke River.

On the western side of the channel, nearly due **W.** from Burial Island, and about three-eighths of a mile from the shore of Seward's Neck, there is *a group of ledges without buoys, bare at half-tide,* lying to the northeastward of Major's Island,—the northernmost being a quarter of a mile distant and the southernmost about three hundred and fifty yards. They always show themselves, and are quite bold-to. The name *Major's Island Ledge* has been suggested for them. The channel between these ledges and Burial Island is three-eighths of a mile wide.

Shackford's Ledge.

After passing Burial Island there are no dangers until up with Shackford's Head, when you must look out for Shackford's Ledge, which makes off from the head in a **S SE.** direction. A red spar-buoy, marked No. 4, is placed on the southern end of the ledge, in good water. Passing to the westward of it, the course leads to the northwestward, between Shackford's Head and Cooper's Island, and to the eastward of a line of ledges called *Cooper's Island Ledges,* mostly bare at half-tide. These ledges extend to the northward from Cooper's Island for about three-eighths of a mile, and are not buoyed.

Goose Island Ledge.

After passing Cooper's Island Ledges, a red spar-buoy will be seen a little over a mile to the northward, off the western end of Goose Island. This marks Goose Island Ledge, which has three feet at lowest tides, and lies to the westward of Goose Island, on the eastern side of the channel. The buoy is placed in eighteen feet water on the *northern* side of the ledge, and not to the *westward,* as it should be; and this must be borne in mind when beating to windward.

Clarke's Ledges.

When past Goose Island, the course turns more to the westward, leading toward Red Island, and then to the northward, toward Garnett's Head, the eastern point of the entrance to Pembroke River. On the western shore, to the southward of this head, will be seen a black spar-buoy. This is on Clarke's Ledges, which lie about a quarter of the way from the western shore and are out at half-tide. This is the first black buoy met with in the bay. It is marked No. 1, and is placed in three and a half fathoms, on the eastern end of the ledges.

The dangers in Pembroke River above Garnett's Head are described on pages 35–36.

SAILING DIRECTIONS

FOR APPROACHING AND ENTERING PEMBROKE RIVER.

II. ***From the Southward, between Treat's Island and the mainland.***—When through Lubec Narrows, steer **NW. ¾ N.** until past Dudley Island, and its northern point is brought to bear **E. ⅞ S.**, in range with the middle of Friar's Head. Pass the western point of the island at a distance of about four hundred yards and haul up **N. ¼ E.** for the middle of Broad Cove, and continue this course until Estes' Head bears **E.** by **N. ¾ N.**, when steer **NW. ¾ N.**, with Treat's Island over the stern bearing **SW. ¾ S.** This course will lead past Shackford's Head and up to Gove Point. When past Cooper's Island, keep about five hundred yards from the shore of Seward's Neck, as there are *several sand-spits lying along that shore,* over which the tide runs with great velocity. *If intending to anchor in Small's Cove,* haul into it as soon as the northern end of Cooper's Island Ledges is passed. *If bound up the river,* continue the course **NW.** by **N.** (or **NW. ¾ N.**, according to tide) until abreast of Gove Point, when steer **N NW.** for Red Island, which pass close-to. (It is necessary to keep this shore aboard in order to avoid being set up into Cobscook River by the very strong flood tide, which here runs with great rapidity.) Continue the **N NW.** course past Red Island until abreast of East Point, when steer **NW. ¼ W.** for Garnett's Head, which pass close-to. Keep the eastern shore aboard in this vicinity, as the western shore is ledgy and shoal. When abreast of Garnett's Head, steer **NW.** by **W. ¾ W.**, and when a little above the head haul up **NW. ½ W.** for the black buoy on Gangway Ledge, and proceed as directed for Pembroke River, on the preceding page.

Pembroke River is called, on the old county maps, **Pemaquan River** from its source in **Pemaquan Lake** to Hersey's Head, and from Hersey's to Garnett's Head it is called **Pemaquan Bay.** It is now, however, generally known as Pembroke River throughout its entire length.

TIDES.

No vessels should ever attempt to enter the bay or its rivers without a pilot, whose local knowledge of the set and turn of the tides will be all that is needed for safe navigation. It may be as well, however, again to call attention to the strong set of the flood into Cobscook River, which compels vessels to keep close to the eastern shore. The tide also runs violently over the sand-spits off Seward's Neck. The tide tables of Eastport Harbor, on page 27, will serve for the lower portion of this bay.

VARIATION OF THE COMPASS.

An approximate value of the magnetic variation for the entrance to Lubec Narrows, in 1879, is **18° 27′ W.** The annual increase is between 2′ and 3′.

ICE IN EASTPORT HARBOR.

This harbor is never so much obstructed by ice, even in severe winters, as to interfere with the movements of either steamers or sailing-vessels. Friar's Roads are not used as an anchorage in winter; and Broad Cove, which is the real harbor, is always free. The great rise and fall of the tides keeps the wharves clear; and the only formations in Friar's Roads are fields of "drift-ice" of small extent, which, coming from the St. Croix and adjacent waters, pass through the Roads to sea; and these are neither heavy nor extensive. The rapidity of the tidal currents is such as to effectually prevent local formations, and also to overcome the influence of the winds on "drift-ice."

COAST OF MAINE

TO THE WESTWARD OF WEST QUODDY HEAD.

From West Quoddy the coast has a general direction about **W.** by **S.** ½ **S.** for about five miles to Bayley's Mistake, and is for the most part high, rocky and barren, with precipitous faces to seaward, and quite bold-to, except on the south side of West Quoddy, where the land is lower, and houses are visible just back of the beach.

BAYLEY'S MISTAKE

is a large cove running about **NNE.** and about a mile long. It is of no importance as a harbor of refuge except in cases of the greatest necessity. On approaching it from the eastward, **Jim's Head**, the eastern point of entrance, will be seen and recognized as a bold, bluff and rocky head, with leafless fir and spruce on top. The harbor will be recognized by a flat mountain with three peaks, which appears nearly in the middle and standing some distance back from the shore. Several houses will be seen at the base of this mountain.

The entrance to Bayley's Mistake is between Jim's Head on the east and **Balch's Head** on the west. The latter is lower than Jim's Head, more gently sloping, and has a few trees on it.

DANGERS

IN APPROACHING AND ENTERING BAYLEY'S MISTAKE.

In the middle of the entrance to this cove lies a ledge, bare at two hours' ebb, called *Bayley's Ledge*, which is the only danger encountered in entering, and is not buoyed.

SAILING DIRECTIONS

FOR APPROACHING AND ENTERING BAYLEY'S MISTAKE.

As before remarked, this harbor must not be attempted unless in case of the most urgent necessity. It is only fit for light-draught vessels, and is very rarely used. To enter it, run close along shore until Jim's Head is made, which steer for, rounding it close-to, and keep to the northward, anchoring when well inside the head.

Into this harbor a depth of four fathoms can be taken; but, being open to southerly winds, it is entirely unsafe for anchorage. In moderate weather, with the wind to the northward, vessels of light draught may run in here to wait for a favorable tide. But in heavy southerly weather, unless it be the only chance of saving the ship, the entrance must not be attempted.

HAYCOCK HARBOR.

From Bayley's Mistake to Haycock Harbor the distance is not quite three-quarters of a mile, and the course about **SW.** by **W.** It is improperly called a harbor, as it is a mere cove, affording no shelter except in the calmest weather. In fine weather vessels whose masters are well acquainted with the cove and its dangers sometimes run in, and lie aground at half-tide. But no one should ever attempt to remain in it if there is any likelihood of foul weather. The water is shoal and the shores high and well wooded.

MOOSE RIVER.

The entrance to this river (which is sometimes called **Moose Cove**) is about a mile to the westward of Haycock Harbor. It is not fit for a harbor of refuge, and should not be used as such unless in very urgent cases, as the entrance is obstructed by ledges, (none of which are buoyed,) the channel is narrow, there is no shelter except in northerly winds, and the holding-ground is not good. Vessels caught by foul weather in this vicinity can always make Little River, six miles to the westward,—an excellent harbor in all winds.

On approaching Moose River, a high, bluff, well-wooded head, called **Eastern Head**, will be seen on the eastern side of the entrance. Its highest point is well back from the shore, and is grassy, with a number of small spruce and fir trees upon it, while the western point is low and rocky. The western shores are lower than the eastern, and are mostly covered with bushes. There is a small settlement at the head of the river, which has grown up around the mills.

Approaches to Little River from the Eastward, the Lt.Ho. bearing N.W. by W distant 3 Miles.

Approaches to Little River from the Westward, Little River Island bearing N.N.E. distant 2¼ Miles.

DANGERS

IN APPROACHING AND ENTERING MOOSE RIVER.

Long ledges make off from Eastern Head to the southwestward for a considerable distance, and are generally called *Eastern Head Ledges*. They are mostly bare at half-tide, and are not buoyed. If they are avoided the harbor may be entered safely.

SAILING DIRECTIONS

FOR APPROACHING AND ENTERING MOOSE RIVER.

The only rule for entering Moose River is to keep the western shore aboard until well past Eastern Head Ledges, and anchor when well inside. In fine weather a pilot may generally be obtained by making the usual signal; but it is at best a poor harbor, and is rarely entered; although five fathoms may be easily taken into it.

LITTLE RIVER.

From Moose River the coast has a general direction **SW. ½ W.** for nearly four miles, to **Sandy Point**, and thence **W. by S. ½ S.** for a little over two miles, to the entrance to Little River. The shore is generally high, rocky, barren and steep-to. Just to the eastward of this entrance, and very noticeable, will appear **Long Point**, high, rocky, and fringed with a few stunted spruce and fir. To the westward of this is seen, first, **Schooner Brook Head**, high, bare and rocky, and next, to the westward, **Otter Head**, the eastern extremity of The Lookout, which is also rocky, but lower.

The entrance to Little River is thirteen miles **SW. by W. ½ W.** from West Quoddy Head. It is an excellent harbor, very little obstructed, and may be safely entered by strangers by following the sailing directions. It runs nearly **NW. by W.** for about a mile and a half, but is navigable only up to the town of Cutler, situated on its northern bank, just above its mouth. It is probably more frequently resorted to as a harbor of refuge than any other entrance between Englishman's Bay and Eastport, as it affords excellent anchorage for vessels in all winds. The bottom is stiff grey mud.

It must be remarked that little in the shape of stores or provisions can be obtained here,—the residents mostly living on fish, of which they obtain only enough for their own consumption.

Vessels bound to Eastport and St. John may here obtain good pilots. The coast is well known to many of the inhabitants, who fish along shore and are acquainted with every inlet and cove.

Little River entrance is between Eastern Knubble on the north and Little River Head on the south, and the most prominent objects seen on approaching it from the eastward will be the light-house and bell-tower on Little River Island. There are two channels—one leading between Eastern Knubble and Little River Island, called the **Main Channel**; and one between the island and Little River Head, called the **Western Channel**. The latter is shoal but has no obstructions.

Eastern Knubble.

Eastern Knubble is a high, precipitous and rocky head, crowned with a few spruce and fir trees; and to the eastward of it there will be seen a high, square, bare, tower-like head, called **Great Head**, which is a good landmark if the coast is made in thick weather and the light-house cannot be seen.

Little River Head.

Little River Head, on the southwestern side of the entrance, is of moderate height. Its northern bluff is wooded with a small growth of fir, but the rest of the surface has been cleared and the stumps of the trees left standing; which, being whitened by exposure, present the appearance of headstones in a graveyard;—this very peculiar appearance marking the head with certainty. The rocks on its southern and eastern faces have large white spots painted on them just below the top of the cliffs, to enable vessels making the harbor from the westward to recognize the entrance, when, from the peculiar formation and trend of the shore, no opening can be seen until to the eastward of Little River Head. These painted rocks are also useful to vessels coming from the eastward in thick weather; for Schooner Brook, which is just to the eastward of the mouth of the river, is so much like the latter in appearance that it would be apt to be mistaken for it in such weather, if it were not for the painted rocks. Vessels have sometimes made this mistake and some have been lost,—Eastern Knubble, which looks a good deal like Little River Island, having been taken for that island and a course shaped for the harbor.

Little River Island and Light-house.

Little River Island lies in the middle of the entrance to the river. It is small and rocky and crowned with a thick growth of stunted fir. On its northwestern side the land is cleared and gently sloping, and in the middle of this cleared space is built the light-house, called Little River Light-house. It is a stone tower, painted white, attached to the eastern end of the keeper's dwelling, which is also of stone. The tower is twenty-eight feet high, and shows a fixed white light, of the fifth order of Fresnel, varied by flashes at intervals of a minute and a half, from a height of forty feet above the sea, visible eleven miles. This light is not visible on any bearing to the eastward of **N.** Its geographical position is

Latitude	44° 39′ 45″ N.
Longitude	67° 12′ 5″ W.

Fog-signal.

A white pyramidal structure about two hundred feet **S. by E.** from the light-house contains the fog-bell, which is struck by machinery twice a minute.

The rocks upon Little River Island also have white spots painted upon them. The Main Channel is between Little River Island and Eastern Knubble, although there is a good channel with eight feet at low water on the southern shore, between the head and the island. (See preceding page.)

On the northern bank of the river, nearly abreast of the light-house, a high, steep hill, called **The Lookout**, is seen just back of the shore.

Eastern Head. Just to the westward of Eastern Knubble is Eastern Head, high, precipitous, and crowned with trees. The banks of the northern shore of the river are all steep and rocky.

Ackley's Point, a little below the town, is a high, rocky and barren bluff, on which there is one house, painted brown, standing in a grove of low firs.

The southern shores of the river are lower than the northern, covered with bushes, and here and there groups of houses close to the shore-line. Just to the westward of Little River Head is another smaller bluff, called **Little Head**, also rocky, steep, and crowned with fir.

The town of **Cutler** is built on the north bank, a little above the light-house, on high ground, extending from the shore to the foot of the hills behind. In **The Narrows**, just above the town, are the remains of a mill-dam.

The Western Channel into this river is unobstructed, and about four hundred yards wide, with eight feet at low water.

Considerable lumber business is done in Cutler, and there is also some ship-building.

DANGERS

IN APPROACHING AND ENTERING LITTLE RIVER.

Eastern Head Ledge. I. ***Coming from the Eastward.***—In coming into this harbor beware of Eastern Head Ledge, bare only at low spring tides, and lying off Eastern Head about one hundred yards from the northern shore. The ledge runs **NW.** and **SE.**, is about fifty yards long, and is not buoyed; but a buoy will be recommended to mark it; as, if properly marked, the entrance would be perfectly safe for strangers.

Transport Ledge. Transport Ledge, which lies in **Cates' Cove**, is a foot out at low water, and lies about fifty yards from low-water line, off **Transport Point**, the eastern point of Cates' Cove. It is not, therefore, in the way, except for vessels using the Western Channel, and is not buoyed.

These are all the dangers in the approaches to this harbor by the Main Channel.

Long Ledge. In the Western Channel the only danger at the entrance is Long Ledge, making off from the southwestern shore of the river abreast of Little River Island, and for the most part dry at low water. Between this ledge and the head is a small cove, generally known as **Long Ledge Cove.**

SAILING DIRECTIONS

FOR APPROACHING AND ENTERING LITTLE RIVER.

I. ***Coming from the Eastward.***—Bring the light-house to bear **W. ¾ S.** and steer for it until close-to, when, if bound in by the Main Channel, pass to the northward of it, keeping it close aboard to avoid being set on Eastern Head Ledge. When past the island, steer directly for the low land at the head of the river, having the church in Cutler a little to the northward of the course. Anchor anywhere abreast of the town, but the best anchorage is near its lower end, just above Ackley's Point, where the depth is from four to five fathoms and the holding-ground excellent, (being composed of stiff grey mud,) but the channel is somewhat narrow.

If coming in by the Western Channel, pass between Little River Head and the island, keeping about midway of the passage, and when abreast of the western end of the island gradually haul over to the northern shore. Through this channel eight feet at mean low water can be carried.

The entrance to Little River bears **NW.** by **W. ¼ W.** from **Southwest Head**, the southern point of Grand Manan, distant a little over twelve miles. Vessels coming from that vicinity may, when about a mile and a half to the southwestward of the head, steer **NW. ¾ W.**, which, if made good, will bring them up with Little River Light-house, when the directions given above must be followed.

DANGERS

IN APPROACHING AND ENTERING LITTLE RIVER.

Eastern Head Ledge. II. ***Coming from the Westward, along shore,*** there are no dangers in the approaches, the shores being tolerably bold-to and safe; but on entering the river look out for Eastern Head Ledge, on the eastern shore, about one hundred yards to the southward of Eastern Head. It lies **NW.** and **SE.**, is about fifty yards long, and at low spring tides is bare.

If coming in by the Western Channel, between the island and the head, look out for Long Ledge, which makes off from the southern shore to a considerable distance, opposite to Little River Island, and is for the most part dry at low water. When past this, edge over towards the northern shore to avoid *Transport Ledge*, which lies in Cates' or **Willard's Cove**, about fifty yards from the low-water line. It is a foot out at low water. ***Long Ledge.***

SAILING DIRECTIONS

FOR APPROACHING AND ENTERING LITTLE RIVER.

II. ***Coming from the Westward, along shore.***—When Libbey Island light bears **N NW.**, distant three miles, steer **NE.** by **E. Easterly** until Little River Island bears **N NE.** and the southern point of Deer Island (on the eastern side of the entrance to Little Machias Bay) bears **W.** by **S.** $\frac{1}{4}$ **S.** Now steer **NE.** by **N.** $\frac{3}{4}$ **N.**, nearly for the eastern point of Little River Island. Give this point a berth of about one hundred and fifty yards, and, as soon as the light-house and bell-tower are open, haul up gradually until you head **N.**, having the island to the westward. When nearly abreast of the light-house, and the river is fairly opened, haul up gradually to **NW.** and run directly in for the low land at the head of the river, having the church a little to the northward of the course; and when abreast of Ackley's Point, round to and come to anchor. Or, wishing to proceed farther up, anchor anywhere off the town, with good holding-ground. But remember that, the farther up, the less water, as the channel shoals rapidly. Off Ackley's Point the depth is from four to five fathoms.

In passing Little River Island give it a berth at all times of one hundred and fifty yards.

The flood tide along shore sets to the eastward and the ebb to the westward. The current runs with considerable velocity, so that few vessels can beat against it. On the other hand, a vessel with a favorable tide can make excellent headway, even in a very light head-breeze.

LIGHT-HOUSE.

NAME.	Latitude N.	Longitude West.		Fixed or Revolving.	Interval of Flash.	Height above sea-level.	Distance visible in nautical miles.
		In arc.	In time.				
	° ′ ″	° ′ ″	h. m. s.		m. s.	Feet.	
Little River Light-house	**44 39 45**	**67 12 5**	**4 28 48.3**	**F. V. F.**	**1 30**	**40**	**11**

VARIATION OF THE COMPASS.

The approximate variation for the year 1879 is 17° 34′ W., and the annual increase about 2′.

ICE IN LITTLE RIVER.

This harbor is unobstructed by ice even during the severest winters, and is accessible at all times for both sailing-vessels and steamers. The absence of heavy formations may be attributed, as in Eastport, to the strength of the tidal currents; but besides this influence, the course of the river (nearly **NW.** and **SE.**) permits the prevalent winds from the northward and westward to assist the current of ebb in carrying the ice to sea, and prevents the current of flood from bringing ice in from outside.

LITTLE MACHIAS BAY.

Two miles to the westward of Little River Head is the entrance to Little Machias Bay, which is of little importance, although having tolerably good water; as its navigation is rendered dangerous by the ledges and rocks off its mouth, and it is open to southerly and southeasterly winds. Between Little River and this bay the coast has a general trend about **W.** $\frac{1}{2}$ **N.**, but its outline is irregular, with several indentations. The land is high, steep and thickly wooded.

The entrance to the bay is between **Dennison's Point** on the east and **Davis' Point** on the west, and is three-quarters of a mile wide, but much obstructed by islets and ledges, rendering the passage unsafe for strangers. It is three-quarters of a mile long **N.** by **E.** and **S.** by **W.**, wider at its head than at its mouth,—being a mile and a half wide at its northern end, where there is a small settlement known as **Little Machias.** The shores are mostly rocky and barren,—the eastern shore being dotted with houses, but the western bank very thinly settled. Most of the land is wooded with fir trees.

Deer Island, which lies a mile to the eastward of the entrance and close in with the shore, is rocky and wooded with the usual growth, and is about a quarter of a mile long in a **NE.** and **SW.** direction. Its shores are bold-to. The channel from the eastward passes between the island and the Black Ledges on the western shore. ***Deer Island.***

Cape Wash, on the western shore, is a rocky islet, lying close in with Davis' Point, and has one house on it, near its northern end.

The Old Man. The Old Man is a small islet lying three-quarters of a mile to the southward (**SE.** by **S.** ½ **S.**) from Cape Wash, a mile and a quarter **SW.** by **W.** ½ **W.** from Deer Island, and a mile and a half from Cross Island, at the entrance to Machias Bay. All of these islets are bold-to.

When inside the bay, the best anchorage will be found on the western shore, in a depth of from two to five fathoms; but it is unsafe ground on account of being open to the southeastward.

The *Black Ledges* lie exactly in the middle of the entrance, nearly midway between Cape Wash and Deer Island, and are very dangerous. They are out at low water, and may be avoided by keeping either shore close aboard. There is no passage between Cape Wash and Davis' Point, but there is said to be a good channel between it and the Black Ledges.

Vessels entering Little Machias Bay from the eastward should pass to the southward and eastward of Deer Island and steer up to the northwestward, toward Dennison's Point, keeping it a little to the northward of the course until past the Black Ledges. When past these, they may alter their course a little to the westward; and, when fairly in the bay, steer over towards the western shore and anchor according to draught. These are the only directions that can be given for this bay, which is of no use as a harbor of refuge and is never entered by strangers. Four fathoms at mean low water can be taken up to the anchorage; but it must be remembered that the Black Ledges are not buoyed.

MACHIAS BAY.

Just to the westward of Little Machias Bay lies a large, high, rocky island, called Cross Island, on the western side of which is the main entrance to a large arm of the sea, known as Machias Bay. It is six miles long and from two and a half to four miles wide, and receives at its northwestern end the waters of Machias River. Its entrance is forty-six miles **NW.** ½ **W.** from Bryer's Island Light-house, twenty-four miles **NW.** by **W.** ½ **W.** from Gannet Rock Light-house, ten miles and a half **NW.** ¾ **W.** from Machias Seal Island Light-houses, and twenty-one miles **W SW.** from West Quoddy Head.

The entrance to Machias Bay is between Cross Island on the east and Libbey Island on the west, and is nearly two miles and a half wide. There is, however, a good channel, though unsafe for strangers, between Cross Island and the mainland to the eastward;—the channel leading to this latter passage passing between The Old Man and Cape Wash, and thence towards **Mink Island**, which is left to the westward, after which the passage is clear. This entrance is called **Cross Island Narrows**, and has several bad ledges in it.

The town of **Machiasport** is situated on the western bank of Machias River, near its mouth, and the city of Machias on the south bank of the same river, about four miles above the port. It has a very large lumber trade, some ship-building, and is the county seat of Washington County.

Cross Island. On the eastern side of the main entrance to Machias Bay lies Cross Island, a very remarkable looking island, crowned with a thick growth of sickly and stunted fir. It is a perpendicular wall of dark rock;—its sides being so bold-to as to allow of a vessel running alongside anywhere from its eastern to its southwestern end, where *a large reef makes out*, which runs nearly a mile and a quarter in a westerly direction. The island lies **E.** and **W.**, and is two miles long and about a mile and a half wide. Three small islets lie off its eastern shore in a line nearly **N.** and **S.** from each other;—the northernmost, called **Scotch Island**, lying on the south side of the eastern entrance to Cross Island Narrows, and the other two, under the common name of **Double-Headed Island**, being connected at low water. They are all tolerably bold-to.

The northern point of Cross Island is called **Quaker Head**, is of moderate height, and covered with spruce and fir. The western point is known as **Western Head**, and is also wooded and of moderate height. Between this head and another to the eastward of it a small cove makes into the northern shore of the island, called **Northern Harbor**, and affords good anchorage, except in northerly and northwesterly winds.

Libbey Islands. Libbey Islands are two rocky islands on the western side of the main entrance, lying **NE.** and **SW.** of each other, and, at low water, nearly joined by reefs. They lie on the western side of the main entrance. The western and larger island, which is about five-eighths of a mile long and quite narrow, is entirely bare of trees, but has two houses on its summit near its northern end. The eastern islet, which also marks the eastern side of the western entrance, has a few dead spruce and fir near its northern end, but is otherwise rocky and bare of vegetation.

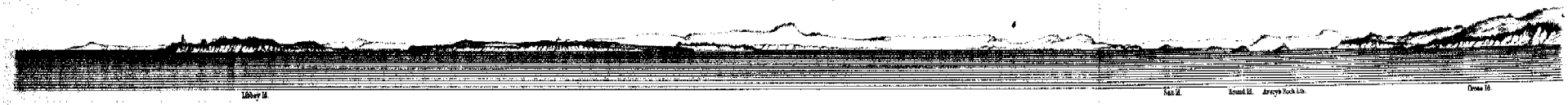
Libbey Island Light-house. Libbey Island Light-house is built on the west end of the westernmost island, and is a guide not only to Machias Bay, but also to Mason's or Englishman's Bay, to the westward. The light-house is a granite tower, thirty-five feet high, and the keeper's dwelling is painted brown. The light is a fixed white light, of the fourth order of Fresnel, and is shown from a height of fifty-two feet above the sea, visible twelve nautical miles. Its geographical position is

Latitude ..... **44° 34′ 5″ N.**
Longitude ..... **67° 22′ 2″ W.,**

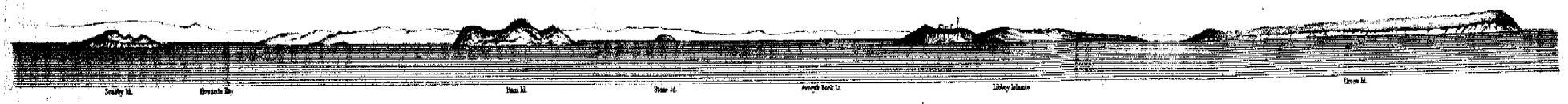
and it bears from—

	Miles.
Southwest Head, (Grand Manan,) W. by N.	20
Gannet Rock Light-house, W NW.	25
Machias Seal Island Light-houses, NW. ¾ W.	12
Bryer's Island Light-house, NW. ½ W.	46
Seal Island Light-house, (off Cape Sable,) NW. by N. ¾ N.	92
Mount Desert Rock Light-house, NE. by E. Easterly	49

4



Entrance to Machias Bay from the Eastward, Libbey Id.Lt.Ho. bearing N.W.¼ W. distant 3¼ Miles.



Entrance to Machias Bay from the Westward, Libbey Id. Lt. Ho. bearing N.E. by N. distant 2¾ Miles.

There is a fog-bell near the light-house, supported by a wooden framework and struck by machinery. **Fog-signal.**

Passing in by the main entrance, there will be seen to the westward, about a mile to the northward of Libbey Islands, a barren, rocky island of moderate height, covered with a thick growth of small fir, except at its southern end,—where is a remarkable round, bluff head with a white face, called **Stone Head**. The island is called Stone Island, and is on the western side of the western channel. **Stone Island.**

Half a mile to the westward of Stone Island lies Starboard Island, or, as it is frequently called, from the name of its owner, **Brown's Island.** It is rocky and nearly bare, and is remarkable for a high, bare, precipitous face at its northeastern end, which has a few spruce clinging here and there to its sides and summit. It is a little over half a mile from shore, and about twelve hundred yards to the westward of Stone Island; but strangers should not attempt to pass between this island and the mainland. Starboard Island has a group of houses and a wharf on its southwestern end. A long sand-spit or shingly reef, which makes off from Point of Main towards the island and extends nearly over to it, forms a good harbor for vessels of light draught in southerly and southeasterly winds. **Starboard Island.**

Point of Main, which is the southern extremity of the mainland on the western side of Machias Bay, is high, bare and rocky. A mile and a half to the northward of it is the entrance to Howard's Bay, which will be opened as soon as you are abreast of Stone Island. It is a beautiful cove, perfectly unobstructed, and has deep water; but is, unfortunately, open to southerly and southeasterly winds. It runs about **N.** and **S.** for three-quarters of a mile to the base of a high, steep, rocky mountain, known as **Howard's Mountain**, which hill may be recognized by its perpendicular faces to the eastward and southeastward. At the head of the cove is a beach composed entirely of small, rounded pebbles suitable for ballast. Vessels, if obliged to anchor in this bay, should lie close in under the eastern shore, where there is a turn in the trend of the shores into a small cove on the eastern side, making a fair lee in easterly and southeasterly winds. **Howard's Bay.**

Howard's Point is the eastern point of the entrance to Howard's Bay, and is high and wooded, as is also all of the shore between the bay and the entrance to Buck's Harbor, which is a mile and a quarter to the northward. Bare, rocky summits crop out here and there from among the trees. **Howard's Point.**

Buck's Harbor, which is an excellent harbor of refuge, with from three to six fathoms water, lies on the western shore of Machias Bay, about a mile and a quarter above Howard's Point and four miles above Libbey Island Light-house. The entrance to it is between Buck's Head on the south and Bar Island on the north, and is about three hundred yards wide. **Buck's Head** is a thinly wooded head of moderate height, descending on the east to a low, bare, rocky point; but, if entering the harbor, the head on that side will be found very abrupt and bold. A small, rocky islet, destitute of vegetation, lies off the head, about two hundred yards distant, and there is a line of ledges inside of it, to which the common name of *Buck's Head Ledges* is given. **Buck's Harbor.**

The northern side of the entrance to Buck's Harbor is formed by **Bar Island**, a high, rocky island, covered with small pine and spruce trees, and with precipitous faces, except at its southeastern end, where it descends gradually to a low, rocky point. The harbor is an excellent anchorage, except in southeasterly winds, and is much used by fishermen. The entrance, between Bar Island and Buck's Head, is obstructed only by the ledges above mentioned, which are bold and always show themselves. An excellent anchorage exists on the northern side of Bar Island, between it and Buck's Neck,—the latter being a low, cleared and grassy neck of land at the head of the harbor, and separating the north and south branches of the cove. It is low, nearly bare of trees, under cultivation, and thickly settled. Between this neck and Bar Island is formed a beautiful square basin, with excellent anchorage in all winds in from six to ten feet water. Mariners should note this, as there is nothing to prevent a stranger from entering this place and coming to anchor. Sailing directions will be given in the proper place. **Buck's Neck.**

Just to the eastward of Bar Island is another islet, called Yellow Island, remarkable for being composed of nearly white rocks. Its eastern end is formed by a high head called **Yellow Head**, which is high and bare, except on top, where grow a few stunted fir trees. Passing the head, there will be opened a larger island to the northward of it, and a little nearer the western shore, called Bare Island, and made conspicuous by two round, bare, rocky heads rising from the sand beach. The northern head is high and precipitous, the southern merely a huge boulder; and a few stunted fir trees cling around their bases. The rest of the island is low, and fringed with rocks except at its northern end, where there is a grove of small fir. **Yellow and Bare Islands.**

The main channel leads between Bare Island and **Chance's Island**, which is nearly due **E.** of it and a mile and a half distant. It lies on the eastern side of the bay, about three-eighths of a mile to the southwestward of the extremity of Sprague's Neck on the eastern shore, and is round, thickly wooded and of moderate height. Long dry ledges run to the southward from its southern end. Sprague's Neck is a long, narrow peninsula of the mainland, making out into the bay about a mile, thickly wooded and of moderate height. It is two and a quarter miles above Quaker Head, and the mainland to the southward of it is all thickly wooded. Its western extremity is a low, sandy point, with water-worn faces and scattered trees. **Sprague's Neck.**

On the western shore of the bay, about half a mile to the northward of Bare Island, lie three islets, the largest and westernmost of which is Salt Island, which lies three-eighths of a mile from the western shore, and is conspicuous for the high, bare, bluff head at its eastern end. Stunted fir and spruce cling to its sides, and there is a **Salt Island.**

small group of them on the eastern end of the head. Next to the eastward is **Round Island**, rocky and of moderate height, and covered with a thick growth of spruce and fir. Its eastern end is a round, precipitous head, also thickly wooded.

Avery's Rock and Light-house.

Channel or Avery's Rock, the southernmost of the three islets, lies to the southwestward of Round Island, and is perfectly bare and rocky, about twenty feet high, marks the turning point in the channel, and is always steered for in coming up the bay. It is quite bold-to, and may be passed close-to on either hand, although the rule is to pass to the eastward of it. On the rock is built a square brick dwelling, painted white, from the centre of which rises a low, square tower, showing a fixed red light, of the fifth order, from a height of sixty-eight feet above the sea, visible fourteen miles. It is officially known as Avery's Rock Light-house, and its geographical position is

Latitude.....44° 39′ N.
Longitude.....67° 21′ W.

Fog-signal. During thick weather a bell, struck by machinery, gives two blows in quick succession alternately with a single blow at intervals of thirty seconds.

Larrabee's Cove.

Salt Island and Round Island are exactly opposite to Sprague's Neck, (the latter being nearly a mile and a half distant from Round Island,) and they also lie on the southern side of the entrance to a large cove on the western shore, called Larrabee's Cove, with high, wooded shores, except on its northern bank, where they are mostly cleared and cultivated. It is two miles above Buck's Harbor, affords excellent anchorage in from two to three fathoms, and is commonly used by the coasters bound to and from Machias. A remarkable wooded point, called **Birch Point**, forms the northern point of entrance to this cove. It is nearly a mile to the northward of Salt Island, slopes gradually to the bay side, and is covered with a thick growth of spruce, birch and fir,—the admixture giving the foliage a peculiar rounding appearance.

Holmes' Bay.

Sprague's Neck, on the western shore, is the southeastern point of entrance to a large and wide bay which stretches away to the eastward for three miles and is called Holmes' Bay. At its mouth it is a mile and three-quarters wide, but it attains to its greatest width just to the northward of the entrance, where it is nearly three miles wide. From this point, however, it gradually diminishes in width until, at the settlement at its head, it is but a little over a quarter of a mile across. Its northwestern point of entrance is called **Holmes' Neck**, and is low, flat and cleared, quite green in summer, and faced by a fine beach. The trees stand somewhat back from the point, but there is a thick growth of them. From its extremity a long flat, bare at low water, makes out, and is known as **Holmes' Point Flats**.

Hog Island.

About half a mile to the northward of Sprague's Neck, in Holmes' Bay, lies Hog Island, low, and crowned with spruce and fir. Its southern end is flat, grassy and bare of trees; and long ledges, bare at half-tide and known as **Hog Island Ledges**, make out from its northern side almost over to the northern shore.

So obstructed is Holmes' Bay that no sailing directions can be given for it, and it is never used except by the small fishing boats which belong there. Its northern shore is tolerably well settled, and at the head of the bay there is quite a settlement occupying both shores.

Holmes' Neck is a little over six miles above the northern Libbey Island and about a mile to the northward of Round Island.

Sanborn's Cove.

Birch Point, on the western shore, separates Larrabee's Cove from Sanborn's Cove, a large and deep cove running to the westward, and affording excellent anchorage for coasters in from two to three fathoms. Here begins Machias River;—the entrance lying between Birch Point and **Holmes' Point**, the western end of Holmes' Neck. The village of **Machiasport** is situated on its western bank, a little over a mile above Birch Point,—its suburbs extending to the northern shore of Sanborn's Cove. When Birch Point is passed the anchorage will open, but the village will be seen on the hill side ahead.

Machias River.

Machias River flows into the northwestern corner of Machias Bay, but is difficult to navigate, and unsafe for strangers without a pilot. Vessels do not go above Machiasport unless they have on board some one well acquainted with the river. The principal trade on this river is in lumber.

Sanborn's Point lies on the western shore, just above Birch Point. It has an earthwork upon it which is now dismantled, built at the southern end of Machiasport.

Randall's Point.

On the eastern bank, above Holmes' Point, the shore is high and bluff, having sandy, water-worn faces from twenty to forty feet high, with birch and fir clinging to their sides. The first point on this side above Holmes' is Randall's Point, partly cleared and backed by trees, and with one or two houses upon it. Its western end shows a sand cliff about ten feet high, with a few low scrub upon its edge, and there is a small beach along its base. About half a mile above it is **Hooper's Point**, high and sandy, with bluff faces, and its summit cleared and fenced. One or two small birch cling to its western slope, and a long, shingly point makes off from it about one hundred yards.

The anchorage at Machiasport is good, but the channel between the town and the mouth of the river is narrow and crooked,—running close to the western shore. All of the eastern shore is flat, and most of the flats are dry at low water, but it requires the assistance of a pilot to pass above Birch Point, unless the wind be fair and the tide well up.

From Sanborn's Point the river has a straight reach nearly **N.** and **S.** past Machiasport, and up to the Eastern Branch, which turns off towards East Machias. The distance is a mile and a half, and the river at this point turns abruptly to the westward towards the city of Machias. **Woodruff's Dike**, which is a shallow cove, bare at low water, lies a few hundred yards above Hooper's Point, opposite to the northern end of Machiasport, and its shore is thickly wooded. On its northern side is a high, steep, rocky bluff, also thickly wooded, called **Pot Head**, and here the shore turns away to the eastward into the Eastern Branch.

Opposite to Pot Head, on the western shore, there is a small, low, sandy island covered with grass and bushes, joined to the shore at low water, and called **Feather-bed Island.** Just above it is a bluff, rocky head of moderate height, crowned with fir, called Day's Head. The western shore, from Machiasport to Day's Head, is mostly cleared and settled, but not fertile. Beyond the head cleared lands of moderate height extend about half a mile to **Day's Point**, a low, grassy point, backed by a thick growth of scrubby trees. All of this shore is very flat,—the channel being nearest to the eastern shore. **Day's Head.**

On the eastern bank, off the northern side of Pot Head, extends a ledge about one hundred yards long. Here is **The Divide,**—the Eastern Branch making off in a **NE.** by **E.** direction towards East Machias, and the main river turning to the northwestward around Day's Point. The channel is about six hundred and fifty yards from the western shore,—the flats making off nearly to that distance. A small black spar-buoy is placed on the eastern point of *Day's Point Flats*, and after rounding this the course up river is about **NW.**

The entrance to **Eastern Branch** is between Rim Point, a low, rocky head, on the north, and Pot Head on the south. This branch of the river, after passing Pot Head, runs about **NE.** by **E.** for half a mile, and then, rounding Rim Point, turns abruptly to the westward, running about **W NW.**; when it turns to the northward and gradually to the northeastward, to **East Machias**, which occupies both banks of the stream about two miles above its mouth. At the village the Eastern Branch is a mere creek, both narrow and shallow, and impossible for strangers to navigate. The channel is so narrow and winding, and the turns so short, that no intelligible directions can be given. **Rim Point.**

The land on the northern shore of Machias River, from Rim Point to the westward, is of moderate height, partly cleared and cultivated and partly wooded; while on the southern shore it is low meadow-land, backed by woods, from Day's Point nearly to the bridge. Where the woods come down to the shore in a thick growth, with a scattered group of rocky boulders at the northern end, is **Crocker's Point,** a quarter of a mile below the bridge.

The bridge is a mile and three-quarters above Machiasport, and has a "draw" in it sufficiently wide for the largest vessels which use this passage. After passing it, the city of Machias will be in sight. Low flat lands, mostly grassy, fringe the water-side on both banks above the bridge, and are backed by higher lands generally bare of trees.

About a mile above the bridge, on the northern shore, is a high, grassy point, called Marshall's Point, with bare ledges cropping out near its southern end. It is mostly composed of grass land, but has a few scattered trees, and the remains of an old house are to be seen upon it. The land on both banks above it is low and partly wooded. **Marshall's Point.**

About a mile above the bridge, on the western shore, is **Libbey's Point**, sometimes called **Meserve's Point.** It is low and thickly wooded with spruce, birch and fir, and both shores are lined with dikes to prevent the flooding of the meadow-lands.

Just above Libbey's Point, but on the eastern shore, and about a mile above Marshall's Point, is **Hoyt's Head,** high and steep, fringed with trees, but mostly under cultivation. From its base a long dike makes out in a **W. ½ N.** direction for about a mile, and is called **Fenno's Dike.**

On the western shore, a few hundred yards above Libbey's Point, is a thickly wooded, rocky head, called Meserve's Head. Here the low meadow-lands begin, and extend nearly a mile to the outskirts of the city. At this point the river branches,—the main stream turning to the southwestward towards Machias, half a mile above, and the north branch, called **Middle River,** running to the northwestward. The latter is now dry and its bed is a meadow. The low meadow-lands are backed by thick woods, composed of a variety of trees, and at high water are all covered; but the edges of the flat are staked out. **Meserve's Head.**

Middle River was formerly crossed by a bridge at its mouth, but this has been built into a solid dike, shutting off all influx. At the western end of this dike begins the city of **Machias**, which occupies both banks of the river. This is the head of navigation. The river is dammed at the upper end of the city, and the dam is occupied by several mills.

Opposite the city there is a large ledge, having six inches on it at low water, and called *Middle Rock*, which occupies the middle of the channel. As the passage is extremely narrow, the presence of this ledge renders it exceedingly difficult for loaded vessels to pass through, and they frequently strike upon it.

Machias is three miles and three-quarters above Machiasport and a little over five miles above Birch Point, and has a very large trade in lumber.

DANGERS

IN APPROACHING AND ENTERING MACHIAS BAY AND RIVER.

I. ***Coming from the Eastward, through the Main Channel.***—Vessels approaching this bay from Cape Sable or from St. Mary's Bay must beware of Machias Seal Island, which is about four hundred yards long, low and rocky, and about twenty feet high. Upon it are situated the Machias Seal Island Light-houses;—two white towers a hundred and sixty-five feet apart, and bearing **E SE.** and **W NW.** from each other. They show two fixed white lights from a height, respectively, of fifty-four and fifty-eight feet above sea level, visible fifteen miles; and their geographical position is *Machias Seal Island and Light-houses.*

Latitude	**44° 30′ 7″ N.**
Longitude	**67° 6′ 5″ W.**

Vessels standing to the northward, with these lights to the westward and distant about five miles, must go about as soon as the two lights come in range, to avoid the *Murr Ledges.*

Fog-signal. A gun is fired every four hours during a fog, as a warning to vessels; but this is an entirely insufficient precaution. There should be either a powerful steam-whistle or an air-trumpet on this island, or the gun should be fired more frequently.

From Machias Seal Island Light-houses

	Miles.
Libbey Island Light-house bears NW. ¾ W.	12
The southeastern shoal of the Murr Ledges SE.	1¼
Southeast Ledge SE. ½ S.	5⅝
St. Mary's Ledge E. ⅔ S.	10

Three and a half miles **W.** from Machias Seal Island Light-houses lies *a rock which has caused the wreck of several vessels.* It was seen by Captain Johnstone, of the ship "Liverpool," trading to St. John, in 1834, and it is proposed to name it *Liverpool Rock.* The pilots could not tell us anything of the depth of water upon it.

There are no dangers on the coast, after passing Seal Island, until Libbey Island is reached. Neither are there any between Southwest Head (Grand Manan) and the entrance, nor in coming along shore from the eastward. Therefore, the first obstruction to navigation which mariners must specially look out for is Cross Island Ledge, or *Southwest Ledge,* as it is sometimes called, which makes out in a westerly direction from the southwestern point of Cross Island for about a mile and a quarter, and for most of that distance is bare at half-tide. It is marked by an iron can-buoy of the second class, painted red and marked No. 2,—placed in seven fathoms to the southwestward of the ledge.

Cross Island Ledge.

After passing this ledge there are no dangers until up with Howard's Point. Here vessels must look out for Sea-Shore Ledge, which lies off the point at a distance of five hundred yards, and is out at low water. It is not in the way unless a vessel is beating to windward, but is marked by a black spar-buoy (No. 1) placed on its southeastern end in thirty feet water, as it is the southernmost of a long line of ledges, most of which are under water, extending along the western shore from Howard's Point almost to Buck's Harbor. Over some of these ledges a vessel of light draught might pass, but they would probably bring up a large or loaded vessel.

Sea-Shore Ledge.

In 1872 the pilots informed us that there was *a sunken rock, with three fathoms on it,* but not named, about a mile **E SE.** from the southwestern point of Bar Island. It is nearly in the channel, but a little to the westward of the sailing lines, and is only dangerous to large and deeply laden vessels. *Another sunken rock* is said to exist on the eastern side of the channel, about a mile **W NW.** from Northern Harbor, (on Cross Island,) or nearly in line between that harbor, Three-Fathom Rock and Bar Island; but its existence is very doubtful. The pilots could not even tell us the depth of water upon it.

After passing Buck's Harbor the channel is clear to Avery's or Channel Rock, which is quite steep-to, and may be approached closely. The light-house will serve to distinguish this rock; and, when abreast of it, Round Island will be seen on the western side; and, lying off it, a black spar-buoy, (No. 3.) This is on Round Island Flats, which extend about **N.** by **W.** from the island to a distance of nearly three-quarters of a mile. When past it, and steering over towards Birch Point, there will be seen another black spar-buoy, (No. 5,) which bears about **E SE.** from Birch Point and marks *The Middle Ground.* Both buoys must be left to the westward. When past The Middle Ground buoy, keep the southwestern shore aboard to avoid the very *extensive flats which make off from the eastern shore,* as vessels very frequently run aground on these flats,—the channel being narrow and the edges of the shoals not marked.

Round Island Flats.

A red spar-buoy (No. 2) marks the end of what are known as *Birch Point Flats.* The course to avoid them leads directly towards the western shore and almost over to it, as the flats are very extensive. The point of flats on which this buoy is placed is nothing more than the western end of *Holmes' Point Flats,* and is incorrectly named, as there are no flats off Birch Point. This is the most difficult part of the channel,—being extremely narrow and crooked; but the flats are soft, and no harm will follow from getting ashore upon them. Birch Point buoy is about a mile **NW.** by **N.** from Birch Point, and the channel leads between it and the point. After passing it there are no dangers up to the anchorage at Machiasport; but if bound up to East Machias or to Machias, you should take a pilot.

There are only flats in the river, which are very extensive and are not marked,—the only exception being the buoy on Day's Point Flats, which extend off from Day's Point to the eastward a considerable distance, (about six hundred yards.) This buoy lies off the mouth of the Eastern Branch, and was placed in position by the pilots of the tow-boats to enable them to shape their course by the point of the shoal.

Day's Point Flats.

SAILING DIRECTIONS

FOR APPROACHING AND ENTERING MACHIAS BAY AND RIVER.

