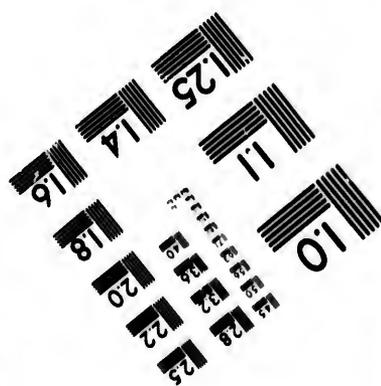
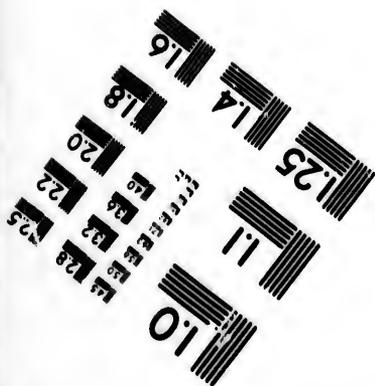
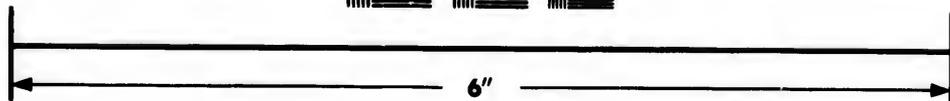
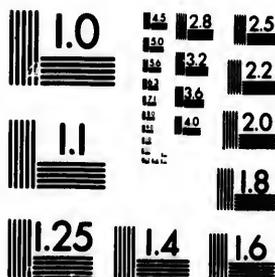


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