I. ***Coming from the Eastward, through the Main Channel.***—If coming along shore from West Quoddy Head, steer **SW.** by **W.** $\frac{1}{2}$ **W.** from the head until Libbey Island Light-house is made, when steer for it until within two and a half miles, with Stone Head bearing **NW.** $\frac{1}{8}$ **W.** Now steer **NW.**, with the head a little to the westward of the course, which will avoid Cross Island Ledge, making off from the southwestern end of Cross Island for about a mile and a quarter. When Libbey Island Light-house is opened just to the westward of the northernmost of the two islands, it will bear **SW.** $\frac{1}{4}$ **W.**; Channel Rock will then bear **NE.** by **N.**, and the passage will be clear. Keeping Libbey Island Light-house bearing **S SW.**, a **N NE.** course leads right up to the rock, which pass to the eastward close-to, and steer **N.** $\frac{1}{2}$ **E.** for Round Island. When abreast of the latter, steer **N.** by **W.** for the black spar-buoy on Round Island Flats, passing to the eastward of it, and when past it steer **NW.** by **N.** to clear the black buoy on The Middle Ground. When past this buoy, the course is **W NW.**, keeping the northern shore aboard to avoid the extensive flats making off from the southern shore, and passing to the eastward of the red buoy on Birch Point Flats. When abreast of this buoy, steer **N.** by **E.** $\frac{1}{2}$ **E.** up the middle of the river, and anchor off the wharves. The shores are pretty bold, and at low water two and a half fathoms may be carried up to the anchorage at Machiasport.

Vessels bound to Machias anchor at the Port, and take a tug or a pilot. The course from Pot Head, to clear Day's Point Flats, is **N.** by **E.** $\frac{1}{2}$ **E.** past the buoy, and then **NW.** for the "draw." After passing the draw the course is **W NW.** to Libbey's Point; thence about **NW.** to The Divide; and from The Divide to the landing at the city, **W SW.** From Machiasport to the bridge about two fathoms may be taken; but there is not over ten feet in the channel up to Machias at low water.

Middle Rock has been partly removed by the U. S. Engineers, so that it now has about six inches on it at mean low water.

From the vicinity of Southwest Head, (***Grand Manan,***) steer **W.** by **N.** $\frac{1}{2}$ **N.** for Libbey Island Light-house, keeping the eastern island close aboard until past Cross Island Ledge, when steer **N.** by **E.** for Channel Rock, and follow the directions given above.

From the vicinity of Cape Sable, steer **N NW.** until Libbey Island Light-house is made, which should be seen directly ahead. Continue this course until within about a mile of the light, when haul up to enter the bay, keeping the eastern Libbey Island close aboard, and when past Cross Island Ledge haul up for Channel Rock Light-house, about **N.** by **E.**, and proceed as before directed.

On the above courses it is necessary to be very careful not to be set on to Cross Island Ledge, as the **N.** by **E.** course for Channel Rock leads very close to it.

WESTERN CHANNEL INTO MACHIAS BAY.

The Libbey Islands, as before stated, (page 42,) lie in the middle of the entrance to Machias Bay,—the Main Channel being on their eastern side, while west of them, between the light-house and the mainland, is what is called the Western Channel,—a wide and nearly clear passage, with good water. On its western side lie a number of islands; the principal of which are The Brothers, Scabby Islands, Ram Island, Foster's Island, Stone's Island and Starboard or Brown's Island. This channel is always used by vessels coming from the westward. In approaching it through Moos-a-bec Reach the first island met with, after passing Head Harbor Island, is **Pulpit Rock**, which lies to the eastward of Great Spruce Island, and in the mouth of Englishman's Bay. It is a low, bare islet, entirely destitute of vegetation. A little over half a mile to the eastward lie The Brothers, two rocky islets of moderate height, covered with grass, except on their northern side, where there is a scanty growth of fir. They lie **E.** and **W.** from each other, close together, with no passage between them. A mile and a quarter to the eastward of The Brothers are the Scabby Islands, two rocky islets lying **NE.** and **SW.** from each other, a mile **S.** by **W.** from Point of Main, about half a mile **SW.** from Foster's Island, and a little over a mile and a half **W NW.** from Libbey Island Light-house. The eastern islet is conspicuous for a high, round head, with one or two dead pines upon it, which at a distance look like masts; otherwise it is bare. The western islet is lower, and has a few dead fir trees on its eastern end. Between these islands and The Brothers lies the eastern entrance to Englishman's Bay.

The Brothers.

Scabby Islands.

Ram Island lies half a mile **S.** from Foster's Island, and about a third of a mile to the eastward of Scabby Islands, and is a low, rocky islet, with a scanty growth of stunted fir on its western end. From Libbey Island Light-house it is distant one mile, which is here the width of the western entrance to Machias Bay.

Ram Island.

Foster's Island lies a little over three-eighths of a mile to the northward of Ram Island, and about the same distance from the shore of Point of Main. It lies **N.** and **S.**, is nearly half a mile long, bare and rocky, formerly wooded, but now cleared and covered only with tree stumps. It is remarkable for the bleached, grey appearance of these stumps, which look like grave stones.

Foster's Island.

A red spar-buoy (No. 2) marks the northern end of the long ledge, called **Foster's Island Ledge,** which makes to the northward from this island.

Nearly half a mile to the northward of Foster's Island lies Starboard or Brown's Island, a rocky islet, almost entirely bare, and remarkable for a high, bare, precipitous face at its northeastern end, with a few spruce trees clinging here and there to its sides and summit. It lies about three-eighths of a mile from the western shore of the bay; and a group of houses and a wharf are seen upon its southwestern end. Strangers must not attempt to pass between this island and the mainland, as a long sand-spit makes off from Point of Main in an easterly direction, nearly joining the island, and forming a sort of cove on its western side, which in southerly and southeasterly winds affords a good anchorage.

Starboard or Brown's Island.

Passing Libbey Island Light-house, the course of the Western Channel leads to the northeastward, passing to the eastward of Ram and Foster's islands; and, to the northward, about a mile and a half from the light-house and a mile from the northern Libbey Island will be seen Stone's Island, a barren, rocky island of moderate height, covered with a thick growth of stunted fir except at its southern end, where is a remarkable, round, bluff head, with a white face, called **Stone's Head.** This head is the part of the island which will be seen by vessels coming in by the Western Channel. From Starboard Island it is distant over half a mile to the eastward; from Foster's Island, one mile in the same direction; and from Ram Island, a mile and a half to the northeastward.

Stone's Island.

Between Stone's Island and the northern Libbey Island the channel is about a mile wide.

There is also a good passage between Foster's Island on the north and Ram and Scabby Islands on the south; but it is obstructed by a long ledge, mostly bare at low water, which makes off from the southern end of Foster's Island half way over towards Ram Island, and is called *Foster's Island Point.*

DANGERS

IN APPROACHING AND ENTERING MACHIAS BAY AND RIVER.

II.—***Coming from the Westward, through the Western Channel.***—Off the southern end of Stone's Island, at a distance of two hundred and fifty yards, lies a large ledge, bare at one-quarter ebb, and with good water inside of it. It is called Stone's Island Ledge, and is marked by an iron spindle, painted black, surmounted by a cage, and placed *on top of the rock.* Vessels using the Western Channel must pass to the eastward of it; those using the passage between Foster's and Stone's islands pass to the southward of it.

Stone's Island Ledge.

Vessels using the passage between Starboard and Stone's islands must look out for Starboard Island Ledge, which lies off the island of that name, and has five feet upon it at low water. It is about one hundred yards long in a northerly and southerly direction, and is marked by a spar-buoy painted red and black in horizontal stripes, and placed in five fathoms about thirty yards to the southward of the shoal of the ledge. It is best to pass to the southeastward of the buoy, as the ledge is boldest-to on that side.

Starboard Island Ledge.

Off the northern end of Foster's Island a long ledge makes out to the northwestward for about an eighth of a mile, and is marked by a red spar-buoy, (No. 2,) placed in three fathoms. The shoal is called Foster's Island Ledge; and vessels using the passage between Foster's and Starboard islands must pass to the northward and westward of the buoy.

Foster's Island Ledge.

Sea-shore Ledge, before mentioned, (page 46,) lies off Howard's Point, at a distance of five hundred yards, and is out at low water. It is the southernmost of a long line of ledges, (most of which are under water,) extending along the western shore of the bay from Howard's Point almost up to Buck's Harbor. A black spar-buoy (No. 1) is placed in five fathoms off the southeastern end of the ledge,—the course passing to the eastward of it.

Sea-shore Ledge.

These are all the dangers in the Western Channel.

SAILING DIRECTIONS

FOR APPROACHING AND ENTERING MACHIAS BAY AND RIVER.

II. ***Coming from the Westward, through the Western Channel.***—Coasters (the only vessels which enter by this channel) leave Head Harbor Light-house to the northward and steer **NE. by E.** for Libbey Island Light-house, passing to the westward of it; and when it bears **S SW.**, they steer **N NE.** for Channel Rock Light-house. Passing to the eastward of this rock the course is **N NE.** for Round Island, and when abreast of the latter **N. by W.** for the black spar-buoy on Round Island Flats. Passing to the eastward of this buoy the course is **NW. by N.** to clear the black buoy on The Middle Ground, and, when past this buoy, **W NW.**, keeping the western shore aboard to avoid the extensive

flats which make off from the eastern side. This course leads up to the red buoy on Birch Point Flats, which is to be left to the northward, and N. by E. ½ E. will lead up to the anchorage off Machiasport. On the above courses there will be deep water as far up as Avery's or Channel Rock, and two and a half fathoms up to Machiasport. *Sailing Directions--Machias Bay.*

Having come through Moos-a-bec Reach, pass to the southward of Pulpit Rock, The Brothers, and Scabby Islands. The course is nearly E. from Mark Island to Libbey Island Light-house, and the distance nearly seven miles. When up with the light-house, bring it to bear S SW. and steer N NE. for Channel Rock, following the directions given above.

On the above courses, to enter Buck's Harbor.—When abreast of Northern Harbor, on Cross Island, you can look right into Buck's Harbor, and there are no dangers in the way except *Buck's Head Ledges,* the outermost point of which is marked by a small, rocky islet, destitute of all vegetation. (See page 43.) Round this islet and steer up the middle of the passage for Buck's Neck, and anchor in from three to four fathoms in the Outer Harbor. *Or, wishing to enter the Inner Harbor,* as soon as you are past Bar Island haul over to the northward, and anchor in the basin formed between that island and the neck. Here is good anchorage, safe from all winds, and a depth of from six to ten feet at low water.

Bear in mind that the northern side of Buck's Head is very bold, and may be approached very closely. The ledges, and the small bare rock outside of them, are also bold on the northern side.

Coming in by the Western Channel, and intending to enter Buck's Harbor, keep at least half a mile off the western shore of the bay, between Howard's Point and the entrance to this harbor, to avoid the ledges which line this part of the shore. Of these Sea-shore Ledge is the southernmost, and, as before mentioned, is marked by a black spar-buoy.

CROSS ISLAND NARROWS.

As before mentioned, (page 42,) between Cross Island and the mainland on the eastern side of Machias Bay there is a passage, about half a mile wide, called Cross Island Narrows. It is not fit for the use of strangers, but is often resorted to by fishermen and coasters, who are well acquainted with its dangers and who wish to enter the bay without rounding Cross Island. The entrance to it from the eastward is between Cape Wash on the north and the dry ledge, called The Old Man, on the south. There is another passage, which is wider, between The Old Man and Double-headed Island; but the former is the one commonly used.

There are several bad ledges in this channel; and nearly in the middle of it, off the northeastern shore of Cross Island, lies a rocky islet, called **Mink Island,**—the channel leading to the northward of it. Between it and Cross Island lies what is called **Eastern Harbor** or **Seal Cove,** which is a good shelter for light-draught vessels in southerly winds, but is open to the northwestward.

DANGERS.

On the northeastern side of the passage, and a little to the eastward of Mink Island, is Thornton's Point Ledge, bare at half-tide, and marked by a red spindle with cage on top. The channel passes to the southwestward of it. *Thornton's Point Ledge.*

Off the mouth of Seal Cove, and a little to the northwestward of Mink Island, is Seal Cove Ledge, a dangerous rock with six feet at mean low water. It is marked by a black spar-buoy (No. 1) placed in four fathoms just to the northeastward of the rock; and the sailing-line passes to the northward of it. The ledge is about one hundred yards long in a NW. and SE. direction. *Seal Cove Ledge.*

SAILING DIRECTIONS.

To enter Cross Island Narrows, pass about midway between The Old Man and Cape Wash, and steer up for Mink Island until past Thornton's Point Ledge, on the northern side of the channel; then haul up to the northward nearly for the northern end of Chance's Island until through the Narrows and Quaker Head bears to the eastward of S., when steer over towards Bare Island,—being careful to give Chance's Island a good berth to avoid the long ledges which make off from it to the southward. As soon as Channel Rock bears N. steer for it, and follow the directions previously given. Four fathoms at low water can be carried through the Narrows.

There are several other passages into and out of this bay,—as, for instance, one between Starboard and Stone's islands, and one between Ram and Scabby islands and the Point of Main; but none of these are fit for strangers.

LIGHT-HOUSES.

NAME.	Latitude N.	Longitude West.		Fixed or Revolving.	Height above sea-level.	Distance visible in nautical miles.
		In arc.	In time.			
	° ′ ″	° ′ ″	h. m. s.		Feet.	
Machias Seal Island Light-houses	44 30 7	67 6 5	4 28 24.3	2 fixed.	54 & 58	15
Libbey Island Light-house	44 34 5	67 22 2	4 29 28.1	Fixed.	52	12
Avery's or Channel Rock Light-house	44 39 0	67 21 0	.....	Fixed red.	68	14

VARIATION OF THE COMPASS.

The approximate variation of the magnetic needle is, for 1879, 17° 16′ W., and the annual increase about 2′.

LIFE-SAVING STATION.

The United States Government have established on Cross Island a life-saving station, with all the apparatus and other appliances necessary for assisting the shipwrecked.

ICE IN MACHIAS AND LITTLE MACHIAS BAYS.

Little Machias Bay is usually closed to navigation during the winter; and in severe winters, like that of 1874–5, it remains closed from December to April. Winds and tides have no decided influence either in preventing or assisting formations.

In Machias Bay, likewise, the ice formation is purely local, except during severe winters. Beginning at the head of the bay and in the sheltered places along the shores, it gradually extends downward and outward, and forms a serious and often insurmountable obstruction to navigation. During calms and light winds from the northward and westward the local formations rapidly increase, while strong winds break them up and force them, as "drift-ice," on the shores and into the harbors on the lee side of the bay,—thus forming a more serious hindrance to the navigation of those harbors than the purely local formations. The tidal current being comparatively weak, has little or no effect in preventing formations of ice or in opposing the effects of strong winds in moving the ice.

During severe winters, like that of 1874–5, the ice begins to form a serious obstruction to the movements of sailing-vessels about the middle of January; but steamers are usually able to proceed without much difficulty until the latter part of that month, when the bay is usually frozen entirely over,—the ice being composed of "field" and "drift" massed together in such quantities as to completely prevent navigation of any kind. To this mass, in 1875, was added great fields of drift-ice from outside, which filled up the mouth of the bay and the approaches to it,—extending out several miles from the coast-line;—and this soon freezing into a solid mass, effectually closed the bay from the 9th to the 19th of February. The weather moderating about the last-mentioned date, accompanied by winds varying from **SW.** around by the southward and eastward to **NE.**, with snow and rain, caused a general breaking up of the mass; but it did not finally disappear until the latter part of March. To be sure, a great portion of this large formation went to sea during the first week in March; but subsequent formations, each lasting but a few days, caused considerable hindrances to navigation as late as the twenty-fifth of that month; and most of the harbors in the bay remained closed several weeks after the bay was free from all obstructions.

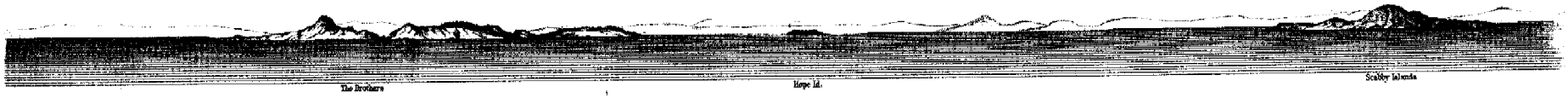
The few buoys in the bay being spars were not drifted from their places, as the ice passed over them instead of massing against them, as in the case of can or nun-buoys.

LITTLE KENNEBEC RIVER.

The entrance to this comfortable little harbor of refuge lies between **Point of Main** on the east and **Cow Point** on the west. From its mouth to its head the distance is nearly six miles, but the anchorage is only about a mile and three-quarters above the Point of Main. It is rarely used, owing to the insufficient knowledge possessed of its approaches by strangers; but the islands which lie off its mouth are bold-to, and with good directions there is no difficulty whatever in entering it and proceeding up to Sea-Wall Point. The course from the eastward leads between the **Scabby Islands** and **The Brothers**;—the former appearing as two low, barren, rocky islets having only a few dead trees upon them, and the latter as two rocky islets of moderate height, with a grassy surface and a scanty growth of fir clinging to their northern sides. The eastern Scabby Island is remarkable for a high, round head, on the summit of which a few dead pines appear like masts. The other islet is lower, and has a few dead fir trees on its eastern end. The channel between these islands and The Brothers is a mile and a quarter wide.

Point of Main. Point of Main is the southern extremity of the mainland separating Machias Bay from Little Kennebec River. It is high, bare and rocky, and is backed by the usual growth of spruce and fir.

Coming through the Inshore Passage from the eastward, vessels must pass between Ram Island and Foster's Island, leaving Scabby Islands to the southward, and steer up by the Point of Main, with Ram Island nearly astern; which course will lead to the eastward of a small, low, rocky island covered with grass, named **Shag Ledge**, lying nearly three-quarters of a mile to the northwestward of Point of Main and about half a mile from it. The Main Entrance, however, is between The Brothers and Scabby Islands, and is unobstructed up to Shag Ledge, which must receive a good berth at high water,—for at low water the ledges which make out from it are bare and quite bold-to.



Entrance to Little Kennebec River, Libbey Id. Lt. Ho. bearing E. ¼ N. distant 24 Miles.

Entrance to Englishman's Bay from the Westward, Mark Id. bearing N. W. by W. ½ W. distant 3 Miles.

In the middle of the mouth of Little Kennebec River lies a small, low island, partly sandy and partly rocky, and dotted here and there with spruce and fir and a stunted growth of pine. It lies nearly N. by E. and S. by W., and is called Hickey's Island. A long reef, dry at low water, makes off from its southern end to a distance of two hundred yards. The best water is midway between this island and the mainland to the eastward. **Hickey's Island.**

Half a mile to the northward of Hickey's Island lies **Fan Island**, close to the western shore. It appears as a grey, rocky head, crowned with fir, and bare ledges make off from it to the westward.

The high, wooded lands in the township of **Jonesboro'** stretch away to the westward, from behind Fan Island, towards Englishman's Bay, and end in Cow Point, a mile and a quarter to the westward of Fan Island. This is a thickly wooded point, of moderate height, and is tolerably bold-to. **Cow Point.**

The shores on the eastern side of the entrance are high, rocky and bare, with the exception of a few stunted spruce here and there. Just above Hickey's Island this bank runs into a low point called **Pierce's Point**, the westernmost point of the eastern shore, and about a mile above Point of Main. It is low, rocky, and fringed with fir trees, and between it and Fan Island the channel is only a quarter of a mile wide.

Sea-Wall Point is so remarkable in its appearance as to serve as a distinguishing mark for the entrance to this river. From off the entrance it looks like a line of yellow rocks, backed by low woods, and is entirely different in appearance from any other part of these shores. On coming close up with it, it will be seen that what appeared at first to be yellow rocks is a wall or rampart of pebbles and boulders. Hence the name. This point is on the western bank, about a mile and three-quarters above Point of Main, and forms the southern side of **Bare Cove**, the common anchorage for vessels entering this harbor. It presents, when viewed from seaward, a very curious appearance. At the head of Bare Cove there is a large lobster-packing house and outbuildings. The land is gently sloping, grassy, and crowned with a thick growth of birch and other trees. **Sea-Wall Point.**

Hope Island lies on the northern side of the cove, and is a round, bluff-looking island, of moderate height, covered with a thick growth of spruce, fir and birch. In-shore of it lies **Spar Island**, a very small islet, which shows a high hillock in its centre covered with scrubby trees, like a crown. **Hope Island.**

On the eastern shore, nearly opposite to Sea-Wall Point, is **Grey's Beach**, low land, covered with scrub, and faced by a fine beach extending up to Yo-ho Point, (about a mile above Sea-Wall Point.) The land on this shore is mostly wooded.

Marstin's Mountain is a very remarkable hill, situated on the western shore, about a mile above Hope Island. It is distinguished by a peculiar bare spot, of a yellow color, on its summit, and is crowned with stunted spruce and fir on its western end. The rest of the summit is bare. This is a very remarkable looking mountain and cannot be mistaken, as the surrounding lands are well wooded and present a striking contrast to its yellow summit, crowned with black fir.

Yo-ho Point, on the eastern shore, is the northern end of Grey's Beach, and is a mile and a half above Pierce's Point and two miles and a half from Point of Main. The channel leads between this point and Hope Island, there being no passage between the latter and the western shore. Yo-ho Point is of moderate height, rocky, and covered with a thick growth of scrub. **Yo-ho Point.**

A ledge, bare at half-tide, lies two hundred yards off this point, and there is no passage inside of it. The bottom is soft. It is noticeable that the rocks at the pitch of the point are of a peculiar pinkish appearance.

Behind Yo-ho Point a long and narrow cove makes into the southward, called **Yo-ho Cove.** There are several ledges in it; but, for vessels of light draught whose masters are acquainted with the dangers, it affords good anchorage.

Between Yo-ho Point on the south and Johnson's Point on the north, is the entrance to the Eastern Branch; for, at Johnson's Point, the river divides,—the main stream continuing to the northward, while the Eastern Branch takes a course to the northeastward.

Johnson's Point, which separates the two branches, is smooth and grassy, of moderate height, fringed with spruce, fir and a few birch, and has a solitary house on its slope. To the eastward of the point is a high, wooded hill, called **Johnson's Mountain.** Off the end of Johnson's Point, with which it is connected at low water, is a low, thickly wooded islet, called **Porcupine Island.** **Johnson's Point.**

The western shores of the river above Sea-Wall Point are high, rocky, and very thickly wooded with a scrubby growth of trees and bushes, from abreast of Hope Island to Marstin's Point. This point is just opposite to Johnson's Point, and on the western bank of the main river. It is a high, bluff, rocky head, whose summit and sides are cleared; but there is a thick growth of scrubby trees at its base. Its southern extremity is low and thickly wooded with a growth of stunted trees and bushes. Behind it rises Marstin's Mountain, already alluded to. **Marstin's Point.**

On the eastern shore of the main river, above Johnson's Point, the land is thickly wooded with a small growth of various kinds of trees. Nearly a mile above that point is a very peculiar looking clay cliff, called **Goose Cove Point.** It has a growth of scrub clinging to its sides, extends to the northeastward about four hundred yards, terminating in a round, bluff boulder; and its surface is diversified with grass land and trees. Off the northern extremity, at a distance of about one hundred and fifty yards, lies a detached rock, bare at low water, called *Goose Rock*, between which and the point there is a passage for vessels of light draught. **Goose Cove** makes in on the northern side of the point, and is shallow and of no importance. The river here sends off a second branch to the eastward, almost entirely bare at low water, and unfrequented; while the main body of the stream continues to the northward to its head.

On the western shore, about half a mile above Marstin's Point, the cleared and cultivated lands begin. They are of moderate height, dotted here and there with trees, and present water-worn faces to the eastward. About a mile above Marstin's Point the land shoots out into a long, low, rocky point, called Foss' Point. Here the western shore turns more to the westward, while opposite to it the long cove above described makes in to the eastward, thus forming a second divide. The shores of the main river are gently sloping, partly wooded and partly cleared and cultivated, with sand cliffs cropping out here and there; but the stream is very shallow. At the point of division stands **Holway's Point**, a remarkable looking clay cliff of moderate height, covered with a growth of scrub. A long sand-bar, bare at half-tide, with scattered boulders upon it, extends from this point in a **SW.** direction for one hundred and fifty yards.

Foss' Point.

The most prominent feature in the eastern cove is Spruce Cove Point, a long, high, clay cliff, extending in an **E.** and **W.** direction, its surface being covered with scrub and bushes, some of which cling to the perpendicular face of the cliff. It separates Goose Cove from **Spruce Cove**, which lies on its northern side. From this point a long ledge makes out about one hundred and fifty yards, barely covered at high water, and usually known as *Spruce Cove Ledge*.

Spruce Cove Point.

The shores at the head of the eastern cove are tolerably well cultivated, smooth and cleared, and a small settlement occupies the shore on both sides. The cove is of slight importance, as it is almost entirely bare at low water.

On the western shore of the river, opposite to Holway's Point, is **Smith's Point**, about half a mile above Foss' Point, and showing a clay head, with precipitous faces; and behind it will be seen smooth, cleared and well cultivated land. A long sand-bar makes off from the point towards Holway's Point.

Strangers should not attempt to go farther up the river than Marstin's Point.

Eastern Branch of Little Kennebec River.

The Eastern Branch, or **Eastern Kennebec River**, makes in between Yo-ho Point and Johnson's Point, (see page 51)—its course from Porcupine Island being **N NE.** for about half a mile, after which it turns to the eastward. Ten feet at low water may be carried to its head, but it is now rarely used, as there is only a small trade in wood. Both shores are thickly wooded with spruce, fir and birch.

Half a mile above Johnson's Point, where the branch turns to the eastward, lies a small, thickly wooded islet of moderate height, called **Hog Island**, dividing the passage into two channels. On the eastern shore, abreast of it, is a long cove, called **Miller's Creek.**

The western channel runs nearly **N.**, leaving Hog Island to the eastward, and the high, bare hill, called **Mayhew's Mountain**, to the westward; and, rounding the island, turns about **NE.** by **E.**, joining the eastern channel at the eastern end of Hog Island.

The eastern channel is very narrow and dry at low water. Leaving Hog Island to the westward, it skirts the base of a high, bare, bluff hill on the eastern shore, called **Collins' Mountain**; and, uniting with the western channel, both proceed in a northeasterly direction for about half a mile, between steep and barren banks, to a rocky point on the eastern shore covered with bushes, and known as Larrabee's Point. Here an abrupt turn to the southward leads through a very narrow but deep channel, about seventy-five yards wide, to a dam, which crosses the passage and separates it from a large and wide cove, called **Larrabee's Basin.** This dam was the site of mill-works, now deserted, and the basin is nearly all occupied by meadow.

Larrabee's Point.

Beyond the entrance to Larrabee's Basin the shores continue of about the same character, for about a third of a mile, to the head of the branch. Twelve feet at low water may be carried up as far as Hog Island, and ten feet up to Larrabee's Point.

That portion of Little Kennebec River which is contained between Marstin's and Johnson's points on the north, and Hope Island on the south, is sometimes known as **Kennebec Bay.**

DANGERS

IN APPROACHING AND ENTERING LITTLE KENNEBEC RIVER.

From the Eastward, through the Ram Island Passage.—This entrance, which is only used by coasters who have come along shore and who are well acquainted with the vicinity, is, nevertheless, a good and safe channel for vessels of light draught. The entrance to it is between Foster's Island on the north and Ram Island on the south. After passing between these islands the course leads to the northwestward, towards Hickey's Island, and the first danger met with is Shag Ledge, a low, rocky island, seen nearly ahead when passing between Ram and Foster's islands. Long reefs of rocks, bare at low water, extend on both sides of it; and it must, therefore, when these are covered, receive a good berth. At low water it is safe to go close to the end of the reef with not less than three fathoms water.

Shag Ledge.

After passing Shag Ledge you will approach Half-Tide Ledge, lying about a quarter of a mile off the western shore of Point of Main. It is out at three-quarters ebb, and must be left to the eastward. After passing it there are no dangers in the channel; but from the southern end of Hickey's Island there makes off a long reef, called *Hickey's Island Ledge*, dry at low water for about two hundred yards. It is not in the way unless you are beating to windward.

Half-Tide Ledge.

The best water in this part of the channel is midway between Hickey's Island and the mainland, where there is not less than three fathoms.

After passing Hickey's Island there are no dangers until up with Sea-Wall Point, which must receive a berth to avoid *the long bar making off from it to the westward.* After passing the point steer directly in to the anchorage, as there is nothing in the way.

If bound up the river, beware of Harvey's Ledge, lying on the western side of the channel, a little above Bare Cove. It is about one hundred and twenty-five yards from the western bank and is out at low water; and, in order to avoid it, you must not go to the westward of Spar Island bearing **N NW.** ***Harvey's Ledge.***

On the eastern shore, opposite to Bare Cove, and three hundred yards off Grey's Beach, lies a rock, out at half-tide, called *Dogfish Rock.* It is bold-to, and shows itself at almost all times of tide. From the lobster-packing house in Bare Cove it bears **E.** by **N.** After passing this rock the eastern shore is free from dangers until up with Yo-ho Point, the southern point of entrance to the Eastern Branch. Here look out for Yo-ho Ledge, a large ledge, bare at half-tide, lying two hundred yards to the northwestward of the point. There is a passage for small boats between it and Yo-ho Point, with soft bottom; but vessels should not attempt to use this narrow channel, even at high water. The main channel into the Eastern Branch passes to the eastward of Yo-ho Ledge, and, rounding it to the northward, passes between it and Porcupine Island. ***Yo-ho Ledge.***

Above Johnson's Point it is difficult to give an intelligible description of the dangers. They are, however, very few,—the principal difficulty in the navigation arising from the contracted channel. Nearly all of the points on both sides are bold-to until up with Goose Cove Point, off the northern point of which, at a distance of a hundred and fifty yards, lies a detached rock, bare at low water, called *Goose Rock.* It is bold-to, and there is a passage for light-draught vessels between it and the point.

Holway's Point is also shoal,—*a long sand bar, with scattered boulders on it,* making off from the point in a southwesterly direction, and bare at half-tide for about one hundred and fifty yards.

One-third of the way from Holway's Point to Goose Cove Point there is a detached rock, out at low water, called *Lobster Rock.* From Smith's Point also, *a long bar makes out,* obstructing the passage above Holway's Point.

SAILING DIRECTIONS

FOR APPROACHING AND ENTERING LITTLE KENNEBEC RIVER.

I. ***Coming from the Eastward, through the Ram Island Passage.***—Pass on either side of the Libbey Islands; but, if coming close along shore, pass them to the northward;—only observing to keep close to the northern island in order to avoid Cross Island Ledge. In so doing, nothing more than three fathoms can be carried. After passing these islands the course is to the westward, between Foster's Island on the north and Ram Island on the south. Continue to the westward until Libbey Island Light-house bears **SE.**, when steer **N.** by **W.** up the middle of the passage, having Ram Island nearly astern. This course passes to the eastward of Shag Ledge and to the westward of Half-Tide Ledge. Continue it until up with Hickey's Island, which pass to the eastward, keeping in mid-channel, where there will not be less than three fathoms. When the southern end of this island is on with the western end of The Brothers, and Cow Point bears **W. ½ N.** and the eastern end of The Brothers **SW.** by **S. ½ S.**, steer **N. ½ E.**, keeping in mid-river. You may go close to Fan Island; but, on approaching Sea-Wall Point, give it a berth of five hundred yards, steering about **N.** by **E.**, and, when abreast of it, steer **N.** by **W.** for Hope Island until abreast of the lobster-packing house, when haul up **NW.** by **W. ½ W.**, and anchor well inshore, according to draught, in from two to three fathoms water.

There is comfortable anchorage in this cove in three fathoms at low water, sticky bottom.

Above Bare Cove strangers should not attempt to go without a pilot.

II. ***By the Main Channel, between Scabby Islands and The Brothers.***—There are no dangers in this channel until up with Shag Ledge; and those described above are common to all the entrances of the Little Kennebec.

When Libbey Island Light-house bears **E.**, distant two miles and a half, steer **N.** by **E. ½ E.** for Pierce's Point, keeping midway between the islands. Pass Shag Ledge to the westward, giving it a berth to avoid the rocks mentioned above, and continue this course until past Hickey's Island and its southern end is on with the western end of The Brothers. Cow Point will now bear **W. ½ N.**, and you must steer **N. ½ E.**, following the directions given above.

Sailing Directions---Little Kennebec River. There are several passages among the islands leading into this river from the westward, but it is not advisable for strangers to attempt them. In case of necessity, Lakeman's Harbor can be made with greater safety and equal facility. Coming from the westward, outside of Head Harbor Island, Head Harbor may be made with perfect safety.

Of the above-mentioned passages among the islands, there is one (the first to the westward of the main entrance) which leads between Pulpit Rock and The Brothers on the south, and Great Spruce, Shot, Anguilar and Halifax islands on the north, towards Point of Main; and another which leads from Englishman's Bay, between Cow Point and Roque's Island. This latter will be described in its proper place, but the former is not safe for strangers.

It may also be remarked that there is a good and nearly unobstructed passage from Englishman's Bay into Little Kennebec River, between Fan Island and Hickey's Island,—the only danger being a ledge which makes off from Hickey's Island, known as *Hickey's Island Point.* This channel is commonly used by fishermen and the lobster-smacks.

LIGHT-HOUSE.

NAME.	Latitude N.	Longitude West.		Fixed or Revolving.	Height above sea-level.	Distance visible in nautical miles.
		In arc.	In time.			
	° ′ ″	° ′ ″	h. m. s.		Feet.	
Libbey Island Light-house	**44 34 5**	**67 22 2**	**4 29 28.1**	Fixed.	**52**	**12**

No survey has ever been made of this river, and no tidal or current data can be furnished. The strength of the current, however, interferes but little with the courses in and out, except in the Ram Island Passage before hauling up for Hickey's Island. In the river the current sets generally in the direction of the channel.

VARIATION OF THE COMPASS.

The approximate magnetic variation for 1879 is about the same as at Machiasport, viz: **17° 16′ W.** The approximate annual increase is about **2′.**

ENGLISHMAN'S BAY.

From Fan Island the coast has a general course about **W.** for a mile and a quarter to Cow Point, already described. There are several indentations in the shore-line between these two points. About half a mile to the westward of Fan Island, and close in with the main shore, lies a small, rocky island, called **Calf Island,** situated in the mouth and on the western side of a large cove called Great Cove. The western point of this cove, called **Calf Point,** is rocky and of moderate height, crowned with spruce and fir, and extends off into a low, rocky point, which is, however, tolerably bold. Great Cove is an excellent anchorage,—the approaches being clear, except for *one ledge, which is always bare.* No directions are necessary for entering except to keep the middle of the passage, and, if the wind be to the southward, round Calf Island and anchor between it and the main. It will be a heavy blow that will disturb this anchorage.

Great Cove.

Mac's Cove, on the western side of Calf Point, between it and Cow Point, is a small cove with woody shores, of no importance, except in northerly winds, as there is no shelter from seaward.

The entrance to Englishman's Bay is between Cow Point on the east and Kelly's Point (which is also the northern point of the eastern entrance to Moos-a-bec Reach) on the west. Between these points it is seven miles wide, but the passage is contracted by a great number of islands lying in the entrance, through and among which lead the different channels into the bay. There is excellent anchorage for the largest vessels;—five and six fathoms being found as far up as Great Head. From a line joining Kelly's and Cow points the bay is five miles long to the entrance to Chandler's River at its northern end.

Point of Main has been already described. Kelly's Point, the western point of entrance, is flat and grassy, of moderate height, and backed by a bald, bare, rocky head, which, on its western side, juts out into the water. It forms the northern point of entrance to Moos-a-bec Reach;—the southern point being formed by the northern end of **Head Harbor Island,** a large island lying on the western side of the approaches to Englishman's Bay and about a mile to the southward of Kelly's Point.

Kelly's Point.

Two lights mark the eastern and western limits of the entrance to this bay. That on the eastern side is on Libbey Island, the westernmost of the two islets of that name lying off the entrance to Machias Bay. It is rocky and bare, with the exception of a few dead trees near its northern end. The light-house is built on its western end, and is a granite tower, thirty-five feet high, about two hundred and fifty feet distant from the keeper's dwelling, which latter is painted brown. A fixed white light, of the fourth order of Fresnel, is shown from a height of fifty-two feet above sea level, visible twelve miles; and a fog-bell, struck by machinery, six strokes in every minute, is attached to the light-station.

Libbey Island and Light-house.

The geographical position of Libbey Island Light-house is

Latitude.....44° 34′ 5″ N.
Longitude.....67° 22′ 2″ W.

The light-house which guides to the western entrance to Englishman's Bay, usually known as Head Harbor Light-house, and sometimes as **Moos-a-bec Light-house**, is on **Mistake Island**, which forms the southern side of Head Harbor. Mistake Island is of moderate height, with a stunted growth of trees near its western end, but is otherwise bare. The light-house is of brick, white-washed, and about two hundred and twenty-five feet distant from the keeper's dwelling, which latter is painted brown; and a covered way, whitewashed, extends about two-thirds of the way from the tower towards the dwelling. The tower is forty feet high, and shows a white light, of the second order of Fresnel, revolving once in every half minute, from a height of sixty-five feet above the sea. **Head Harbor Light-house.**

Its geographical position is

Latitude.....44° 28′ 27″ N.
Longitude.....67° 31′ 55″ W.

Vessels from the westward make this light and enter Englishman's Bay by the western channel, between Roque's Island and the mainland of Jonesport. Those from the eastward make Libbey Island Light-house and enter the bay by the eastern channel, between Scabby Islands and The Brothers. Both passages are good,—the former having not less than eight fathoms, the latter about six.

Two miles **S.** by **E.** from Head Harbor Light-house is placed a whistling-buoy, operated by the motion of the sea, and giving continuous blasts, averaging from twenty to thirty in a minute. It is shaped like a nun-buoy and is about twelve feet out of water.

In making this bay from the eastward the first noticeable object met with will be Libbey Island, with a grey stone light-house on its western end. The keeper's dwelling, close to it, is painted brown. There are a few dead trees on the northeastern end of the island. One mile to the northwestward of the light is **Ram Island**, already described (page 47.) as a low, rocky islet, with a scanty growth of small fir trees on its western end. A quarter of a mile to the westward of Ram Island, and on the eastern side of the entrance to the bay, lie the Scabby Islands, two small islands **NE.** and **SW.** from each other, and close together. The eastern one is conspicuous for a high, round head, with one or two dead pines looking like masts on its top; otherwise, it is bare. The western islet is lower than the other, rocky and bare, except for a few dead fir trees on its western end. (See also page 47.) **Scabby Islands.**

A mile and a quarter to the westward of the Scabby Islands lie The Brothers, two rocky islets of moderate height, lying **E.** and **W.** from each other, with grassy surface and a scanty growth of fir clinging to their northern sides. The eastern channel into Englishman's Bay passes between these islands and the Scabby Islands; and in coming in by it the entrance to Little Kennebec River will appear between the two groups, and, stretching to the westward from that entrance, the rocky, wooded shore between Sea-Wall and Cow points. The latter will appear rocky, of moderate height, and covered thickly with trees. **The Brothers.**

Behind The Brothers and to the westward of them will be seen the high, wooded shores of Roque's and Great Spruce islands, with the heavily timbered shores of Mark Island, and the rocky, wooded land on the northern and eastern faces of Head Harbor Island appearing to the southward of Great Spruce.

On the eastern side of the entrance, half a mile to the northward of the Scabby Islands, and the same distance to the southwestward of Point of Main, lies a small, rocky island covered with grass, called **Shag Ledge**. At low water long reefs of bare rocks extend off from it on both sides.

Pulpit Rock, a low, bare, rocky islet, lies about five-eighths of a mile **W.** from The Brothers; and one mile to the northward of the latter, and on the western side of the channel, lies a group, composed of three small islands, nearly **E.** and **W.** from each other,—the easternmost being one mile and five-eighths to the eastward of Great Spruce Island, and called Halifax Island. It is long and low, except at its western end, where it is joined by a sand-bar to a high, rocky head, which has a few dead spruce and pine dotting its surface. The eastern half is covered with a thin growth of scrubby fir. Next to the westward of Halifax is **Anguilar Island**, smaller than the former, and covered with a thin growth of scrubby trees. The westernmost islet of the group is in reality two islands, called the **Shot Islands**, very small and nearly bare,—there being but a few scattered trees on them. They lie **NE.** and **SW.** from each other, close together. **Halifax Island.**

The wooded shores of Mason's Bay will appear in the distance, between Cow Point and the northeastern end of Roque's Island. A little less than half a mile to the westward of the Shot Islands, and a little over a mile to the northward of Pulpit Rock, is the eastern end of Great Spruce Island. This and its companion, Little Spruce Island, are the southernmost of the group lying in the middle of Englishman's Bay, and which, with the smaller islands near them, separate the approach into two channels. The northernmost and largest of the group is Roque's Island, and between it and the Spruce Islands are contained excellent harbors. Great Spruce Island is high and rocky, about three-quarters of a mile in diameter, and its shores are partly wooded and partly bare. Its southeastern point is high, rocky and partly wooded, with high land rising behind it, while its eastern point (that which is nearest to the Shot Islands) is low and has a few spruce and pine trees upon it. This island is separated from Little Spruce, to the westward of it, by a narrow and crooked passage, called **Spruce Island Gut**, through which there is a channel for vessels of light draught. Little Spruce Island is of considerable height, with two high round heads on it, whose summits are covered with a scanty growth of scrubby fir. Its sides are bare and bluff, and bold-to, except at the southern end, where a very long and dangerous ledge makes off, called *Little Spruce Island Ledge*, which is bare at low tide, and breaks heavily at all times. **Great and Little Spruce Islands.**

Roque's Island, the largest island in Englishman's Bay, lies nearly in the middle, about a mile and a half from each shore. It is a mile and a half wide (from **E.** to **W.**) at its widest part, but its shape is so irregular that its length from **N.** to **S.** varies from a quarter of a mile to a mile and three-quarters. The shore-line is very much cut up by coves and indentations, some of which form excellent harbors of refuge, and as such are commonly used. From the Spruce Islands (to the southward of it) it is separated by a crooked passage from an eighth to a quarter of a mile in width, called **Roque's Island Narrows**, and sometimes **Spruce Island Narrows**;—the former being the preferable name. It leads from the westward into Lakeman's Harbor, or Roque's Island Harbor, as it is sometimes called.

Roque's Island.

The eastern shores of Roque's Island are high, barren and woody, except near the southern end, where a large portion has been burnt over and is now bare and desolate. The northeastern point is a high, wooded hill, terminating in a bare, rocky bluff of considerable height, called Great Head,—a prominent landmark for vessels entering the bay from the eastward. The northwestern point is called **Squiers' Point**, and is low, flat and grassy, backed by thin woods, mostly birch and spruce. A long ledge, bare at low water, makes off from it about a quarter of a mile, and is called *Squiers' Point Ledge*.

Great Head.

Between Squiers' Point and Great Head is formed a large and deep cove of regular shape, called Shorey's Cove,—a most excellent harbor, sheltered from all winds, with good anchorage in from two to three fathoms, soft bottom, and no obstructions. Its eastern shore is high and thickly wooded, while the southern and western shores are partly cleared and under cultivation, and on the latter there is a group of farm-houses.

Shorey's Cove.

The only danger in Shorey's Cove is the long reef which makes out from Squiers' Point, (before mentioned,) to avoid which, at high water, you should give the point a berth of five hundred yards. At low water, you may go within one hundred and fifty yards of the end of the bare reef.

Wood, water and fresh provisions can be readily obtained in this harbor at reasonable prices.

The southwestern point of Roque's Island, known as **Parker's Head**, is a high, rocky head, wooded with spruce and scrubby fir, and the land between this and Squiers' Point is high, rocky and wooded.

On the southern side of the island, directly opposite to Shorey's Cove, makes in another large cove, with good water, and well sheltered from all winds, called **Lakeman's or Roque's Island Harbor**. It may be entered from the westward through Roque's Island Narrows, and from the eastward by the passage between Halifax, Anguilar and Shot islands on the south, and Lakeman's Island on the north. This latter is rocky, of moderate height, and wooded, and lies to the southward of the eastern point of Roque's Island and close to it. There is also a passage into Lakeman's Harbor between Great Spruce and the Shot islands,—and this latter is the best entrance, as it is not safe to pass between Lakeman's and the eastern point of Roque's Island.

Lakeman's Island.

About two hundred yards above Parker's Head a large bar, called *Parker's Bar*, runs out for about a quarter of a mile from shore in a **W SW.** direction.

About a mile to the northwestward of Cow Point, in the eastern passage and close in with the eastern shore of the bay, lies a low, thickly wooded island, called **Shoppe's Island**. It is about a quarter of a mile from the nearest land, (which is called Shoppe's Point,) and will be recognized as the low, cleared, grassy point on the eastern shore, with a group of houses on it in range with a clump of black-looking trees. There is no passage inside of Shoppe's Island; but just to the westward of it is the entrance to Pond Cove,—easily recognized by Pond Cove Island on its western side, low and sandy at its southern end, and covered mostly with scrub; and by *the peculiar red rocks* on its eastern side just above Shoppe's Point.

That portion of Englishman's Bay to the northward of Roque's Island and Shoppe's Point is called **Mason's Bay**. There are a number of islands in it, close in shore, which will be mentioned in the description of the northern and eastern shores of the bay.

On the eastern side of the bay the land, as it extends from Cow Point to the northward and westward, becomes lower and shows water-worn, sandy faces. The surface is cleared, cultivated and settled,—the cleared lands being backed by thick woods, separating them from Little Kennebec River. To the westward of the sand cliffs a broad strip of meadow-land stretches away to Shoppe's Point, and extends back to a high and thickly wooded hill to the northward.

About half a mile to the eastward of Shoppe's Point is the mouth of a small creek, known as **Englishman's River**, on the shores of which is a settlement. It is of no importance as a harbor.

Shoppe's Point is low, grassy, cleared and settled, and is recognizable by a group of houses standing about the middle of the point in range with a grove of black-looking trees on the top. This is the only grove near here, although scattered trees extend back from it to the higher hills. Shoppe's Point is a mile and an eighth to the northwestward of Cow Point, and with Shoppe's Island, which lies to the southward of it, forms the eastern side of the entrance to an excellent anchorage, called **Pond Cove**. Here the eastern shore of the bay turns abruptly to the northward and runs in that direction one mile and a half to the head of the cove;—the harbor being formed by this eastern shore on one side, and a long island, called **Pond Cove Island**, on the other. This island lies **N.** and **S.**, is half a mile long, and its southern end is low, sandy, and covered with scrub. The northern end is the highest, and is covered with a thick growth of trees. On the eastern shore of Pond Cove, about a third of a mile above Shoppe's Point, is Red Rock Point, easily recognized by its rocks, which are of a peculiar red color, crowned with a thick growth of spruce and fir. The land at the head of the cove is high and thickly wooded, and a noticeable object on the eastern shore is a large white building from which a wharf extends. This is a lobster packing house. Here is an excellent harbor

Shoppe's Point.

Red Rock Point.

of refuge, which may be safely entered by strangers, if of moderate draught, under any circumstances, as two and three fathoms are found at the usual anchorage. **Description of Englishman's Bay.**

To the westward of Pond Cove lies the entrance to **Great Cove**, situated between Pond Cove Island on the east and Ram Island on the west, and extending to the head of the bay. **Ram Island** is a round, low islet, thickly wooded, lies three-quarters of a mile to the westward of Pond Cove Island and a little over half a mile from the northern shore of the bay,—Great Head bearing nearly **S.**, distant one mile and a quarter.

Great Cove is a beautiful sheet of water, nearly circular in form, affording excellent anchorage, with two and three fathoms water and no obstructions. The banks are thickly wooded, with the exception of a small portion at its head, which shows water-worn faces, is cleared, and has one or two houses upon it. Both Pond and Great coves lie in Mason's Bay.

The northern shore of Mason's Bay runs in nearly an **E.** and **W.** direction, is mostly well wooded, and of moderate height. A mile and a quarter to the westward of Pond Cove Island is the entrance to Chandler's River, which flows into the bay on its northern side, about midway between its eastern and western ends. It is really only an arm of the bay, and runs nearly **N.** and **S.** for a little over two miles to the small settlement of Jonesboro'. The entrance is divided by a low and thickly wooded islet, known as **Fellows' Island**, which will show at its southern end a bare, rocky point backed by scrubby fir trees, and a long reef, bare in some places at high water, making off from it about **S.** by **E.** for nearly five hundred yards. The eastern channel, which is the narrowest, and is not safe for strangers, leads between **Fellows' Point**, the north point of the island, and **Knips' Point**, the eastern point of the entrance to the river. Behind this point is a small cove, called **Sawyer's Cove**, with partly cleared shores showing sandy faces; and there is a ledge, scarcely covered at high water, off Knips' Point. At low water there is no passage through the eastern channel. **Chandler's River.**

The main entrance to the river is between Fellows' Island on the east and **Rodgers' Island** on the west. The latter lies close in with the mainland on the western bank, and is thickly wooded. Its northern point, which is grassy and covered with trees, is called **Rodgers' Point.** In the middle of this channel lies an islet, about fifteen feet high, composed mostly of sand and pebbles, and destitute of all vegetation except a little grass on top. This is Little Mark Island, and is to be left to the eastward coming in. **Little Mark Island.**

The western point of the entrance to Chandler's River is known as **Newbury Point**, and is low and rocky, covered with scrubby bushes and a few spruce. It forms also the northern point of entrance to the Western Branch of Mason's Bay, which here makes off to the westward for about two miles;—its southwestern point of entrance being called **Farnsworth's Point.** Nearly in mid-channel of Western Branch will appear (except at high water, when it is awash) a round rock, called **Seal Rock**, which must receive a berth of one hundred yards. To the northwestward will be seen **Little Hen Island**, low and covered with scrub and a few trees. Both banks are thickly wooded; but at the head of the branch cleared and settled lands are seen.

About a third of a mile above Newbury Point is Look's Head, high and thickly wooded. Here the two shores of Chandler's River approach each other, leaving but a very narrow passage between, which is, however, entirely unobstructed, and may be safely navigated by keeping in the middle. After passing **The Narrows** (which are nearly half a mile long) the river widens into a sort of bay about half a mile wide. Its western shores and those at its head are mostly cleared, cultivated and settled. **Look's Head.**

At the northern end of The Narrows, and on the western bank, is **Look's Point**, a quarter of a mile above the head of the same name. It has two or three houses on it, and is easily distinguished by the sand cliffs at its eastern end, at the foot of which lines of stones have been laid as a sort of sea-wall. The surface is under cultivation. Behind the point makes in **Look's Bay.**

On the eastern shore, abreast of Look's Point, a long, narrow cove, called **Tenney's Cove**, makes in to the eastward, at the head of which a small creek, called **Tenney's Creek**, discharges itself. Both banks are wooded; but its northern point of entrance, called Board Point, is low, with a few spruce and small fir trees fringing its edge, and a long, bare reef extending off from it two hundred yards. **Board Point.**

There are some wooded lands in Look's Bay, but the shores are mostly cleared and cultivated, and show sandy, water-worn faces.

On the northern side of Board Point makes in **Tide Mill Creek**, which runs first to the eastward, and then for about three-quarters of a mile to the northward, to the mills. The northern side of the entrance to this creek, called **Deep Hole Point**, is woody, and has water-worn, sandy faces, and takes its name from a deep hole said to exist in this vicinity.

On the western bank, about three-quarters of a mile above Look's Point, is a low, thickly wooded point, called **Calton's Point**, nearly opposite to, but a little above, Deep Hole Point. Here the river becomes narrower, with a width of about a quarter of a mile, and the channel leads to the westward,—the course being about **N. ¼ W.**, between cleared and cultivated banks. The western shore is grassy and has a gentle slope, while the eastern banks are composed of water-worn, sandy faces, backed by grassy and cultivated lands.

The settlement of **Jonesboro'**, about two miles above Look's Point, is a small hamlet of little importance, standing on cleared, grassy land. There is a probability, however, of some coasting trade being attracted hither on account of the granite quarry lately opened on the eastern shore, about half a mile below the village. A long wharf, with the necessary derricks, has been built here for loading the stone-vessels.

At Jonesboro' the river turns abruptly to the westward, but above this point does not merit any detailed description. It is usually known as **Mill Creek** beyond the settlement.

Western Branch of Mason's Bay. The Western Branch of Mason's Bay, as before mentioned, makes in to the westward, between Newbury Point and Farnsworth's Point. In the middle of its mouth lies **Rodgers' Island**, which is thickly wooded. The main channel leads between Newbury Point and the northeastern point of this island, called **Rodgers' Point**, which is grassy, of moderate height, and covered with trees. Nearly in the middle of the channel off Rodgers' Island lies a round rock, awash at high water, called **Seal Rock.**

All of the shores of the Western Branch are well wooded with scrubby trees. There are no cleared lands or settlements until you reach its head, where the clearings begin. Here there is a little village or hamlet, forming part of the township of **Jonesport.**

Little Hen Island. At the northern end of the passage, between Rodgers' Island and the western shore, lies Little Hen Island, small, low, and covered with scrub and a few trees. Here the flats, which are dry at low water, begin; and above this there is no passage except at high water. The only trade in this part of the bay is in cordwood.

The western shores of Mason's Bay have a general course from Kelly's Point **N NE.**, and are diversified with cultivated and cleared lands and thickly wooded slopes. The land is not very high, and settlements are few. This shore is generally shoal in its approaches, and should receive a berth.

About two hundred yards above Parker's Head (the southwestern point of Roque's Island) a long bar makes out in a **W SW.** direction about a quarter of a mile. It is quite shoal, and should be buoyed. From the Jonesport shore, above Parker's Head, another long point, covered with boulders, extends for nearly three-quarters of a mile in a **SE. by S.** direction, and is generally known as *Rodgers' Bar.* With Parker's Bar on the opposite shore it greatly obstructs this passage, as the ends of the two bars overlap, although there is a wide channel between them. It requires considerable care to avoid being set on to one or the other. Proper directions will be given for this passage, but strangers are not advised to attempt it until both bars have been buoyed.

DANGERS

IN APPROACHING AND ENTERING ENGLISHMAN'S BAY.

I. ***Coming from the Eastward.***—Many coasters and fishermen use the passage which leads along shore, between Fan and Hickey's islands, up to Cow Point. This is an excellent and almost unobstructed passage,—the only danger being the ledge off the northern end of Hickey's Island. This ledge is an extension of the island, and is known as *Hickey's Island Point.* After passing it there are no dangers; but the main entrance from the eastward is, as before mentioned, between the Scabby Islands and The Brothers. In approaching this channel do not stand too far to the westward,

Jumper's Ledge. as the dangerous rock known as Jumper's Ledge lies to the southward of Pulpit Rock. This ledge has six feet on it, and is marked by a spar-buoy, painted red and black in horizontal stripes, placed in five fathoms about fifty yards to the eastward of it. Vessels, in order to avoid this ledge, must not stand farther to the westward than to bring Pulpit Rock to bear **N.** by **W.** In this passage, after entering, look out—first, for the reefs off

Shag Ledge. Shag Ledge, which here make off to the southwestward a considerable distance; but by keeping the middle of the passage they are easily avoided. After passing this ledge do not approach the western side of the channel too closely, to avoid the *Cod's Head*, a small rock, out at low water, which lies a quarter of a mile to the southwestward of Hickey's Island, and is not buoyed. After passing it the channel is clear, and it is only necessary to keep clear of the banks on either hand.

Great Head, however, (the northeastern point of Roque's Island,) is quite bold-to, and may be closely approached.

Squiers' Point Ledge. If intending to anchor in Shorey's Cove, beware of Squiers' Point Ledge, a long reef making out from Squiers' Point in an easterly direction, and nearly all out at low water. To avoid it, if the tide is in, give the point a berth of five hundred yards. At low water the bare rock may be approached within one hundred and fifty yards.

Bound up Chandler's River there are no obstructions until near Fellows' Island, when there will be seen to the eastward an islet, composed mostly of sand and pebbles, with a little grass on top, called **Little Mark Island**, which must be left to the eastward. After passing it there are no dangers, although the channel is very shoal. It is only necessary to give the points a small berth in passing them, or, in other words, to keep in the middle of the river.

Seal Rock. Bound into the Western Branch, look out for Seal Rock, which lies nearly in the middle of the passage between Rodgers' Island and Newbury Point, and is awash at high water. After passing it, keep as nearly as possible in the middle of the passage to avoid *Rodgers' Island Point*, a line of bad ledges, awash at high water, making off from the northern end of the island about three hundred yards. When clear of these the course leads to the westward, passing to the northward of *Mason's Bay Ledge*, a dangerous rock, covered at high water, lying **W.** by **N.** from the northern end of Rodgers' Island, at a distance of six hundred yards.

The passage between Rodgers' Island and Farnsworth's Point is exceedingly narrow,—the channel being nearly closed by a long sand-spit making off from the mainland and known as Flake Bar. Farnsworth's Point is also sometimes called **Flake Point.** *Flake Bar.*

The southeastern point of Rodgers' Island should not be approached closely, as there is *a reef making out from it about a hundred yards,* bare at low water.

The southern point of Fellows' Island has a long reef making out from it in a **S.** by **E.** direction for nearly five hundred yards, and bare in places at ordinary high water.

Strangers should not attempt the passage into Western Branch, which leads between Rodgers' Island and Farnsworth's Point. Unless of light draught, vessels should always anchor in Pond Cove or Shorey's Cove.

SAILING DIRECTIONS

FOR APPROACHING AND ENTERING ENGLISHMAN'S BAY.

I. ***Coming from the Eastward, through Fan Island Channel.***—The course through this channel to clear Cow Point is **W. ¼ S.**, which may be continued until the passage is fairly open into the bay, when steer **NW. ¼ W. Nearly,** for Great Head. *If bound into Pond Cove,* when abreast of Shoppe's Island haul gradually around the island to the northward, and steer **N. ½ E.**, having Pond Cove Island on the western side and Red Rock Point on the eastern. Anchor off the factory, in three fathoms water, soft bottom; or run farther up into the cove, according to draught of water. There are no dangers.

Bound into Great Cove: Continue the course to the northward for Ram Island until the passage between it and Pond Cove Island is fairly opened, when steer **N.** by **E. ½ E.**, and anchor at discretion, in from two to three fathoms. There are no dangers.

Bound into Shorey's Cove: Continue the course **NW. ¼ W.** for Great Head. Round the head into the harbor, but be careful not to go too near Squiers' Point. Anchor at pleasure, in from two to three fathoms at low water. The holding-ground is excellent.

Bound up Chandler's River, take a pilot; but, should it so happen that none can be obtained, continue the course to the northward, past Ram Island, and enter midway between Fellows' and Rodgers' islands, leaving Little Mark Island to the eastward. When about midway between Newbury Point and Fellows' Island turn to the northeastward, steering about **NE.**, between the island and the point, until The Narrows are fairly open.

The Narrows may be safely passed by keeping in the middle, after which the course is nearly **N.** by **E.** for Calton's Point, to the eastward of which you must pass. After passing it there are no directions necessary, except to keep in the middle of the river until up with the quarry wharf. Not more than four or five feet at low water can be carried up to Jonesboro', and vessels of light draught only, can enter the river.

Bound into Western Branch: When between Fellows' and Rodgers' islands, keep the middle of the passage to the westward until past Rodgers' Island Point, when steer **W. ¼ N.**, heading midway between two high sand cliffs, with gently sloping grass-lands between them, which will be seen at the head of the bay. This course clears Mason's Bay Ledge. Anchor off Little Hen Island, unless it be high water. Above this no sailing directions can be given, as a pilot must always be taken by strangers wishing to go above Great Cove. It rarely happens that one cannot be obtained for Chandler's River or Western Branch, and it is not safe to attempt to enter without one.

II. ***To enter from the Eastward, by the Main Channel.***—After passing Libbey Island Light-house keep to the westward until midway between the Scabby Islands and The Brothers, when a **NW.** course will lead up the middle of the passage. After this follow the directions previously given.

APPROACHES TO ENGLISHMAN'S BAY FROM THE WESTWARD.

There are dangerous shoals off Petit Manan; and the passages among the islands in Moos-a-bec Reach are narrow and intricate; therefore, as a rule, strangers should always pass to the southward of the islands, and between Petit Manan and Head Harbor. The high lands of the latter and of Steel-Coat or Steel Harbor Island will, in that case, be made first. Off the southern end of the latter will be seen Mistake Island, a rocky islet of moderate height, with a stunted growth of trees near its northwestern end, and a light-house, showing as a tall white tower, on its southern end. The surface near the tower is bare of trees and rocky. A white light of the second order, revolving once every thirty seconds, and visible thirteen miles, is shown from this light-house as a guide to Moos-a-bec Reach, Head Harbor and Englishman's Bay, and has been already described on page 55. **Mistake Island.**

Steel-Coat or **Steel Harbor Island** is triangular in shape with the apex to the southward, lies **N.** and **S.**, and is about a mile long. It is just to the southward of Head Harbor Island, and forms, with it, what is known as Head Harbor.

Steel-Coat Island. It is for the most part barren;—bare ledges cropping out here and there over its surface;—and even where wooded, the growth is thin and scanty. **Mistake Point**, its southern end, is low, rocky and entirely bare, and runs up towards the north into a high head with a few sickly spruce and fir upon it.

Head Harbor Island lies **S SW.** from Roque's Island, distant about two miles and a half,—its northern point bearing **W. ¼ S.** from Libbey Island Light-house, distant seven miles. It is about two miles long **NW.** and **SE.**, and about a mile wide at its widest part. The shore is of moderate height, diversified with wooded hills and cleared valleys, with houses

Head Harbor Island. dotting the slopes at long intervals. **Head Harbor,** between it and Steel-Coat Island, is an excellent anchorage, much resorted to, but is not very easy of access to strangers. Off the southeastern end of the island is **Man Island,** forming the eastern point of entrance to this harbor, destitute of all vegetation, and remarkable for the bare, black rocks, called **Black Head,** at its southwestern end. There is also an anchorage between Mistake and Steel-Coat islands, called **Steel-Coat Harbor,** and formed by Steel-Coat Island on the east and Mistake and Knight's islands on the west. It is a good anchorage; as the passage, though narrow, is perfectly safe, and there are no obstructions.

A whistling-buoy has been placed off this island two miles **S.** by **E. ¼ E.** from the light-house. It is sounded by the motion of the sea; and is a most useful guide in thick weather to Head Harbor, Englishman's Bay or Moos-a-bec Reach.

When within about five miles of the Libbey Islands the course leads to the southward of a great number of islands and islets, most of which are rocky and barren, and all of which lie on the southern side of **Moos-a-bec Reach.** Of

Crumple Island. these the southernmost is called Crumple Island, and is very remarkable in appearance,—looking like a number of round hillocks joining each other. The middle hillock is the highest, and has one or two tall trees upon it, while that which is next to the southwestward is bare, with the exception of two tall leaning trees on its summit which form a conspicuous mark.

To the northward of Crumple Island and close to it is **Fisherman's Island,** low, rocky, and dotted with numerous tall, dead trees, looking somewhat like the spars of shipping. A little farther to the northward is **Browney Island,** thickly wooded in the middle, with tall trees projecting here and there above the general outline of woods. The western part of the island is bare of everything excepting numerous dead trees, while the eastern end is a high, bare, rocky head, sloping gently to the shore-line.

Great Wass Island. The high, wooded lands next to the eastward of Fisherman's and Crumple islands are on Great Wass Island. This is a large and very irregularly shaped island, lying **N.** and **S.**, and about four miles long. Its northern half is usually called **Beal's Island,** and lies on the southern side of Moos-a-bec Reach. Great Wass Island is about a mile and a half to the westward of Head Harbor Island, but the passage between them is so full of islets, ledges and sunken rocks as to be entirely unfit for strangers.

Rounding Head Harbor Island, you will open Englishman's Bay;—the course leading to the northward along the eastern shore of the Island, with the Spruce Islands to the eastward, and the high lands of Roque's Island appearing behind them. **Great Spruce Island,** the easternmost of the two, will appear as a high, rocky island, partly wooded and partly bare, while **Little Spruce Island** will be recognized by two high, round heads, whose summits are covered with a scanty growth of scrubby trees.

Seguin Island. Close to the northern shore of Head Harbor Island lies Seguin Island, easily recognized by the whitish rocks cropping out here and there over its surface and two spruce trees on the eastern side of its summit. It lies on the south side of **Seguin Passage,** in Moos-a-bec Reach, and must not be confounded with the Seguin Island off the entrance to **Kennebec River.**

To the eastward of the Spruce Islands numerous rocky islets will be seen, apparently shutting off all approach to the bay on that side. On the western side, and nearly ahead, **Mark Island** will appear,—high, bluff and rocky, with a large round head on its western end, and entirely covered with a dense growth of trees. When abreast of it, the eastern passage into Englishman's Bay is fairly opened, with **Ballast Island** in the middle. This is a small, bare island, with two or three dead spruce trees standing like spars over its surface.

On the eastern side of the passage will be seen the high, rocky and wooded shore of Roque's Island, the channel leading between this and Ballast Island. To the eastward will be seen the eastern entrance to Moos-a-bec Reach, which will appear full of islets, with a large settlement on its northern shore. This is the little village of **Jonesport.**

The western shore of Englishman's Bay has a general course **N NE.**, and will appear as moderately high land, diversified with cleared and cultivated patches and thick woods. Houses may be seen at long intervals, this coast being very thinly settled.

DANGERS

IN APPROACHING AND ENTERING ENGLISHMAN'S BAY.

II. ***Coming from the Westward.***—After passing the ledges off Petit Manan Island, there are no obstructions until near Mistake Island. Do not come too close to Man Island, *as there is a sunken rock, with a few feet of water on it,* one hundred yards **SW.** from Black Head.

You may pass tolerably close to the eastern shore of Head Harbor Island, and the same is true of Mark Island; but in approaching the latter beware of the very dangerous Eastern Ledges, lying in

the middle of the passage, but on the eastern side of the channel. They are two small ledges, one of which is bare at low water, and lie **E NE.** and **W SW.** from each other, with from six to ten fathoms between them, and are not buoyed. The easternmost ledge, which is dry at low water, is about three hundred yards from the western rock. Both are bold-to. These ledges bear **S.** from Spruce Island Gut, one mile and three-eighths; **E.** by **N.** ½ **N.** from Seguin Island, one mile and a half; and **E.** by **S.** ½ **S.** from Mark Island, one mile and an eighth distant. The channel between them and the islands is very deep and entirely unobstructed. After passing them the channel is clear until near the southwestern end of Roque's Island, (Parker's Head,) when you must look out for Parker's Bar, making out from the island a little above Parker's Head in a **W SW.** direction about a quarter of a mile. It is not buoyed, and must be carefully avoided. Haul to the northwestward to clear it, and when past it haul again to the northeastward to avoid *Rodgers' Bar*, which makes out from the Jonesport shore to a distance of half a mile, and is mostly bare at low water. Neither is this bar buoyed, which renders this channel unsafe without a pilot; but buoys have been recommended on both bars.

Eastern Ledges.

Parker's Bar.

SAILING DIRECTIONS

FOR APPROACHING AND ENTERING ENGLISHMAN'S BAY.

III. ***Coming from the Westward, Outside of everything.***—Give Petit Manan Light-house a berth of five miles, and steer **NE.** by **E.** ¾ **E.** until up with Head Harbor Light-house, (sometimes called Moos-a-bec Light-house,) when haul to the northward, giving it a berth of about a mile. Thus you will pass to the northward of the whistling-buoy about a mile. Keep the course past the entrance to Head Harbor and steer to the northward, along the shores of the island, until the eastern end of Mark Island bears **NW.** by **N.** ¾ **N.**, when steer that course until within three-eighths of a mile of the island. This course passes seven-eighths of a mile to the eastward of Eastern Ledges, and carries not less than sixteen fathoms water. Now steer **N.** ½ **E.**, carrying not less than six fathoms, until past Ballast Island and approaching Parker's Head, when edge off to the westward to avoid Parker's Bar. When clear of this, steer **NE.** ½ **N.** to avoid Rodgers' Bar, on which course there will not be less than four fathoms.

When up with Squiers' Point, if bound into Shorey's Cove, round the point to the eastward, (giving it a berth of about five hundred yards to avoid the ledge,) and anchor at discretion, in from two to four fathoms water.

Bound to Chandler's River, steer about **N NE.** until up with Fellows' Island, after which follow the directions given for the river on page 59.

IV. ***To pass inside of Simms' Rock and enter Englishman's Bay.***—*Simms' Rock* is a dangerous sunken rock, two miles **S.** ½ **E.** from Petit Manan Light-house, and has six feet at lowest tides. A spar-buoy, painted red and black in horizontal stripes, is placed in eight fathoms on the northeastern side of the rock. To go between it and Petit Manan, give the island a berth of about one mile and steer **E.** ¾ **N.**, passing about a mile outside of Head Harbor Light-house and carrying deep water. Round the southeastern end of Head Harbor Island and steer to the northward, carrying not less than six fathoms, until the eastern end of Mark Island bears **NW.** by **N.** ¾ **N.**, when steer for it, and follow the directions given above. The course **E.** ¾ **N.** passes about a mile to the northward of Simms' Rock and about a mile to the northward of the whistling-buoy.

V. ***Having come through Moos-a-bec Reach, to enter Englishman's Bay.***—When abreast of Mark Island steer **N.**, carrying not less than six fathoms, until up with Ballast Island, to the eastward of which you must pass. When past it, haul to the westward to avoid Parker's Bar, and when clear of this danger steer **NE.** ½ **N.** to clear Rodgers' Bar. When up with Squiers' Point, follow the directions given above for Shorey's Cove and Chandler's River.

In beating to windward, keep the view of the sea open to the westward of Parker's Head and Little Spruce Island until past Parker's Bar, and do not approach the western shore nearer than a mile to clear Rodgers' Bar.

In thick weather keep about half a point to the southward of the course for Head Harbor Light-house until you hear the whistling-buoy. Then run for the buoy, and when past it proceed as above directed.

LAKEMAN'S HARBOR.

This harbor, (see page 56,) situated on the southern side of Roque's Island, nearly opposite to Shorey's Cove, is an excellent harbor of refuge, well sheltered from all winds. There are several ways of approach to it from the eastward, and one from the westward, through Roque's Island Narrows; but this latter is much obstructed, and dangerous without an experienced pilot.

Lakeman's Harbor. The eastern passages are, first: One between Lakeman's Island on the north, and Halifax, Anguilar and Shot islands on the south; secondly, one between Halifax Island on the north and The Brothers on the south. This latter passage leads to the westward towards Great Spruce Island, leaving Anguilar and Shot islands to the northward and Pulpit Rock to the southward, and then turns to the northward, running between Spruce Island Point and the Shot Islands into the harbor. The harbor may also be entered by the passage between Great Spruce Island and Pulpit Rock. All things considered, however, strangers are advised rather to attempt to make the Little Kennebec, Pond Cove, or Shorey's Cove, than this harbor, as the passages among the islands have not been surveyed and there may be dangers which are now unknown.

No sailing directions are necessary for either of these channels, except to keep in the middle of the passage. *The harbor cannot be entered at night without an experienced local pilot.*

HEAD HARBOR.

This comfortable harbor of refuge (see page 60) lies on the southern side of Head Harbor Island, sheltered from southerly winds by Steel-Coat or Steel Harbor Island, and is much used,—being secure from all winds and easy of access. The approach from the westward is not safe, as the passage between Great Wass Island and Head Harbor Island is full of islands and shoals; but the main entrance is from the southward, between the southeastern point of Head Harbor Island and Mistake Point, the southern end of Steel Harbor Island.

On approaching it from the eastward or southward the light-house on Mistake Island, on the western side of the entrance, will be the first prominent object noticed. **Mistake Island** is bare, except for a stunted growth of trees near its northwestern end.

Man Island, on the eastern side of the entrance, is remarkable for the high, bare, black, rocky head at its southwestern end, called **Black Head.**

A very peculiar looking, long, white, bare and rocky hill, with a sharp peak in the middle, is seen at the northern end of the harbor on coming in, and is known simply as **The Head**, giving the name to the harbor.

The shores of **Steel-Coat Island** are rocky and of moderate height, with a growth of sickly trees on them,—but **Mistake Point** is low, rocky and entirely bare.

The only danger in entering Head Harbor is *the sunken rock lying a hundred yards* **SW.** *from Man Island.* It has a few feet on it at low water, and is not buoyed. (See page 60.)

A whistling-buoy, painted red and looking like a nun-buoy, is placed two miles **S.** by **E.** from Head Harbor Light-house, and is an excellent guide to the entrance in thick weather.

SAILING DIRECTIONS.

To enter this harbor from the Eastward.—Bring the light-house on Mistake Island to bear **SW.** by **S.**, and run for it until you open the middle of the passage bearing **N.**, when steer **N.** ½ **E.** up the middle until up with White's Point, (or Kelly's Point, as it is generally called,) which is the western point of entrance to the Cow Yard or Inner Harbor. Here anchor, or keep off to the northeastward and run into Inner Harbor.

The **Cow Yard** or **Inner Harbor** is a cove of peculiar shape, on the southern side of Head Harbor Island. Its course is first about **N.** by **E.** ½ **E.** for about three hundred and fifty yards, when it turns abruptly to the eastward, running nearly **E SE.** for an eighth of a mile to its head. It is only two hundred and fifty yards wide at its mouth, between Kelly's Point on the west and Killwood Point on the east, and is narrower as it approaches its head. **Kelly's Point or White's Point** is rocky, low, and of a white color, bare of trees, but backed by a thin growth of spruce and fir. **Killwood Point** is low, bare and grassy.

To enter the Cow Yard.—When on the **N.** ½ **E.** course, abreast of **Money Island**, (the small rocky island, crowned with scrubby fir and birch, lying to the westward going in,) steer **N.**, passing between Kelly's Point and a bare, rocky islet lying off Killwood Point,—the channel being midway between the point and the islet. Anchor at discretion. There are from two to four fathoms in this harbor, and it is sheltered from all winds; but it is not advisable to enter the Inner Harbor unless intending to stay some time, or unless the sea is uncomfortable in the anchorage off Kelly's Point;—an occurrence of great rarity.

STEEL-COAT HARBOR.

Between Steel-Coat Island on the east and Mistake and Knight's islands on the west there is a narrow passage, with deep water, which leads into what is called Steel-Coat or Steel Harbor. Both shores are bold-to, and there are no obstructions in the channel, while the harbor itself is wide and perfectly sheltered. A peculiarity of the passage is that the rocks are marked with names painted upon them. There are no sailing directions necessary for it, other than to run for the light-house until within a hundred yards of it, and then steer nearly **W.**, which course will lead into the passage. After entering keep the middle until you come out into the harbor, where you may anchor at discretion, in from two to three fathoms, soft bottom.

MOOS-A-BEC REACH

MAINE

Scale 1:20000

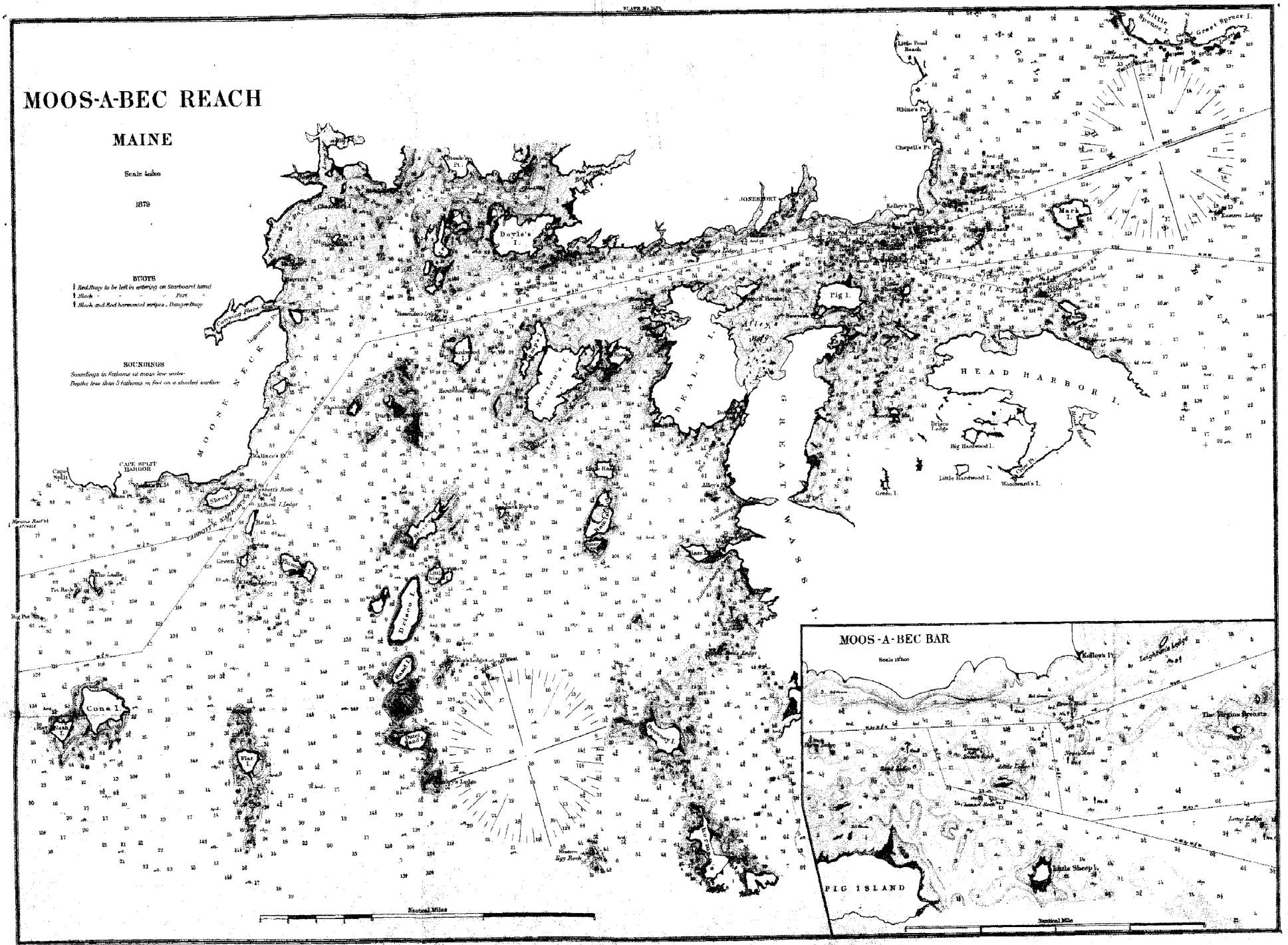
1879

BUOYS

Red Buoy to be left in entering on Starboard hand
Black " " Port
Black and Red horizontal stripes . Danger Buoy

SOUNDINGS

Soundings in Fathoms at mean low water.
Depths less than 3 fathoms in feet on a shaded surface.



LIGHT-HOUSES.

NAMES.	Latitude N.	Longitude West.		Fixed or Revolving.	Interval of Flash.	Height above sea-level.	Distance visible in nautical miles.
		In arc.	In time.				
	° ′ ″	° ′ ″	h. m. s.		m. s.	Feet.	
Libbey Island Light-house..	44 34 5	67 22 2	4 29 28.1	Fixed.	....	52	12
Moos-a-bec Light-house	44 28 27	67 31 55	4 30 7.7	Revolving.	0 30	65	13

TIDES.

In the neighboring port of Jonesport a pretty good determination of the times and height of flood and ebb tide has been obtained, and will serve, approximately, for this bay. The predictions of times and heights of high water at Jonesport will be found in the "**Tide Table for the Atlantic Coast**," published annually by the Coast Survey. The mean rise and fall of tides in Englishman's Bay is about thirteen feet; and the time of high water after full and change is, approximately, $11^h\ 15^m$.

VARIATION OF THE COMPASS.

The magnetic variation for 1879 is, approximately, 17° 8′ W., with an annual increase of 2′.

ICE IN ENGLISHMAN'S BAY.

Ice forms in this bay and its harbors about the same time and in the same manner as in Machias Bay;—and, like the formations in that bay, is purely local, except during severe winters, when a conglomerate of "field" and "drift-ice" is formed, completely obstructing navigation. (See also page 50.) Winds have little influence in preventing or assisting the local formations; nor have the tides; but both assist in bringing in drift-ice from outside, and in carrying it off when the mass is broken up. Calms and light winds from the northwestward are favorable to a rapid increase in the local formation; while strong winds break it up and force it on shore to leeward,—thus blocking up the harbors on that side. The bay is generally dangerous to navigate, even in moderate winters, from January 1st to March 1st; and in severe winters is closed from December to April.

In 1874–5, sailing-vessels found navigation exceedingly hazardous as early as the middle of January; and impossible after the twenty-fourth of that month. During February all access to the bay, or even a near approach to it, was cut off by an immense field composed of drift-ice "packed" together and frozen into a solid mass, which not only filled the bay, but extended several miles out to sea. The southwesterly, easterly and northeasterly winds which occurred in the latter part of that month broke this mass up and carried much of it to sea; but it did not finally disappear from the bay until the latter part of March; and the harbors remained, for the most part, closed several weeks later.

MOOS-A-BEC REACH.

Vessels proceeding to the westward along the coast may, when abreast of Libbey Island, go outside of the light on Mistake Island, and steer **W.** by **S.** ½ **S.** to clear Long Island, (off Blue Hill Bay;) or they may go through Moos-a-bec Reach. This is a narrow passage, formed by the mainland on the north and a group of islands on the south, of which Head Harbor, Beal's, Norton's and Sheep islands are the principal. The reach is full of dangerous ledges; its channels are intricate, and it is not safe for a stranger without full directions. Inasmuch, however, as it is much the shortest of the passages between Machias and Mount Desert, and affords excellent anchorage in all winds, it is commonly used by coasters. Its length, from Kelly's Point on the east to Moose Neck on the west, is a little over seven miles; but its width varies,—being in some places not over a third of a mile, and in others less than a quarter, while in its widest part it is over a mile from shore to shore. There are several channels leading into it; but those from the southward, of which there are three, are only used by vessels desirous of making a harbor, and are not safe for strangers under any circumstances. The passage used by vessels coming along shore enters on the east between Kelly's Point and Head Harbor Island, passes between the mainland of Jonesport and the northern shores of Beal's and Norton's islands, and, threading the intricate channels among the islands to the westward, passes between Sheep and Ram islands (through what is called Tabbott's Narrows) to Cape Split, the eastern point of the entrance to Pleasant Bay. Hence, the way is clear to Petit Manan. Or, after passing through Tabbott's Narrows the course may be laid to the southwestward, leaving Nash's Island (on which is a light-house) to the northward; and, after passing it, the course may be shaped for Petit Manan.

Coming from the eastward, Mark Island is first met with, lying in the middle of the eastern entrance. It is the landmark for vessels bound to the westward through the reach; lies three-quarters of a mile from the northern shore of Head Harbor Island, and is high, rocky, and entirely covered with a dense growth of trees. On its western end is a large, round head, which, when seen from the eastward, will appear over the trees as if it were in the middle. The shores are bold-to, except on the southern side, where there is a ledge extending out an eighth of a mile. The Seguin Passage passes to the southward of this island; but vessels coming along shore generally pass to the northward of it. **Mark Island.**

Seguin Island. Next to the southward of Mark Island, and close in with the northern shore of Head Harbor Island, lies Seguin Island,—the passage between it and Mark Island, called **Seguin Passage**, being a little over half a mile wide. It is low, has whitish rocks cropping out here and there over its surface, and two spruce trees standing on the eastern side of its highest point. Seguin Passage has not less than four fathoms, and is mostly used by steamers. Ten feet at low water may be taken between Seguin and Head Harbor islands; but the passage is narrow, full of rocks, and fit only for small boats.

Head Harbor Island. Head Harbor Island (already described on page 60) lies about two miles and a half to the southwestward of the Spruce Islands,—its northern end bearing from Libbey Island Light-house **W. ¼ S.**, distant seven miles,—and extends nearly **NW.** and **SE.** for a little over two miles. Its shores are diversified with wooded hills and cleared valleys, and dotted with houses at long intervals.

The Virgin's Breasts. About three-quarters of a mile to the westward of Mark Island will be seen The Virgin's Breasts, or the **Virgin Islands**, as they are sometimes called. They are three in number,—one lying on the northern side of the passage about three-eighths of a mile to the eastward of Kelly's Point, and the other two lying close together on the southern side of the channel, separating it from the Seguin Passage. The larger of these two is called **The Nipple**; while the northern island is often called **Virgin Island.** It has a round, grassy top, without trees. All of the islets are surrounded by dangerous ledges.

Kelly's Point. Kelly's Point, the northern point of the eastern entrance to the reach, is flat and grassy, of moderate height, and backed by a bold, bare, rocky head, which, on the western side, juts into the water. From this point to the westward the northern shore is mostly cleared and settled, of moderate height and backed by woods. The village of **Jonesport** occupies nearly all of this shore,—extending almost to the mouth of Indian River.

Sawyer's Cove. One mile to the westward of Kelly's Point is the entrance to Sawyer's Cove, a shallow cove, about half a mile long, and a little over a quarter of a mile wide at its mouth, running **NE.** and **SW.**, and forming part of the water front of Jonesport. A few hundred yards to the westward makes in a small creek, called **Sawyer's Creek.** From this creek to Hopkins' Point the shores are of moderate height, with occasional sandy, perpendicular faces, thickly settled and backed by woods.

Sheep Islands. Opposite to Kelly's Point, on the southern side of the channel, and three-quarters of a mile to the westward of The Nipple, lie the Sheep Islands, known, respectively, as **Sheep Island** and **Little Sheep Island.** The latter, which is the northernmost, is a low, rocky islet, surrounded by ledges, and is three-eighths of a mile **E.** by **S. ¼ S.** from Pig Island, and five-eighths of a mile **S SW.** from Kelly's Point. About five hundred yards **S.** by **W.** from it lies Sheep Island, about three hundred and fifty yards long **NW.** and **SE.**, and a quarter of a mile to the northwestward of the western end of Head Harbor Island. Between Sheep Island and the latter is the best channel into the passage between Head Harbor Island and Great Wass Island, which leads to the southwestward, towards a low, rocky islet (covered with grass and with a single tree upon it) lying in the middle of the passage, and called **One Bush Island.** Strangers, however, must not attempt this passage.

Pig Island. Nearly half a mile to the westward of Little Sheep Island, and still on the southern side of the channel, is Pig Island, nearly half a mile long **W.** by **N.** and **E.** by **S.**, of moderate height and mostly bare, with ledges cropping out here and there over its surface, and a few stunted spruce. There is no passage between it and Great Wass Island except at high water.

A low islet, lying about **S SW.** from the southwestern point of Pig Island, is called **Sawyer's Island,** and at low water is joined to the former.

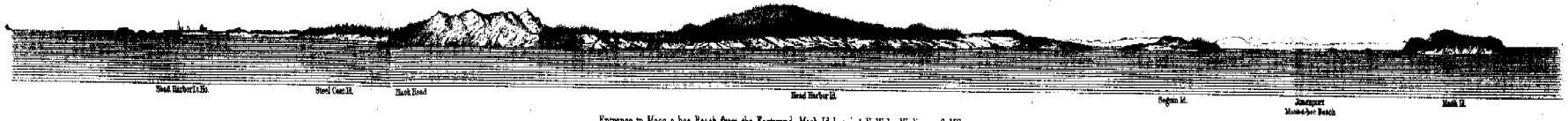
Great Wass Island. About an eighth of a mile to the southward of Pig Island is the northern end of Great Wass Island, (the largest of the islands in this vicinity,) which is very irregular in shape and about four miles long. Its shores are rocky, of various heights, thinly settled and generally well wooded. About a mile and a half below its northern end it is nearly cut in two by two coves which make in on its eastern and western sides.

French-House Island. Next to the westward of Pig Island is French-House Island, also on the southern side of the reach. It lies in the mouth of Alley's Bay, about an eighth of a mile from the Beal's Island shore and a little over half a mile from Pig Island; is of moderate height, rocky, and has one conspicuous spruce tree upon it. At low water it is connected with Beal's Island by a reef of rocks.

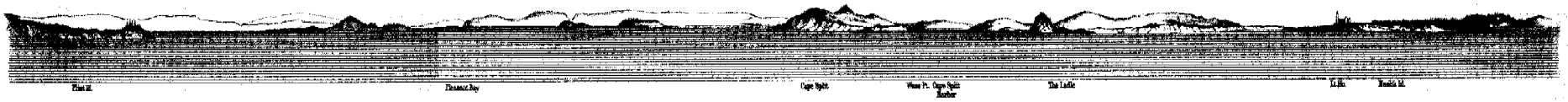
Beal's Island. Beal's Island is the northwestern part of Great Wass Island, with which it is joined at low water. It is a mile and an eighth long **N.** by **E.** and **S.** by **W.**, has an average width of five-eighths of a mile, and lies on the southern side of the reach, directly opposite to Jonesport. Its eastern, western and northern shores are of moderate height and thinly settled; while on the northwestern side appear sandy, water-worn faces. **Beal's Point,** its northwestern point, is quite low and bare of grass, but has a group of stunted firs some distance back from the shore-line. Between this island and the northern part of Great Wass Island lies **Alley's Bay,** half a mile wide at its mouth, but very shallow. It affords good shelter, however,—the bottom being soft mud, where vessels may lie aground without damage.

At low water Beal's Island is joined at its southeastern end to Great Wass Island; but at high water boats may pass between them through a narrow, rocky passage, called **Flying Place,** into Alley's Bay.

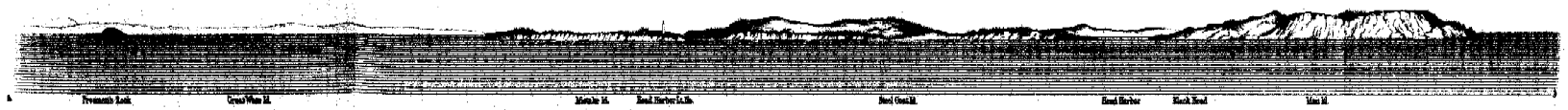
Passing Beal's Island, you open a very small, bare, rocky island, lying close in with its western shore, entirely destitute of vegetation,—being a mere ledge,—and called **Barney's Little Island.** Next to the westward, and still on the southern side of the reach, lies a group of islands to the westward of Beal's Island, and called, respectively, beginning with the easternmost, the Sheep Islands, Norton's Island and Pomp's Island.



Entrance to Moos-a-bec Reach from the Eastward, Mark Id. bearing N. W. by W distant 3 Miles.



Entrance to Moos-a-bec Reach from the Westward, Nashs Id. Lt. Ho. bearing E.N.E. distant 2 Miles.



Approaches to Head Harbour, the Lt Ho. bearing N. W. by N. ¼ N. distant 2¼ Miles.

Sheep Islands. The Sheep Islands lie about a quarter of a mile to the westward of Beal's Island, and are a group of three,—the easternmost of which is low and rocky, and has a group of spruce trees on it, in the centre of which stands a lone tree. At low water it is connected with Beal's Island by ledges and flats. The others are small, bare, rocky, and have only tree stumps upon them.

Norton's Island. One hundred and fifty yards to the westward of the Sheep Islands is Norton's Island, three-quarters of a mile to the westward of Beal's Island, three-quarters of a mile long, and lying **NE.** and **SW.** Its shores are low, composed of yellow, weather-beaten rocks, and covered with a thick growth of scrubby trees. There is no passage at low water between this island and Beal's Island.

Pomp's Island. Pomp's Island lies close to the northwestern shore of Norton's Island, to which it is joined at low water, and extends in a **NE.** and **SW.** direction for nearly half a mile. It is low, rocky and almost bare. Its northeastern end, which is the highest land on the islet, has a somewhat bluff appearance, and is bare except for clumps of stunted fir dotting the surface here and there. The island was formerly thickly wooded, but the stumps of the trees only remain.

Old House Point, **Donovan's Cove,** **Hopkins' Point.** On the northern side of the reach, directly opposite to French-House Island, is **Old House Point,** the eastern point of entrance to Sawyer's Creek; about seven-eighths of a mile to the westward of this is **Donovan's Cove,** shallow, and of no importance; and the same distance to the westward of this, and opposite to Norton's Island, is Hopkins' Point, the eastern point of entrance to Indian River. It is low and grassy, with a very few spruce and fir trees on top. Close to it, and exactly across the mouth of the river, lies **Doyle's Island;**—the main channel of Indian River leading along its northern shore. The island is low and wooded, except near its eastern end, where the land is cleared and has a house and outbuildings on it; and is separated from Hopkins' Point by a narrow passage about one hundred and fifty yards wide, called **Whiting's Passage.** Two spruce trees, which stand close together on its southwestern point, serve as a distinguishing mark for recognizing the entrance to Indian River, as there are no other trees on the point.

Goose Islands. The Goose Islands, which lie a little over a quarter of a mile to the westward of Doyle's Island, are six in number. They are all low and well wooded, except that one which is next to the southernmost, which is small and low, and has only a few scattered spruce on its flat, grassy surface. The third island of the group is very thickly wooded, and has a hut on its eastern shore near the northern end. The channel into Indian River passes to the westward of these islands, and then leads to the eastward along their northern faces. A large white boulder on the southern end of the northern island forms a conspicuous object from seaward.

Hardwood Island. On the southern side of the channel, nearly opposite to the Goose Islands, and five-eighths of a mile to the westward of Pomp's Island, lies Hardwood Island. It is a quarter of a mile long **N NE.** and **S SW.**; and, seen from the eastward, shows dark-wooded heads at its northern and southern ends, with somewhat lower land between them;—the rest of the island appearing partly bare, and partly wooded with a stunted growth of trees. Seen from the southward and westward, its southern end shows a remarkable white, rocky point, almost bare; and both ends appear to be covered with small trees. This island is surrounded by shoals, but there is a good passage (obstructed, however, by *a ledge with seven feet at low water*) between it and Pomp's Island. There is another good channel on its eastern side, (between it and the Duck Ledges,) half a mile wide, and with not less than three fathoms in it. The main channel of the reach leads along the northern side of Hardwood Island and is quite narrow at this point,—being obstructed by *a bad ledge nearly in the middle of the passage.* After passing this ledge the channel continues to the westward towards the mainland, passing to the northward of the Duck Ledges, which lie about five-eighths of a mile **W SW.** from Hardwood Island. They consist of three large, bare rocks or ledges, all uncovered at half-tide, and the northernmost almost bare, showing as a white, bare, rocky islet with a sort of grass cap on top. These ledges should receive a wide berth in every direction, unless you intend passing to the southward of them, where they are comparatively bold-to,—the shoals not extending off farther than an eighth of a mile in that direction.

Duck Ledges.

Shabbit Island. Next to the westward of the Duck Ledges, and a little over a quarter of a mile from the dry ledge, is **Shabbit Island,** low, rocky and wooded, and about an eighth of a mile long. On its southern side it is tolerably bold-to, but should receive a berth of at least three hundred yards from vessels passing to the northward of it.

Indian River. Indian River, which makes in to the northward on the western side of Hopkins' Point, is separated from **West River** by a large island, known as **Moose Island.** The western point of entrance to West River is called **Bickford's Point;** and, seen from the reach as you go the westward, will appear barren, rocky and nearly destitute of trees. There are one or two houses on its extremity, but the general appearance of the land is very desolate, and all of the approaches to it are shoal.

Wohoa Bay. To the westward the shore forms a deep bight, called Wohoa Bay, into which empty three shallow creeks, having a common mouth, and known, respectively, as **Hicks', Long** and **Mill** creeks. The whole bay is full of ledges, very dangerous for vessels even of the lightest draught. Next to the westward of it is Reynolds' Bay, off which lie three small, rocky islets, known as **Chandler's, Sheldrake** and **Daniels'** islands. The first mentioned lies off the western point of entrance to Wohoa Bay at a distance of two hundred yards; the second lies a quarter of a mile **S.** by **W.** ½ **W.** from the first; and the third forms the eastern extremity of a long reef making out from the southern extremity of Reynolds' Bay.

Reynolds' Bay. Both bays are parts of the same large basin which is formed by the curve of the shore. Reynolds' Bay is quite shoal, affords little shelter, and is seldom

Carrying-Place Cove. resorted to. A quarter of a mile to the southward of it lies Carrying-Place Cove, a long and narrow cove, bare at low water, running nearly **E.** and **W.** for three quarters of a mile. It was formerly an Indian carrying-place from Cape Split Harbor to the reach. A small, thickly wooded island, which lies just outside of the entrance, and on the southern side, is called **Carrying-Place Island**, and is an eighth of a mile from the shore, which now takes a turn to the southward, running first about **S. ½ W.** for nearly half a mile, and then about **SW.** nearly a mile, forming the eastern shores of **Moose Neck.** These shores are of moderate height, crowned with woods, but cleared on their eastern slopes, with here and there a house. They are tolerably bold-to, except about midway between Carrying-Place Cove and Tabbott's Narrows, where a small island, called **Bar Island**, lies within two hundred yards of the shore, with shoal water extending about one hundred yards beyond it. This island is nearly opposite to Shabbit Island.

At the southeastern point of Moose Neck begins Tabbott's Narrows; and here the shore turns abruptly, running nearly **W.** for about seven-eighths of a mile to the entrance to **Cape Split Harbor,** and appearing barren, rocky and undulating, with a scanty growth of trees. There is not less than four fathoms into Cape Split Harbor and not less than three at the anchorage, and it is perfectly safe for strangers; but there is little shelter in southerly winds.

Cape Split. Cape Split, on the western side of this harbor, is a remarkable looking headland;—being a high, bare, rocky bluff, except at its southeastern end, where it presents a black, wooded face; and along its southeastern face, where there is a growth of black fir and spruce. There is a very peculiar looking, round, rocky islet, called **The Castle,** lying off the southwestern shore of the cape. It is crowned with fir and spruce, and has perpendicular faces, while the summit is quite flat.

Tabbott's Narrows. Tabbott's Narrows are contained between Sheep Island on the northwest and Ram Island on the southeast, and are not over three hundred and fifty yards wide, with a depth of not less than six fathoms. **Sheep Island** lies within one hundred and fifty yards of the southern shore of Moose Neck, and is somewhat remarkable,—being high, rocky and nearly bare, with the exception of a solitary tree here and there. It is five-eighths of a mile long **E.** and **W.** and tolerably bold-to. Four feet at low water may be carried between it and the mainland.

Ram Island, on the southern side of the channel, lies **NNE.** and **SSW.,** is about three hundred and fifty yards long, tolerably high, rocky, and covered with a very thick growth of trees, giving it a round, bluff and bushy appearance. The woods are so thick as to appear black. **Green Island** and **Plummer's Island,** which lie to the southward and southeastward of this island, are not generally noticed by vessels bound to the westward; as they are not near the main channel. The former is low, bare and rocky, with a grassy surface, but no trees; while the latter is of moderate height and thickly wooded. There is a good passage between them with not less than four and a half fathoms; but it is not safe on account of numerous outlying ledges.

After passing through the Narrows the course continues to the westward towards Cape Split, and the first island met with is on the southern side of the channel, and is called The Ladle. It is a remarkable looking islet, about two hundred and fifty yards long **NNW.** and **SSE.,** and bears a faint resemblance to a ladle upside down. Its southern end is low, bare and rocky,

The Ladle. but the northern end is a high, round head, crowned with stunted fir and spruce, and showing perpendicular faces, and is called the **Bowl of the Ladle.** Next to the westward of it, and an eighth of a mile distant, is **The Pot,** a barren rock, about ten feet above high-water mark. Extensive shoals surround both it and The Ladle, and there is no safe passage between them. About half a mile **WSW.** from The Pot lies **The Big Pot,** a high, bare islet, entirely destitute of vegetation, lying **E.** and **W.,** and about one hundred yards long. Its eastern end is high and very steep, with peculiar looking red and yellow rocks on the summit, while those near the water are black.

Taking the southern passage out of the reach;—after passing the Narrows you must steer to the southwestward, leaving The Ladle to the westward and Green Island to the eastward, and running nearly for Cone Island. This island

Cone Island. lies seven-eighths of a mile to the southward of The Ladle, and is about eight hundred yards long. It is low, grassy, and covered with a scanty growth of spruce and pine, tolerably bold-to, except on its southern side, where ledges make off a quarter of a mile, and on its western side, where it is joined, at low water, to **Nash's Island,** a rocky islet about three hundred and fifty yards long, and entirely bare, with ledges making to the southward from it for

Nash's Island Light-house. about a quarter of a mile. On Nash's Island is the light-house, a guide to Pleasant River, Cape Split Harbor and Moos-a-bec Reach. It is a white tower, twenty-eight feet high, connected with the keeper's dwelling by a covered way, and shows a fixed red light, of the fourth order of Fresnel, from a height of forty-seven feet above the sea, visible in ordinary weather twelve miles. Its geographical position is

Latitude ..... **44° 27′ 51″ N.**
Longitude ..... **67° 44′ 50″ W.**

Cone and Nash's islands should both be left to the southward by vessels entering the reach from the westward.

There are many other islands lying in the approaches to Moos-a-bec Reach from the southward, which will be described in treating of the channels leading into the passage from that direction. Those above described lie in the main channel and on both sides of it.

DANGERS

IN APPROACHING AND PASSING THROUGH MOOS-A-BEC REACH.

I. ***From the Eastward, across Moos-a-bec Bar.***—In coming along shore from the eastward you will first make Mark Island; and, if intending to go in by the northern channel, across the bar,

you pass to the northward of this island, steering towards Kelly's Point. On this course, when up with the eastern end of the island a black spar-buoy will be seen, bearing about **W NW.** and three-quarters of a mile off. This is on the Bay Ledges, which lie a little over three-quarters of a mile **NW.** from Mark Island, extending in a line **E. ½ N.** from Kelly's Point for nearly a mile;—the shoalest water upon them being three feet. Several narrow slues lead among the ledges, but are, of course, fit only for the dory or fishing-boat. The buoy is marked No. 11, and placed on the eastern end of the ledge, in about sixteen feet water. ***Bay Ledges.***

While the general name Bay Ledges is given to the group lying east of Kelly's Point, a particular ledge, with four feet at mean low water, lying to the westward of buoy No. 11, has received the name of Leighton's Ledge. It is a quarter of a mile **W.** by **S.** from the black buoy on Bay Ledges; and between them there is a narrow passage with fifteen feet at low water, but unsafe for strangers. A black spar-buoy (No. 9) is placed in fourteen feet water on the southern side of the ledge, and nearly opposite to the spindle on Gilchrist's Rock. ***Leighton's Ledge.***

The northern shore of Mark Island is quite bold-to.

About three-eighths of a mile **W.** by **N.** from Mark Island, and nearly opposite to the buoy on Bay Ledges, will be seen an iron spindle and cage painted red. This is on *Gilchrist's Rock*, a detached ledge on the southern side of the channel, and bare at low water. The channel between this spindle and the Bay Ledges is about a quarter of a mile wide. Passing it there will be seen ahead, and about three hundred and fifty yards off, The Virgin's Breasts, the two southernmost of the Virgin Islands; and which will appear as two small rocky islands, lying **NE.** and **SW.** from each other,—the northernmost having a grassy top, but the other showing as a mere dry ledge. These islets must receive a small berth to the southward; for although the northern one is pretty bold-to, the southern island, called **The Nipple**, should not be approached nearer than two hundred and fifty yards on account of the bad ledges extending to the northward for nearly an eighth of a mile. ***The Virgin's Breasts.***

When abreast of these islands there will be seen ahead, at distances varying from a half to three-quarters of a mile, three black and two red spar-buoys, which appear to be huddled together in a group. It is necessary for the mariner, in endeavoring to thread the intricate channel in which these buoys are placed, to be very careful of his courses, and especially to remember that the southernmost buoy of the group (which is *black*) is not in this channel at all, but is placed to mark the southern end of Nova's Rock, in the Seguin Passage. It must not be approached by vessels using this northern passage, but *the course must be shaped so as to pass between the red spar-buoy to the northward and the middle one of the three black buoys.* The red spar, which is passed to the northward, is on the northern end of Nova's Rock, a very dangerous rock, lying on the southern side of this channel, bare at lowest tides, and bearing from the northernmost of The Virgin's Breasts **W.**, distant five-eighths of a mile, and from Kelly's Point (eastern extremity) about **S. ½ W.**, distant a quarter of a mile. The buoy is marked No. 10, and placed in about eight feet water on the northern end of the ledge,—the channel leading between it and a black spar-buoy, lying between fifty and sixty yards to the northward, on *Emm's Rock*. This is a detached rock, with about a foot and a half water at lowest tides, lying about three hundred yards **S.** by **W. ½ W.** from the eastern extremity of Kelly's Point. The buoy is marked No. 7, and placed in seven feet water on the southern end of the ledge. As the channel between this rock and Nova's Rock is extremely narrow, great care must be exercised in passing through it. Seven and a half feet may be taken through between these buoys at mean low water, but the channel with this depth is very narrow, and as a rule, it is not safe to calculate upon more than six feet across the bar. ***Nova's Rock.***

Passing Emm's Rock buoy, the course leads towards a black spar-buoy about a quarter of a mile to the westward, passing to the northward of a red buoy on Little Ledge, a bad ledge in the Deep-Water Channel leading into Seguin Passage from the northward. It is an eighth of a mile **W. ¼ S.** from Emm's Rock, has a foot and a half on it at low water, and is marked by a red spar-buoy (No. 8) placed on its northeastern end. Passing it, a black spar-buoy will be seen to the northwestward, about two hundred yards off. This marks *Moos-a-bec Bar*, which makes out from the northern shore just to the westward of Kelly's Point, and is dry at lowest tides. The buoy is placed on its southeastern end in eight feet, is marked No. 5, and the channel passes to the southward of it. ***Little Ledge.***

When abreast of this buoy a red spar-buoy (No. 6) will be seen ahead, bearing about **W.**, and about three-eighths of a mile off. This is on Sand Ledge, bare at half-tide, and lying on the southern side of the channel, about three hundred yards from the northern shore. In steering so as to pass to the northward of it, you also pass about two hundred yards to the northward of a wooden spindle surmounted by a cask and painted red. This is on *Snow's Rock*, also on the southern side of the channel, and about four hundred yards **W. ¼ N.** from the buoy on Little Ledge, and a quarter of a mile **E SE.** from Sand Ledge. The spindle is on the dry part of the ledge, which is near the northern end. ***Sand Ledge.***

When abreast of the red buoy on Sand Ledge there will be seen, about six hundred yards ahead, another red spar-buoy. This is on the northern end of Horse Ledge, which lies a little over a quarter of a mile **S SE.** from the eastern point of entrance to Sawyer's Cove, and about **W.** by

Horse Ledge. N. ¾ N. from the red buoy on Sand Ledge, and is bare at low water. The buoy, which is marked No. 4, is usually left to the southward; but it may be left to the northward by giving it a berth of about two hundred and fifty yards,—passing through a narrow but deep channel, which has another dry ledge on its southern side. The best way, however, is to the northward of the buoy, as shoal water extends to the southward from it about an eighth of a mile.

The water is all shoal from the bare rock on the southern side of Horse Ledge to Pig Island; but the channel becomes wider after passing that ledge; and between Sawyer's Cove and French-House Island it is nearly half a mile wide.

In beating, the main shore may be approached within from one hundred and fifty yards to an eighth of a mile, between Horse Ledge and Cummings' Ledge, (about a mile to the westward,) with not less than twenty-one feet water. But on the southern side you must give French-House Island a berth of at least four hundred yards, *as long ledges make out from it to a distance of three hundred and fifty yards.* In fact, all of the area between Pig and French-House islands is full of ledges and shoals.

The northern shore of Beal's Island may not be approached nearer than an eighth of a mile if you wish to keep in over three fathoms water. The shoals are abrupt throughout nearly the whole length of the reach, so that it is necessary to be careful in approaching either shore.

Cummings' Ledge. Cummings' Ledge is the next ledge to the westward after passing Horse Ledge, and makes off from the Jonesport shore a little over half a mile to the westward of Old House Point, which separates Sawyer's Cove from Sawyer's Creek. The shoal of the ledge has three feet at mean low water, and is about two hundred yards from shore; but the buoy, which is a black spar, marked No. 3, is placed on the southern side of the ledge in sixteen feet water and an eighth of a mile from shore. The sailing-line passes to the southward of it.

After passing Cummings' Ledge, vessels in beating must give the northern shore a berth of about three hundred yards, and not approach the southern side of the reach so near as the line between the northern ends of Beal's and Pomp's islands, as the whole space between these islands and Norton's and the Sheep Islands is full of ledges, many of which are dry at low water. Not less than three fathoms will be found within the above limits.

Several small shoals, with from thirteen to fifteen and sixteen feet at mean low water, lie almost exactly in the middle of the passage between Doyle's and Pomp's islands, but are not dangerous, except to vessels of large draught and in heavy weather. These ledges lie in a line nearly **E.** and **W.**, and three-eighths of a mile long; and the best water is to the southward of them, although three and three-quarter fathoms can be carried between them and Doyle's Island.

After passing these ledges a tall spindle, painted black and surmounted by a round cage, will be seen ahead, bearing about **W.** by **N.**, and apparently off the northern end of Hardwood Island. This is on the dry part of Fessenden's Ledge, a large ledge, lying midway between the southernmost of the Goose and Hardwood islands, extending **E.** and **W.**, about two hundred and fifty yards wide, three hundred and fifty yards long between the lines of three fathoms, and bare at low water near the spindle. Soundings of six, ten and thirteen feet are found on other parts of the ledge. The spindle bears from the southernmost Goose Island **S.**, four hundred yards, and from Shabbit Island **E NE.**, one mile distant, and is to be left to the northward.

Fessenden's Ledge.

The northern end of Hardwood Island must receive a berth of two hundred yards, and the northwestern shore of the same island a berth of at least an eighth of a mile, *as there are bad ledges lying off those points,* some of which are dry at low water, and one is always bare. The channel is here very narrow, being only an eighth of a mile wide from Fessenden's Ledge spindle over to the shoals off Hardwood Island; but after passing this island it widens out to the northward and westward, and affords an excellent beating channel with from four to nine fathoms in it.

When to the westward of Fessenden's Ledge, look out, on the southern side of the channel, *for the shoals north of the Duck Ledges.* These consist of a number of dangerous rocks, most of which are bare at low water, and extend to the northward from the white, rocky islet, with the tuft of grass on top, which forms the northernmost of the Duck Ledges. From this islet to the southern edge of the channel the length of the line of shoals is nearly three-eighths of a mile and its direction about **NE.** This mass of ledges is nearly six hundred yards wide at its northern end; and, in fact, shoal soundings extend clear to Shabbit Island, a distance of half a mile to the southwestward.

Shabbit Island should receive a berth of at least an eighth of a mile from vessels drawing over fifteen feet, and is to be left to the southward and eastward.

Bar Island, on the western side of the channel, and nearly opposite to Shabbit, should receive a berth to the westward of at least three hundred yards, *as dangerous shoals make off from it about an eighth of a mile.* The channel here is half a mile wide between the shoals, and has seven and nine fathoms in it.

Below Bar Island the eastern shore of Moose Neck is tolerably bold; but at the eastern entrance to Tabbott's Narrows the shoal water extends out about a quarter of a mile, surrounding Sheep Island.

Tabbott's Ledge. The first dangers met with will be seen, on approaching the Narrows, to be marked by two spar-buoys, one red and one black, placed **NW.** and **SE.** from each other and close together. The black buoy on the northern side of the channel is on Tabbott's Ledge, which has four feet at low water, and lies off Sheep Island, (formerly called Tabbott's Island,)—extending in an easterly direction from that island about an eighth of a mile.

The buoy is marked No. 1, placed in sixteen feet on the eastern end of the ledge, and is to be left to the northward.

Ram Island Ledge.

On the southern side of the channel, a little more than one hundred yards from the buoy on Tabbott's Ledge, lies a red spar-buoy. This is on Ram Island Ledge, which lies in the middle of the channel, and has nine feet at mean low water. It is a detached rock, with from five to eight fathoms water all around it, an eighth of a mile **NE.** from Ram Island, and about four hundred yards **E.** by **S.** from Sheep Island. The buoy is placed on its northern side, in good water, is marked No. 2, and is to be left to the southward.

The channel becomes very wide after passing to the westward of the Narrows, and has in it from eight to ten fathoms; but the northern shore must not be approached too closely until past Cape Split Harbor, *as there are ledges extending from it to the southward about three hundred and fifty yards.* This shore should, therefore, receive a berth of a quarter of a mile from vessels drawing over fifteen feet. Cape Split is, however, tolerably bold-to, and on its western side is quite so,—eight fathoms being found within a hundred yards.

When up with Cape Split, look out for Norton's Ledge, whose southern end will be seen about three-quarters of a mile to the westward, marked by an iron tripod and spindle thirty-five feet high, with ball on top, painted black. It must be left to the northward by vessels bound along the coast; but those intending to enter Pleasant Bay may pass to the northward of the ledge by keeping close to Cape Split. Norton's Ledge is a long shoal making off from Norton's Island in a southwesterly direction, and is for the most part bare at half ebb. **Norton's Island** is a barren, rocky island, of moderate height, and lies in the entrance to Pleasant Bay. A good channel exists between it and Cape Split. After passing this ledge, the course leads towards Petit Manan Island, and you are clear of the reach; but it is necessary to look out for Tibbetts' Rock, a detached shoal with fifteen feet at mean low water, and a reported depth of four feet at low tides near it. It is bold-to on its northeastern side,—the water deepening to sixteen fathoms within twenty yards of the shoal. It is less abrupt on its southern and southwestern sides; but a depth of twenty fathoms is found within half a mile of it. This rock bears from

Norton's Ledge.

Tibbetts' Rock.

	Miles.
Petit Manan Light-house, E. ¼ N.	3½
Nash's Island Light-house, SW. ¾ S.	5
Southeast Rock, NE. ¾ N.	3½

The course for Petit Manan Island from the western entrance to Moos-a-bec Reach passes about two miles to the northwestward of this rock.

The buoys in Moos-a-bec Reach are colored and numbered as for vessels bound through from the westward; but they should be, for consistency's sake, colored and numbered from the eastward. Navigators must bear this peculiarity in mind; and, when coming into this reach from the eastward, must leave red buoys to port and black buoys to starboard.

SAILING DIRECTIONS

FOR APPROACHING AND PASSING THROUGH MOOS-A-BEC REACH.

I. ***Coming from the Eastward, across Moos-a-bec Bar.***—When the middle of Mark Island bears **W. ½ S.**, distant two miles and a quarter, and you are in eighteen fathoms, steer **W.**, which course leads safely past the island with not less than seven fathoms water, and up with the black buoy on Emm's Rock, and the red buoy on Nova's Rock, carrying not less than fifteen feet. Continue this course until up with the black buoy on the bar, which pass in seven feet water; and, when abreast of this, steer **W.** by **N. ⅜ N.** until abreast of the red buoy on Horse Ledge, carrying not less than fifteen feet. Pass to the northward of this buoy, and steer **W. ¼ N.** through the reach, which course leads safely through the main channel between Fessenden's Ledge and Hardwood Island with not less than twenty-one feet water. Continue it until the white, rocky islet which forms the northernmost of the Duck Ledges bears **S. ¼ E.** and Ram Island **SW. ¾ W.**, with five fathoms water, when **SW.** by **W.** will lead safely through Tabbott's Narrows with from five to nine fathoms water. As soon as the western end of Sheep Island bears **NW.** by **N.**, with five fathoms water, steer **W. ½ N.**, which will clear Norton's Ledge in not less than eight fathoms; after which the course may be shaped for Petit Manan or Pond Island.

The above courses pass half a mile to the northward of Eastern Ledges; three hundred and fifty yards to the southward of the buoy on the Bay Ledges; one hundred yards to the northward of Gilchrist's Rock; one hundred yards to the northward of The Virgin's Breasts; to the southward of the black buoy on Emm's Rock and close to it; to the northward of the red buoy on Nova's Rock and close to it; one hundred yards to the southward of the black buoy on Moos-a-bec Bar; one hun-

Sailing Directions--Moos-a-bec Reach.

dred and twenty-five yards to the northward of the red spindle on Snow's Rock; one hundred and twenty-five yards to the northward of the red buoy on Sand Ledge; to the northward of and close to the buoy on Horse Ledge; about one hundred yards to the southward of Cummings' Ledge; an eighth of a mile to the southward of the shoal spots to the southward of Doyle's Island; one hundred yards to the southward of Fessenden's Ledge; two hundred and fifty yards to the westward of Shabbit Island; midway between the buoys on Tabbott's and Ram Island ledges; and three-eighths of a mile to the southward of the spindle on Norton's Ledge.

Or, intending to pass between The Ladle and Cone Island.—Continue the course **SW.** by **W.** for the western end of Cone Island, and when within half a mile, and in from ten to eleven fathoms water, with The Ladle bearing **N NW.**, steer **W.** ¾ **N.** through the middle of the passage, which is here over a thousand yards wide. This course will carry not less than nine fathoms water. In beating to windward do not approach The Ladle nearer than two hundred and fifty yards, and give the northern shore of Cone Island a berth of an eighth of a mile, within which limits there will be over three fathoms at mean low water. Seven feet at low water can be carried over the bar at the eastern end of the reach; and the least water in the channel, after passing the bar, is fifteen feet. Through the Narrows from six to nine fathoms may be taken, and thence to Cape Split from eight to ten fathoms. Between The Ladle and Norton's Island there is not less than eight fathoms, and between The Ladle and Cone Island from eight to eleven fathoms. To the southward of Cone Island the ground is somewhat broken, and the depths range all the way from five to twenty-one fathoms. In the deeper channels the bottom is soft,—the shoals being almost all rocky.

DANGERS

IN APPROACHING AND PASSING THROUGH MOOS-A-BEC REACH.

II. ***From the Eastward, by the Seguin Passage.***—This passage, which, owing to its windings, is mostly used by steamers, enters from the eastward, between Mark Island on the north and Seguin Island on the south. The least water in it is eleven feet, (just beyond Channel Rock,)—but it is full of ledges, which render the navigation difficult, though all dangers are marked by buoys. With a wind anywhere between **E NE.** and **S SW.** a sailing-vessel may safely enter and run this channel from the eastward; and with the wind from **W SW.** around to **N.** she may enter and run it from the westward.

The **Deep-Water Passage**, which leads into the Seguin Passage, from the northern or main channel, between Little Ledge and Nova's Rock, has not less than four fathoms in it, and is often used by coastwise steamers. Not less than fifteen feet at low water may safely be taken from the anchorage at Jonesport through this and the Seguin Passage.

All approaches to the reach from the eastward are equally obstructed by the Eastern Ledges, (already described on pages 60–61.) These are two dangerous rocks, lying **E NE.** and **W SW.** from each other, with good water between them. They bear from Spruce Island Gut **S.**, one mile and three-eighths distant; from Seguin Island **E.** by **N.** ½ **N.**, one mile and a half distant; and from Mark Island **E.** by **S.** ½ **S.**, one mile and an eighth distant. The easternmost ledge, which is dry at low water, is about three hundred yards to the eastward of the western rock, and both are bold-to. The channels between these ledges and the Spruce Islands, Mark, Seguin and Head Harbor islands are wide, having from fifteen to twenty fathoms water, and are entirely unobstructed. Eastern Ledges are not marked in any way, but may be left on either hand in approaching Moos-a-bec Reach.

Eastern Ledges.

On approaching Seguin Passage from the eastward the first danger met with is Seguin Ledge, marked by a red spar-buoy, which will be seen lying to the northward of Seguin Island, with a black spar-buoy a little to the westward. Seguin Ledge lies an eighth of a mile **NE.** ½ **N.** from the northern end of Seguin Island; from the middle of Mark Island **S.** by **W.**, distant a little less than half a mile; and from the dry rock of Eastern Ledges **W.** ¾ **S.**, one mile and five-eighths distant. It has three feet at mean low water, and is marked by a red buoy (No. 4) placed on its northern end in five fathoms water. It must be left to the southward.

Seguin Ledge.

The black buoy seen about two hundred and fifty yards to the westward of Seguin Ledge buoy is on Gangway Ledge, which has ten feet at mean low water, bears **W NW.** from Seguin Ledge, and is on the western side of the channel. From Seguin Island it bears **N.** ¼ **W.**, distant three hundred and fifty yards. There is a good channel to the northward, and between it and the Drisco Ledges, with not less than four fathoms, if a berth of one hundred and twenty-five yards is given the buoy; but the custom is to pass to the southward of it. The black buoy is marked No. 5, and placed on the southern side of the ledge, in eighteen feet water.

Gangway Ledge.

In steering so as to pass between the red buoy on Seguin Ledge and the black buoy on Gangway Ledge, you will head nearly for a red spindle with a ball-shaped cage on top, appearing off the northwestern end of Seguin Island. This is on Moose Rock, a detached rock, covered at high water, lying on the southern side of the channel, about three hundred yards NW. ¼ W. from Seguin Island; a quarter of a mile W. ¼ S. from Seguin Ledge; and an eighth of a mile SW. by W. ½ W. from Gangway Ledge. The spindle is supported by an iron tripod, and the whole structure is thirty-five feet high. It is to be left to the southward, although there is a good channel between it and Seguin Island. *Moose Rock.*

When abreast of the spindle on Moose Rock, a black spar-buoy will be seen bearing about NW. and about two hundred and fifty yards off. This is on the Drisco Ledges, two detached rocks lying N. by W. and S. by E. from each other, separated by a deep passage about one hundred yards wide. The northern one, bare at low water, lies about an eighth of a mile to the northward of the buoy, which is placed on the southern side of the southern rock. The southern rock has five feet at mean low water, and bears from Mark Island Point SW. by W. ¾ W., five-eighths of a mile; from Gangway Ledge W. by N. ¾ N., a quarter of a mile; and from Moose Rock spindle NW. ⅜ N., about three hundred and fifty yards distant. The northern rock bears from Mark Island Point W. by S. ½ S., five-eighths of a mile; from Gangway Ledge NW. by W., nearly three-eighths of a mile; and from Moose Rock spindle NW. by N. ¼ N., about six hundred yards distant. The buoy is black, marked No. 3, placed in eighteen feet to the southward of the ledge, and vessels must pass to the southward of it. *Drisco Ledges.*

Directly opposite to it, on the south side of the channel, will be seen the red spar buoy (No. 2) on Sawyer's Ledge, which has two feet at lowest tides, and lies two hundred and fifty yards W. ¼ S. from Moose Rock and one-eighth of a mile S. by W. ¼ W. from the buoy on Drisco Ledges. The channel passes between this and the Drisco Ledges and is here an eighth of a mile wide. When between the two, a black spar-buoy will be seen about three-eighths of a mile to the northwestward. This is on Long Ledge, lying on the north side of the channel, and extending in a nearly E. and W. direction about two hundred yards. The western end of the ledge, off which the buoy is placed, is out at one-quarter ebb, bears from the northernmost of the Drisco Ledges W. ½ N., distant a quarter of a mile, and from the buoy on the southern end of those ledges W NW., nearly three-eighths of a mile. There is from three to five fathoms among all these rocks, but it is not safe for a stranger to attempt to pass among them. The eastern end of Long Ledge is awash at low water. The buoy, which is marked No. 1, must be left to the northward; and, after passing it, the course leads towards Channel Rock. On this course, when approaching Little Sheep Island give it a berth of at least an eighth of a mile, as there are *a great many shoal spots to the northward and eastward of it.* *Sawyer's Ledge.* *Long Ledge.*

The black spar-buoy seen on the northern side of the channel about a quarter of a mile to the northeastward of Little Sheep Island is on the southern end of Southwest Ledge,—the name given to the shoal ground to the southward of Nova's Rock,—on which there is nine feet at low water. The buoy is marked No. 3, placed in fourteen feet, and bears from the black buoy on Long Ledge NW. by W. ½ W., distant a little over half a mile, and from the middle of Little Sheep Island NE. by E., distant about a quarter of a mile. The channel passes to the southward of it notwithstanding its color. *Southwest Ledge.*

When abreast of Southwest Ledge buoy two spar-buoys will be seen nearly ahead and from a quarter to three-eighths of a mile off. The nearer of the two, which is black, is on the southern end of Little Ledge; and the other, which is red, is on Channel Rock. The sailing-line passes between them.

Little Ledge, as before described, has a foot and a half on it at low water, and lies between Seguin Passage and Deep Water Channel,—forming the eastern part of that extensive area of shoal ground of which Snow's Rock forms the western extremity. There are two large bare rocks on the southern side of this ledge, and a spit bare at low water makes from them in a southeasterly direction for about one hundred and fifty yards. It is upon the end of this spit that the buoy (No. 1) is placed, in sixteen feet water;—Channel Rock buoy bearing W. by N. ½ N., about two hundred yards, and Snow's Rock spindle NW., by N. ⅜ N., about four hundred yards distant. *Little Ledge.*

Channel Rock, on which is the red buoy, (No. 2,) has six feet at low water, lies nearly in mid-channel, but on the south side, bearing W NW. from Long Ledge buoy, distant seven-eighths of a mile, and NE. ¾ E. from the eastern end of Pig Island, distant a little over six hundred yards. The buoy is placed on the eastern end of the rock, in about two fathoms, and must be left to the westward. When abreast of it care must be taken to avoid the southern end of Snow's Rock, which has nine feet at low water, and lies on the north side of the channel, nearly opposite to Channel Rock. Snow's Rock extends N. and S., between the Seguin Passage and the Northern Channel; and its northern end, which is dry at low water, is marked by an iron spindle with cage on top, painted red. In passing through the Seguin Passage this spindle must receive a berth of not less than one-eighth of a mile. *Channel Rock.* *Snow's Rock.*

The course now continues to the northwestward, past Snow's Rock; and a quarter of a mile off will be seen another red buoy. This is on the northeastern side of Sand Ledge, bare at half-tide, and lying on the south side of the main or northern channel, and on the west side of the Seguin Passage, at their point of union. The course to join the northern channel turns to the northward so as to leave this buoy (No. 4) to the westward. Sand Ledge bears from Channel Rock **NW. ⅛ W.**, distant nearly three-eighths of a mile, and from the spindle on Snow's Rock **W.** by **N. ½ N.**, distant a quarter of a mile. The channel passes between it and the latter, but the best water (fifteen feet) is nearest to Sand Ledge buoy. When past this ledge, you enter the main channel and must shape your course for the red buoy on Horse Ledge. (See pages 68–69 for dangers in the northern channel.)

Sand Ledge.

Bound through the Deep-Water Passage.—When within a quarter of a mile of Channel Rock buoy, turn abruptly to the northward and steer nearly for the wharf on the south shore of Kelly's Point. On this course there will be seen to the northeastward, and about three hundred and fifty yards off, a black spar-buoy, and to the northwestward, about a quarter of a mile off, a red spar-buoy. The former is on the southern end of Nova's Rock, which lies in a **N NE.** and **S SW.** direction and is about three hundred yards long, and bare at low spring-tides. Its northern end, marked by a red spar-buoy, is on the south side of the bar channel, and its southern end is on the north side of the Deep-Water Passage. The buoy on this end is marked No. 1, bears from the eastern extremity of Kelly's Point **S SW.**, about six hundred yards distant, and from Little Sheep Island **NE.** by **N. ½ N.**, nearly three-eighths of a mile. It is placed in eighteen feet water.

Southern end of Nova's Rock.

The red buoy to the northwestward is on Little Ledge, which lies on the western side of the channel, about three hundred yards from the black buoy on Nova's Rock, and has a foot and a half on it at low water. It bears from the eastern extremity of Kelly's Point **SW. ½ S.**, distant a little over a quarter of a mile. The buoy, which is marked No. 2, is on the north end of the ledge, in two fathoms, and is to be left to the westward. When past this buoy you enter the northern channel, and the course leads to the westward to clear the black buoy on the bar and the red buoy on Sand Ledge.

Little Ledge.

SAILING DIRECTIONS

FOR APPROACHING AND PASSING THROUGH MOOS-A-BEC REACH.

II. ***From the Eastward, by the Seguin Passage.***—Vessels using this passage pass to the southward of Mark Island; and, with the middle of that island bearing **NW.** by **W. ½ W.**, distant nearly four miles, and the north end of Seguin Island bearing **W. ¾ N.**, distant four miles, steer **W NW.**, carrying not less than thirteen fathoms, until the eastern end of Mark Island bears **N.** by **W.**, and you have ten fathoms. Thence the course is **W.** by **S. ½ S. Nearly**, for the spindle on Moose Rock, which course leads between the black buoy on Gangway Ledge and the red buoy on Seguin Ledge with not less than six fathoms water. When abreast of the former, in from three to four fathoms, the course changes to **W.** by **N.**, passing to the northward of the spindle on Moose Rock. This course leads safely between the Drisco Ledges and Sawyer's Rock with not less than three and a half fathoms, and must be continued for nearly three-eighths of a mile, or until the southernmost of The Virgin's Breasts bears **N.** by **W. ¼ W.**, with five fathoms water; when **NW.** by **W. ½ W.** will lead up the middle of the channel to Channel Rock with not less than thirteen feet. Passing to the northward of Channel Rock buoy, the course must be continued until the eastern end of Pig Island bears **SW.** by **S. ¾ S.** and is a little more than a quarter of a mile distant. On this course there will be eleven feet. Now turn abruptly to the northward and steer **N. ¼ W.**, passing to the westward of the red spindle on the northern end of Snow's Rock and to the eastward of the red buoy on Sand Ledge. This course leads into the northern channel with not less than fifteen feet water. Continue it until within two hundred yards of the northern shore, when steer **W.** by **N. ¾ N.** to clear the red buoy on Horse Ledge, carrying not less than twelve feet water. When past Horse Ledge, follow the directions given for the main channel.

III. ***To enter by the Seguin Passage and pass through the Deep-Water Passage into the northern channel.***—When, on the course **NW.** by **W. ½ W.** for Channel Rock buoy, you are within a quarter of a mile of the buoy, with Little Sheep Island bearing **SW. ½ S.**, two hundred and fifty yards distant, and a depth of twenty-eight feet water, steer **N. ½ E. Nearly**, for the wharf on the south side of Kelly's Point. This course leads safely through between Nova's Rock and Little Ledge, passing to the westward of the former and to the eastward of the latter, and carrying not less than

four fathoms. When past Little Ledge buoy you are in the northern channel, and must steer **W.** by **N.** $\frac{3}{8}$ **N.** for Horse Ledge buoy. On this course there will be nothing less than fifteen feet. When up with Horse Ledge, follow the directions for the main channel through the reach.

DANGERS

IN APPROACHING AND PASSING THROUGH MOOS-A-BEC REACH.

III. ***From the Eastward, by the passage between The Virgin's Breasts and Long Ledge.***— This passage is an excellent channel for entering Moos-a-bec Reach from the eastward, and is superior to the Seguin Passage; but it is not buoyed. The entrance to it is just to the northward of that leading into the Seguin Passage, and there is not less than six fathoms in it until it joins the latter near Channel Rock. This channel passes to the northward of all the ledges of the Seguin Passage, and between Long Ledge and The Virgin's Breasts, but should not be used by strangers unless with a fair wind.

There are no ledges in the middle of this passage,—the dangers lying on both sides. The first of these met with, after passing the Eastern Ledges, is Seguin Ledge, which lies nearly a quarter of a mile to the southward of the sailing-lines and has a red spar-buoy on its northern end.

Seguin Ledge. Seguin Ledge is an eighth of a mile **NE.** $\frac{1}{2}$ **N.** from the north end of Seguin Island; from the middle of Mark Island **S.** by **W.**, a little less than half a mile distant; and from the dry rock on the Eastern Ledges **W.** $\frac{3}{4}$ **S.**, a mile and five-eighths distant. It has three feet at mean low water, and must be left well to the southward.

Gangway Ledge. Gangway Ledge will next be passed, lying on the south side of this channel, and marked by *a black spar-buoy, placed on its southern side,* as a guide to Seguin Passage. This buoy must therefore receive a berth of not less than two hundred yards from vessels using the northern passage, as the ledge lies between them and it. Gangway Ledge has ten feet at mean low water; lies **W NW.** from Seguin Ledge, about two hundred and fifty yards distant, and from Seguin Island **N.** $\frac{1}{2}$ **W.**, three hundred and fifty yards distant.

Drisco Ledges. Next to the westward of the Gangway, and a little over a quarter of a mile from it, will be seen the black spar-buoy on the southernmost of the Drisco Ledges, which are also in the Seguin Passage. From the buoy the ledges extend to the northward about three hundred and fifty yards; and the northernmost, which is bare at low water, and not buoyed, is a dangerous obstruction to the channel now being described. From Mark Island Point it bears **W.** by **S.** $\frac{1}{2}$ **S.**, five-eighths of a mile; from Gangway Ledge **NW.** by **W.**, nearly three-eighths of a mile; and from the southernmost of The Virgin's Breasts **SE.** $\frac{3}{4}$ **S.**, a little over three-eighths of a mile distant. When abreast of it, and heading to the westward, a black buoy will be seen to the southward of the course, about three-eighths of a mile distant. This is on the southern end of Long Ledge, and is also placed as a guide to the Seguin Passage. Long Ledge extends nearly **E.** and **W.**, and is about two hundred yards long. The buoy is on its southern side, near its western end, and bears from the southernmost of The Virgin's Breasts nearly **S.**, about six hundred yards distant. As the ledge lies between this buoy and the channel, it must receive a berth to the southward of not less than two hundred yards. After passing it the course continues to the westward, and this channel unites with the Seguin Passage at its point of union with the Deep-Water Passage.

Long Ledge.

SAILING DIRECTIONS

FOR APPROACHING AND PASSING THROUGH MOOS-A-BEC REACH.

IV. ***From the Eastward, by the passage between The Virgin's Breasts and Long Ledge.***— When the middle of Mark Island bears **NW.** by **W.** $\frac{1}{2}$ **W.**, four miles distant, and the northern end of Seguin Island **W.** $\frac{3}{4}$ **N.**, also four miles distant, steer **W NW.**, carrying not less than thirteen fathoms, until the eastern end of Mark Island bears **N.** by **W.**, and you have ten and a half fathoms, soft bottom. Then steer **W.** by **N.** through this channel and into the Seguin Passage. On these courses the least water will be four fathoms. When within a quarter of a mile of Channel Rock buoy, in four and three-quarter fathoms, with Little Sheep Island bearing **SW.** $\frac{1}{2}$ **S.**, about two hundred and fifty yards off, steer **NW.** by **W.** $\frac{1}{2}$ **W.** to pass through the Seguin Passage, or **N.** $\frac{1}{2}$ **E.** through the Deep-Water Passage; after which follow the directions previously given.

There is a narrow passage, with ten feet at low water, between Seguin Island and Head Harbor Island, but it is entirely unfit for strangers.

FISHERMAN'S ISLAND PASSAGE.

Through and among the numerous islands lying on the southern side of Moos-a-bec Reach lead several wide and good channels, which may be used by vessels in case of necessity. They are not buoyed, however, and great care is required to avoid the numerous ledges which obstruct them. Fisherman's Island Passage, the easternmost of these channels, leads between Crumple, Fisherman's, Browney, Ram and Norton's islands on the east, and Outer Sand, Inner Sand, Drisco and Stevens' islands and the Duck Ledges, on the west. It is in most places quite wide, and has not less than five and a half fathoms throughout its length until you come abreast of Hardwood Island, where a few soundings of sixteen feet will be found. From the entrance to the point at which it unites with the main channel of the reach this passage is exactly five miles long, and affords good beating-room through most of its length; and on this account it is particularly desirable that the ledges in it should be buoyed. Such action has been recommended.

A stranger wishing to enter this passage may easily recognize it by the appearance of Crumple and Fisherman's islands.

Crumple Island. The former looks like a number of round hillocks of various heights joining each other,—the central hillock being the highest, with one or two tall trees on its slopes. Next to this, to the southwestward, two tall, leaning trees are seen, forming a very conspicuous mark; and near the eastern end of the island rises a small hill with a peculiar-looking clump of trees on its summit. Crumple Island lies three-quarters of a mile **SW.** from the southern end of Great Wass Island.

Fisherman's Island. Fisherman's Island, which lies just to the northward of Crumple Island, is a low, rocky island, of a peculiarly barren and desolate appearance, dotted with many tall, dead trees, which, when seen from the northwestward, with this island and Crumple Island in range, look like masts of shipping. There is no safe passage between these islands and Great Wass,—the channel being narrow, shallow and full of ledges.

Browney Island. About half a mile to the northward of Fisherman's Island will be seen Browney Island, thickly wooded in the middle, with tall trees projecting here and there above the general line of woods. Its western end is low, rocky and bare, with the exception of numerous dead trees,—while its northeastern end is a high, bare, rocky head, sloping gently to the water, and the southeastern end is low and covered with bushes and dead trees.

Sand Islands. On the western side of the entrance, nearly opposite to Browney Island, will be seen **Outer Sand Island**, high and grassy, with a scanty growth of spruce and fir. There are many dead trees, like spars, standing at intervals over its surface. **Inner Sand Island** will be seen to the northward of Outer Sand, about eight hundred yards from it. It is rocky, of considerable height, and thinly wooded with small spruce and pine trees. There is no passage between the two Sand Islands.

Drisco Island. Just to the northward of Inner Sand will be seen Drisco Island, one of the largest islands of this group. It lies **NE.** and **SW.**, and is a little over half a mile long. It will appear thickly wooded, with here and there tall trees above the general outline of woods. These three islands, (Outer Sand, Inner Sand and Drisco,) if viewed from the entrance, and in mid-channel, will appear nearly in range, or with their ends overlapping;—but the above description will enable any one to recognize them.

There is a good passage between Inner Sand and Drisco islands, with not less than seven fathoms, but it is obstructed by a bare ledge at its eastern entrance.

Little Drisco Island lies off the northern end of Drisco and about two hundred yards to the eastward; and is rocky and thickly wooded. There is a good passage between the two islands, with not less than four fathoms.

Stevens' Island. Stevens' Island lies about six hundred yards to the northward of Little Drisco, extends **E NE.** and **W SW.**, and is about three-eighths of a mile long. It is of moderate height, rocky and mostly bare, although a few tall dead trees stand here and there. About one-third of the way from the eastern to the western end a group of four or five spruce and fir trees will appear, and serve as a sufficient distinguishing mark for this island. It is surrounded by shoals.

Immediately opposite to Stevens' Island, bearing about **E.**, and almost exactly in the middle of the channel, will be seen a high, bare rock, called **Sea-Duck Rock.** There are from nine to twelve fathoms on all sides of it, but it is boldest on its western side. On its eastern side the channel is the widest, however, and has the deepest water. Sea-Duck Rock is a little over half a mile **E.** from Stevens' Island.

Three-quarters of a mile to the eastward of Sea-Duck Rock are the Ram Islands, which lie on the eastern side of Fisherman's Island Passage, and are three in number. They extend **N NE.** and **S SW.**, and are three-quarters of a

Ram Islands. mile in length over all. The two southern ones are joined at low water and form what is called **Great Ram Island**, which is of moderate height and well wooded. The northernmost of the group, called **Little Ram Island**, is small and rocky, with a bushy clump of black-looking trees at its northwestern end and several small clumps dotting its surface, while the rest of the island is thinly wooded with small fir trees. The Ram Islands are a mile and a half to the northward of Browney Island; and Little Ram Island is about six hundred yards **SE.** from Norton's Island.

There is a narrow passage, with fourteen feet water, between Little Ram and Great Ram islands, and also good water (from three to four fathoms) between Little Ram and Beal's islands; but strangers should not attempt either passage. Good anchorage may be had between the Ram Islands and Great Wass Island, either on the northern side of Slate Island, in from three to six fathoms, soft bottom; in **Slate Cove**, in from twelve to fifteen feet; in **Cummings' Cove**, (on the western shore of Great Wass

Island,) in from two to three fathoms; or in **The Flying Place**, (which separates Great Wass and Beal's islands,) where there will be from two to four fathoms, soft bottom.

The western shore of **Great Wass Island** is rocky, barren, for the most part thickly wooded, thinly settled and very little cultivated. Slate Island lies off its western shore at a distance of two hundred and fifty yards,—a dry reef connecting the two at low water. The island is about seven hundred and fifty yards **E.** by **S.** ½ **S.** from the southern end of Great Ram Island. It is low and rocky, and dotted here and there with clumps of spruce and single trees; and a hut stands on its western end. The island is surrounded by shoals, and must receive a berth to the eastward of two hundred and fifty yards. On its northern side is good anchorage in from three to six fathoms, sheltered from all winds. **Slate Island.**

Norton's Island, lying six hundred yards **NW.** by **N.** from the Ram Islands, is the largest of the group sometimes called the **Sheep Islands.** It extends three-quarters of a mile **NE.** and **SW.**, with low shores, composed of yellow, weather-beaten rocks; and is covered with a thick but scrubby growth of trees. Ledges surround this island, especially on its southern side, where shoal water extends to a distance of nearly half a mile. **Norton's Island.**

Pomp's Island, lying close in with the northwestern shore of Norton's Island, is joined to it at low water. It lies **NE.** and **SW.**, is nearly half a mile long, low, rocky and almost bare. Its northeastern end has a somewhat bluff appearance, and has small clumps of stunted fir. This island was formerly thickly wooded, but the stumps of the trees alone remain.

Due **W.** from Pomp's Island, and a little over half a mile distant, lies Hardwood Island; with a good channel between the two, by which vessels entering from the southward may pass into the reach. This island lies **N NE.** and **S SW.**, and is a quarter of a mile long. Seen from the southward and westward, its southern end shows a remarkable white, rocky point, almost bare; and both ends of the island appear to be covered with small trees. *A bad ledge, with seven feet at mean low water,* lies exactly in the middle of the passage between this and Pomp's Island. **Hardwood Island Ledge** lies a quarter of a mile to the southeastward of Hardwood Island; and the **Norton's Island Ledges** extend three-eighths of a mile from the western shore of that island, thus diminishing the width of the channel to about an eighth of a mile. The passage, therefore, between Hardwood and Pomp's islands is not recommended to strangers, as none of the ledges are buoyed. The best plan is to keep to the northward, leaving Hardwood Island to the eastward and the Duck Ledges to the westward. **Hardwood Island.**

The Duck Ledges are dangerous rocks, lying about five-eighths of a mile **W SW.** from Hardwood Island, and are uncovered at half-tide, with the exception of the northernmost, part of which is always bare and shows as a white, rocky islet with a sort of grass-cap on top. These ledges should receive a wide berth in every direction, unless you are passing along to the southward of them, where they are comparatively bold-to, the shoals not extending farther off than an eighth of a mile. They lie a little over half a mile to the northward of Stevens' Island, with a good and unobstructed passage, in which there is from three to seven fathoms, between them. **Duck Ledges.**

After passing Hardwood Island you enter the main channel of the reach, and may steer **E.** ½ **S.** to the anchorage off Jonesport, or come to anchor to the northwestward of Hardwood, in from three to five fathoms, soft bottom.

In Fisherman's Island Passage and the channel leading from it into Moos-a-bec Reach there are many good anchorages, but most of them are not available to strangers, owing to the absence of buoys on the ledges. Between the Ram Islands and Great Wass Island is, however, good anchorage, as mentioned on the preceding page, which can always be made in the daytime,—the channel being not less than half a mile wide and unobstructed. When past Slate Island, the best anchorage is under the reef which connects it with Great Wass, in from three to six fathoms, soft bottom; but anchorage may be made anywhere between the Ram Islands and Great Wass Island.

DANGERS

IN FISHERMAN'S ISLAND PASSAGE.

In approaching this entrance the first danger met with is *Sea-Horse Rock*, about a mile and a quarter to the westward of the southern end of Fisherman's Island, and bare at half-tide. About a quarter of a mile to the northeastward of it is Western Egg Rock, a large ledge, three-quarters of a mile to the westward of Fisherman's Island, bare at half-tide, and lying **N.** and **S.**, with a length of eight hundred yards. This ledge is not buoyed, nor is the Sea-Horse, and both are dangerous, especially at night. Western Egg Rock bears from Nash's Island Light-house **SE.** by **E.** ½ **E.**, nearly five miles distant, and from Browney Island **SW.** ½ **W.**, nearly one mile distant. ***Western Egg Rock.***

On the western side of the passage, one mile and a half from Western Egg Rock, lies a bare, rocky islet, called Stanley's Ledge. It is a little over a quarter of a mile **S.** from Outer Sand Island, with which it is connected by sunken reefs,—shoal water extending over three hundred yards to the southward from it, and to the eastward about two hundred and fifty yards. It is not buoyed. ***Stanley's Ledge.***

Off the western and northern sides of Browney Island, on the eastern side of the channel, lie the Browney Island Ledges, extending **N NE.** and **S SW.** nearly three-quarters of a mile, in some places

bare at half-tide, in others with from two to fifteen feet upon them, and not buoyed. Narrow threads of deep water separate the different ledges of the group from each other. The southern-

Browney Island Ledges.

most ledge is bare at low water, and shoal water extends off from it in a SW. direction nearly half a mile from the island. Their northern end bears N. by W. ½ W. from the northwestern point of Browney Island, distant about eleven hundred yards. Vessels endeavoring to make an anchorage under the north shore of Slate Island should therefore give Browney Island a berth to the southward of seven-eighths of a mile. The south end of Browney Island Ledges is nearly half a mile W. by S. from the western end of that island. Vessels coming into this channel should not, therefore, approach Browney Island nearer than three-quarters of a mile.

About six hundred yards NE. ¾ E. from the northern end of Browney Island Ledges lies a bare ledge, surrounded by shoal water. From the south end of Ram Island it bears S. by E. ¾ E., five-eighths of a mile distant, and from Slate Island SW. ¾ W., five-eighths of a mile. It is not buoyed, but, in day-time, is always visible. It is proposed to call this ledge The Old Bachelor.

The Old Bachelor.

The southern end of Ram Island should not be approached nearer than two hundred and fifty yards by vessels drawing over twelve feet.

On the western side of the channel, exactly opposite to the north end of Browney Island Ledges, there is a great mass of ledges and bare rocks, lying off Drisco and Sand islands, of which the most prominent is a rocky islet about twenty feet high, called Batson's Ledge, a little over three hundred and fifty yards long, and always bare. A ledge, bare at low water, lies on its western side, close to it; one, which is out at half-tide, lies a little less than a quarter of a mile to the northward; a kelp ledge, with eleven feet, lies an eighth of a mile to the eastward; and another, with nine feet, lies three-eighths of a mile E. by S. ½ S. All of these are detached rocks, with deep water between them. Between Batson's Ledge and Sand Island there is not less than five fathoms at low water, and not less than seven fathoms in the passage between Drisco and Inner Sand islands, when passing to the northward of Batson's Ledge. None of these passages are, however, available for strangers. Such should aim to pass to the eastward of the nine-feet kelp ledge, to which the name of *Corn Ledge* has been given.

Batson's Ledge.

Sea-Duck Rock, already described, (page 74,) is the next danger met with in entering by this passage, and it is best to pass to the westward of it, as, although the channel is wider between it and the Ram Islands, there is danger in that passage from the extensive Norton's Island Ledges, which extend nearly half a mile from the southwestern end of Norton's Island. Also, a long ledge makes off from Sea-Duck Rock to the southeastward about three hundred and fifty yards, and is, in some places, dry at low water, while the western side of the rock is tolerably bold-to, and may be approached within one hundred yards with four fathoms water. Sea-Duck Rock bears from the southern end of Ram Island NW. by W., distant a little over three-quarters of a mile; from the southern end of Stevens' Island E., distant nearly five-eighths of a mile; and from Hardwood Island S. ¼ E., distant one mile and a quarter.

Sea-Duck Rock.

Stevens' Island is shoal on its eastern side to a distance of about six hundred yards, and the ledges are bare in many places at low water. As none of these rocks are buoyed, great care must be taken to avoid them.

After passing Sea-Duck Rock, look out on the eastern side of the passage for Norton's Island Ledges, which will be recognized by a bare, rocky islet, lying about a quarter of a mile SW. from Norton's Island. Shoal water extends from this islet a quarter of a mile to the westward, but it is not buoyed. Still farther to the northward, and exactly opposite to Duck Ledges, will be seen another bare ledge, lying about three-eighths of a mile N NW. from the rocky islet above mentioned, and a little over a quarter of a mile from the Norton's Island shore, forming the northern end of the Norton's Island Ledges. There is no passage between it and the southern rock, but it is pretty bold-to on its western side. In beating and standing to the eastward in this vicinity care must be taken not to get into the pocket between the northern and southern rocks, as there is deep water between them, with no outlet.

Norton's Island Ledges.

Duck Ledges, lying on the west side of the passage, opposite to Norton's Island Ledges, are very dangerous rocks. Being nearly always bare, they are easily avoided; but are surrounded by a mass of ledges and sunken rocks, rendering a near approach to them in the highest degree dangerous. Shoal water makes to the northeastward from the larger ledges to a distance of three-eighths of a mile. In passing them through this channel the eastern ledge should receive a berth of about three hundred yards, and the northern ledge (that which is always out, and has the cap of grass upon it, see page 65) should not be approached nearer than three-eighths of a mile. This is the most dangerous as well as the narrowest part of the channel, and vessels which draw over twelve feet should not attempt to pass through unless the tide is up. *A bar with only seventeen feet* runs clear across the channel, from near the northern end of the rocks north of the Duck Ledges to Hardwood Island on the eastern side of the passage. As neither the Duck Ledges nor Hardwood Island Ledge is buoyed, it is exceedingly difficult to keep in the channel unless acquainted with the locality.

Duck Ledges.

Hardwood Island Ledge, lying on the eastern side of the channel, is bare at half-tide, and obstructs also the passage between Hardwood and Pomp's islands. The bare rock lies about four hundred yards **S. ½ E.** from the southern end of Hardwood Island, and shoal water extends from it almost to the shore. It is not buoyed. Vessels must not, when past this rock, approach too near the western shore of Hardwood Island, as shoal water is found an eighth of a mile from its northwestern end. Twelve feet at mean low water may be carried to within a little over one hundred yards of its southwestern end, but in passing it the rule is to edge away to the westward as soon as past the southern end of the island, and keep about four hundred yards from it. By so doing the bar will be crossed in seventeen feet,—the best water.

Hardwood Island Ledge.

After crossing the bar you enter the main channel; and, if bound to Jonesport, steer to the eastward, being careful to pass not less than two hundred and fifty yards to the northward and westward of Hardwood Island. In doing so you will pass to the southward of the black spindle with a spherical cage on top. This is on Fessenden's Ledge, a large ledge, lying south of the Goose Islands, about in the middle of the passage, (see page 68,) and bare at low water near the spindle. Soundings of thirteen and sixteen feet are found on other parts of the ledge. The spindle bears from the southernmost Goose Island **S.**, four hundred yards, and must be left to the northward.

Fessenden's Ledge.

After passing Fessenden's Ledge follow the directions for the main channel.

SAILING DIRECTIONS

FOR FISHERMAN'S ISLAND PASSAGE.

Bring Nash's Island Light-house to bear **NW. ¼ N.**, four miles and three-quarters distant, and the south end of Crumple Island **E. by N. ¼ N.**, about two miles and a half distant; when you will be about off the middle of the entrance and must steer **N NE.**, having the Ram Islands a little to the northeastward of the course. Continue this course, on which there will be nothing less than sixteen fathoms, until the northern end of Browney Island bears **E. by S. ½ S.**, and the white rocky point of Hardwood Island **N. Easterly;** when you will be in sixteen fathoms, soft bottom, and must steer **N. ½ W.**, passing to the westward of Sea-Duck Rock; to the eastward of Stevens' Island; to the westward of Norton's Island Ledges; and between the Duck Ledges and Hardwood Island. Continue this course until in the main channel, which will be entered about three hundred and fifty yards to the westward of Fessenden's Ledge. Bound to Jonesport, steer up towards the spindle on Fessenden's Ledge, to the southward of which you must pass, and when abreast of it steer **E. ¼ S.** for the anchorage.

On the **N. ½ W.** course, as above, there is not less than five fathoms until up with the bar between Duck Ledges and Hardwood Island, upon which there is seventeen feet; and after passing it there is not less than four fathoms to the anchorage.

The above courses pass nearly half a mile to the westward of Western Egg Rock; a little over half a mile to the westward of Browney Island Ledges; about seven-eighths of a mile to the eastward of Stanley's Ledge; a little over a quarter of a mile to the eastward of the ledges off Sand Island; about three hundred yards to the westward of Sea-Duck Rock; a little over a hundred yards to the eastward of the ledges off Stevens' Island; three-eighths of a mile to the westward of Norton's Island Ledges; a quarter of a mile to the eastward of the easternmost of the Duck Ledges; a quarter of a mile to the westward of Hardwood Island Ledge; about three hundred yards to the eastward of the ledges to the northwestward of Duck Ledges; and about an eighth of a mile to the westward of the shoal water off the northwestern end of Hardwood Island.

Wishing to anchor in the Anchorage north of Slate Island: When the northern end of Browney Island bears **E. by S. ½ S.**, and the southern point of Hardwood Island **N. Easterly**, as before, and in sixteen fathoms, soft bottom, steer **NE.**, which course will lead nearly midway between Ram and Slate islands. On this course there will be nothing less than eight fathoms. As soon as Slate Island bears **SE.**, (or, in other words, when it is exactly abeam,) steer **E. by S. ⅜ S.** towards the Great Wass Island shore, and anchor at pleasure;—the depth being from three to six fathoms, soft bottom. Or, continue the **NE.** course for the southern end of Beal's Island, having a high, bare hill, with white ledges cropping out over its surface, **(Beal's Mountain,)** to the northward of the course; and when within about one-third of a mile from shore, anchor in the mouth of The Flying Place, in from four to six fathoms, soft bottom. These are the only anchorages fit for strangers.

The above courses pass a little over a quarter of a mile to the northward of the northern end of Browney Island Ledges; a quarter of a mile to the westward of The Old Bachelor; about four hundred yards to the eastward of the shoals off Ram Islands; and nearly a quarter of a mile to the westward of those off Slate Island.

FLAT ISLAND PASSAGE

is next to the westward of the Fisherman's Island Passage, its entrance being between Outer Sand Island and Flat Island. It is a wide and deep channel, leading to the northward, between Outer Sand, Inner Sand, Drisco, Brown's and Stevens' islands, the Duck Ledges and Shabbit Island on the east, and Flat, Plummer's and Ram islands on the west. It is nearly free of dangers; and not less than nine fathoms can be taken through it into the main channel of the reach. The entrance may be recognized by Flat Island on the western and Outer Sand Island on the eastern side.

Flat Island. Flat Island lies a mile and quarter to the westward of Outer Sand Island and a mile and five-eighths to the eastward of Nash's Island. It is a low, rocky islet, about three hundred and fifty yards in diameter, and surrounded by ledges, called **Flat Island Ledges**, which extend to the northward from the island three-eighths of a mile and to the southward two-thirds of a mile. The island should receive a berth to the northward of not less than a mile, but may be approached within three hundred and seventy to four hundred yards, either on its eastern or western side.

Outer Sand Island. Outer Sand Island, before described, (page 74,) is a high, grassy island, with a very scanty growth of spruce and fir, and a number of dead trees standing like spars here and there. It is two miles to the westward of Browney Island. Next to the northward lies **Inner Sand Island**; and to the northward of this, **Drisco Island**; both of which have been already fully described, (page 74.)

Off the western shore of Drisco Island lies a small island, called **Brown's Island**, two hundred and fifty yards from Drisco, and low, rocky and bare, with the exception of a few dead trees standing here and there over its surface. Its shores are bold-to. An excellent channel exists between it and Drisco Island, through which not less than seven fathoms may be taken.

Plummer's Island. On the western side of the channel, a little above Brown's Island, and a mile and a half to the northward of **Flat Island**, lies Plummer's Island. Seen from the southward and westward it looks like two wooded islands, of moderate height, and presents a bold, white, rocky face to the eastward. This island lies **W NW.** and **E SE.**, and is a little over six hundred yards long. On its eastern, northern and western sides it is tolerably bold to, and may be approached within one hundred and fifty yards; but on its southern side lies *Plummer's Island Ledge*, a quarter of a mile from the shore.

Nearly opposite to Plummer's Island, on the eastern side of the channel, lies **Stevens' Island**, before described, (page 74,) Its western end is shoal to a distance of three-eighths of a mile. Passing to the northward of Plummer's Island you will open **Ram Island**, which will appear a little over half a mile to the westward, on the southern side of Tabbott's Narrows. It is of moderate height, rocky, and covered with a very thick growth of trees, giving it a round, bushy appearance.

Duck Ledges. On the eastern side of the channel, about half a mile to the northward of Stevens' Island, lie the Duck Ledges, the westernmost of which marks the eastern limit of the channel, and is a long ledge, bare at one-quarter ebb, lying **NE.** and **SW.**, about a quarter of a mile to the westward of the large ledges. A quarter of a mile to the northward of it will be seen **Shabbit Island**, lying on the eastern side of this channel and on the south side of the main channel, and marking the point of union of the two. It is low, rocky and wooded, and about an eighth of a mile long. On its southern side it is tolerably bold-to, but it should receive a berth of nearly two hundred yards to the eastward from vessels passing to the westward.

When abreast of Shabbit Island you will enter the main channel about seven-eighths of a mile above Tabbott's Narrows.

DANGERS

IN FLAT ISLAND PASSAGE.

Flat Island Ledges. The approaches to this channel are clear until near Flat Island, off the south end of which extend the dangerous Flat Island Ledges to a distance of two-thirds of a mile. These consist of a great number of small detached rocks, most of which are bare at low water, and have small slues with from four to seven feet among them. To avoid them, pass to the southward of Flat Island not less than a mile. They always show themselves, and are not buoyed.

Stanley's Ledge. On the eastern side of the entrance look out for Stanley's Ledge, lying a little over a quarter of a mile to the southward of Outer Sand Island. It is bare and rocky, and is connected with Outer Sand Island by a line of sunken rocks. The bare rocks should not be approached nearer than a quarter of a mile from either the southward or westward.

There are no dangers in this passage in mid-channel, but only on the sides. In beating, when standing to the westward do not approach Flat Island nearer than four hundred yards; and when

standing to the eastward give Outer Sand and Inner Sand islands a berth of a quarter of a mile. When to the northward of Flat Island, and standing to the westward, give that island a berth to the southward of not less than half a mile; and when up with the southern end of Drisco Island do not stand to the westward of the eastern end of Plummer's Island bearing **N.** by **E.**, for there are *many shoal spots and bare detached ledges* lying to the southward of Green Island at distances varying from a half to five-eighths of a mile. By following the above directions there will never be less than three and a half fathoms water.

Plummer's Island Ledge.

Plummer's Island Ledge lies about a quarter of a mile off the southern shore of Plummer's Island, has about three feet at mean low water, and is not buoyed. To avoid it, do not stand to the westward of the eastern end of the island bearing **N.** by **E.**

Brown's and Drisco islands, on the eastern side of the channel, are both bold-to; but ledges make off from the western end of Stevens' Island about six hundred and fifty yards, and are in many places bare at low water. The western end of this island should, therefore, receive a berth to the eastward of not less than three-eighths of a mile.

Duck Ledges.

The westernmost of the Duck Ledges, which is bare at one-quarter ebb, lies about half a mile to the northward of Stevens' Island and a little over a quarter of a mile to the westward of the easternmost Duck Ledge, and should not be approached nearer than three hundred yards, as there are sunken rocks to the westward. After passing it there are no more dangers until you enter the main channel of the reach.

SAILING DIRECTIONS

FOR FLAT ISLAND PASSAGE.

With Nash's Island Light-house bearing **NW. ¼ N.** and the southern end of Browney Island **E.** by **N. ¼ N.**, (each being distant three miles and one-eighth,) steer **N.** by **E.**, which will lead safely through the passage as far as Shabbit Island. When abreast of this island, in nine fathoms water, and about six hundred yards off, steer **NE.** by **E.** until the northernmost of the Duck Ledges (that which is always bare and has the cap of grass upon it) bears **S. ¼ E.**, when you will have five and a half fathoms water, and must steer **E. ¼ S.** for the anchorage off Jonesport. On the above courses there will not be less than nine fathoms as far up as Shabbit Island; thence until the northern Duck Ledge bears **S. ¼ E.**, not less than five; and thence to the anchorage not less than four fathoms.

Anchorage may be had between Drisco and Stevens' islands, in from six to nine fathoms, by rounding Brown's Island to the eastward, giving it a berth of about one hundred and fifty yards, and steering **E. ½ N.**, about for Sea-Duck Rock. Keep the Stevens' Island shore best aboard; and, when past its western end, anchor. The bottom is soft.

CONE ISLAND PASSAGE.

There is an excellent entrance to Moos-a-bec Reach from the southward, between Flat Island on the east and Cone and Nash's islands on the west, having no dangers; and the only sailing directions necessary are to keep off the shores of the Islands. This passage leads into Tabbott's Narrows at their western end, is over a mile wide at its narrowest point, and has not less than ten fathoms.

Cone Island.

Cone Island, lying on the western side of the entrance, is a little over a mile **NW. ¾ W.** from Flat Island. It is low, grassy, and covered with a scanty growth of spruce and pine; and tolerably bold-to, except on its southern side, (where there are ledges making off a quarter of a mile,) and on its western side, where it is joined at low water to Nash's Island.

Nash's Island and Light-house.

Nash's Island is low, rocky, entirely bare, and about three hundred and fifty yards long. Ledges make out from it about a quarter of a mile to the southward. On this island is built Nash's Island Light-house,—a guide to Pleasant Bay, Cape Split Harbor and Moos-a-bec Reach. It is a white tower, twenty-eight feet high, connected with the keeper's dwelling by a covered way; shows a fixed red light, of the fourth order of Fresnel, from a height of forty-seven feet above the sea, and is visible, in ordinary weather, twelve miles. Its geographical position is

Latitude	**44° 27′ 51″ N.**
Longitude	**67° 44′ 50″ W.**

Green Island.

Green Island, lying about a mile and a half to the northward of Flat Island and about three hundred yards to the southward of Ram Island, in Tabbott's Narrows, must be left to the eastward by vessels entering by this passage. It is low, bare and rocky, with a grassy surface, but no trees. It is surrounded by ledges; and there is no passage between it and Ram Island.

SAILING DIRECTIONS

FOR CONE ISLAND PASSAGE.

Coming in from the southward and westward, bring Nash's Island Light-house to bear **N.** by **E.**, one mile and a half distant, with about twenty fathoms water, soft bottom, and steer **NE.** $\frac{1}{2}$ **N.**, which course will lead into Tabbott's Narrows at their western end. There will not be less than ten fathoms until you reach the Narrows; after which there will be nothing less than four fathoms to Jonesport.

These courses pass a quarter of a mile to the eastward of Cone Island; the same distance to the westward of Green Island; and midway between Ram and Sheep islands.

In beating through Cone Island Passage, do not approach Nash's Island from the southward nearer than three-eighths of a mile, nor the southern end of Cone Island nearer than six hundred yards; but you may stand close to the eastern point of the latter, as it is quite bold-to. In standing to the eastward, to the northward of Flat Island, give that island a berth of half a mile, and Green Island a berth to the northward of nearly five-eighths of a mile, *to avoid the shoals lying off those islands.* The western shore of Green Island should receive a berth to the eastward of two hundred and fifty yards.

Cone Island Passage is an excellent channel, and is frequently used by vessels bound to the westward, after they have passed through Tabbott's Narrows.

LIGHT-HOUSES.

NAME.	Latitude N.	Longitude W.		Fixed or Revolving.	Interval of Flash.	Height above sea-level.	Distance visible in nautical miles.
		In arc.	In time.				
	° ′ ″	° ′ ″	h. m. s.		s.	Feet.	
Moos-a-bec Light-house	44 28 27	67 31 55	4 30 7.7	Revolving	30	65	13
Nash's Island Light-house	44 27 51	67 44 50	4 30 59.3	Fixed red.	.....	47	12

TIDES.

Corrected Establishment at Jonesport	$10^h\ 58^m$
Mean Rise and Fall of tides	11.7 ft.
Mean Rise and Fall of Spring tides	12.4 ft.
Mean Rise and Fall of Neap tides	11.0 ft.
Mean duration of Rise	$6^h\ 10^m$
Mean duration of Fall	$6^h\ 15^m$

VARIATION OF THE COMPASS.

The approximate magnetic variation in Moos-a-bec Reach for the year 1879 is **16° 48′ W.**, and the approximate annual increase **2′**.

LIFE-SAVING STATION.

A life-saving station, provided with boats and other appliances for assisting vessels in distress, has been established on Browney Island by the United States Government.

ICE IN MOOS-A-BEC REACH.

This reach is rarely closed to navigation during the winter;—only two cases being known within the memory of those residing on its shores. These occurred in the winters of 1856–7 and 1874–5. The formations are usually local;—beginning about the middle of December, and subsequently rendered more formidable by accessions of drift-ice from Englishman's Bay and Pleasant Bay. In severe winters (like those mentioned above) the drift-ice in great quantities lodges in the channels among the islands, extends out seaward as far as the eye can reach, and freezes into a solid mass;—thus effectually opposing all navigation. In 1874–5 no navigation was possible during the month of February; and it was not safe for sailing-vessels to attempt the reach from the twenty-eighth of January until the twenty-first of March.

Winds from the northward and eastward are the most likely to break up and clear the reach of both local and "drift"-ice. Westerly and southwesterly winds force "drift"-ice into it; while southerly winds, being generally accompanied by a heavy sea and milder temperature, have a tendency to break the ice up and cause it to disappear.

The tidal currents are sufficiently rapid to prevent extensive local formations and to carry off "drift"-ice, under ordinary circumstances; but in severe winters the extent and thickness of the masses bid defiance to the utmost strength of the currents unless assisted by strong favorable winds.

INDIAN RIVER

empties into Moos-a-bec Reach on the western side of Hopkins' Point. It is an arm of the sea, running about **N.** by **E.** and **S.** by **W.**, and a little over two miles long; is separated into two streams by a large island called Moose Island, which extends nearly the whole length of the river; and is about a mile and five-eighths long and a little over half a mile wide. That part of the river to the eastward is called **East River**, or Indian River proper; that to the westward is called **West River**, and both are entirely unsafe for strangers to enter, as the channel is narrow and crooked, and both branches are full of bare ledges and sunken rocks. There is little or no trade;—what there is being carried on by light-draught vessels, whose masters are well acquainted with the dangers. A pilot can always be obtained at Jonesport for either river.

Doyle's Island.

Off the mouth of East River, and close in with Hopkins' Point, lies Doyle's Island, about half a mile long **E.** and **W.**, low and wooded, except near its eastern end, where the land is cleared, and has a house and out-buildings. It is separated from Hopkins' Point by a passage about one hundred and fifty yards wide, called **Whiting's Passage**, which is, however, only fit for small boats. Two spruce trees, standing close together, on the southwestern point of the island, serve to distinguish the entrance to Indian River, as there are no other trees on the point.

Goose Islands.

From three-eighths to five-eighths of a mile to the westward of Doyle's Island lie the Goose Islands, six in number, low and well wooded, except the one next to the southernmost, which is a small, low island, with only a few scattered spruce on its flat, grassy surface. The third islet of the group is very thickly wooded, and has a hut on its eastern shore near the northern end. The channel into Indian River lies on the western side of this group, and between Moose Island on the north and Doyle's and Goose islands on the south. The passage between Doyle's and Goose islands is too full of ledges to be of use.

Bickford's Point, the western point of entrance to West River, is barren, rocky, and nearly destitute of trees. There are one or two houses on its extremity, but the general appearance of the land is very desolate. All of its approaches are very shoal.

Moose Island.

Moose Island, when viewed from the southward, presents a low, rocky surface,—the summit crowned with spruce and fir and scrubby bushes. There are a few houses on the bank; and its southeastern extremity shows a round knubble of moderate height, crowned with a group of spruce and fir, and presenting a peculiar appearance. Fish-weirs extend off from the shore to the edge of the channel, and ledges (most of them bare at low water) extend nearly half way across the entrance.

The western banks of West River show undulating surfaces, diversified with wooded land and cleared slopes,—the latter extending to the water's edge. There are very few houses. The channel, after passing Bickford's Point, is more free of ledges than that of East River, and ten feet at mean low water may be taken about a mile and a quarter above Bickford's Point.

The shores of East River have the same general character as those of West River, but the eastern banks are indented by several coves or creeks. The southernmost of these, called **Hay Creek**, makes into the eastward a little over a quarter of a mile above Hopkins' Point. **Snare Cove**, a little over two-thirds of a mile to the northward of Hay Creek, is a small, semicircular cove of no importance; and just to the northward is **Snare Creek**, which is about thirteen hundred yards long, but dry at low water. The banks of East River are generally low or of moderate height, mostly wooded, but occasionally cleared and thinly settled. The general course of the river is about **NNE.** for nearly two miles, where it joins West River at the northern end of Moose Island. The passage between this island and the mainland to the northward is a little over one hundred yards wide, and crossed by a bridge. There is a small settlement about half a mile above this, on the banks of the East River, called **Indian River Settlement**. Seven feet at mean low water may be taken up this river about a mile and a half above its mouth; but the channel is too narrow and intricate for strangers.

No sailing directions can be given for either branch of Indian River. The channels are very narrow and crooked, and are obstructed by numerous and very dangerous ledges, none of which are buoyed. Vessels bound up must take a pilot in Moos-a-bec Reach.

CAPE SPLIT HARBOR.

The entrance to this harbor is a little over half a mile to the westward of Sheep Island, (in Tabbott's Narrows,) and is contained between the western shores of Moose Neck and Cape Split. It is a little over a quarter of a mile wide, and has not less than seven fathoms. The harbor is an excellent refuge, and is frequently used,—easy of access, especially to vessels coming from the eastward through Tabbott's Narrows, or from the southward through Cone Island Passage. It is a wide cove, almost a mile and a quarter long, with a general course **NNE.** and **SSW.**, widening out above the entrance to nearly three-quarters of a mile from shore to shore. Three fathoms can be found at the anchorage, and the holding-ground is excellent.

Cape Split.

Cape Split, forming the western side of the harbor, is a remarkable looking headland,—being a high, rocky bluff, bare, except at its southwestern end, where it presents a black, wooded face, and along its southeastern face, where there is a growth of black-looking fir and spruce.

There is a round, rocky islet of peculiar appearance, lying off the southwestern shore of the cape, called **The Castle.** It is crowned with fir and spruce, and has perpendicular faces, while its summit is quite flat.

The shores of **Moose Neck**, forming the eastern side of Cape Split Harbor, are rocky and undulating, with a scanty growth of trees. Both banks are thinly settled and under partial cultivation.

DANGERS

IN APPROACHING AND ENTERING CAPE SPLIT HARBOR.

I. ***From Tabbott's Narrows.***—Coming from the eastward through Tabbott's Narrows, and wishing to enter Cape Split Harbor, beware of *the ledges lying on the eastern side of the entrance,* three hundred and fifty yards to the southward of Moose Neck. These ledges, several of which are bare at low water, lie about half a mile to the westward of Sheep Island, and are not marked; but almost always show themselves. They are the only dangers in entering from the eastward.

Cape Split may be approached, in going in, within one hundred yards, with not less than three fathoms; and not less than four fathoms can be carried up to the anchorage.

SAILING DIRECTIONS

FOR APPROACHING AND ENTERING CAPE SPLIT HARBOR.

I. ***From Tabbott's Narrows.***—When, on the **SW.** by **W.** course through the Narrows, the western end of Sheep Island bears **NW.** by **N.**, (or is exactly abeam,) with five and a half fathoms, soft bottom, steer **NW.** by **W.** ¾ **W.** until the middle of the entrance to the harbor bears **N NE.** Now steer that course, and, when up with **Tabbott's Cove,** (which is on the eastern side, about a quarter of a mile above the entrance,) haul into it, and anchor according to draught. Here you may moor **NW.** and **SE.**, and lie safe from all winds, in not less than three fathoms. But, in northerly winds, you may anchor anywhere in the channel after passing the entrance. In **SW.** or southerly winds the harbor is open, and the best anchorage is in Tabbott's Cove.

On the course from Sheep Island for the entrance to Cape Split Harbor there is not less than four fathoms; on the course in, nothing less than six fathoms; and up to the anchorage, not less than three fathoms.

The course from the Narrows to the entrance to the harbor passes about one hundred and fifty yards to the southward of the ledges off the western end of Moose Neck; and the course in passes about one hundred yards to the westward of the same ledges,—keeping the Cape Split shore more aboard, as there are no dangers.

DANGERS

IN APPROACHING AND ENTERING CAPE SPLIT HARBOR.

II. ***Coming from the Southward, through Cone Island Passage.***—There are no dangers in this passage (for description of which see pages 79–80) until up with The Ladle, about fifteen hundred yards to the northward of Cone Island. This is a remarkable looking islet, about two hundred and fifty yards long, lying **N NW.** and **S SE.**, and bearing a faint resemblance to a ladle upside down. Its southern end is low, bare and rocky; and its northern end a high, round head, crowned with stunted fir and spruce and with perpendicular faces, and called the **Bowl of the Ladle.** About three hundred and fifty yards to the eastward of The Ladle is *a small rock, bare at low water,* and tolerably bold-to,—there being not less than four fathoms between the two. This is the only danger in approaching Cape Split Harbor through this channel, and is easily avoided by giving The Ladle a berth of a quarter of a mile to the westward.

The Ladle.

SAILING DIRECTIONS

FOR APPROACHING AND ENTERING CAPE SPLIT HARBOR.

II. ***From the Southward, through Cone Island Passage.***—Bring the eastern end of Cape Split (or the western point of the harbor entrance) to bear **N.** ¼ **E.**, three miles distant, when you will be abreast of the southern end of Flat Island Ledges, and about half a mile to the westward, in sixteen fathoms water, soft bottom. Now steer **N.** ¼ **E.** until the northern end of The Ladle bears **SW.** by **W.** ½ **W.**, distant three-eighths of a mile, with nine fathoms water, when the middle of the entrance will bear **N NE.**, and that course will lead in.

On the above courses there is not less than nine fathoms up to the entrance to the harbor.

DANGERS

IN APPROACHING AND ENTERING CAPE SPLIT HARBOR.

III. ***Coming from the Westward.***—To enter this harbor from the westward the usual rule is, after passing Petit Manan Light-House, to bring it to bear **SW.** ¼ **W.** and steer **NE.** ¼ **E.** On this

course, when a little over two miles and a quarter from the light-house there will be seen to the northeastward, and about a mile and a quarter distant, a red spar-buoy. This is on Jordan's Delight Ledge, formed by a line of reefs about a mile long, extending to the southward from an islet called **Jordan's Delight**. These rocks are all under water, and it is not safe to pass between the buoy and the islet. Jordan's Delight is a rocky islet, of moderate height, entirely covered with a dense black growth of trees, and lying about seven-eighths of a mile to the southward of Pond Island, and in the middle of the approaches to Narraguagus Bay. Seen from the westward it shows a bare, precipitous head, backed by trees. The red spar-buoy on Jordan's Delight Ledge is marked No. 2, and must be left to the westward. ***Jordan's Delight Ledge.***

There is said to be a ledge with eighteen feet at low water, two and three-eighths miles **N E.** $\frac{1}{2}$ **E.** from Petit Manan Light-house, called *Dave Leighton's Ground.*

Passing the red spar on Jordan's Delight Ledge, you leave to the northwestward, about a mile and a half distant, a red and black nun-buoy. This is on Jackson's Ledge, which has twelve feet at low water, and lies about four miles **E.** $\frac{3}{4}$ **N.** from Petit Manan Light-house. It is not in the way, however, of vessels using this passage unless they are beating. ***Jackson's Ledge.***

After passing these ledges the course continues to the northeastward for Cape Split, and the first danger met with is called The Big Pot, a high, bare islet, entirely destitute of vegetation, and about one hundred yards long. Its eastern end is high and very steep, with red and yellow rocks on the summit, while those nearer the water are black. This rock lies one mile **N.** $\frac{1}{4}$ **E.** from Nash's Island, and about a mile and an eighth **SW.** $\frac{1}{2}$ **W.** from the entrance to Cape Split Harbor. It is tolerably bold-to, may be approached to within one hundred and fifty yards, and must be left to the eastward. ***The Big Pot.***

Three-eighths of a mile **E.** from The Big Pot lies The Pot, a barren rock, about ten feet above high water. Extensive shoals surround it, and it should receive a berth of about an eighth of a mile to the eastward. **The Ladle**, lying an eighth of a mile to the eastward, should not be approached nearer than two hundred yards. ***The Pot.***

On the northwestern side of the channel, about three-quarters of a mile **N.** of The Big Pot, there will be seen a black spindle, formed by an iron tripod and shaft, thirty-five feet high, with a ball on top. This is on Norton's Reef, or *Norton's Ledge*, as it is sometimes called, lying on the eastern side of the entrance to Pleasant Bay, (two-thirds of a mile to the westward of Cape Split,) and bare at low water. The spindle must be left well to the westward. ***Norton's Reef.***

When up with the eastern end of Cape Split give it a berth to the northward of one hundred and fifty yards; and do not approach the eastern side of the entrance nearer than two hundred and fifty yards, *to avoid the ledges off the western shore of Moose Neck.* (See preceding page.)

SAILING DIRECTIONS

FOR APPROACHING AND ENTERING CAPE SPLIT HARBOR.

III. ***Coming from the Westward.***—When past Petit Manan Light-house, bring it to bear **SW.** $\frac{1}{4}$ **W.**, and steer **NE.** $\frac{1}{4}$ **E.** until up with the red buoy on Jordan's Delight Ledge. Pass to the eastward of this, and steer **NE.** $\frac{1}{2}$ **E.** for Cape Split, passing to the northwestward of The Big Pot and to the eastward of the spindle on Norton's Reef. When The Pot bears **S SE.**, three-eighths of a mile distant, with eight fathoms water, soft bottom, steer **E.** by **N.** $\frac{3}{4}$ **N.**, giving the eastern extremity of Cape Split a berth to the northward of about one hundred and fifty yards, and carrying not less than seven fathoms; and when in the middle of the entrance, steer **N NE.** into the harbor.

The above courses pass to the eastward of Jordan's Delight Ledge; well to the westward of Jackson's Ledge; three hundred yards to the westward of The Big Pot; three-eighths of a mile to the northwestward of The Pot; and half a mile to the eastward of the spindle on Norton's Reef. On these courses there will not be less than six fathoms.

PLEASANT BAY

lies on the western side of Cape Split,—the entrance being between Ripley's Neck and the cape. Between these two points it is a little over two miles and a quarter wide, but gradually diminishes to a width of a quarter of a mile at the Upper Narrows, about three miles above, where Pleasant River discharges itself into the bay. Its general trend is about **N NE.** and **S SW.** Both banks are tolerably high and well wooded, and there are very few settlements.

Into the northern end of Pleasant Bay empties Pleasant River, running in about the same direction three miles and a quarter to the town of Addison, built on its northern bank, where the river makes an abrupt turn to the eastward. Addison is six miles and three-quarters above the mouth of the bay. Several islands and islets lie off the entrance to this bay, and there are many in the bay itself. The channels are intricate and unsafe for strangers, who should always take a pilot at Cape Split, Millbridge, or on one of the adjacent islands.

Cone Island. Cone Island lies one mile and five-eighths to the southward of Cape Split, and is low, grassy, and covered with a scant growth of spruce and pine. It is tolerably bold-to except on its southern side, where ledges make off for a quarter of a mile. It lies on the eastern side of the entrance to Pleasant Bay, and is joined at low water to Nash's Island, an eighth of a mile to the westward. This island is about three hundred and fifty yards long, and is low, rocky and entirely bare. Here is built the light-house, which is a guide to this bay as well as to Moos-a-bec Reach and Cape Split Harbor. It is a white tower, twenty-eight feet high, (connected by a covered way with the keeper's dwelling,) showing a fixed red light, of the fourth order, from a height of forty-seven feet above the sea, visible in ordinary weather twelve miles. Its geographical position is

Nash's Island and Light-house.

Latitude ..... **44° 27′ 51″ N.**
Longitude ..... **67° 44′ 50″ W.**

Flint Island. Flint Island lies on the western side of the entrance to Pleasant Bay, about one mile and five-eighths to the westward of Cape Split and one mile and three-eighths from Nash's Island. It is rocky, and bare of all vegetation except a very scanty growth of stunted fir near its eastern and western ends; and is about five-eighths of a mile long in a **NW.** and **SE.** direction. A little to the westward of it will be seen a very peculiar-looking islet, called Ship-Stern Island. When viewed from the southeastward this island shows as a high, bluff, rocky head, with a thick growth of trees covering its summit. On its southwestern end the rocks are stratified horizontally with black and brown strata, and this appearance, together with the shape of the point, (somewhat like the stern of an old-fashioned ship,) has given the name to the islet.

Ship-Stern Island.

Dyer's Island. About a quarter of a mile to the northward of Flint Island lies Dyer's Island, a large island, extending nearly **N.** and **S.**, and about two miles long. It is rocky, of considerable height, diversified with woods and bare, rocky shores, and forms part of the eastern shores of Narraguagus Bay, separating that bay from the approaches to Harrington and Pleasant bays.

Norton's Island. On the eastern side of the bay, and about one-third of a mile to the westward of Cape Split, lies Norton's Island, sometimes called **Dock Island,**—a barren islet of moderate height, lying nearly **N.** and **S.**, and about half a mile long. From it a long ledge makes off in a southwesterly direction, bare at half ebb, and has on its end a black spindle surmounted by a ball. This ledge is called *Norton's Reef* or *Ledge*. (See pages 69 and 83.)

Cape Split. **Sheep Island** is a low, sandy islet, with trees in black clumps scattered over its surface, lying between Cape Split and Norton's Island; but, to the northward, Cape Split, the eastern point of entrance to Pleasant Bay, will appear as a high, bald head, with a thick border of black-looking trees fringing its northwestern face.

On the western side of the entrance will be seen Ripley's Neck, high, rocky and very thickly wooded, mostly with oak and birch. **Ripley's Point**, however, (the southern end of the neck,) is a high, round, rocky head, covered with spruce and fir. A group of islets, known as the **Narrows Islands**, lie off this shore, near Ripley's Point. They are nearly all of moderate height, rocky and well wooded. A small island, called **Potato Island,** lies close to Ripley's Point,—and is low and rocky, with a number of dead trees upon it. Between this and the Narrows Islands there is a passage, called **The Narrows**, leading into Harrington and Narraguagus bays. There is sufficient depth in it at high water for vessels drawing eighteen feet, but no stranger should attempt the passage.

Ripley's Neck.

Carrying-Place Cove. On the western shore of the bay, about one mile and a quarter above Ripley's Point, will be seen a large cove, called Carrying-Place Cove, of little importance, but offering fair anchorage for vessels drawing twelve feet. The shores at its head are gently sloping, cleared and cultivated; but the northern shore is rocky and wooded with scrub, and the southern shore shows yellow sand cliffs, about twenty feet high, covered with trees. In many places the face of the cliffs is hidden by a growth of scrub; in others it crops out bold and bare. A couple of rocky islets, covered with scrub, lie in the mouth of this cove, nearest to the northern shore.

The eastern side of Cape Split is rocky, barren and wooded, except in one place just above the high land of the cape, where it is low, flat and grassy, and slopes gently to the edge of the bank, which has low, sandy faces. There is a small settlement on this side of the cape. The bank is faced by a sand beach,—the only one on this shore between Cape Split and Reef Point.

Nash's Harbor. About a mile and a quarter above the extremity of the cape a large and wide cove makes in nearly **E SE.**, and about half a mile long, called Nash's Harbor, with a small settlement at its head. A low, rocky, wooded islet lies in the middle of the entrance; and a smaller one, bare of trees, a little to the northward. The larger islet is called **Nash's Harbor Island**, and there is a passage on either side of it. The southern point of the entrance to Nash's Harbor, called **Nash's Harbor Point**, is low, rocky, and covered with a thin and scattered growth of spruce and fir. This harbor affords shelter for light-draught vessels at high water, but is almost entirely bare at low water, and those who use it must lie aground.

Poet's Harbor. About three-eighths of a mile above Nash's Harbor, and nearly two miles above Cape Split, another cove will be seen on the eastern shore, called Poet's Harbor. It is narrow, runs nearly **E.** and **W.**, and is about half a mile long. A rocky islet, thickly wooded with birch, spruce and other trees, lies in the mouth of the cove, close in with the northern shore, and, until closely approached, appears to be part of the mainland. This is **Poet's Island.** The cove is of no importance, being bare at low water.

In entering Pleasant Bay the first island met with on the eastern side, after passing *Norton's Island*, is **Eagle Island**, a round, *rocky islet of moderate height, with a few stunted fir and spruce trees dotting its surface* and *fringing its banks*. Next to the northward, but closer in with the eastern shore of the bay, is **Sheep Island**, (previously mentioned,) a low, sandy islet, covered with scattered groups of fir,—the trees standing in clumps, with bare spots between them.

The Night-Cap.

Next to the northward of Sheep Island is the entrance to Nash's Harbor; and about three-quarters of a mile above it is an islet called The Night-Cap, grassy and bare of all trees except two tall spruce trees on its western end standing close together. It lies nearly midway between the Narrows Islands and the entrance to Nash's Harbor.

Birch Islands.

Nearly half a mile above The Night-Cap will be seen a group of three islets, *also in the middle of the bay*, known as the Birch Islands. They are all round, rocky, and covered with a scattered growth of spruce, fir and birch. The two southernmost lie **E.** and **W.** from each other, and the third lies **N.** from the other two, and is noticeable for *peculiar red rocks on its southern end* close to the water. The southernmost Birch Islands lie abreast of the entrance to Poet's Harbor, and the northernmost islet nearly opposite to, but a little below, the mouth of Carrying-Place Cove, on the western shore.

When past the Birch Islands two other islets will be reached,—rocky and bare of trees, lying about an eighth of a mile to the northward of the former, and called *Raspberry and Little Mink islands*. *The northernmost is* **Raspberry** and the other **Little Mink Island**. Both are nearly round, and bare of everything but a thin growth of moss and grass. They lie **N.** by **E.** and **S.** by **W.** from each other, and about three hundred yards apart.

Guard's Point.

On the western shore of the bay, just above Raspberry Island, will be noticed a somewhat remarkable-looking point, called Guard's Point, low, wooded with a scanty growth of oak and birch, and presenting to the southeastward a remarkable yellow cliff-like face of sand. It cannot be mistaken.

On the eastern shore, nearly abreast of Raspberry Island, will be noticed a very remarkable-looking head called **Tumble-down-Dick**, a perpendicular wall of grey rock, *with trees clinging to the face of the precipice*, and the bare rock cropping out here and there in large masses. It is heavily wooded and about one hundred and fifty feet high. Close in with it lies a small, low, rocky island, covered only with scrub, except on top, near its northeastern end, where there is only grass, and called **Gibbs' Island.**

Seavey's Point.

On the northern side of Tumble-down-Dick is Seavey's Point, of moderate height, somewhat bluff and steep, cleared, cultivated, and with a house and out-buildings. On its southern side, between it and Tumble-down-Dick, a long cove makes in, called **Seavey's Cove**, of no importance.

Ramsdell's Cove.

On the western shore, about a quarter of a mile above *Guard's Point*, is a low, rocky islet, with only scrub on it, called **Fort Island**; and nearly half a mile above Guard's Point a long cove makes in, called Ramsdell's Cove. A line or row of houses stands on the hill at its head,—the two middle ones having red roofs. The cove makes in between two sandy heads with perpendicular faces, which are not named. Good anchorage for small vessels may be had in Ramsdell's Cove. On the northern side of the entrance lie two islets **NW.** and **SE.** from each other. They are low, sandy, and covered with scrub.

Hemlock Island.

On the eastern shore of the bay, and about a quarter of a mile above *Seavey's Point, there will be seen* a very remarkable-looking islet, called Hemlock Island,—*its surface covered with a kind of dead grass* intermingled with scrub, which gives it the appearance of being streaked with yellow and brown. A thin group of stunted trees grows on its southern end, and at low water it is joined to the eastern shore. Behind Hemlock Island makes in a long and deep cove called **Look's Cove.** Here are the **Upper Narrows** and the mouth of **Pleasant River**, which is here only about a quarter of a mile wide.

A small, low, grassy island, bare of trees, lies about one hundred yards to the northward of Hemlock Island.

Reef Point.

The eastern shores, from Seavey's Point to Reef Point, a little over a mile above, are very thickly wooded, and uninhabited. The river rapidly widens above the Narrows, and at Reef Point is about five-eighths of a mile wide. Reef Point is a long, level, grassy point, of moderate height, cleared and cultivated; and has sandy, water-worn faces, and a house and barn.

Richards' Point.

On the western shore, from Ramsdell's Cove to Richards' Point, about three-quarters of a mile above, the banks show sandy faces, and the land, which is flat and grassy, extends back to rocky and barren hills, dotted here and there with spruce and fir trees. Richards' Point is a high, grassy head, with sandy, water-worn faces from fifteen to twenty feet high,—its surface being flat, cleared and under cultivation. A farm-house and barn occupy the high ground. On the northern side of the point there is a long cove, called **Lower Wass Cove**, making in to the westward about half a mile, and dry at low water. It is nearly opposite to Reef Point, and separated from Upper Wass Cove, a quarter of a mile above, by a large headland, called Wass Point,—a high, grassy head, with a house and barn, and an old lobster-packing house at the water's edge. It is about two miles below Addison, and forms the dividing point between Lower and **Upper Wass Cove.** The shores of this cove are all sandy, with water-worn faces; and there is a somewhat remarkable high, sandy cliff, crowned with a small grove of trees, on the southern side, near its head. On the northern side, at the entrance to the cove, is **Reynolds' Point**, a long, flat, sandy point, covered only with grass, and having sandy, water-worn faces.

Wass Point.

On the eastern shore of Pleasant River, for about a mile above Reef Point, the shores are barren and rocky and dotted with a scattered growth of scrubby fir and spruce. Thence to Addison they are mostly cultivated and settled, with occasional groves of small trees between the cleared fields. The cultivated lands are mostly flat or very gently sloping, and extend back to the higher lands, which are barren, rocky, and covered with the usual growth of stunted trees.

White's Point. On the western shore, half a mile above Reynolds' Point, is White's Point. Between the two the banks are low, flat and sandy, with water-worn faces; and the land extends back to rocky hills crowned with stunted fir. White's Point is grassy, bare of trees, and has a small farm-house and barn. On its northern side makes in a broad cove called Dyer's Cove, or sometimes Dyer's Bay. It is of no importance, being quite shallow. When abreast of White's Point the village of Addison will be seen ahead, and about a mile and three-quarters distant.

Dyer's Cove. Dyer's Cove, or **Dyer's Bay**, lies on the northern side of White's Point, and is about half a mile wide. Its northern point is thickly wooded with birch, oak and other deciduous trees, which makes it very noticeable, as it is the only point so timbered between Ramsdell's Cove and the village. The shores are mostly cleared, but are dotted with trees here and there; and at its head there is a settlement, with what appears to be a school-house, on the high land. This house is white and has a cupola or belfry on top.

From Dyer's Cove to the northward the western bank of Pleasant River is mostly cleared and cultivated. About a mile above the cove the river turns abruptly to the eastward, and on the western and northern bank, at the turn, is situated the village of **Addison**. The principal trade of this village is in lumber and ship-building,—vessels of one hundred and fifty and two hundred tons being built here; and even three-masted schooners of three hundred tons and upwards have been launched from the yards. Large schooners may load here at high water, but at low water they must lie aground. The river is only about two hundred and fifty yards wide abreast of the village, and rapidly narrows to only two hundred yards a short distance above.

The course of Pleasant River above Addison is first about **E.** for nearly a mile and a half, and then about **N.** by **E.**, with many windings, to the village of **Columbia**, a little over three miles above. But throughout all of this distance it is a mere creek in width, and is very shallow. Columbia is a little over four miles and a half above Addison.

A narrow and crooked channel, with six feet at low water, leads up to the village of Addison, but it is not for strangers.

GENERAL REMARKS.

Pleasant Bay is not fit for a harbor of refuge for strangers. Both the bay and river are so full of ledges (none of which are buoyed) that the passage is rendered in the highest degree unsafe, even at high water. Many of these ledges are bare at low water, and others at half-tide; but there are many dangerous sunken ones. The bay has not yet been surveyed, and in the absence of buoys for the ledges it is impossible to give any sailing directions whatever. The general course from the Upper Narrows to Addison is about **N NE.**

Narraguagus Bay and River to the westward, and Cape Split Harbor to the eastward, of Pleasant Bay, afford sufficiently good shelter; but a comparatively safe anchorage may be obtained on the northern side of Norton's Island;—the only danger in the way being *Norton's Reef*, (already described, pages 69 and 83,) making off from that island in a southwesterly direction, bare at half-tide, and marked by a large iron spindle surmounted by a ball.

In approaching Pleasant Bay, Harrington River, Narraguagus Bay or Pigeon Hill Bay from seaward, there will be seen to the northward and northwestward a long range of blue hills of different heights, but lying in a continuous chain. These are the **Tunk Mountains.** The most remarkable are **Humpback**, (which shows a summit composed of two large humps or hills,) and **Burke's Hill**, the southernmost of the range, which has a nearly flat top, with a steep slope to the southward.

HARRINGTON RIVER.

The entrance to this river lies on the western side of Ripley's Neck, between it and Dyer's Island. This and Flat and Back bays to the westward have a common entrance between the neck and the island. Harrington River is sometimes called **Great Nash's River.** Its general course is **N NE.** for five miles to **Hardwood Point**, where it turns to the northward and runs nearly **N NW.** for a mile and a quarter, to the village of Harrington. The entrance between Ripley's Point and Dyer's Island is about three-quarters of a mile wide, but is obstructed by Strout's Island, which lies almost exactly in the middle of the passage. The best water is between this island and Dyer's Island, and this passage, which is known as the **Eastern Passage** and sometimes as **Dyer's Island Narrows**, is commonly used by the coasting steamers in entering Narraguagus Bay from the eastward. Twelve feet at low water may be taken through it, but it is not recommended to strangers; nor can any stranger enter Harrington River with safety, as there are many flats and sunken ledges, none of which are buoyed, and the channel is narrow and intricate.

The principal trade at Harrington is in lumber and ship-building, but the latter is the chief industry. Only six feet at low water can be taken up to Nash's Point, opposite Hardwood Point, and above this there is no passage except at half-flood or high water.

In approaching this river from the southward, after passing Nash's Island, you pass to the eastward of Flint Island and to the westward of Norton's Island. About a quarter of a mile to the northward of the former will be seen a long and high island, called Dyer's Island, lying nearly N. and S. between the mouth of Harrington River and the entrance to Narragnagus Bay. It is high, rocky, and mostly wooded from the summit to the water's edge, but here and there are cleared and cultivated patches. The slopes are gentle where the cleared lands are seen, but the island is in most places steep. A very large reef extends along its eastern shore in a nearly N. and S. direction, breaking heavily at half-tide, and is known as *Dyer's Island Eastern Ledge*. **Dyer's Island.**

Off the northern end of Dyer's Island, and exactly in the middle of the passage, will be seen a high, rocky island, wooded at both ends, but cleared in the middle. This is Strout's Island. A very dangerous line of ledges, bare at half-tide, and known as *Middle Ledges* or *Strout's Island Ledges*, lie off its southeastern shore a quarter of a mile distant, and extend in a N. and S. direction for over a quarter of a mile. The best water into the river is between this island and Dyer's Island,—the passage between Strout's Island and Ripley's Neck being too ledgy for safe navigation. **Strout's Island.**

Opposite to Strout's Island, on the eastern shore, is **Ripley's Point**, the southern extremity of Ripley's Neck, a high, round, rocky head, covered with spruce and fir, lying between this entrance and Pleasant Bay. The western shore of the neck shows high lands, mostly thickly wooded, but in places cleared and cultivated,—the cleared lands having a gentle slope, but the wooded shores being mostly steep. **Ripley's Neck.**

Foster's Island, on the western shore, about a quarter of a mile to the northward of Dyer's Island and opposite to Ripley's Neck, is a long, narrow island, extending N. and S., and a mile and a half long. A good channel, with not less than twelve feet at low water, leads between this and Dyer's Island into Eastern Passage, and is commonly used by the coast steamers. Foster's Island is high, rocky and well wooded,—there being but very few clearings.. The northern end is quite low, and thickly wooded to the edge of the shore with a variety of trees. **Foster's Island.**

Ray's Point lies nearly due E. from the northern end of Foster's Island, half a mile distant, and a mile and three-quarters above Dyer's Island. It is on the western side of the river,—being the southern extremity of a long, narrow peninsula separating Harrington River from **Back Bay**,—and is low and sandy, covered with grass and a few scrubby bushes, and has a couple of houses standing in a grove of spruce and fir trees. Between it and Ripley's Neck the passage is a little over half a mile wide. **Ray's Point.**

Off the northern end of Ripley's Neck, on the eastern side, and close in with the shore, lie two small islands called Ripley's Islands, of moderate height, and very thickly wooded with a variety of trees. The northernmost and larger of the two has a house and outbuildings on its northern end. Passing Ray's Point to the northward, a long cove or bay, called **Flat Bay**, will be opened, extending to the northward nearly two miles. To the northeastward Harrington River stretches away between high, wooded banks; and the high lands, crowned with thick black woods and dotted with houses on their southern slopes, (which will be seen at the head of the river,) form the site of the village of Harrington. **Ripley's Islands.**

On the eastern side of the entrance to Flat Bay, and on the western side of Harrington River, lies Pinneo's Point, nearly a mile above Ripley's Islands and a mile and a quarter above Ray's Point. Seen from the southward, its eastern side appears to be thickly wooded to the edge of the water, while the western half of the point shows a cleared and cultivated field backed by woods, and having several houses. The southern face is a water-worn, sandy cliff, about twenty feet high; and in range with it will appear a low, sandy islet, with its surface covered with scrubby bushes and its shores lined with boulders. This is **Chamberly Island**, and lies in the mouth of Flat Bay. **Pinneo's Point.**

On the eastern shore, on the northern side of Ripley's Neck, a large and wide cove makes in to the southeastward, called Ripley's Cove. It is shallow,—affording shelter to vessels of very light draught (four to six feet) only. The cove is about half a mile long, and three-quarters of a mile wide at its mouth, gradually diminishing to three-eighths of a mile at its head. The shores are all wooded; in fact, from Ripley's Neck to Timber Cove, a mile and a half above, the eastern bank of the river is mostly rocky, wooded and cultivated. On the southern side of Timber Cove there are some clearings and a few houses, but the soil has a poor appearance. **Ripley's Cove.**

On the western shore, about half a mile above Pinneo's Point, is a group of five rocky islets, known as the Five Islands, connected at low water by flats and bare ledges with the mainland. They are low and covered only with grass and scrub, except that the southernmost has a single spruce on its western end and also two small sheds. The cove formed on the western side of these islands with the mainland is called **Five Islands Cove.** At high water there is a passage for vessels of light draught between the two outer and three inner islands, but at low water this passage is bare. **Five Islands.**

Passing the Five Islands, you come to **Sandy Cove**, also on the western shore, three-quarters of a mile above Pinneo's Point. Its shores are low, sandy and wooded, except at its head, where is a marsh or salt meadow. A rocky islet lies in the middle, but there is no anchorage except for small boats.

On the eastern shore, a mile and a half above Ripley's Islands, lies Timber Cove, almost exactly opposite to Sandy Cove, and making in a southeasterly direction for nearly three-eighths of a mile. Between **Timber Cove.**

Hardwood Point on the south and **Coffin's Point** on the north it is a little over a quarter of a mile long. Just to the southward are some clearings and a few houses. The cove itself, however, is of no importance, as it is shallow,—affording no anchorage.

Mill Creek. A little over half a mile above Hardwood Point is Mill Creek, an arm of the bay, running **E.** and **W.**, and about three-quarters of a mile long. Small vessels may enter it at high water. Its entrance will be recognized by the thick grove of trees on its southern bank and the cleared level field on the northern side,—where there is also a house and barn.

On the western shore, about three hundred yards above Sandy Cove, lies a sandy islet, covered with a thin growth of birch and other hardwood trees, called **Cranberry Island.** From the Five Islands to about seven-eighths of a mile above Sandy Cove the shores have the same general character,—being low, sandy, with water-worn faces, and fringed with birch, maple and other hardwood trees. Here and there a patch of meadow-grass marks the outlet of a brook.

Oliver Lord's Point. **Lily Cove,** lying on the western shore, nearly a mile above Sandy Cove, is a long, shallow cove, with low, flat and wooded shores, fringed with meadow-grass, running nearly **N.** and **S.** Its eastern point of entrance is called Oliver Lord's Point, and is wooded thickly with spruce, birch, maple and other trees; and has a long, low, sandy, water-worn face on the southern side. It is a little above Mill Creek, on the eastern shore.

On the eastern shore, from Mill Creek to upper Hardwood Point, a mile above, the banks are flat, with water-worn faces; and the growth is scrubby fir and spruce, in thick groves, extending like spurs between the cleared lands.

Hardwood Point. Hardwood Point (to which we propose to give the name of **Cole's Point,** by which it is sometimes known) is low, flat, grassy and fringed with small bushes. Here the river turns nearly **N.**, becoming rapidly narrower, and continues one mile and a quarter to Harrington, where it is a mere creek, not more than forty yards wide, and is all flats.

Nash's Point. On the western shore, nearly opposite to Cole's Point, is Nash's Point, a little over half a mile above Oliver Lord's Point, and wooded almost to the edge of the water with a thick growth of birch, maple and other trees. Its eastern face is sandy and about ten or fifteen feet high.

The village of **Harrington,** although a small place, does considerable business in ship-building;—but it cannot be reached by vessels of any size before high water. Six feet may, however, be taken up to Nash's Point at low water.

DANGERS.

As none of the ledges in this river are buoyed it is not safe for strangers. There are many bare and sunken rocks and a number of mud-flats. Most of the flats are staked out. *Dyer's Island Eastern Ledge* is the first danger encountered,—a long reef, extending in a **N.** and **S.** direction along the eastern shore of Dyer's Island, and breaking heavily at half-tide. It

Strout's Island Ledges. is not buoyed. Passing it we come to Strout's Island Ledges, or *Middle Ledges,* as they are sometimes called. These are on the eastern side of the entrance, and lie about a quarter of a mile off the southeastern shore of Strout's Island. They are bare at half-tide, and extend in a **N.** and **S.** direction for a quarter of a mile. There is no buoy, but the ledges always show themselves by breakers.

Ray's Point Ledges. Passing these ledges, there are no dangers until near Ray's Point, when look out for Ray's Point Ledges, making off in a southerly direction from that point, and bare at half-tide to a distance of two hundred and fifty yards. Shoal ground extends to the southward one hundred yards from the bare ledges. These ledges are not buoyed, but may be avoided by giving the point a berth of a quarter of a mile to the northwestward.

A little to the southward of Mill Creek, on the eastern shore, there is *a long ledge making out to a distance of about four hundred yards,*—its western end being marked by a stake. Off the southern point of the entrance to Mill Creek there is *another long ledge making out from shore for a quarter of a mile, bare at half-tide,* and also marked by a stake. After passing these ledges the only guides to vessels bound up river are the stakes on both sides of the channel. At low water, however, the flats are mostly bare and the channel is distinctly seen.

SAILING DIRECTIONS.

No stranger should attempt to pass up this river; but, in case of necessity, in day-time a harbor may be made either under the northern end of Dyer's Island, between that and Foster's Island, or farther up, between Foster's Island and Ripley's Neck. *To make this Anchorage:* When past Nash's Island, bring it to bear **SE.** by **S.** and steer **NW.** by **N.**, through the passage between Dyer's and Strout's islands. When past the northern end of the latter, bring a red spindle (which is on *Half-Tide Ledge* and will be seen to the westward, off the northern end of Dyer's Island) to bear **W.** by **S.** and steer **W.** $\frac{1}{2}$ **S.**, which will bring you up with a red spar-buoy outside of the spindle. This is on Eastern

Flats, and here there is safe anchorage. *Or, when past Strout's Island*, steer **N.** by **E.** ½ **E.**, between Ripley's Neck and Foster's Island, heading for Pinneo's Point. Anchor at pleasure. Not less than twelve feet at low water is found on the above courses.

Dyer's Island Narrows, though tolerably well marked, is not safe for strangers. *Norton's Reef*, on the eastern side of Pleasant Bay entrance, is marked, as mentioned on page 83, by an iron tripod spindle, painted black; *Eastern Flats*, by a red spar-buoy (No. 4) placed in five fathoms; *Half-Tide Ledge*, by a red spindle or spar; *Dyer's Island Ledge*, by a red spar-buoy (No. 2) placed on the ledge; and *North Ledge*, by a second-class nun-buoy, painted black and marked No. 1. The red buoys are to be passed on the port hand and the black buoys on the starboard hand when entering from the eastward.

VARIATION OF THE COMPASS.

The approximate magnetic variation for Pleasant Bay and Harrington River is, for 1879, **16° 44′ W.** The approximate annual increase is **2′.**

FLAT BAY.

Flat Bay is a part of Harrington River, which makes into the northward between Pinneo's Point on the northeast and Blasket Point on the southwest. Between these two points the entrance is a little over a quarter of a mile wide, but is obstructed by Chamberly Island, lying off Pinneo's Point. Flat Bay runs nearly **N.** by **E.**, and is about two miles long, with an average width of about three-eighths of a mile.

Pinneo's Point, before described, (see page 87,) is its northeastern point of entrance. On its southern and southwestern sides this point appears as a high, rocky and well wooded head,—the trees coming down to the edge of the water. **Chamberly Island**, lying to the southwestward, is a low, sandy islet, with its surface covered with scrubby bushes and its shores lined with boulders. The channel is between it and Blasket Point, the southern point of entrance to Flat Bay. This point lies on the western shore of Harrington River, one mile above Ray's Point; is sandy, of moderate height, with precipitous faces, covered with grass, and here and there a lone tree. Behind it makes in a large cove, which is, however, very shallow and of no importance. **Blasket Point.**

When past Chamberly Island, Mill River will open to the northwestward, appearing as a large and wide bay, running nearly **N.** and **S.**, between heavily wooded shores. A high, bare hill is seen over the land on its eastern side, and low, cleared, gently sloping lands project like spurs between the clumps of forest. On the western bank of this river will be seen a settlement in the midst of grassy fields;—extending to the edge of the water, and called **Back Bay Settlement**, as it occupies the peninsula between Mill River and Back Bay and fronts on the latter. The **Tunk Mountains** are seen in the distance.

Three-quarters of a mile above Blasket Point, and on the western side of the bay, is a long, low, flat, grassy point, fringed with small oak and birch trees, and having a handsome grove and a group of houses on its highest part. This is **Oaks Point**, and is the northeastern point of entrance to Mill River, which runs into Flat Bay about three-quarters of a mile above Blasket Point. Its course is to the northeastward for nearly a mile, where it divides;—the main fork continuing about **N.** for seven-eighths of a mile to **Camden Mills**, and the eastern branch running about **N.** by **E.** for nearly three-quarters of a mile. This eastern branch is called **Cole's Creek**. Camden Mills are a mile and three-quarters above Oaks Point. The shores of Mill River and Cole's Creek are all well wooded, and there are a few houses on the eastern shore, between Oaks Point and the mouth of the creek. Both streams are very shallow, and there is no passage except at high water. **Mill River.**

The banks of Flat Bay above Oaks Point are sandy, with water-worn faces, of various heights, and diversified with wooded and cultivated lands. The western shore is composed almost entirely of a flat plain, with its surface partly wooded with large timber, and partly cultivated and thinly settled. All of this bay is shallow, and the upper part is bare at low water. There is no trade except the little depending on the saw-mills on Mill River.

BACK BAY.

A long and narrow peninsula, the southern extremity of which is called Ray's Point, separates Flat Bay and Harrington River from Back Bay, a large, shallow bay, of very irregular shape, connected with Harrington River by a passage leading between Ray's Point and Foster's Island, and with Narraguagus Bay to the westward by a passage between Foster's Island and the mainland. Its course is first about **N.** by **E.** from abreast of Ray's Point to Strout's Point, and then **NE.** nearly a mile and a quarter to its head.

Ray's Point, already described, (see page 87,) lies nearly **E.** from the northern end of Foster's Island, half a mile distant, and forms the eastern point of entrance to the bay. It is a mile and three-quarters above Dyer's Island, is low and sandy, covered with grass and a few scrubby bushes, and has a couple of houses standing in a grove of spruce and fir trees. **Ray's Point.**

The northern end of **Foster's Island** is quite low, and wooded to the edge of the water with a variety of trees.

Partridge's Island, lying off the entrance to Back Bay, about four hundred yards to the southward of Kemp's Folly, is a low islet, very thickly wooded.

Strout's Point, on the western bank, five-eighths of a mile above the northern end of Foster's Island, is tolerably high, rocky, and wooded with spruce and fir in clumps, except at its northeastern end, where it is thickly wooded, mostly with fir. Its shores show steep faces, but are shoal in their approaches,—shoal ground making off a long distance in the direction of Foster's Island. There is *a rock, bare at high water*, about four hundred yards from the point; but the flats extend a considerable distance to the southward of this,—the channel lying on the Foster's Island side. The flats are marked by fish-weirs, extending to the edge of the channel.

Strout's Point.

Kemp's Folly, four hundred yards to the northward of Partridge's Island, is low and grassy, and is easily distinguished by the handsome clump of birch and maple on its southeastern end. There are not more than a couple of dozen trees in the group, and they stand close together on the extreme point.

Kemp's Folly.

The shores of Back Bay above Strout's Point are all of moderate height and thickly wooded. The bay is shoal,—having at low water a very narrow and crooked channel with four feet in it,—is never used except by the people who live on its banks, and is of no importance.

NARRAGUAGUS BAY.

The entrance to this large and commodious bay, lying just to the westward of Pleasant Bay and Harrington River, is forty-three miles from West Quoddy Head, twenty miles from Libbey Island, and a little over twelve miles from Head Harbor Island. It lies between Dyer's and Flint islands on the east and Pond Island on the west, and is over two miles wide;—its general course being nearly **N.** for over four miles, where the Narraguagus River discharges itself into its northwestern end, and another branch extends in a **N NE.** direction towards Back and Flat bays.

The course of Narraguagus River is about **N.** by **W.** for nearly a mile and three-quarters, to Millbridge, situated on its western bank. Here the river is very narrow and is crossed by a bridge. Seven feet at low water can be taken up to the town, but the channel is not fit for strangers, who must anchor off the Steamboat Wharf, just below the mouth of the river; but a pilot can always be obtained either at this wharf or on Pond Island. Fresh water can be had at this anchorage, as well as at several other points on the river; wood is plentiful and cheap, and provisions can be obtained at Millbridge without difficulty.

In approaching this bay from the eastward, after passing Nash's Island, the most noticeable object will be Pond Island, upon which is the light-house, a guide to this bay. The island appears as a very regularly shaped hill, much like Green Mountain (on Mount Desert) in shape, but composed of barren rocks, dotted in a few places with trees. It is three miles and a half to the westward of Nash's Island and a little over two miles from Flint Island; lies **N.** by **E.** and **S.** by **W.**, and is nearly a mile long. Upon its southeastern end is built the light-house, appearing, when seen from the eastward, as two white objects, like the roofs of houses. On the northern end of the island there is a house and barn with a flag-staff near them. This part is low, level and grassy, but is not visible until the northern end is reached.

Pond Island.

Pond Island is on the western side of the entrance to Narraguagus Bay, and on the eastern side of the eastern channel into Pigeon Hill Bay; and the high, bare, rocky hill seen in range with its southern part is **Pigeon Hill.**

Pond Island Light-house, or **Narraguagus Light-house**, as it is sometimes called, consists of a brick dwelling-house, whitewashed, and surmounted by a white lantern twenty-nine feet above the ground; and shows a fixed white light, of the fifth order of Fresnel, from a height of forty-five feet above the sea, visible twelve miles. Its geographical position is

Pond Island Light-house.

Latitude ..... **44° 27′ 20″ N.**
Longitude ..... **67° 49′ 52″ W.**

A bell, struck by hand, is sounded during thick weather.

After passing Nash's Island, the first island met with by a vessel bound into Narraguagus Bay will be Flint Island, on the eastern side of the entrance, and a mile and three-eighths from Nash's Island. When viewed from the eastward it will appear rocky, and bare of all vegetation except a very scanty growth of stunted fir near its eastern and western ends. It lies nearly **NW.** and **SE.**, and is about five-eighths of a mile long.

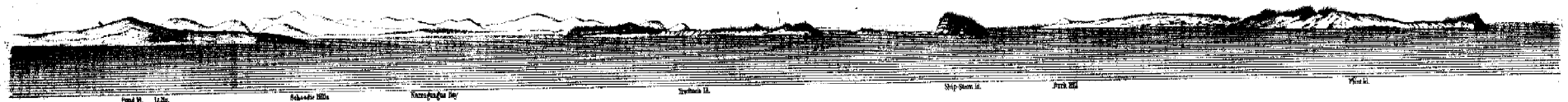
Flint Island.

On its western side, and close to it, will be seen Ship-Stern Island, which, when viewed from the southeastward, shows as a high, bluff, rocky head, with a thick growth of trees covering its summit. On its southwestern end the rocks are stratified horizontally with black and brown strata, and this appearance, together with the shape of the point, (somewhat like the stern of an old-fashioned ship,) has given the name to the island.

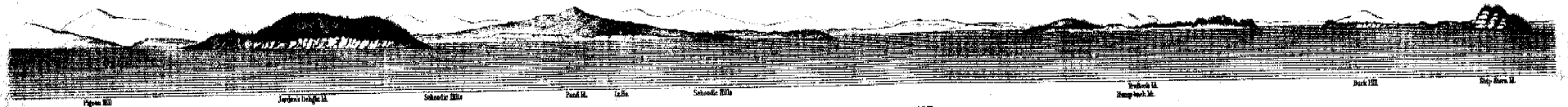
Ship-Stern Island.

On the western side of the entrance, about seven-eighths of a mile **S.** from Pond Island, lies Jordan's Delight, a rocky islet of moderate height, entirely covered with a dense growth of black-looking trees, and a quarter of a mile long **NE.** and **SW.** There is a passage between it and Pond Island, but it is not recommended to strangers. To the southward of this islet lies *Jordan's Delight Ledge*, marked by a red spar-buoy; but there is no passage between the two.

Jordan's Delight.



Entrance to Narraguagus Bay from the Eastward, Pond Id. Lt. Ho. bearing N.W.¼ W. distant 3¼ Miles.



Entrance to Narraguagus Bay from the Southward, Pond Id. Lt. Ho. bearing N.W. by N. distant 3 Miles.

When hauling to the northward to enter the bay, after passing Ship-Stern Island, there will be seen ahead, and about a mile and a quarter distant, a large, rocky and wooded island exactly in the middle of the bay. This is Trafton's Island, about a mile to the northward of Ship-Stern Island, and the same distance **NE.** by **N.** from the northern end of Pond Island. It shows steep, rocky faces, crowned with a dense growth of trees at the eastern and western ends, but bare in the middle, where peculiar-looking white rocks appear. Trafton's Island lies nearly **E.** and **W.**, and is about half a mile long. It is distant from Dyer's Island a little over half a mile, and from the mainland on the western shore of the bay three-quarters of a mile;—the centre of the island lying almost exactly in the middle of the bay. Close to it, off its southeastern point, there is a low islet, composed of red rocks, crowned with spruce and fir, having no name. **Trafton's Island.**

Dyer's Island, on the eastern side of the bay, is that long, high island a quarter of a mile to the northward of Flint Island. It extends about two miles nearly **N.** and **S.**, and, seen from the southward and westward, appears as a rocky island of considerable height,—its shores being mostly wooded, but occasionally bare. There are only two or three settlers,—most of the island being rocky and barren. **Dyer's Island.**

The western shores of Narraguagus Bay are formed by the mainland of the township of **Millbridge,** which extends to the southward as a long, narrow peninsula, separating this bay from Pigeon Hill Bay to the westward, and terminates in Joe Dyer's Point. This, when viewed from Narraguagus Bay, will appear low, rocky, and covered with a growth of fir and spruce. It is a mile to the westward of Pond Island, but the passage between them is studded with islets, prominent among which are the **Horse Heads** and the **Douglass Islands.** There are good passages among these islands, but strangers should not attempt them. **Joe Dyer's Point.**

To the northward of Joe Dyer's Point the western shore, to Chitman's Point, is low and covered with a dense growth of low fir trees.

Chitman's Point is nearly two miles above Joe Dyer's, and nearly opposite to, but a little above, Trafton's Island. There is a large smoke-house on the shore, and back of this the land is low, rocky and thickly wooded. A small, narrow cove, bare at low water, and called **Chitman's Cove,** makes in behind it to the southward. **Chitman's Point.**

About three-quarters of a mile above Chitman's Point is Buchanan's Point, also on the western shore. It is low and rocky, and its top is covered with patches of grass and bushes. Passing to the northward of it you will open a small stream, called **Buchanan's Creek,** nearly dry at low water. High, rocky banks rise behind it, and on its northern side are level, cultivated fields,—the settled lands beginning here. Half a mile above Buchanan's Point a long wharf will be seen on the western shore. This is the **Steamboat Wharf,** used by the coastwise steamers when the state of the tide will not permit them to reach Millbridge;—communication being had under such circumstances by means of a small steamer of light draught. On the shore at the head of the wharf there is a large lobster-packing house. It is best for strangers to anchor off this wharf, unless of large draught, when the best anchorage is under the northern side of Trafton's Island, in from three to five fathoms, soft bottom. **Buchanan's Point.**

On the eastern side of the bay, and about a quarter of a mile above Dyer's Island, lies Foster's Island, a mile and a half long, and extending about **N.** by **E.** and **S.** by **W.** Its southern end will appear low, and has a thick growth of trees to within a few hundred yards of the point. Beyond this the shore rises, and is partly bare and partly wooded with scrub. The northern end of the island is quite low, and thicky wooded to the water with a variety of trees. **Foster's Island.**

The passage between Foster's and Dyer's islands is the one commonly used by the coast steamers when leaving the bay bound to the eastward, or coming in to it from that direction. It is called **Dyer's Island Narrows,** has twelve to fifteen feet at low water, and is buoyed.

Patterson's Point, or **Pickett's Point,** as it is sometimes called, lying at the head of the bay and on the eastern side of the entrance to **Narraguagus River,** is two miles and a half to the northward of Trafton's Island and nearly three-quarters of a mile above the Steamboat Wharf; and is of moderate height, level and grassy, with spruce and fir trees dotting its surface at intervals. On the eastern side of this point, between it and Foster's Island, spreads the **Eastern Branch** of the bay, which leads to Back and Flat bays and Harrington River; but this passage is very shallow and unfit for strangers. **Patterson's Point.**

On the western shore, above the Steamboat Wharf, the banks are of moderate height, with grassy tops;—the land being mostly under fine cultivation and well settled. There are sandy and clay cliffs in many places, worn by the action of the water; and where the lands have not been cleared the woods are very thick.

On the eastern bank of the river, above Patterson's Point, the shore, during the summer, presents a beautiful appearance,—being mostly smooth, level grass-land, dotted with trees like a park, and well settled. The town of **Millbridge** is built upon the western bank, a mile and a half above Patterson's Point and four miles and three-quarters above Pond Island. It is situated on a flat, grassy plain, elevated about twenty feet above the tide,—the banks having precipitous, sandy faces. It is a beautiful and thriving village, with considerable lumber trade and some ship-building interest. Wood, water and fresh provisions can always be obtained, and at cheap rates. Water may also be obtained at the Steamboat Wharf, at Patterson's Point, (where a brook of excellent water flows into the river,) and about half a mile below the town, on the western shore, where there is another brook. Information of these places can always be obtained from the inhabitants.

DANGERS

IN APPROACHING AND ENTERING NARRAGUAGUS BAY.

I. ***Coming from the Eastward.***—In approaching this harbor from the eastward the first danger met with, after passing the whistling-buoy off Head Harbor, will be found on the course towards Petit Manan Light-house, and is known as Tibbetts' Rock. It was lately reported to Lieutenant Commander Theodore F. Jewell, U. S. N., Assistant Coast Survey, by Captain Stillman Ray; and the former gentleman made an examination of it, finding fifteen feet at mean low water. There is, however, said to be *only four feet* close to the fifteen feet spot. This dangerous ledge, which is not buoyed, bears from

Tibbetts' Rock.

	Miles.
Petit Manan Light-house, E. ¼ N.	3½
Nash's Island Light-house, SW. ¾ S.	5
Southeast Rock, NE. ¾ N.	3½

A buoy will be recommended on this rock. To avoid it, when standing towards Petit Manan do not go to the southward of Petit Manan Light-house bearing **W.** ¾ **S.**

When nearly up with the northern end of Pond Island, look out for Pond Island Ledge, which makes off from the northern end of Pond Island, and has three feet on it at lowest tides. A black spar-buoy, marked No. 1, and placed on its northern end, will be seen on approaching the island. It is in fourteen feet water, and must be left to the westward. Passing it and coming up with Trafton's Island, there will be seen well to the eastward, and off the northern end of that island, the red spindle on *Trafton's Island Ledge*, lying off the northeastern end of the island, and dry at half-tide. It is not in the way of a vessel bound in or out with a fair wind. The spindle is placed on the ledge, and is surmounted by a wheel. Vessels bound to Millbridge pass to the westward of it.

Pond Island Ledge.

Lower Middle Ground.

Passing Trafton's Island, a black spar-buoy will be seen nearly a mile ahead, on the Lower Middle Ground, lying off the western shore. The buoy is marked No. 3, and is placed in fourteen feet off the eastern end of the shoal, and about a quarter of a mile from shore. It must be left to the westward; and when past it, a red spar-buoy will be seen some distance ahead, on the lower end of Upper Middle Ground, lying on the eastern side of the channel, about three-quarters of a mile above the Lower Middle. The buoy is in seven feet at mean low water, is marked No. 2, and must be left to the eastward.

Upper Middle Ground.

Passing this buoy, there will be seen ahead, but nearest to the western shore, the black spar-buoy on Long Point Ledge, making off from **Long Point**, on the western shore, a little over a hundred yards, and dry at low water. The buoy is marked No. 5, placed on the eastern end of the ledge in seven feet at mean low water, and must be left to the westward.

Long Point Ledge.

When abreast of the Steamboat Wharf a red spar-buoy will be seen ahead, on the eastern side. This is on Dyer's Island Ledge, lying off the northern end of Dyer's Island, about **W.** ½ **N.** from the southern end of Foster's Island, and has five feet at lowest tides. The buoy is marked No. 2, is placed on the northwestern side of the ledge in ten feet water, and must be left to the eastward going to or coming from Millbridge, and to the southward if bound out by the Eastern Passage or Dyer's Island Narrows.

Dyer's Island Ledge.

The flats off Patterson's Point are marked by a fish-weir, extending to the edge of the channel. You may pass close to the weir,—that is, within fifty yards,—with two fathoms water. When abreast of this point there will be seen, about half a mile ahead, the red spindle on Half-Tide Ledge, lying on the eastern side of the channel and about three hundred yards from shore. The ledge is bare at half-tide, and there is no passage inside of it; and the spindle, which is of iron, surmounted by a cage, is to be left to the eastward.

Half-Tide Ledge.

Above Half-Tide Ledge *the flats extend out from both shores*, and at low water the channel is easily traced, as the flats are nearly all bare. Nine feet at low water may be taken up to Patterson's Point, and seven feet to Millbridge.

SAILING DIRECTIONS

FOR APPROACHING AND ENTERING NARRAGUAGUS BAY.

I. ***Coming from the Eastward.***—Pass half a mile to the southward of Nash's Island, and steer for Pond Island Light-house until within half a mile of the island and the town opens to the westward of Trafton's Island. Then steer **NW.** by **N.** past Trafton's Island, gradually altering the course to the northward so as to give the island a berth to the eastward of a quarter of a mile. When up with the northern end of the island, steer **N.** by **E.** ½ **E.** for the black buoy on the Lower Middle Ground; and when abreast of this, steer **N.** half a mile, and then **N.** by **W.** ½ **W.** Nearly, for the

Steamboat Wharf. This clears the red buoy on the southern end of the Upper Middle Ground; and when abreast of it you must steer **N.** by **E. Nearly**, for the black buoy on Long Point Ledge. Passing to the eastward of this, continue the course until up with the red buoy on Dyer's Island Ledge, when steer **N.** up the middle of the river. *Sailing Directions--Narraguagus Bay.*

Vessels drawing eight feet should anchor off the fish-weir at Patterson's Point, and all strangers should anchor under the northern side of Trafton's Island or off the Steamboat Wharf, and take a pilot for Millbridge. There is good anchorage for large vessels under Trafton's Island in from three to five fathoms.

The above courses take twelve feet at low water up to the Steamboat Wharf and nine feet up to Patterson's Point. They pass to the eastward of Pond Island Ledge; well to the westward of Trafton's Island Ledge; to the eastward of Lower Middle Ground; to the westward of Upper Middle Ground; to the eastward of Long Point Ledge; and to the westward of Half-Tide Ledge.

DANGERS

IN APPROACHING AND ENTERING NARRAGUAGUS BAY.

II. ***By the Eastern Passage, or Dyer's Island Narrows, between Dyer's Island and Strout's Island.***—As before mentioned, (on page 91,) this passage is used by the coasting steamers in entering Narraguagus Bay from the eastward, and in leaving it bound to the eastward. The usual course is to come through Tabbott's Narrows, pass to the southward of Norton's Island, and then, turning to the northward, pass between Dyer's and Strout's islands, and thence between Dyer's and Foster's islands into Narraguagus Bay. The passage is not fit for sailing-vessels unless with the winds between **E.** and **S.** if bound in, and between **W.** and **N.** if bound out; but twelve feet at mean low water may be carried through it into the bay.

After passing Tabbott's Narrows there will be seen ahead, a little to the northward of the course, a large black spindle on Norton's Reef, or *Norton's Ledge*, as it is sometimes called, making out in a southwesterly direction from Norton's Island, and nearly all bare at half ebb. The spindle is on its southern end, is composed of an iron tripod, and is to be left to the northward. *Norton's Reef.*

After passing Norton's Reef the course leads over towards Dyer's Island and along its eastern shore; and the first danger encountered will be *Dyer's Island Eastern Ledge*, lying off the eastern shore of that island,—a long reef, extending **N.** and **S.**, breaking heavily at half-tide, and marked by a red spar-buoy, (No. 4.) After passing it, the next danger met with is Strout's Island Ledges, or *Middle Ledges*, as they are sometimes called, lying on the eastern side of the passage, about a quarter of a mile from the southeastern end of Strout's Island, bare at half-tide, and about a quarter of a mile long in a **N.** and **S.** direction. They are not buoyed, but are always visible. The course in passes to the westward of them. When past them, there are no dangers until the passage between Foster's and Dyer's islands is open, in which will be seen a red spindle and spar-buoy. The spindle is on *North Point Ledge*, or *Half-Tide Ledge*, a long reef, lying off the northern end of Dyer's Island and on the southern side of this passage. The buoy is on the northern extremity of the same reef, but the spindle is on the dry part. *Strout's Island Ledges.*

Vessels must not attempt to pass between them, but must keep to the northward of the buoy. When up with it, the red spar-buoy on Dyer's Island Ledge will be seen a short distance ahead. This ledge has seven feet at mean low water, and lies off the northern end of Dyer's Island, a little to the westward of North Point Ledge. The buoy is marked No. 2, and is placed on the northwestern side of the ledge. It must be left to the southward, and the course shaped for a black nun-buoy (No 1) placed on the southern side of a seven feet ledge, called *North Ledge*, which is in Narraguagus Bay. When up with this buoy, steer about **N.** up the middle of the river. (See sailing directions on preceding page.) *Dyer's Island Ledge.*

SAILING DIRECTIONS

FOR APPROACHING AND ENTERING NARRAGUAGUS BAY.

II. ***By the Eastern Passage or Dyer's Island Narrows, between Dyer's Island and Strout's Island.***—After passing through Tabbott's Narrows, steer **W.** ½ **N.** to clear Norton's Reef spindle, and when past it bring Nash's Island to bear **SE.** by **S.** and steer **NW.** by **N.**, between Dyer's Island and Strout's Island, passing to the westward of the ledges off the latter and to the eastward of those off the former island. When the passage between Foster's and Dyer's islands is open, bring the red spindle to bear **W.** by **S.**, and steer **W.** ½ **S.** so as to leave the spar-buoy near the spindle to the southward. When past this buoy steer **W.** by **S.**, which will lead up with the red can-buoy in Narraguagus Bay, when you must follow the sailing directions for the bay and river previously given.

Through this passage not less than twelve feet at low water can be carried.

DANGERS

IN APPROACHING AND ENTERING NARRAGUAGUS BAY.

III. ***Coming from the Westward.***—About seven miles and a half **SW.** ¾ **W.** from Nash's Island Light-house, and fifteen miles **W.** ¾ **S.** from Moos-a-bec or Head Harbor Light-house, lies Petit Manan Island. From Baker's Island, off Mount Desert, it bears **E.** by **N.** ½ **N.**, distant a little over sixteen miles, and from Mount Desert Rock **NE.** ¼ **N.**, distant twenty-six miles. It is a group of low, rocky islets, destitute of vegetation, and surrounded by dangerous shoals. They lie **NW.** and **SE.**, and exactly off the western entrance to Pigeon Hill Bay; and on the southernmost is built the light-house;—appearing, when viewed from the westward, as a very tall tower with a group of houses at its base. This light-house is a granite tower one hundred and nine feet high, connected with the keeper's dwelling, which is close to it and is painted drab. The tower shows a fixed white light, of the second order of Fresnel, *varied by flashes* at intervals of two minutes, from a height of one hundred and twenty-five feet above sea-level; and in ordinary weather is visible seventeen miles. Its geographical position is

Petit Manan Island.

Petit Manan Light-house.

Latitude	**44° 22′ 2″ N.**
Longitude	**67° 51′ 51″ W.**

There is at Petit Manan Light-house a steam fog-whistle ten inches in diameter, in duplicate, which gives two blasts of five seconds' duration every minute,—the intervals between the blasts being eight and forty-two seconds respectively.

Fog-signal.

Another dwelling-house, painted cream-color, stands about one hundred and fifty feet to the westward of the tower; and the fog-signal houses, which are white, about sixty yards to the southwestward, and on the southern extremity of the island.

Petit Manan Island is surrounded by dangerous ledges and shoals at distances varying from two to five miles. On its northern side lie the two shoals known as *Inner Bar* and *Outer Bar*. On its western and southern sides are several detached rocks, very dangerous to navigation, but all of them marked by large buoys. Of these, the first one met with in approaching the island and bound into Narraguagus Bay is known as Moulton's Ledge, lying three miles **W.** by **N.** from Petit Manan Light-house, bare at low water, and extending in a **NE.** and **SW.** direction about one hundred yards, with soundings of between three and five fathoms extending half a mile to the southward from the bare ledge. A spar-buoy, painted red and black in horizontal stripes, is placed in five fathoms about one hundred yards to the southwestward of the ledge, and must be left to the northward.

Moulton's Ledge.

Vessels bound to the eastward or westward may go within from three-quarters to half a mile of Petit Manan Island with not less than four fathoms; in which case, after passing Moulton's Ledge, the first danger met with will be Petit Manan Reef. This ledge makes off from the island in a southerly direction, is about half a mile long, and marked by a second-class iron can-buoy (No. 1) painted black. The buoy is on the southern end of the ledge in seven and a half fathoms, and is to be left to the northward by vessels using this passage; but it is better for strangers to keep to the southward, outside of all these dangers.

Petit Manan Reef.

Simms' Rock, a dangerous ledge, having six or seven feet at low water, lies two miles **S.** ½ **E.** from Petit Manan Light-house, and has from six to eight fathoms water all around it; while the channel between it and Petit Manan Reef is about a mile wide, and has not less than six fathoms water. This rock is marked by a spar-buoy, painted red and black in horizontal stripes, placed on the northeastern side of the rock in eight fathoms water, marking the southern side of the channel between this ledge and Petit Manan Reef. Vessels using this passage pass to the northward of it.

Simms' Rock.

Southeast Rock is the outermost of the rocks to the southward of Petit Manan, from which it is distant four miles in a **S.** by **E.** direction. It has seven feet at lowest tides, and is marked by an iron can-buoy of the second class, painted red and black in horizontal stripes, and placed in eight fathoms on the northern side of the ledge. This buoy must be left to the southward;—or if passing to the southward of it, it must receive a berth of one-third of a mile.

Southeast Rock.

When past Southeast Rock, the next danger met with will be Jackson's Ledge, which is not, however, in the way of vessels using this channel unless they are beating to windward. It lies on the eastern side of the passage, about four miles **E.** ¾ **N.** from Petit Manan Light-house, and a little over three miles to the southward of Jordan's Delight, having twelve feet at mean low water and nine feet at lowest tides, and is marked by a red and black nun-buoy placed on its northern side, which is to be left to the southward.

Jackson's Ledge.

Dave Leighton's Ground, said to lie a mile and a half to the westward of Jackson's Ledge, is also left to the southward by vessels using this passage to Narraguagus. It is reported to have eighteen feet upon it, and to bear from the southeastern end of

Dave Leighton's Ground.

Boisbubert Island SE. by S. ½ S., two miles distant, and from Petit Manan Light-house NE. by E. ½ E., two miles and a half distant. A buoy has been recommended to mark this shoal ground.

Tibbetts' Rock, already described on page 92, is said to have four feet upon it, and is about half a mile to the westward of Jackson's Ledge. Lieutenant Commander Jewell describes it as not very large, "but steep-to on its northeastern side—the water deepening to sixteen fathoms within fifty feet of its shoalest part. The depth of water increases less abruptly on the southern and southwestern sides; but twenty fathoms may be found within half a mile." ***Tibbetts' Rock.***

"This rock lies nearly in the track of vessels bound into Moos-a-bec Reach from the westward," and bears from

	Miles.
Petit Manan Light-house, E. ¼ N.	3½
Nash's Island Light-house, SW. ¾ S.	5
Southeast Rock, NE. ¾ N.	3½

A buoy will be recommended on this rock.

Egg Rock, lying on the western side of this channel, off the entrance to Pigeon Hill Bay, is not in the way of vessels bound into Narraguagus unless they are beating in. It is simply a bare, rocky islet, destitute of vegetation, and about ten feet high, and lies three-quarters of a mile to the southward of Little Boisbubert Island and a little over two miles to the northward of Petit Manan Light-house. From Jackson's Ledge it bears NW. by W. ¾ W., distant about three miles and a half. ***Egg Rock.***

One-third of a mile S SW. from Egg Rock lies *The Whale*, bare at one-third ebb. It is not in the way of vessels using this passage; but those who pass on the northern side of Petit Manan must beware of it.

When within about a mile and a half of Jordan's Delight, there will be seen a red spar-buoy ahead, which is on Jordan's Delight Ledge, formed by a line of reefs about a mile long, extending to the southward from the island. The rocks are all under water, and it is not safe to attempt to pass between them and the island. Jordan's Delight, as already mentioned, (page 90,) is a rocky islet of moderate height, entirely covered with a dense growth of black-looking trees, and is seven-eighths of a mile S. from Pond Island. The buoy, which is marked No. 2, is placed in seven fathoms on the southwestern side of the ledge, and is to be left to the eastward by vessels using this passage; or it may be left to the northward by rounding Pond Island, (leaving it to the westward,) and thus entering the bay. It is customary, however, coming from the westward, to pass to the northward of Jordan's Delight,—between it and Pond Island. In so doing, the next danger met with will be Pond Island Ledge, lying off the northern end of Pond Island, having three feet on it at lowest tides. A black spar-buoy, (No. 1,) which will be seen as soon as the northern end of the island is approached, is placed in fourteen feet water off its northern end, and must be left to the westward. Passing it and coming up with Trafton's Island, there will be seen well to the eastward, and off the northern end of that island, a red spindle. This is on Trafton's Island Ledge, lying off the northeastern end of the island, and dry at half-tide. It is not in the way of a vessel bound in or out with a fair wind. The spindle is *on* the ledge, in fourteen feet water, is surmounted by a wheel, and must be left to the eastward. There is good anchorage under the northern shores of Trafton's Island in from three to five fathoms, and strangers can anchor here and take a pilot for Millbridge. ***Jordan's Delight Ledge.*** ***Pond Island Ledge.*** ***Trafton's Island Ledge.***

The eastern and western channels unite at this point. (For description of dangers and sailing directions, see page 92.)

SAILING DIRECTIONS

FOR APPROACHING AND ENTERING NARRAGUAGUS BAY.

III. ***Coming from the Westward.***—1. ***Between Petit Manan Reef and Simms' Rock:*** Give the light-house a berth of three-quarters of a mile, passing a quarter of a mile S. of the black buoy on the reef, and when the former bears NW. by N. ¼ N., steer N. by E. ¾ E. for Pond Island Light-house. When within half a mile of the latter, haul to the eastward around the island, keeping half a mile from it; and when the southeastern point of Pond Island bears W., steer NW. by N. past Trafton's Island, gradually altering that course to the northward so as to give the island a berth to the eastward of a quarter of a mile. When up with the northern end of the island, haul to the eastward, (keeping the same distance from shore,) and anchor under its northern shore; but if bound up, steer N. by E. ½ E. towards the Lower Middle Ground, and follow the directions given for Narraguagus Bay. (See page 92.)

Sailing Directions--Narraguagus Bay. The above courses lead a quarter of a mile to the southward of Petit Manan Reef; a little over a mile to the northward of Simms' Rock; seven-eighths of a mile to the eastward of The Whale; the same distance to the westward of the reported position of Dave Leighton's Ground; and a mile and a quarter to the westward of Jordan's Delight Ledge.

2. ***Between Simms' Rock and Southeast Rock:*** Give Petit Manan Light-house a berth to the northward of about three miles; and, in passing it, the red and black can-buoy on Southeast Rock should be seen in any ordinary weather about a mile to the southward of the course, and the red and black spar-buoy on Simms' Rock the same distance to the northward. As soon as past the range of Simms' Rock buoy and Petit Manan Light-house, and Pond Island Light-house bears **N.** by **E.** $\frac{1}{3}$ **E.**, steer that course until within half a mile of the island, when haul to the eastward around it, and proceed as before directed.

The above courses pass about a mile to the southward of Simms' Rock, and nearly half a mile to the eastward of it; about a mile to the northward of Southeast Rock; about five-eighths of a mile to the westward of Dave Leighton's Ground; a mile and five-eighths to the westward of Tibbetts' Rock; about a mile to the eastward of The Whale; and about a mile and a quarter to the westward of Jordan's Delight Ledge.

3. ***To pass Outside or to the Southward of all the ledges off Petit Manan and enter Narraguagus Bay:*** Do not approach Petit Manan Light-house nearer than five miles until to the eastward of the light bearing **N.** by **W.**; and when Pond Island Light-house bears **N.** $\frac{3}{4}$ **E.** steer for it until within half a mile of it, when haul to the eastward, and proceed as before directed.

These courses pass about a mile to the southward of Southeast Rock; about a quarter of a mile to the westward of Dave Leighton's Ground; a mile and quarter to the westward of Tibbetts' Rock; a mile and a quarter to the eastward of The Whale; and a mile to the westward of Jordan's Delight Ledge.

4. ***To pass to the Southward of Jordan's Delight and enter Narraguagus Bay:*** Having come by the most frequently-used passage, (that between Petit Manan Reef and Simms' Rock,) when Pond Island Light-house bears **N.** by **E.** $\frac{3}{4}$ **E.**, steer for it until Petit Manan Light-house bears **SW.** $\frac{3}{4}$ **W.**, when steer **NE.** $\frac{3}{4}$ **E.** Nearly, for Nash's Island Light-house, keeping Petit Manan over the stern. When past Jordan's Delight, and Pond Island Light-house opens to the eastward, steer **N.** by **W.**, keeping about half a mile from the Pond Island shore and a quarter of a mile from Trafton's Island shore. When up with the northern end of the latter, steer **N.** by **E.** $\frac{1}{2}$ **E.** towards Lower Middle Ground buoy, and proceed as directed for Narraguagus Bay. (See page 92.)

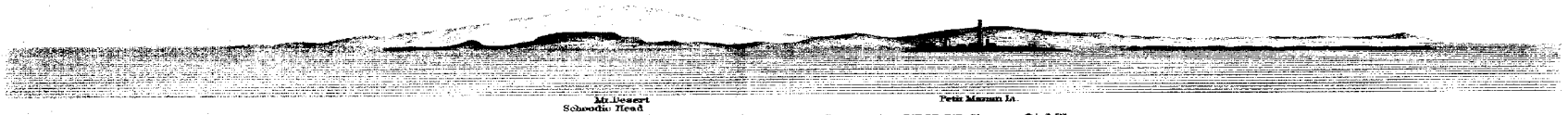
The above courses pass a quarter of a mile to the southward of Petit Manan Reef; a mile to the northward of Simms' Rock; nearly three-eighths of a mile to the northward of the reported position of Dave Leighton's Ground; and a quarter of a mile to the southward of Jordan's Delight Ledge.

IV. ***To cross Petit Manan Outer Bar and enter Narraguagus Bay.***—Between Petit Manan Island and Petit Manan Point (two miles and a half to the northward of it) the water is all shoal. Two passages across these shoals—the northern one with seven feet at lowest tides, and the southern one with ten feet—are called, respectively, Inner and Outer Bar. The **Inner Bar Passage** is not safe for strangers, and is not buoyed. The **Outer Bar Passage** has a spar-buoy, and is used by the coast steamers and such coasters as are familiar with the dangers of these inshore passages. The buoy is a spar, thirty-five feet long, painted black and white, and is placed in two fathoms in the middle of the channel. In 1872 this buoy was about sixty yards too far to the westward, and if it has not yet been shifted vessels should be careful not to run directly for it, as they might strike on the southern point of the shoal.

In coming from the westward to cross Outer Bar, give Petit Manan Light-house a berth to the southward of about a mile; bring Ship-Stern Island about a handspike's length open to the northward of Jordan's Delight, (on a bearing of nearly **NE.**,) and steer in on that range, which will lead safely over the bar in the best water.

This is the pilots' range for crossing, as the buoy is frequently carried away and oftener out of position. If the range cannot be seen and the buoy is gone, the bar should not be crossed, and *can never be crossed in heavy weather,* as it breaks heavily from Petit Manan Point out to the island.

As a rule, strangers should not attempt to cross Petit Manan Bar, but should pass to the southward of the island. The reefs between the island and the point are very dangerous, and should be crossed only in smooth weather and with an experienced pilot.



Petit Manan Id. from the Eastward, the Lt.Ho. bearing W. N. W. distant 2¼ Miles.

Petit Manan Id. from the Westward, the Lt.Ho. bearing N. E. by E. distant 3¼ Miles.

LIGHT-HOUSES.

NAME.	Latitude N.	Longitude West.		Fixed or Revolving.	Interval of Flash.	Height above sea-level.	Distance visible in nautical miles.
		In arc.	In time.				
	° ′ ″	° ′ ″	h. m. s.		m.	Feet.	
Narraguagus Light-house	44 27 20	67 49 52	4 31 19.5	Fixed.	.....	45	12
Petit Manan Light-house	44 22 2	67 51 51	4 31 27.4	F. V. F.	2	125	17

VARIATION OF THE COMPASS.

The approximate magnetic variation for the year 1879 is 16° 34′ W., with an approximate annual increase of 2′.

LIFE-SAVING STATION.

It is the intention of the United States Government (1878) to establish a life-saving station on Petit Manan Island, provided with boats, cars and other apparatus for rescuing the shipwrecked, and for the comfort and shelter of such as shall have been saved.

ICE IN NARRAGUAGUS BAY.

Ice forms in this bay and in Narraguagus River and Dyer's Island Narrows about the same time and in the same manner as in Machias and Englishman's bays;—commencing about the middle of December, and continuing to form a more or less formidable obstacle to navigation until March. (See also pages 60 and 63.) The ice is mostly of local formation, except during severe winters, when a field of harbor ice and floes from outside is massed together and frozen, completely shutting off all approach to the bay, and extending several miles outside of Jordan's Delight.

Winds have little influence in preventing or assisting local formations, nor have the tides; but both assist in bringing in drift-ice from outside, and in carrying it off when the mass is broken up. Calms and light winds from the northward and westward are favorable to a rapid increase in the local formations; while strong winds break them up and drive them ashore on the lee side of the bay;—thus blocking up the harbors on that side. In severe winters Narraguagus Bay is dangerous to navigate from December to April, and wholly closed from the middle of January to the first of March.

Winds from **SW.** around by **S.** to **SE.** and thence to **NE.** have a tendency to break up the ice; when it goes to sea with the ebb, assisted by the wind if anywhere to the northward of **E.** Southerly winds, being almost always accompanied by a heavy sea and a rise in the temperature, do more than any others to break up the "field;" but in such case it is apt to come in again on the flood as "drift;" and should a cold snap occur, will freeze together again and close the bay.

PIGEON HILL BAY,

sometimes called **Boisbubert Harbor**, lies just to the westward of Narraguagus Bay, from which it is separated by the long peninsula of the mainland which terminates in Joe Dyer's Point. It is naturally divided into two parts,—the **Northern** or **Inner Bay**, which is bounded on the north and west by the township of **Steuben**, on the east by the township of **Millbridge**, and on the south by Boisbubert Island, (pronounced "Bowbear;") and the **Southern** or **Outer Bay**, which is contained between Boisbubert Island on the east and Petit Manan Point on the west. The general course of the Outer Bay is **NNE.** for about three miles and a quarter, and that of the Inner Bay is about **N. ¼ W.** for a little over two miles. The latter is very shallow.

Pigeon Hill Bay is of little commercial importance;—there being some fishing interest, but no other trade. It is useful as a harbor of refuge, but is somewhat dangerous to approach on account of the Petit Manan Bars (which close the western entrance to vessels of large draught) and the ledges and shoals which obstruct the passage from the eastward. In case of necessity, however, it may be safely entered from the eastward by large vessels if the directions hereinafter given be carefully followed.

In approaching Pigeon Hill Bay either from the eastward or westward, the most prominent object visible will be **Pigeon Hill**, (whence the bay takes its name,) which will appear as a high, round hill of regular shape, covered only with bushes, entirely destitute of trees, and about five hundred feet high. The hill rises from Petit Manan Neck about three miles above the point, and there is at present a large tripod and a staff on its summit, (marking the site of one of the Coast Survey stations,) which is visible several miles.

Petit Manan Island.

Petit Manan Island, lying off the middle of the entrance, nearly two miles to the southward and eastward of Petit Manan Point, has been already described (on page 94) as a group of low, rocky islets, lying in a line nearly **NW.** and **SE.**, destitute of vegetation, and most of them connected at low water. On the southernmost and largest islet is built the light-house, which appears, when viewed from either the eastward or westward, as a very tall, grey tower, with a group of low houses at its base. Petit Manan Island bears from

	Miles.
Nash's Island Light-house, SW. ¾ S. ..... about	7¼
Moos-a-bec or Head Harbor Light-house, W. ¾ S.	15
Baker's Island (off Mount Desert,) E. by N. ½ N. ..... a little over	16
Mount Desert Rock, NE. ¼ N.	26

It is surrounded by very dangerous ledges and shoals, so that strangers should not approach it from the southward nearer than five miles, and cannot go inside of it at all.

Petit Manan Light-house.

Petit Manan Light-house is a sea-coast light—that is, it is intended not only as a guide to the harbors of Pigeon Hill Bay and Narraguagus, but also as a landmark for vessels passing along the coast. It is situated on the southern end of the southernmost islet of the group, and is a granite tower one hundred and nine feet high, connected with the keeper's dwelling, which is painted drab. Another dwelling, painted cream-color, is seen about fifty yards to the westward, and two fog-signal houses sixty yards to the southwestward of the tower. The light is fixed white, (varied by flashes at intervals of two minutes,) of the second order of Fresnel, and, in ordinary weather, is visible seventeen miles. Its geographical position is

Latitude ..... **44° 22′ 2″ N.**
Longitude ..... **67° 51′ 51″ W.**

Fog-signal.

There is at Petit Manan Light-house a steam fog-whistle, in duplicate, ten inches in diameter, which gives two blasts of five seconds' duration every minute. Between the blasts are silent intervals of eight and forty-two seconds, respectively. This signal is especially useful to mariners on account of the dense and long-continued fogs so frequent in this vicinity, sometimes lasting three weeks without intermission.

Passing Petit Manan, we come next to **Egg Rock,** lying nearly in the middle of the entrance, two miles and an eighth to the northward of Petit Manan Light-house and one mile to the southward of Boisbubert. It is a bare, rocky islet, about ten feet high, entirely destitute of vegetation. One-third of a mile **S SW.** from it lies *The Whale,* bare at one-third ebb, and breaking constantly.

Petit Manan Point.

Nearly opposite to Egg Rock, on the western side of the entrance to Pigeon Hill Bay, is Petit Manan Point, forming the western point of entrance to the bay and separating it from Dyer's Bay. It is the southern extremity of **Petit Manan Neck,** which forms the western shore of Pigeon Hill Bay, and is long, low, rocky, and covered with a growth of stunted fir and spruce. At low water it extends out into a long, bare ledge, close around which leads the channel across Inner Bar, which is good for seven feet at lowest tides.

A little more than three-quarters of a mile above Petit Manan Point, on the western side of the bay, is **Woods Pond Point,** low and rocky, with a crown of stunted fir and spruce. The most of this western shore is rocky and has a forbidding aspect; for, although the soil is fertile, there is very little of it, and the settlements are few and gradually diminishing. Back of the shore-line the land rises to a considerable height near the ridge of the neck, and there are several houses on the summit and slopes.

Boisbubert Island.

On the eastern side of the entrance, and a little above Woods Pond Point, begins Boisbubert Island, (pronounced "Bow-bear,") forming the eastern shore of Outer Bay. It lies **N.** and **S.,** is two miles and a quarter long, with an average width of three-quarters of a mile; and, seen from the eastward or southeastward, presents an extremely desolate appearance,—showing a bare, white, rocky surface of considerable height, without a vestige of grass or trees, and sloping gradually to the edge of the water. On approaching its northern point it will be seen to be low, and composed altogether of bare rocks, upon which is a group of small houses surrounding a flag-staff. The western shore has some thin patches of soil and is thinly settled; while on the southern shore there is a large cove, called **Little Boisbubert Harbor,** which affords anchorage for vessels of five and six feet draught.

Little Boisbubert Harbor is, however, pretty well open to southerly and southeasterly winds, although somewhat protected from the former by **Little Boisbubert Island,** which lies close in with its southwestern point and on the southwestern side of Little Boisbubert Harbor. It is a rocky islet, about three-eighths of a mile long, lies nearly **NW.** and **SE.,** and is covered with a thick growth of spruce and fir,—standing like a black wall upon it.

The Chair.

On the western shore of the bay, about a mile above Woods Pond Point, there is a rock of peculiar shape, standing alone on the very edge of the shore-line, and called The Chair, from its resemblance to that article. You may go pretty close to it (within one hundred yards) with not less than two fathoms water. The western bank is here all rocky and desolate, and the woods are a very sparse growth of stunted fir and spruce trees.

At Chitman's Point, abreast of Pigeon Hill, and nearly three miles above Woods Pond Point, the bay inclines more to the westward, running nearly **N.** for about two miles to its head.

Chitman's Point.

Chitman's Point, a low, round point, lying at the eastern base of the hill, and having a single house and barn, is nearly level and partly cultivated. The northern end of Boisbubert is exactly opposite to it. Passing this northern end of Boisbubert, (which is low, bare and rocky, as before described,) you will open the Eastern Passage into the bay leading between Joe Dyer's Point and Pond Island. **Joe Dyer's Point** is low and rocky, wooded with spruce and fir, and has a large white house and out-buildings on its western side. Three-quarters of a mile to the northward, and nearly a mile above Boisbubert, lies **Bar Island,** close to the eastern shore. It is oval in shape, about five-eighths of a mile long, lies nearly **N NE.** and **S SW.,** and, seen from the southward, appears very thickly wooded with a variety of trees. There are, however, some small cleared patches on its eastern side. There is no passage at low water to the eastward of Bar Island,—*a bar, dry at three-quarters ebb,* stretching from it to the mainland. At high water seven feet may be taken into the mouth of a long cove or creek making in to the eastward abreast of the northern half of the island, and called **Bobby's Creek.**

The bay is quite shallow on the western side of Bar Island, although much wider than the passage to the eastward. Only a few feet can be taken at low water past the island,—the usual anchorage being just to the southward of Pigeon Hill, so as to shut in the Eastern Passage behind the northern end of Boisbubert.

Currant Island Passage.

The **Eastern Passage,** sometimes called Currant Island Passage, leads, as before mentioned, between Joe Dyer's Point on the west and Pond Island on the east, and between these two is about three-quarters of a mile wide. Its width, however, rapidly diminishes, until, between Joe Dyer's Point and Boisbubert, it is only about eight hundred yards in width. It is studded with islets and full of ledges, and is entirely unsafe for strangers.

Pond Island.

Pond Island, before described, (see page 90,) when viewed from the eastward appears as a very regularly shaped hill, somewhat like Mount Desert, but composed of barren rock, dotted in a few places with trees. Its northern end is seen, however, on approaching it, to be low, level and grassy, and is occupied by a house and a barn with flag-staff near it. From this end *a long ledge, bare at low water,* makes off to the northeastward.

Pond Island Light-house.

Pond Island Light-house, or **Narraguagus Light-house,** (as it is sometimes called to distinguish it from the light at the mouth of the Kennebec River,) is built on the southeastern end of the island, and shows, when viewed from the eastward, as two white objects, like the roofs of houses. The lantern rises from the centre of the dwelling-house, which is of whitewashed brick, and shows a fixed white light, of the fifth order of Fresnel, from a height of forty-five feet above the sea, visible twelve miles. It is a guide to Narraguagus and Pigeon Hill bays.

Currant Island.

On passing the northern point of Pond Island, bound through the Eastern Passage into Pigeon Hill Bay, there will be seen ahead, bearing nearly **W.**, and about seven-eighths of a mile off, a low, rocky islet, called Currant Island, crowned with a grove of stunted fir trees at its northern end, and lying nearly in the middle of the passage, about equally distant from Boisbubert and Joe Dyer's Point. Between the latter and Currant Island will be seen **Big Pea Ledge,** a low, bare, rocky islet, with a smaller one to the northward, called **Little Pea Ledge.** The channel leads between Currant Island and Big Pea Ledge, and has eighteen feet at low water, but is too dangerous for strangers to attempt to enter.

Douglass Islands.

Along the western shore of Pond Island, and between it and Boisbubert Island, lie a number of islets and islands, called the Douglass Islands. They are six in number, rocky, of moderate height and well wooded. Seen from either the southward or northward, the two southernmost of the group present a peculiar appearance, which has given them the name of **The Horse Heads.** There is a depth of from four to eight fathoms in the passages among these islands, and between them and **Pond Island**;—one of the best anchorages on the coast being found between the westernmost of the two largest islands and Pond Island, in eight fathoms water, with good holding-ground, and free from ice in the winter. It is known as **Douglass Island Harbor,** and, in easterly gales, cannot be surpassed as an anchorage,—being easy of access. The shores of Douglass Islands are steep and rocky, and are crowned with a thick growth of spruce and fir.

After passing Currant Island the channel joins the main channel from the southward, which has been before described.

DANGERS

IN APPROACHING AND ENTERING PIGEON HILL BAY BY THE MAIN CHANNEL.

Jackson's Ledge.

I. ***Coming from the Eastward, Outside of Jackson's Ledge.***—Coming from the eastward, you either pass outside of everything; or, coming through Moos-a-bec Reach, pass between Jordan's Delight and Jackson's Ledge. In the former case, the first danger met with on approaching the harbor will be Jackson's Ledge, having twelve feet at mean low water and nine at extreme low tides. It lies **E. ¾ N.** from Petit Manan Light-house, distant four miles; is not buoyed, and must be left well to the northward. When past it, the course leads towards Petit Manan Light-house, and vessels must beware of Tibbetts' Rock, which has four feet at low water and is not buoyed. It bears from

Tibbetts' Rock.

	Miles.
Petit Manan Light-house, E. ¼ N.	3½
Nash's Island Light-house, SW. ¾ S.	5
Southeast Rock, NE. ¾ N.	3½

Egg Rock.

A buoy will be recommended upon this ledge. When near Petit Manan Light-house the course turns to the northwestward towards Petit Manan Point; and there will be seen to the northward of the course, and about a mile and a half off, a bare, low, rocky islet, called Egg Rock. It is about ten feet high, destitute of vegetation, lies about three-quarters of a mile **S.** by **W.** from Little Boisbubert Island, and on its southern side is obstructed by a dangerous ledge, bare at one-third ebb, called *The Whale.* This rock lies about a third of a mile outside of Egg Rock, breaks at high water, and is not buoyed.

There is a narrow channel between Little Boisbubert and Egg Rock by keeping close to the former; but it is not safe for strangers.

About one hundred and fifty yards off Woods Pond Point there *is a rock, out at low water,* which is not buoyed; and half a mile above the point lies *another, out only at extreme low tide,* and a quarter of a mile from shore.

Boisbubert Ledge is on the eastern side of the channel, and lies off the western shore of Boisbubert Island, about three hundred yards from it. It is a detached ledge, bare at half-tide, extends nearly **N.** and **S.**, and is very bold and steep-to,—the deepest water in the bay being found close to its western side. It is not buoyed. Passing it, the passage is clear until near Chitman's Point, when it will be necessary to keep the Boisbubert shore aboard to avoid the *Lobster Rocks*, bare at extreme low tide, and extending from Chitman's Point nearly two-thirds of the way across the passage,—their eastern end being two hundred and fifty yards from the point. They are dangerous, but are not buoyed.

Boisbubert Ledge.

Off the northern end of Boisbubert extends a line of ledges in about a **NNW.** direction for two hundred and fifty yards, and bare at low water. To the northernmost rock, which is out at half-tide, the name of *Half-Tide Rock* has been given, which has gradually been extended to the whole line of rocks. As the reef is not buoyed, care must be taken when using the Eastern Passage to avoid them. Coming in by the Main Channel, as soon as you are past Lobster Rocks keep over towards the western shore to avoid Half-Tide Rock. This is the worst part of the channel.

Half-Tide Rocks.

Above this, no detailed description can be given.

SAILING DIRECTIONS

FOR APPROACHING AND ENTERING PIGEON HILL BAY BY THE MAIN CHANNEL.

I. ***Coming from the Eastward, Outside of Jackson's Ledge.***—When off Head Harbor Light-house, about two miles distant, in thirty-six fathoms water, steer **W.** ¾ **S.**, with Petit Manan Light-house a little to the southward of the course. On this course, when the light-house bears **NW.** by **W.** ¾ **W.**, nearly four miles off, you will be well clear of Jackson's Ledge, and may steer for the light until within three-quarters of a mile, when steer **N.** by **W.** ½ **W.** Nearly, for Woods Pond Point. When past Egg Rock, and within seven hundred yards of the point, steer **NNE.** until nearly up with Chitman's Point. Give this point a berth to the westward of about three hundred and fifty yards to avoid Lobster Rocks, and when past them, anchor to the northward of the point, opposite to the house on Joe Dyer's Point, in from three to three and a half fathoms, soft bottom. The holding-ground is good and the shelter excellent.

The above courses pass well outside and to the southward of Jackson's Ledge; a quarter of a mile to the westward of The Whale; nearly half a mile to the westward of Egg Rock; about three hundred yards to the westward of Boisbubert Ledge; and one hundred yards to the eastward of Lobster Rocks. They carry nothing less than three fathoms at low water to the anchorage above Chitman's Point.

DANGERS

IN APPROACHING AND ENTERING PIGEON HILL BAY BY THE MAIN CHANNEL.

II. ***Coming from the Eastward, between Jordan's Delight Ledge and Jackson's Ledge.***—Coming from Moos-a-bec Reach, after passing Nash's Island, the first danger met with will be seen to the northwestward, a little over a mile to the southward of Jordan's Delight, and is marked by a red spar-buoy. This is Jordan's Delight Ledge, a line of dangerous sunken rocks extending about **S.** by **E.** from the island for over a mile. There is no passage between the buoy and Jordan's Delight,—the whole distance being full of rocks. The buoy is marked No. 2, and placed in five fathoms on the southern side of the ledge. The course passes to the southward and eastward of it; and the next danger is *Dave Leighton's Ground*, lying about two miles **SE.** by **S.** ½ **S.** from the southern point of Boisbubert, and about two miles and a half **NE.** by **E.** from Petit Manan Light-house. It is not buoyed.

Jordan's Delight Ledge.

The course leads to the southward of Dave Leighton's Ground, between it and Jackson's Ledge, lying on the southern side of this passage, three miles and a quarter **S.** by **E.** from Jordan's Delight, and four miles **E.** ¼ **N.** from Petit Manan Light-house. It has twelve feet at mean low water and nine at extreme low tides, and is not buoyed; but is left well to the southward by vessels using this passage.

Jackson's Ledge.

After passing Dave Leighton's Ground, the next danger met with is The Whale, a dangerous ledge, bare at one-third ebb, lying about a third of a mile outside of Egg Rock, and not buoyed. It breaks heavily at high water, and must be left to the eastward.

The Whale.

Egg Rock (before described, pages 95 and 99) is about ten feet high, destitute of vegetation and rocky. It lies about three-quarters of a mile **S.** by **W.** from Little Boisbubert, with a narrow channel between them, which is unsafe for strangers.

About one hundred and fifty yards off Woods Pond Point lies *a rock, out at low water*, and not buoyed; and half a mile above, *another, out only at extreme low tides*, and a quarter of a mile from shore.

Boisbubert Ledge and Lobster Rocks have been already described on the preceding page.

SAILING DIRECTIONS

FOR APPROACHING AND ENTERING PIGEON HILL BAY BY THE MAIN CHANNEL.

II. ***Coming from the Eastward, between Jordan's Delight Ledge and Jackson's Ledge.***—Bring Nash's Island Light-house to bear **NE.** and steer **SW.**, with Petit Manan Light-house a little to the westward, and continue this course until within about two miles of the light and the middle of the southern end of Boisbubert bears **N.** by **W.** $\frac{3}{4}$ **W.**; when you will be clear of Dave Leighton's Ground, and must steer **NW.** by **W.** $\frac{1}{4}$ **W.** for Petit Manan Point until Woods Pond Point bears **N.** by **W.** $\frac{1}{2}$ **W. Nearly.** Now steer for that point until within seven hundred yards, when steer **N NE.**, and follow the directions for the bay previously given. Three and a half fathoms can be carried up to the anchorage above Chitman's Point.

These courses pass three-quarters of a mile to the southward of Jordan's Delight Ledge; about the same distance to the northward of Jackson's Ledge; about half a mile to the southward of Dave Leighton's Ground; about half a mile to the southward of The Whale; half a mile to the westward of Egg Rock; and a quarter of a mile to the eastward of the rock off Woods Pond Point.

This passage is the one commonly used by coasters.

DANGERS

IN APPROACHING AND ENTERING PIGEON HILL BAY.

III. ***Coming from the Westward, Outside of Petit Manan Island.***—The first danger met with, in coming from the westward, bound into Pigeon Hill Bay, is called Moulton's Ledge, and has a red and black spar-buoy off its southwestern end, in five fathoms water. This ledge is bare at low water, lies four miles **W.** by **N.** from Petit Manan Light-house, extends in a **NE.** and **SW.** direction, and is nearly one hundred yards long. From its southern end shoal water (from three to five fathoms) extends half a mile to the southward. The buoy may be left on either hand, but it is usual to leave it to the northward, unless bound across the Inner Bar. ***Moulton's Ledge.***

Passing Moulton's Ledge, look out on the southern side for Southeast Rock, which has seven feet at lowest tides, and eight and ten fathoms on all sides of it. It lies four miles **S.** by **E.** from Petit Manan Light-house, and is marked by an iron can-buoy of the second class, painted red and black in horizontal stripes. The buoy is in eight fathoms water, a little over thirty yards to the northwestward of the ledge. The course leads to the northward of the rock, between it and Petit Manan. ***Southeast Rock.***

Next to the northeastward of Southeast Rock is Tibbetts' Rock, with four feet at lowest tides, and not buoyed. It bears from ***Tibbetts' Rock.***

	Miles.
Petit Manan Light-house, E. $\frac{1}{4}$ N.	$3\frac{1}{2}$
Nash's Island Light-house, SW. $\frac{3}{4}$ S.	5
Southeast Rock, NE. $\frac{3}{4}$ N.	$3\frac{1}{2}$

A buoy will be recommended upon this rock; and when the approaches to this bay have been surveyed, buoys will, no doubt, be placed upon all the ledges.

Simms' Rock, also on the southern side of the channel, is more dangerous than Southeast Rock,—being much nearer to the island. It has about six feet at low water, and lies about two miles **S.** $\frac{1}{2}$ **E.** from Petit Manan Light-house, with eight fathoms water all round it. A spar-buoy, painted red and black in horizontal stripes, is placed in eight fathoms on the northeastern side of the rock, about fifty yards from it. ***Simms' Rock.***

The course leads to the northward of Simms' Rock buoy, and you must look out, on the northern side, for Petit Manan Reef, making off from the southern end of the island about **S.** by **W.** for nearly half a mile, and quite shoal. An iron can-boy of the second class, painted black, and marked No. 1, is placed in seven and a half fathoms on the southern end of the reef. You must pass to the southward of it, and then haul to the northward to enter the bay. ***Petit Manan Reef.***

The Whale, on the eastern side of the entrance, is the next danger, and lies about a third of a mile outside of Egg Rock. It is bare at one-third ebb and breaks at high water.

The Whale.

There is no passage between this rock and **Egg Rock.** The latter is a small, low, rocky island, about ten feet high and destitute of vegetation, lying about three-quarters of a mile **S.** by **W.** from Little Boisbubert, with a narrow channel between them, which is only fit for those well acquainted with its dangers.

Woods Pond Point must receive a berth to the westward of about a quarter of a mile. There is *a detached rock, out at low water*, about one hundred and fifty yards off the point; and half a mile above lies *another, out only at extreme low tides*, and a quarter of a mile from shore. Neither rock is buoyed, and care is requisite to avoid them.

Boisbubert Ledge.

Boisbubert Ledge, lying on the eastern side of the channel, off the western shore of Boisbubert about three hundred yards distant, is a detached ledge, bare at half-tide, extending nearly **N.** and **S.**, and very bold and steep-to,—the deepest water in the bay being found close to its western side. There is no buoy.

Passing Boisbubert Ledge, the passage is clear until near Chitman's Point, when it becomes necessary to keep the Boisbubert shore aboard to avoid the *Lobster Rocks*, extending

Half-Tide Rocks.

off Chitman's Point to a distance of two hundred and fifty yards, which is nearly two-thirds of the way across the passage. They are bare at extreme low tides, and not buoyed. When past them, edge over towards the western shore again, especially if the tide be ebb, to avoid the Half-Tide Rocks, a line of ledges extending in a **NNW.** direction from the northern end of Boisbubert about two hundred and fifty yards. They are bare at low water, except one rock on the extreme northern end of the reefs, which is out at half-tide, and gives the name to the group. They are not buoyed, and are especially dangerous to vessels using the Eastern Passage between Boisbubert and Joe Dyer's Point.

SAILING DIRECTIONS

FOR APPROACHING AND ENTERING PIGEON HILL BAY.

III. ***Coming from the Westward, Outside of Petit Manan Island.***—Bring Petit Manan Light-house to bear **NE.** and run nearly for it, passing about six hundred yards to the southward of it. When past the light, and Woods Pond Point bears **N.** by **W.** ½ **W.**, steer that course until past Egg Rock and within seven hundred yards of the point, when steer **NNE.**, and proceed as directed for the bay. (See pages 99–100.)

These courses pass well outside of Moulton's Ledge; well to the northward of Southeast Rock; about a mile to the northward of Simms' Rock; two hundred yards to the southward of the buoy on Petit Manan Reef; half a mile to the westward of The Whale, and the same distance from Egg Rock; a quarter of a mile to the eastward of the rock off Woods Pond Point; and about three hundred yards to the westward of Boisbubert Ledge. They carry not less than three and a half fathoms at low water.

DANGERS

IN APPROACHING AND ENTERING PIGEON HILL BAY.

IV. ***Coming from the Westward, Inside Petit Manan Island, over the Outer Bar.***—From Petit Manan Point to the island a long shoal extends, called Petit Manan Bar. Across this bar there are two channels for light-draught vessels, called, respectively, **Inner** and **Outer Bar** channels. The former is unfit for strangers; but the latter (having ten and a half feet at mean low water) is very often used by the coasting steamers and other light-draught vessels. At low spring tides, however, it has only nine feet.

Intending to cross the bar coming from the westward, the first danger met with is Moulton's Ledge,—bare at low water, and marked by a red and black spar-buoy placed in five

Moulton's Ledge.

fathoms off its southwestern end. It lies four miles **W.** by **N.** from Petit Manan Light-house, extends in a **NE.** and **SW.** direction, and is nearly one hundred yards long. Soundings of from three to five fathoms extend from its southern end half a mile to the southward. The buoy may be left on either hand, but it is usual to pass to the southward of it, unless bound over Inner Bar.

After passing Moulton's Ledge there are no dangers until up with Petit Manan Bar, or *Petit Manan Outer Bar*, as this shoal should be called. As before mentioned, it is all shoal

Petit Manan Bar.

from the point to the island; but the bar is crossed by two channels, suitable for vessels of light draught,—the Outer Bar having nine feet at lowest tides and twenty-one feet at high water. The channel is narrow, and there is *a ledge, bare at half-tide*, about two hundred and fifty yards from the northern end of the island, which must be left to the southward. There are other ledges on the reef, which are dangerous and require great care to avoid them. The passage of either bar is not recommended to strangers.

A spar-buoy, painted black and white in perpendicular stripes, marks the best water in the channel across Outer Bar. In 1872 this buoy had shifted its position, and was then sixty yards too far to the westward, causing a vessel, which attempted to cross by running for it, to go ashore on the bar. (This is mentioned in order that it may be known that the buoy is apt to drift, and that more attention should be paid to the range for crossing than to the position of the buoy.) When in position the buoy bears from the light-house N. ½ E.

Dangers--Pigeon Hill Bay.

When past the bar, haul up for Woods Pond Point, and the first danger met with is **The Whale,** (see page 95;) then **Egg Rock,** (see pages 95 and 99,) off Little Boisbubert; and then Woods Pond Point, which latter must receive a berth to the westward of a quarter of a mile. There is *a detached rock, out at low water,* about one hundred and fifty yards off the point; and half a mile above lies *another, out only at extreme low tides,* and a quarter of a mile from shore. Neither rock is buoyed, and care is requisite to avoid them.

The other dangers have already been described, (see page 99.)

SAILING DIRECTIONS

FOR APPROACHING AND ENTERING PIGEON HILL BAY.

IV. ***Coming from the Westward, Inside Petit Manan Island, over the Outer Bar.***—From Schoodic Island steer E. ½ N. for Petit Manan Light-house until within a mile and a half of it, when steer NE., with Ship-Stern Island just open to the northward of Jordan's Delight. If the buoy on the bar is in place, this range should carry you up with it and across the bar in nine feet at low water, passing about a third of a mile to the northward of Petit Manan Island. On this course, when Woods Pond Point bears N. by W. ½ W., or Petit Manan Light-house S. ¼ W., steer for the former, and follow the directions given for the bay.

These courses pass a mile and a quarter to the southward of Moulton's Ledge; about three hundred yards to the northward of the half-tide rock to the northward of Petit Manan Island; and half a mile to the westward of The Whale.

Bound to Narraguagus, continue the NE. course, with Ship-Stern Island and Jordan's Delight open as before; and, when near the latter, pass between it and Pond Island and steer into the bay; or, when over the bar, steer E. by N. ½ N. to clear Jordan's Delight Ledge, and when Pond Island Light-house opens to the eastward of Jordan's Delight steer about N. by W. for Trafton's Island, and follow the directions for that bay.

DANGERS

IN APPROACHING AND ENTERING PIGEON HILL BAY.

V. ***Coming from the Westward, Inside Petit Manan Island, over the Inner Bar.***—This channel cannot be used without a pilot, and in heavy weather cannot be used at all, as it breaks heavily from the point to Outer Bar Channel, and often clear to the island. It passes close under Petit Manan Point, and there is a depth of seven feet over it at lowest tides and about nine feet at mean low water. The first danger met with in crossing *Inner Bar* is *Inner Bar Ledge,* bare at half-tide, and about half a mile from the point. It is on the southern side of this channel, is not buoyed, and must not be closely approached for fear of The Old Bull,—a dangerous ledge, bare at low water, lying between Inner Bar Ledge and Petit Manan Point, and about one-third of a mile from the latter. The channel passes to the northward of this ledge, which is not buoyed, and is very dangerous when covered; but at low water it is only necessary to keep about midway between the bare ledge and Petit Manan Point. In heavy weather an unbroken line of breakers extends from the point one mile and a half to the southward. The Old Bull always breaks with violence.

The Old Bull.

SAILING DIRECTIONS

FOR APPROACHING AND ENTERING PIGEON HILL BAY.

V. ***Coming from the Westward, Inside Petit Manan Island, over the Inner Bar.***—No detailed direction can be given for this passage, which is never used by strangers. None of its dangers are buoyed, and only in fine weather can the bar be crossed at all. The pilots' rule for crossing from the westward is to bring the group of grey-looking houses in Pigeon Hill Bay just open to the westward of a remarkable sandy head on the western end of Boisbubert, and steer in on that range, leaving The Old Bull and Inner Bar Ledge both to the southward, and carrying nothing less than seven feet at lowest tides. Neither the group of houses nor the sandy bluff can possibly be mistaken. When over the bar, haul up about N NE., giving the western shore a berth of about seven hundred yards, and follow the directions previously given.

DANGERS

IN APPROACHING AND ENTERING PIGEON HILL BAY.

VI. ***By the Eastern or Currant Island Passage.***—This passage, as before mentioned, leads between Joe Dyer's Point on the north and Boisbubert Island on the south, and is about seven hundred and fifty yards wide. It is obstructed by shoals, ledges and islets, carries three fathoms at mean low water, and is not safe for strangers. The channel is very narrow and somewhat crooked, and leads between Currant Island and Big Pea Ledge. The first danger met with in approaching the entrance is Pond Island Ledge, making out in a **NE. ½ N.** direction from the northern end of Pond Island about three hundred yards. It is bare in several places at low water, and there is but three feet water just to the westward of the buoy on its northern end. This buoy is a black spar, (No. 1,) and is placed in fourteen feet water on the north-eastern end of the reef. It must be left to the southward and the course shaped for Currant Island. On this course look out for **Big Pea Ledge**, on the northern side of the channel, but nearly in the middle of the passage between Joe Dyer's Point and Boisbubert. Is is a low, bare, rocky islet, a few feet above high water mark. The best water is nearest the Currant Island shore.

Pond Island Ledge.

Having passed between Currant Island and Big Pea Ledge, look out for Half-Tide Rocks, lying in a line **N NW.** from the northern end of Boisbubert, and bare at low water. The outermost rock, bare at half-tide, is two hundred and fifty yards from the island, and gives the name to the reef, which is not buoyed. When past these ledges, steer towards the western shore of the bay, (having Chitman's Point to the southward of the course,) and anchor in three fathoms just to the northward of the point; or, wishing to anchor to the southward of Chitman's Point, look out for *Lobster Rocks*, extending from Chitman's Point nearly two-thirds of the way across the passage, and bare at extreme low tide. The eastern end of these rocks is two hundred and fifty yards from the point and is not buoyed. To avoid them, keep the Boisbubert shore aboard until past them.

Half-Tide Rocks.

SAILING DIRECTIONS

FOR APPROACHING AND ENTERING PIGEON HILL BAY.

VI. ***By the Eastern or Currant Island Passage.***—Strangers must not attempt this passage. When up with Pond Island, pass to the northward, giving it a berth of a quarter of a mile to avoid Pond Island Ledge, and steer about **W.** by **S.** ¾ **S.** for the northern end of Currant Island. This island is easily recognized by the groves of stunted fir trees on its northern end. When past it, bring the large lone tree on the northern side of the summit on Pond Island just open with the northern end of Currant Island, and steer in on that course, (keeping the range,) which leads safely into the bay. When, on this course, a large grey house (the most southerly on Petit Manan Neck) is brought over Chitman's Point, you are clear of danger, and thence may keep to the northward, or southward, at pleasure. (The grey house mentioned above cannot be mistaken, as it is the highest house in the village,—being almost on the summit of the hill.)

The above courses pass one hundred and fifty yards to the northward of Pond Island Ledge, and about one hundred yards to the northward of Half-Tide Rocks.

DANGERS

IN APPROACHING AND ENTERING DOUGLASS ISLAND HARBOR.

I. ***From the Eastward.***—This safe and commodious harbor lies between Pond Island on the east and the Douglass Islands on the west. (See page 99.) There is excellent anchorage, with good holding-ground in eight fathoms water, free from ice in the winter, and easy of access. To come into it from the eastward, pass between Pond Island and Jordan's Delight and steer for the middle of Boisbubert, passing to the southward of the Douglass Islands, and then, turning to the northward, run up between the latter and Boisbubert.

On these courses the first danger met with is Seal Cove Ledge. **Seal Cove** lies on the eastern shore of Boisbubert, about a mile above the southeastern point, and abreast of it. Two hundred and fifty yards from shore lies the ledge, which is out at high water, runs **N.** and **S.**, and is to be left to the westward. Passing this, the next danger is on the eastern side, and is called *Douglass Island Ledge*. It lies off the northern end of the western island,—its northern point being a little over a quarter of a mile from the island. There is a channel between it and the northern point by keeping the latter close aboard; but no stranger should attempt this.

Seal Cove Ledge.

After passing this ledge the channel leads to the eastward, towards Pond Island, and there are no more dangers.

SAILING DIRECTIONS

FOR APPROACHING AND ENTERING DOUGLASS ISLAND HARBOR.

I. ***From the Eastward.***—Pass about midway between Pond Island and Jordan's Delight and steer for the middle of Boisbubert. When within about five hundred yards of the shore of Seal Cove, Joe Dyer's Point will bear **N. ½ W.**, and the passage between the Douglass Islands and Boisbubert will be fully open. Steer **N. ½ W.**, (having Currant Island and Joe Dyer's Point nearly in range,) and when about a third of a mile (six hundred yards) to the northward of the westernmost Douglass Island steer about **E. ½ N.** towards Pond Island, passing about two hundred yards to the northward of the easternmost Douglass Island. Round this island, steer to the southward, between it and Pond Island, and anchor at discretion. The depth is eight fathoms, the holding-ground good, and the shelter in easterly gales perfect.

The above courses pass two hundred yards to the eastward of Seal Cove Ledge; one hundred yards to the northward of Douglass Island Ledge, and carry over four fathoms all the way.

DANGERS

IN APPROACHING AND ENTERING DOUGLASS ISLAND HARBOR.

II. ***From the Westward, or from Sea.***—In approaching from the westward, outside of Petit Manan, the first danger met with is Simms' Rock, already described, (pages 94 and 101,) which has six feet at low water, and lies about two miles **S. ½ E.** from Petit Manan Light-house, with eight fathoms water all around it. A spar-buoy, painted red and black in horizontal stripes, is placed in eight fathoms on the northeastern side of the ledge and about fifty yards from it. Pass to the northward of this, and look out, on the northern side, for *Petit Manan Reef*, making off from the southern end of that island about **S. by W.** for nearly half a mile, and quite shoal. An iron can-buoy of the second class, painted black and marked No. 1, is placed in seven and a half fathoms on its southern end. Pass to the southward of the buoy, and haul up for Pond Island Light-house. ***Simms' Rock.***

On the course for the light-house the first danger met with is Jerry's Ledge, lying about a quarter of a mile to the southward of the southeastern point of Boisbubert, (called **Big Head.**) It is awash at low water and is not buoyed; but must be left to the westward, and the course shaped for Joe Dyer's Point. On this course, when near Seal Cove beware of *Seal Cove Ledge*, lying about two hundred and fifty yards from the shore of the cove and out at high water. It runs **N.** and **S.**, and is to be left to the westward. ***Jerry's Ledge.***

Passing Seal Cove Ledge, the next danger, on the eastern side of the channel, is Douglass Island Ledge, lying off the northern end of the western island. It is a detached rock,—its northern point being a little over a quarter of a mile from the island,—and is not buoyed. There is a channel between this rock and Douglass Island by keeping the latter close aboard; but no stranger should attempt this. The ledge must be left to the southward; as the course turns to the eastward towards Pond Island, and then to the southward, between that island and the Douglass Islands. ***Douglass Island Ledge.***

Coming from seaward, the first danger met with in approaching Petit Manan Light-house is Southeast Rock, lying four miles **S.** by **E.** from the light-house, and having seven feet at lowest tides. An iron can-buoy of the second class, painted red and black in horizontal stripes, is placed in eight fathoms water a little over thirty yards to the northwestward of the ledge. It may be left on either hand by giving it a berth; but vessels coming from the southward should pass to the westward of it. When past it, the red and black spar-buoy on Simms' Rock will soon appear, and must also be left to the westward. ***Southeast Rock.***

SAILING DIRECTIONS

FOR APPROACHING AND ENTERING DOUGLASS ISLAND HARBOR.

II. ***From the Westward, or from Sea.***—*Coming from seaward*, steer for Petit Manan Light-house on a course about **N.** by **E.** until up with the black can-buoy on Petit Manan Reef. Pass to the eastward of this, bring Pond Island Light-house to bear **N NE. Northerly**, and steer for it until abreast of the southeastern point of Boisbubert, and distant from it half a mile. Now steer **N. ½ W.** for Joe Dyer's Point, passing midway between Boisbubert and the westernmost Douglass Island, and follow the directions for entering the harbor.

The above courses pass a mile and a half to the westward of Southeast Rock; half a mile to the westward of Simms' Rock; half a mile to the eastward of Petit Manan Reef; and seven hundred yards to the eastward of Jerry's Ledge. They carry not less than four fathoms.

Coming from the westward, pass to the southward of Petit Manan Island about a mile on an E. by **N.** $\frac{1}{2}$ **N.** course; and when past the buoy on the reef bring Pond Island Light-house to bear **N NE. Northerly,** and steer for it, following the directions given above.

These courses pass one mile to the northward of Simms' Rock; half a mile to the southward of Petit Manan Reef; and the same distance to the eastward. They carry not less than four fathoms water.

LIGHT-HOUSES.

NAME.	Latitude N.	Longitude West.		Fixed or Revolving.	Interval of Flash.	Height above sea-level.	Distance visible in nautical miles.
		In arc.	In time.				
	° ′ ″	° ′ ″	h. m. s.		m. s.	Feet.	
Pond Island, or Narraguagus Light-house.	**44 27 20**	**67 49 52**	**4 31 19.5**	Fixed.	.....	**45**	**12**
Petit Manan Light-house	**44 22 2**	**67 51 51**	**4 31 27.4**	F. V. F.	**2 0**	**125**	**17**

VARIATION OF THE COMPASS.

The magnetic variation for the year 1879 is **16° 34′ W.**, with an approximate annual increase of **2′.**

ICE IN PIGEON HILL BAY.

The period of ice-formations and their character in this bay, and in Dyer's and Gouldsboro' bays to the westward, are the same as in Machias, Englishman's and Narraguagus bays, to which the mariner is referred, (pages 63 and 96–97.) In general terms, it may be remarked that navigation is dangerous for sailing-vessels between December and March; but that, in ordinary winters, steamers can make their way without much difficulty to the lower landing. In severe winters all navigation ceases from about the last of January to about the first of March.

DYER'S BAY

is a long and narrow arm of the sea, making in a **N NE.** direction, just to the westward of Pigeon Hill Bay. It is separated from the latter by Petit Manan Neck, and from Gouldsboro' Bay (to the westward) by Dyer's Neck. At the entrance it is a mile and three-quarters wide, (from Petit Manan Point to Dyer's Point,) but rapidly contracts to a width of about twelve hundred yards, which it keeps, with slight deviations, to within a mile and a half of its head. From Petit Manan Point to the head of the bay the distance is six nautical miles.

There is good anchorage, with excellent holding-ground, anywhere above Sheep Island, in from three to five fathoms, muddy bottom. The bay is easy of access, although the islets and ledges at the mouth are apt to frighten a stranger. There is, however, a deep and good channel, perfectly safe, which runs close to the Dyer's Bay Ledges, and may be readily attempted by strangers.

On approaching this bay from the vicinity of Petit Manan Island a very remarkable high, bare, rocky head will be seen about six miles to the westward,—its outline cut into steps and its summit bare of trees. This is **Schoodic Head,** the southern extremity of Schoodic Neck,—the eastern point of entrance to Frenchman's Bay. Behind it, and to the northward, rises the high, bare summit of **Green Mountain,** on Mount Desert Island. These two hills (Schoodic and Green Mountain) are the most prominent landmarks on this part of the coast, and are usually steered for by vessels coming on the coast from seaward, whether they are bound to the eastward or westward.

Petit Manan Point. The eastern point of entrance to Dyer's Bay is Petit Manan Point, the southernmost end of **Petit Manan Neck.** It is low, rocky, covered with a stunted growth of fir and spruce, and extends off at low water into a long, low, rocky ledge, bare of all vegetation. It bears from Petit Manan Light-house **NW.** by **N.** $\frac{1}{2}$ **N.,** two miles and a half distant.

Dyer's Point. Dyer's Point, the western point of entrance, is a mile and three-quarters **NW.** from Petit Manan Point, and is the southern extremity of **Dyer's Neck,** which forms the western shore of the bay. It is low, rocky, covered with a scrubby growth, and has a bare, white summit, on top of which was (in 1872) a large wooden tripod. Several ledges and rocks lie off the point, rendering it dangerous of approach.

On the eastern shore of the bay, about a mile and a half above Petit Manan Point, is **Yellow Birch Head,** a bare, bluff, sandy head, with precipitous faces, and destitute of trees. A long reef making out from it about a quarter of a mile is in part bare at low water, and has about five feet on its western end. Nearly opposite to the head, on the western shore of the bay,

is Stanley's Point, about five-eighths of a mile above Dyer's Point, and forming the southern point of a narrow cove making to the westward, called **Stanley's Cove.** This point is easily recognized,—being composed of white rock, bare of all vegetation except clumps of grass and scrub, and sloping gradually to the water. Viewed from seaward, it appears as a round, white, rocky head, entirely bare. **Stanley's Point.**

A mile above Stanley's Point, on the western bank, is Yeaton's Point, the southern point of entrance to **Yeaton's Cove.** The latter is a small but shallow cove, making to the westward; and is of no importance, as there is no safe anchorage. **Yeaton's Point.**

On the eastern shore of the bay the land is partly wooded and partly cleared, but in no place fertile or well cultivated. Settlements are very few,—a barren and desolate appearance being presented towards the bay. A mile above Yellow Birch Head, and nearly opposite to Yeaton's Cove, a long and very narrow cove makes to the southward, called **Over's Cove.** It is of no importance.

Parker's Point, on the eastern shore, nearly two miles to the northward of Stanley's Point and a little below Sheep Island, lies at the southern base of Eagle Hill. It is low and covered with a thick growth of birch and other hardwood trees; and a small, shallow cove makes to the westward, on its southern side.

Eagle Hill, the most prominent landmark in this bay, situated at the head of Dyer's Neck and on the western shore, is a round, gently sloping hill, not quite so high as Pigeon Hill, and with a bare, rocky summit. Seen from the southward, it appears covered with low bushes and small trees; but viewed from the eastward, it appears thickly wooded for about half its height,—the rest being bare. It is three miles above Dyer's Point, and lies on the southern shore of Dyer's Harbor. **Eagle Hill.**

The Sheep Islands lie nearly opposite to, but a little above, Parker's Point, and three miles and a half above Petit Manan Point. They are about midway between the eastern and western shores, lie **NW.** and **SE.** from each other, and are distinguished as the **Eastern** and **Western Sheep** islands. The former, much the smaller of the two, is thickly wooded with a dense growth of small fir and spruce; while Western Sheep Island is, on the contrary, covered only with scrub. Seen from the mouth of the bay, the two islands appear low and wooded,—the western end of the western island showing as a low, yellow point. It is this head which is steered for in coming up the bay. **Sheep Islands.**

From Dyer's Point to Eagle Hill the western shore of the bay is mostly low and well wooded; but it is not steep-to, as a line of sunken kelp ledges lie at some distance from the shore and render it dangerous to approach. The eastern shore, on the contrary, is quite bold-to in its approaches.

Opposite to the northern end of the Western Sheep Island, and on the eastern shore of the bay, will be seen the entrance to a long and narrow cove making in a southerly direction across Petit Manan Neck, past the base of Pigeon Hill, and nearly reaching Pigeon Hill Bay,—there being only a narrow isthmus, two hundred yards wide, between the latter and the head of the cove. There is no passage between the Sheep Islands and the mouth of the cove, nor is it of any importance,—being shallow and unfit for anchorage.

Dyer's Harbor is the usual anchorage in this bay, and makes in on the northern side of Eagle Hill a little more than three and a quarter miles above Dyer's Point. It is a large cove, half a mile long and about a quarter of a mile wide, lying in a **NW.** direction from the western side of the bay, and affords good anchorage in all winds. Its southern point of entrance, **Schooner Point,** lies at the base of Eagle Hill; and is low, rocky, and covered only with scrub and low bushes. The channel leads between the point and a low, rocky islet, covered with a thick growth of stunted fir and spruce, lying off Good's Point, but joined to it by ledges at low water. **Dyer's Harbor.**

The northern point of Dyer's Harbor entrance is called Good's Point, and is low, rocky, and thickly wooded with a variety of trees. It is three-eighths of a mile to the northward of Schooner Point and a mile to the northward of the Sheep Islands. The northern shore of the harbor to the westward of this point begins to show cleared and thinly settled lands, and the cove gradually contracts its width to its head at **Beaver-Dam Brook,** three-eighths of a mile above. **Good's Point.**

Vessels of large draught usually anchor under Good's Point after passing the small wooded island at the entrance, as the southern shore is rather shoal. Vessels of light draught may anchor anywhere, according to their draught.

Above Dyer's Harbor the bay turns to the eastward, running about **NNE.** for one mile and a quarter to its head, thus forming a long but very shallow bay, called **Pinkham's Bay,** full of ledges and flats, and having no passage except at high water.

DANGERS

IN APPROACHING AND ENTERING DYER'S BAY.

I. ***Coming from the Eastward.***—On coming up with the entrance to this bay, when past Petit Manan Island, there will be seen on the western side of the entrance a line of low, rocky islets, lying in an **E.** and **W.** direction, called the Sally Islands. They are six in number, mostly crowned with a thin growth of stunted trees and bushes, and their rocky faces bleached white. The easternmost lies within half a mile of Dyer's Point, while the most westerly is on the western side of Gouldsboro' entrance. Thus they form an apparent barrier to the ***Sally Islands.***

Dangers--Dyer's Bay. entrance to Gouldsboro' Bay. The easternmost island, known as **Eastern Island**, lying just to the westward of Dyer's Point, is bare except in the middle, where there is a small grove of bushes and stunted fir. Off its eastern end extends in an **E.** direction for nearly a mile a line of bare ledges, known as *Eastern Island Ledges*, or *Dyer's Bay Ledges*. These are bold-to on their eastern side, but must not be approached from the southward on account of the sunken rocks in that direction.

The Old Bull. The Old Bull, lying off Petit Manan Point, is out at low water, and breaks heavily at all times. It lies about a third of a mile from the point and is not buoyed. In heavy weather breakers extend in an unbroken line for a mile and a half from Petit Manan Point.

When near Stanley's Point, do not go too close to the eastern shore, to avoid Yellow Birch Reef, making out from Yellow Birch Head about a quarter of a mile, and in part bare at low water. It has not more than five feet on its western extremity, and there is no buoy. After passing it, the eastern shore is bold-to, while the western shore is ledgy and must not be approached closely.

Yellow Birch Reef.

There are no dangers in the bay above this point.

SAILING DIRECTIONS

FOR APPROACHING AND ENTERING DYER'S BAY.

I. ***Coming from the Eastward.***—Give Petit Manan Light-house a berth of half a mile to the northward and the island the same berth to the eastward, and steer for Dyer's Point, about **N NW.** When abreast of Petit Manan Point, steer **N. ½ E.** until up with Stanley's Point, avoiding the reef off Yellow Birch Head; and then **N.** by **E. ½ E.** up the bay, passing to the westward of the Sheep Islands. When up with the entrance to Dyer's Harbor, pass midway between Schooner Point and the wooded islet off Good's Point, and anchor under the latter point in from three to four fathoms, stiff clay bottom. *Or*, instead of entering Dyer's Harbor anchor anywhere to the northward of the Sheep Islands, in from four to five fathoms water, mud and clay.

This harbor affords excellent anchorage in all winds.

The above courses pass to the southward of the black can-buoy on Petit Manan Reef close-to; about three hundred yards to the westward of The Old Bull; close to the easternmost of the Dyer's Bay Ledges; and about two hundred yards to the westward of Yellow Birch Reef. They carry not less than four fathoms water.

DANGERS

IN APPROACHING AND ENTERING DYER'S BAY.

II. ***Coming from the Westward.***—Moulton's Ledge, bare at low water, lies three miles **W.** by **N.** from Petit Manan Light-house and three miles **SW.** by **W. ½ W.** from Dyer's Point.

Moulton's Ledge. It extends in a **NE.** and **SW.** direction for one hundred yards, and is marked by a red and black spar-buoy, placed in five fathoms water off its southwestern end. Soundings in from three to five fathoms extend to the southward half a mile from this southwestern end, but on the northern side the water is deeper. The buoy may be left on either hand, but it is usual to pass to the southward of it.

The Old Bull. When past the buoy on Moulton's Ledge the bay is open, and the next danger is The Old Bull, (before described, on page 103 and above.) It lies about one-third of a mile off Petit Manan Point, is out at low water, breaks heavily at all times, and is not buoyed. The courses pass well to the westward of it.

Dyer's Bay Ledges. Dyer's Bay Ledges, or *Eastern Island Ledges*, lie on the western side of the entrance, extending to the eastward from Eastern Island nearly a mile. They are always out, and are bold-to on their eastern side; but must not be approached from the southward on account of the sunken reefs lying off their southern sides. In going in, the easternmost ledge is passed close-to,—being left to the westward.

Yellow Birch Reef. Yellow Birch Reef is the next danger, and lies on the eastern side of the channel,—making off from Yellow Birch Head in a westerly direction for about a quarter of a mile. It is in part bare at low water, and has not more than five feet on its western end. After passing it the eastern shore is bold-to, while the western is ledgy and must not be approached closely in beating to windward.

Above Yellow Birch Reef there are no dangers.

SAILING DIRECTIONS

FOR APPROACHING AND ENTERING DYER'S BAY.

II. ***Coming from the Westward.***—Pass Schoodic Island, and when up with Moulton's Ledge buoy pass to the southward of it, and steer **NE. ¼ N.** for the eastern end of the Dyer's Bay Ledges. This course brings Yellow Birch Head a little to the eastward of **N.** When up with the ledges, pass to the eastward and close to them, and steer **N. ½ E.** until up with Stanley's Point; and then **N.** by **E. ½ E.** up the bay, following the directions given above.

These courses pass five hundred yards to the southward and three hundred yards to the eastward of Moulton's Ledge buoy; close to Dyer's Bay Ledges, leaving them to the westward; and about two hundred yards to the westward of Yellow Birch Reef. They carry not less than four fathoms.

VARIATION OF THE COMPASS.

The magnetic variation in Dyer's Bay for 1879 is **16° 34′ W.**, with an approximate yearly increase of **2′**.

GOULDSBORO' BAY

lies next to the westward of Dyer's Bay, from which it is separated by Dyer's Neck. It is an arm of the sea, making in a nearly **N.** direction, is seven miles long, (including Steuben Harbor,) and has an average width of a mile and a quarter to The Narrows, five miles above its mouth. That part of the bay between The Narrows and Steuben Harbor is called Joy's Bay, and is all shoal water.

In approaching from Petit Manan the course is about **N NW.**, and there will be seen: First, the long, low, rocky point of Petit Manan Neck, bearing about **N.** by **E.**; the round, white summit of Stanley's Point next to the westward, with Dyer's Bay open between them; and ahead the Sally Islands, with Eastern Island a little to the northward. To the eastward of Eastern Island, the bare ledges extending towards Petit Manan Point are the Dyer's Bay Ledges. The high land of **Schoodic Head,** with **Green Mountain** on Mount Desert, are seen to the westward—the former being about five miles distant.

The line of islets across the mouth of Gouldsboro' Bay are the Sally Islands, six in number. Eastern Island is sometimes counted as one of the group, which, in such case, would number seven. The channel leads between it and the easternmost of the Sally Islands, which is about thirty feet high, looks like a cluster of round rocks, and is bare of all vegetation except a scanty growth of moss and grass. Next, to the westward, is another rocky islet, some- **Sally Islands.**
what higher, and bare of everything but a few dead stumps and one or two sickly spruce trees. The remaining islets of the group are similar in appearance,—being rocky, tolerably high, and bare of all vegetation except a few stunted trees here and there. The channel between Eastern Island and the Sallies is about a quarter of a mile wide, and has not less than four fathoms at mean low water. **Eastern Island,** already described, (pages 107–108,) lies on the eastern side of the channel and about a quarter of a mile from Dyer's Point. It is rocky and bare except in the middle, where there is a small grove of stunted fir trees and bushes.

Dyer's Point, the eastern point of entrance to Gouldsboro' Bay, is the southern end of **Dyer's Neck,**— **Dyer's Point.**
the long peninsula separating this bay from Dyer's Bay to the eastward. It is a mile and three-quarters **NW.** from Petit Manan Point; and, seen from the westward, is low, rocky, destitute of trees, and has a bare, white summit, (see also page 106.) There is no passage between this point and Eastern Island.

When in the middle of the entrance between Eastern Island and the Sallies the shores of the bay will appear low and wooded, and there will be seen stretching in a line across its head the grand outlines of the **Tunk Mountains,** (a range of handsome hills in the township of **Cherryfield,**) about five miles to the northward of Steuben. The two most prominent hills of the range are **Humpback Mountain,** which shows two round humps, and **Burk Hill,** which is lower than Humpback, and has a nearly flat top, with a steep slope to the southward.

Several houses are seen on the low shore at the head of the bay; but as a rule little cultivated land appears.

Above Dyer's Point the eastern shore of the bay is low and thickly wooded to Sand Cove Point, a mile and a quarter above Eastern Island. This point is low, woody, and has several large boulders scattered at the edge of the woods. On its northern side makes in a small cove of no importance, called **Sand Cove;** but above this **Sand Cove Point.**
there are no noticeable features on the eastern shore until up with **Big Ben,** a mile above Sand Cove and two and a quarter miles above Eastern Island. This is a very remarkable rock, standing in a cleared space among the trees, and when first seen looks like a weather-beaten, unpainted barn. It is, however, a huge, square, grey rock, with perpendicular sides, and is by far the most noticeable feature of the bay.

The eastern bank, from Sand Cove to Big Ben, has a general course about **N.**, and is nearly straight, with no indentations It is low and thickly wooded.

The western bank, above **Young's Point,** (the western point of entrance,) is more irregular in outline, somewhat higher than the eastern shores, and generally thickly wooded with a small growth of fir and spruce that, from a distance, looks like scrub and bushes.

Three-quarters of a mile above Young's Point makes in **Ward's Cove,** a large cove, shallow, and of little importance, affording anchorage to vessels of light draught; but above this cove the western shore is nearly as straight as the eastern,

West Bay, or Gouldsboro' Harbor. and runs in a northerly direction about two miles and a half to **Pilot's Point**, which is about sixty feet high and densely covered with fir and spruce to the water's edge. It is nearly three miles and three-quarters above Young's Point, and forms the southern point of entrance to West Bay, or Gouldsboro' Harbor. This bay is an arm of Gouldsboro' Bay, making in, first to the westward and then to the northward, to the town of **Gouldsboro'**, which occupies its western shore near its head. It is three miles and a half long in a **N.** and **S.** direction, and has an average width of three-quarters of a mile; but it is shallow and unfit for strangers,—there being no channel except at high water.

Point Francis. One mile to the westward of Pilot's Point is Point Francis; and between the two a large but shallow cove, which is not named. Point Francis is also low and thickly wooded, like Pilot's Point, and when seen from the eastward looks like a continuation of the latter. It is the proper southern point of entrance to Gouldsboro' Harbor, and behind it (to the westward) there is a long and wide cove, forming the southern part of West Bay, known as **Great Marsh Bay**. This extends to the southward a mile; but is shallow and of no importance.

Jetteau's Point, the northern point of entrance to West Bay, and about twelve hundred yards to the northeastward of Point Francis, is low, rocky, crowned with a stunted growth of fir, and at low water extends into a long, bare ledge.

Marsh Cove Point. On the eastern shore of Gouldsboro' Bay, about a mile above Big Ben, and nearly opposite to Pilot's Point, lies Marsh Cove Point, a low, sandy head, covered with birch, and showing a precipitous, water-worn face to the westward. A great number of small boulders are scattered at its base, and it is also remarkable as being the only sandy head between the mouth of the bay and Rogers' Point. When past it the houses in the village of **Steuben** open from behind the woods on the eastern shore, showing over the low land of Rogers' Point, the eastern point of entrance to Joy's Bay;—for above this point the name of Gouldsboro' Bay is lost and the former substituted for it.

Rogers' Point. Rogers' Point is a long, low, flat, grassy point, with perpendicular, sandy faces, bare of trees except at its western end, where a very few may be seen. A group of three rocky islets, two of them covered with scrub, lie on the northern side of the point, in a line **N.** and **S.** The two nearest to the shore are called **Money Islands**, and at low water are joined to Rogers' Point. The third or northernmost is entirely bare, and is known as **Lobster Island.** There is no passage between it and the Money Islands.

About half a mile to the northwestward of Jetteau's Point, in Gouldsboro' Harbor, is **William's Point**, low, with steep faces and thickly wooded; and between the two makes in **Timber Cove**, a small indentation of no importance. Opposite to William's Point, on the western side of the harbor, is **Guptill's Point**, low, flat and grassy, with a few scattered trees upon it. This latter point also forms the western point of entrance to Great Marsh Bay.

Garden Point. Garden Point is on the western shore, a little above Jetteau's Point, and nearly opposite to Rogers' Point. It is a low, flat point, with a group of very large willow trees and two or three houses. Seen from a distance the willows have the appearance of orchard trees. Between this and Rogers' Point the bay is but three-eighths of a mile wide, forming what is called **The Narrows.**

Joy's Bay. Joy's Bay is a mile and three-quarters long and has an average width of five-eighths of a mile. At its head it divides—one branch, running to the northeastward, forms Steuben Harbor; the other, running first to the westward and then to the northward, is called Joy's Cove. The shores of the bay are partly wooded, partly cleared and settled, and in most places show perpendicular, sandy faces.

A little over half a mile above Garden Point, on the western shore of Joy's Bay, is **Wall's Point**, with steep faces and thickly wooded; and about three-quarters of a mile above this is Stevens' Point, the southern point of entrance to Joy's Cove. On the eastern shore of Joy's Bay, about a mile above Rogers' Point is **Parrit's Cove**, a semicircular cove, about three hundred and fifty yards in diameter, but bare at low water. The northern point of entrance to this cove, called **Parrit's Point**, is low, level and grassy, with perpendicular faces. About six hundred yards above it is **Bald Point**, or **Val's Point**, as it is sometimes called, which forms the southeastern point of entrance to Steuben Harbor.

Steuben Harbor. Steuben Harbor is formed by the eastern branch of Joy's Bay, and is shallow,—affording anchorage only for vessels of very light draught. Bald Point, its eastern point of entrance, is a sandy bluff, with flat surface, and the western point is also a sandy head, with cleared, grassy, level surface, and called **Burnt Point**, or **Baker's Point.** The latter is also the eastern point of entrance to **Joy's Cove**, the western branch of the bay, which runs to the westward, between Burnt Point on the north and east, and a sandy head, with perpendicular faces, covered with clumps of birch, and called **Stevens' Point.** There is no anchorage in the cove, the water being very shallow, except at high water.

The dangerous **Weir Ledges**, bare at half-tide, obstruct the entrance to Steuben Harbor;—extending from Val's Point in a **NW.** direction four hundred and fifty yards, or to within an eighth of a mile of Burnt Point. The latter point is also shoal, and must receive a berth to the westward of not less than one hundred yards;—so that the available channel at low water is only about one hundred yards wide. In Joy's Bay also there are several ledges lying off the entrance to **Baker's Cove** on the northern, and **Tucker's Creek** on the southern shore;—but this bay is easier of access than Steuben Harbor.

The principal anchorage in Gouldsboro' Bay is on the western side, near Garden Point, and just below Rogers' Point. Here from three to four fathoms may be found, with excellent holding-ground in a sort of stiff clay mixed with mud. After riding for twenty-four hours it is often found a work of considerable labor to get the anchor.

DANGERS

IN APPROACHING AND ENTERING GOULDSBORO' BAY.

I. ***Coming from the Eastward, Outside of Petit Manan Island.***—The first danger met with in approaching Petit Manan from the eastward is Southeast Rock, which has seven feet at lowest tides, lies three miles **SE.** by **S.** ¼ **S.** from the light-house, and is marked by an iron can-buoy of the second class, painted red and black in horizontal stripes. The buoy is in eight fathoms water, a little over thirty yards to the northwestward of the shoal, and there are soundings of from eight to ten fathoms on all sides of the rock. It is usual to pass well to the northward of the buoy, unless bound along the coast. ***Southeast Rock.***

The next danger encountered is *Simms' Rock*, with six feet at low water, lying about two miles **S.** ½ **E.** from Petit Manan Light-house, with eight fathoms water all around it. A spar-buoy, painted red and black in horizontal stripes, is placed in eight fathoms fifty yards to the northeastward of the rock, and is usually left to the southward by vessels bound into any of the neighboring harbors. When up with it, look out on the northern side of the channel for Petit Manan Reef, marked by an iron can-buoy of the second class, painted black. It makes off from the southern end of the island about **S.** by **W.** for nearly half a mile, and is quite shoal. The buoy is on the southern end, in seven and a half fathoms. Pass to the southward of it, and when well past the buoy haul up for the mouth of the bay. ***Petit Manan Reef.***

On this latter course the first danger is Moulton's Ledge, three miles **W.** by **N.** from Petit Manan Light-house, with a red and black spar-buoy placed in five fathoms water off its southwestern end. This ledge is bare at low water, and extends in a **NE.** and **SW.** direction nearly one hundred yards, with shoal water extending from it to the southward about half a mile. The buoy is to be left to the westward if bound into Gouldsboro' Bay. ***Moulton's Ledge.***

When past it, look out for *Dyer's Bay Ledges*, which extend in an easterly direction from Eastern Island nearly a mile, and must not be closely approached on their southern side, as there are sunken rocks in that direction. The ledges themselves are always out, and there is no passage between them and Eastern Island. Vessels bound into Gouldsboro' Bay pass well to the westward of them.

After passing between Eastern Island and the easternmost of the Sally Islands there are no dangers in the bay until you approach Pilot's Point. All that is requisite is to keep off the shores. But when up with Pilot's Point you must be careful not to go to the westward of a line between the northeastern end of that point and the eastern extremity of Jetteau's Point, or, what is better, to go about as soon as Jetteau's Point bears **N NW.** Thus you will avoid *the great mass of ledges and flats* which occupies all of the bight between Pilot's Point and Point Francis. Nearly all of this bight is bare at low water, and many ledges are bare at half-tide. The northernmost of these ledges, which also marks the southern limits of the entrance to Gouldsboro' Harbor, is called **Shag Ledge**, is out at half-tide, and lies about twelve hundred yards **NW.** by **N.** ⅜ **N.** from Pilot's Point,—leaving a passage between it and Jetteau's Point nearly six hundred yards wide; but the available channel is diminished to three hundred yards by the ledges off Jetteau's Point.

Point Francis must receive a berth to the southward of not less than a quarter of a mile, on account of the numerous ledges, bare at half-tide, extending from it to the northward and northeastward; nor must the northern shore of the entrance be too closely approached,—for a dangerous ledge, called **Seal Ledge**, lies nearly in the middle, off the mouth of **Timber Cove**,—(the shallow cove on the western side of Jetteau's Point.)

SAILING DIRECTIONS

FOR APPROACHING AND ENTERING GOULDSBORO' BAY.

I. ***Coming from the Eastward, Outside of Petit Manan Island.***—Pass three-quarters of a mile to the southward of Petit Manan Light-house, and when it bears **NE.** by **E.** ½ **E.**, about a mile off, steer **N NW.**, which will lead, with not less than four fathoms, between Eastern Island and the easternmost Sally Island, into the bay. When about three-quarters of a mile above the Sallies and off the entrance to Ward's Cove, steer **N.** ½ **E. Nearly**, for Garden Point, and anchor, at discretion, either off the entrance to West Bay, or under the western shore between Garden Point and Rogers' Point, in from three to four fathoms, stiff clay and mud. Only vessels of light-draught go above The Narrows, and they must have a pilot.

DANGERS

IN APPROACHING AND ENTERING GOULDSBORO' BAY.

II. ***Coming from the Westward.***—After passing Schoodic Island look out for Moulton's Ledge, which is bare at low water, and has a spar-buoy, with black and red horizontal stripes, off its southwestern end. This ledge is about two miles to the ***Moulton's Ledge.***

southward of the Sallies and three miles **W.** by **N.** from Petit Manan Light-house, and extends in a **NE.** and **SW.** direction nearly one hundred yards, with shoal soundings (from three to five fathoms) nearly half a mile to the southward from the dry ledge. The buoy may be left either to the northward or southward in coming into Gouldsboro' from the westward, but it is usual to pass to the southward of it. There are no dangers after passing Moulton's Ledge.

SAILING DIRECTIONS

FOR APPROACHING AND ENTERING GOULDSBORO' BAY.

II. ***Coming from the Westward, and intending to pass to the Northward of Moulton's Ledge.***—When past Schoodic Island, get Petit Manan Point to bear **E.** by **N.** and run for it, passing inside of Moulton's Ledge to the northward of it. On this course, when Petit Manan Light-house bears **SE.** $\frac{1}{2}$ **E.** and the middle of the passage between Eastern Island and the easternmost of the Sallies **N.** $\frac{1}{2}$ **W.**, steer the latter course until past the entrance, when steer **N NW.** for about three-quarters of a mile, until off Ward's Cove. Now steer **N.** $\frac{1}{2}$ **E.** for The Narrows, and proceed as before directed.

These directions lead nearly three-quarters of a mile to the northward of Moulton's Ledge, and carry not less than three fathoms water.

III. ***Coming from the Westward, and intending to pass to the Southward of Moulton's Ledge.***—When past Schoodic Island, bring Petit Manan Light-house to bear **E.** by **N.** and steer for it until Petit Manan Point bears **NE.** by **N.** $\frac{1}{2}$ **N.** and the middle of the passage between Eastern Island and the easternmost of the Sallies **N.** $\frac{1}{2}$ **W.** This clears Moulton's Ledge, passing to the southeastward of it, with Petit Manan Light-house two miles off. Now steer **N.** $\frac{1}{2}$ **W.** until in the middle of the passage, when **N NW.** carries the best water to abreast of Ward's Cove. Now steer **N.** $\frac{1}{2}$ **E.**, and proceed as before directed. Or, continue the course **N.** $\frac{1}{2}$ **W.** until about three-quarters of a mile above Sand Cove Point and in the middle of the bay, when steer **N.** $\frac{1}{2}$ **E.**, and proceed as before directed.

The above courses pass a mile and a half to the southward of Moulton's Ledge, and carry nothing less than three fathoms to the anchorage.

Directions cannot be given for Gouldsboro' and Steuben harbors, as there is no channel except at high water, and that is not fit for strangers.

VARIATION OF THE COMPASS.

The magnetic variation in Gouldsboro' Bay for 1879 is 16° 31′ W., with an approximate annual increase of 2′.

ICE IN DYER'S AND GOULDSBORO' BAYS.

The period and character of ice formations in these bays are the same as in Machias, Englishman's, Narraguagus and Pigeon Hill bays, to which the mariner is referred. (See pages 50, 96–97.) In general terms, it may be remarked that navigation is dangerous for sailing-vessels between December and March; but that, in ordinary winters, steamers could make their way without much difficulty as far up as Pilot Point, in Gouldsboro' Bay, and Good's Point, in Dyer's Bay. (There is, however, at present no steam navigation in these bays.) In severe winters (like that of 1874–5) all navigation ceases from about the last week in January to about the first week in March.

PROSPECT HARBOR.

Cranberry Point. Two miles **W.** by **S.** from Eastern Island lies Cranberry Point, the eastern point of entrance to Prospect Harbor. It is long, low and rocky, bare of trees, and has patches of scrub here and there. From it a long ledge extends to the southward, breaking heavily, except in very moderate weather. There are several houses on the point, some distance back from the shore.

Prospect Harbor is a large cove, running **N.** and **S.**, about a mile and a half long, (the **Outer Harbor** having an average width of one mile,) and affords good anchorage in northerly or northeasterly gales. It is, therefore, much frequented by coasters. Its shores are mostly low, but backed by thickly wooded lands of moderate height.

Coming from the eastward, as soon as the western extremity of Cranberry Point bears **N.** by **W.** the harbor will be open, and there will be seen at its head a large white house with what appears to be a small cupola on its gable end. This is Prospect Harbor Light-house, built on the end of the keeper's dwelling, and from a distance only so much of it is seen as rises above the roofs,—giving it the appearance mentioned above. The light-house is built on **Prospect Harbor Point**, the dividing point at the head of the cove, separating **Sand Cove** on the east from **Inner Harbor** on the west. It is a granite tower, whitewashed, and joined to the keeper's dwelling.

Prospect Harbor Light-house.

It shows a revolving red and white light, of the fifth order, from a height of forty-five feet above the sea, flashing every thirty seconds, and visible eleven miles. Its geographical position is

Latitude ..... **44° 24′ 11″ N.**
Longitude ..... **68° 0′ 46″ W.**

From off Cranberry Point the houses in the settlement will appear to the westward of the light-house. A prominent church with tall spire also appears on the western shore. In 1872 this was unpainted, and had a peculiar yellowish appearance on that account.

A good landmark for Prospect Harbor is a remarkable long grove of black-looking trees of about equal height, standing on top of the high land just to the westward of the harbor.

Petty's Point.

Petty's Point, the western point of entrance to Prospect Harbor, is a mile and three-quarters **WNW.** from Cranberry Point, and is low, rocky, and clothed only with low scrub; but the land rises behind it to a considerable height.

DANGERS

IN APPROACHING AND ENTERING PROSPECT HARBOR.

Little Black Ledge.

I. ***Coming from the Eastward.***—The usual course from the eastward is to pass between Cranberry Point and a bare ledge, called Little Black Ledge, nearly covered at high water, lying one mile **S.** ½ **W.** from Cranberry Point and two and a half miles **S.** by **E.** ¾ **E.** from the light-house.

Pass to the southward of Little Black Ledge, and continue to the westward until the light bears **N.** ½ **E.**; or haul to the northward as soon as past the ledge, and pass between it and Big Black Ledge, or **Big Ledge**, as it is sometimes called,—a rocky islet, bare of everything, lying **S.** by **E.** from the light-house, distant two and a third miles; **SW.** by **S.** ¾ **S.** from Cranberry Point, distant nearly one mile; and **W.** by **N.** ½ **N.** from Little Black Ledge, distant about one-third of a mile. The channel between the two is excellent and safe, and is very often used by vessels from the eastward.

Big Black Ledge.

One-third of a mile to the westward of Big Black Ledge lies *The Old Man*, bare at half-tide, but not in the way of vessels bound in from the eastward. A good channel, with from four to nine fathoms, exists between it and Big Ledge.

The Old Woman.

A little over half a mile **NW.** ¼ **W.** from Big Black Ledge lies a large and dangerous piece of shoal ground, part of which is bare at half-tide, and the rest having from two to twelve feet upon it. The shoal part is sometimes called The Old Woman, and sometimes *The Sow and Pigs;* but the former is the name generally used. It lies almost exactly in the middle of the entrance, with equally good water on both sides; but by vessels coming from the eastward it is usually left to the westward. From Prospect Harbor Light-house it bears **S.**, distant nearly two miles; and is marked by a red spar-buoy (No. 2) placed in five fathoms on its western end.

Clark's Ledges.

When past The Old Woman the passage is clear from shore to shore until up with the entrance to Inner Harbor, when look out for Clark's Ledges, bare at one-quarter ebb, making from the western side of the entrance to a distance of over a quarter of a mile from shore. These are very dangerous, (especially at night,) and great care is necessary to avoid them. The western shore should receive a berth of at least one-third of a mile, (seven hundred yards.) These ledges are marked by a black spindle with wheel and pendant on top, placed on their eastern end.

On the northern side of the entrance, do not approach Prospect Harbor Point (on which the light-house stands) too closely, as there is *a long ledge making off from it to the southward and westward for two hundred and fifty yards*, which is bare at low water for two-thirds of its length, and is not buoyed.

The best anchorage in Inner Harbor is about six hundred yards to the westward of the light-house, in from three to five fathoms, soft bottom. The whole of the upper part of the cove is a mass of flats and kelp ledges, and a large part of it bare at low water. Vessels of light draught may anchor farther up, according to their draught, (by using the lead carefully,) as the water shoals gradually.

SAILING DIRECTIONS

FOR APPROACHING AND ENTERING PROSPECT HARBOR.

I. ***Coming from the Eastward, to enter by the main channel.***—Steer **W.** ½ **S.** for the middle of Schoodic Island until Prospect Harbor Light-house bears **NW.** by **N.** ¾ **N.**; when steer for it, which course will lead safely in, with not less than eight and a half fathoms water, passing three hundred and fifty yards to the westward of Cranberry Point; a quarter of a mile to the eastward of Little Black Ledge; and nearly half a mile to the eastward of Big Black Ledge. When within six hundred yards of the light, steer **NW.** by **W.** ¾ **W.** into Inner Harbor, and anchor according to draught. The depth at the usual anchorage is from three to five fathoms, and the holding-ground good.

Sailing Directions--Prospect Harbor.

II. ***Coming from the Eastward, to enter between Big Ledge and Little Black Ledge.***—From about a mile and a half outside of Eastern Island, (Gouldsboro' Entrance,) steer **W.** ½ **S.** for the middle of Schoodic Island until past Little Black Ledge, with Prospect Harbor Light-house bearing **N.** by **W.** ½ **W.** Now steer for the light, passing between Big and Little Black ledges, and carrying not less than nine fathoms water; and when within about six hundred yards of it steer **NW.** by **W.** ¾ **W.** into Inner Harbor, passing to the northward of Clark's Ledges, two hundred and seventy-five yards distant. Anchor in from three to five fathoms, soft bottom, with the light bearing **E.** ½ **N.**

III. ***Or, to come from the Eastward and enter by the western channel.***—Continue the course **W.** ½ **S.** for Schoodic Island until the light-house bears **N.** ½ **E.**; when run for it, passing two hundred yards to the westward of The Old Woman and nearly six hundred yards to the westward of The Old Man, carrying not less than seven fathoms water. Continue this course until past Clark's Ledges and Inner Harbor is fairly open, when steer about **NW.** by **W.** ¾ **W.** for the middle of the cove, and anchor as before.

Strangers are not advised to try the channel between Big and Little Black ledges, though there is a depth of twelve fathoms in it.

DANGERS

IN APPROACHING AND ENTERING PROSPECT HARBOR.

II. ***Coming from the Westward.***—The coast is pretty clear from Schoodic to Prospect Harbor, and the first danger met with is Bunker's Ledges, with two feet at mean low water, lying off the mouth of Bunker's Harbor. They are very dangerous ledges, as they extend to the eastward nearly seven hundred yards and are not buoyed. From Prospect Harbor Light-house the shoal of these rocks bears **SW.** by **S.** ¾ **S.**,—seen over Petty's Point,—and the rule for avoiding them is not to shut the light in behind that point, or not to go to the westward of the light-house bearing **N NE.** The channel between these ledges and The Old Man, which lies on the eastern side of the entrance, is a mile wide, and has from seven to fourteen fathoms.

Bunker's Ledges.

Roaring Bull Ledge lies in the middle of the entrance to Birch Harbor, about an eighth of a mile from its western point, and is dry at low spring tides. There is no safe passage between it and the shore, although twelve feet at mean low water exists in a narrow and crooked channel. A black spar-buoy (No. 1) is placed in three fathoms about twenty yards to the eastward of the shoal of the ledge; and from it Prospect Harbor Light-house bears **NE.** by **N.** ¾ **N.**, distant one mile and three-eighths. This ledge is called, in the Buoy List, **Harbor Ledge.**

Roaring Bull Ledge.

The Old Man, described on the preceding page, is bare at half-tide, lies on the eastern side of this channel, and bears from Prospect Harbor Light-house **S.** ¼ **E.**, a little over two and a quarter miles distant.

The Old Woman.

It is tolerably steep-to, and always shows itself by breakers. A little over one-third of a mile to the northward is The Old Woman, also described on the preceding page. It is sometimes called *The Sow and Pigs*, is partly bare at low water, and in other places has from two to twelve feet. From The Old Man it bears **N.** by **W.**, about six hundred and fifty yards distant; from Prospect Harbor Light-house **S.**, nearly two miles distant; and from Big Black Ledge **NW** ¼ **W.**, a little over half a mile distant. There is a good channel, with from seven to ten fathoms in it, between The Old Man and The Old Woman. A red spar-buoy (No. 2) is placed in five fathoms on its western end.

When past The Old Woman the channel is clear to the entrance to Inner Harbor, and you may stretch boldly from shore to shore. When up with Inner Harbor entrance, however, look out for Clark's Ledges, making off from the western shore, opposite to the light-house, to a distance of over a quarter of a mile, and bare at one-quarter ebb. They are marked by a black spindle with wheel and pendant, placed on their eastern end. The western shore should receive a berth of at least one-third of a mile to avoid them.

Clark's Ledges.

SAILING DIRECTIONS

FOR APPROACHING AND ENTERING PROSPECT HARBOR.

IV. ***Coming from the Westward.***—When past Schoodic Island, steer **NE.** ½ **N.** until Prospect Harbor Light-house bears **N.** by **E.**, when run for it, passing half a mile to the westward of The Old Man, the same distance to the eastward of Bunker's Ledges, a little over five hundred yards to the westward of The Old Woman, and carrying not less than nine fathoms water. This course continue until within four hundred yards of the light-house, when **NW.** by **W.** ¾ **W.** leads into Inner Harbor, passing to the northward of Clark's Ledges, and carrying not less than four fathoms. Anchor in from three to five fathoms, soft bottom, with the light bearing **E.** ½ **N.**

LIGHT-HOUSE.

NAME.	Latitude.	Longitude West.		Fixed or Revolving.	Interval of Flash.	Height above sea-level.	Distance visible in nautical miles.
		In arc.	In time.				
	° ′ ″	° ′ ″	h. m. s.		s.	Feet.	
Prospect Harbor Light-house..	44 24 11	68 0 46	4 32 3.1	Revolving.	30	45	11

TIDES.

Corrected Establishment	$10^h\ 57^m$
Mean Rise and Fall of tides	10.8 ft.
Mean Rise and Fall of Spring tides	11.5 ft.
Mean Rise and Fall of Neap tides	9.5 ft.
Mean duration of Rise	$6^h\ 13^m$
Mean duration of Fall	$6^h\ 12^m$

VARIATION OF THE COMPASS.

The magnetic variation for 1879 is 16° 29′ W., with an approximate annual increase of 2′.

BIRCH AND BUNKER'S HARBORS.

These little harbors, suitable for light-draught vessels, are small coves making in to the westward of Prospect Harbor, and are of little importance. Birch Harbor lies on the western side of Petty's Point, and Bunker's Harbor about three-quarters of a mile to the southwestward of the same point. The former is a long and narrow cove, making in a **W NW.** direction about a mile, and affords anchorage in from six to eighteen feet at low water; but is only used by the fishermen who live on its banks;—as coasters always run into Prospect or Winter Harbor. The shores are low and rocky, and have in places a thin fringe of small trees, but are for the most part covered only with scrub and bushes. High lands rise somewhat steeply behind the low banks, especially on the north and west, where the summit of the Schoodic Hills is seen. There is a small settlement on its banks.

Bunker's Harbor, three-quarters of a mile to the southwestward of Birch Harbor, is a small, narrow cove, running nearly **N NW.** and **S SE.** and about half a mile long. Its shores partake of the same character as those of Birch Harbor,—being low, rocky, covered with scrub, and backed by the high, steep, rocky lands of Schoodic. Anchorage in from two to four fathoms at low water may be found, but the cove is not fit for strangers. There is a small settlement on its shores.

From the entrance to Birch Harbor the shore runs **S.** by **W.** ½ **W.** for about three-quarters of a mile, terminating in a low, rocky point, called **Spruce Point.** The only growth upon it is scrubby bushes and small fir. This point is one mile in a nearly **E NE.** direction from the northern end of Schoodic Island; and between it and the eastern shore of the peninsula of Schoodic is formed a large semicircular cove, called **Schoodic Harbor,** and sometimes **Rowland's Harbor,** in which there is from three to seven fathoms at low water. Its shores are rocky and uncultivated, and the cove itself is rarely used. There are several dangerous sunken rocks (which are not buoyed) lying in this cove; but it may be safely entered from the eastward with not less than five fathoms by keeping either shore aboard. Coming from the westward the passage is clear, and may be safely traversed by keeping in the middle.

Peninsula of Schoodic.

The western shores of Schoodic Harbor are formed by the peninsula of Schoodic, the eastern point of entrance to Frenchman's Bay. This prominent peninsula, one of the great landmarks on the coast of New England, is a range of high, barren, rocky hills, terminating to the southward in a low, bare, rocky point, called **Schoodic Point.** They are composed of bare, yellowish rock, with their slopes cut into very peculiar looking steps, and a few low trees dotting at wide intervals their eastern sides. A thin scrub growth may also be seen in the crevices of the rock on a near approach; but the general appearance is barren and desolate in the extreme. These hills are usually made by vessels from Europe coming upon our coast, bound either to the northward or southward.

Schoodic Island.

When Schoodic is viewed from the eastward there will appear in range with it a small island, called Schoodic Island, long, narrow and quite low, lying **N NE.** and **S SW.**, within half a mile of Schoodic Point, with a good passage between them. The southern part of the island is covered with a thick growth of low spruce and fir, while the northern end is bare except for a few scattered trees here and there, and both shores are bold and steep-to. The passage between Schoodic and Schoodic Island is obstructed at its northeastern end by a bare ledge, called **Schoodic Ledge,** lying a quarter of a mile **N.** by **E.** from the northern end of the island. It may be left on either hand.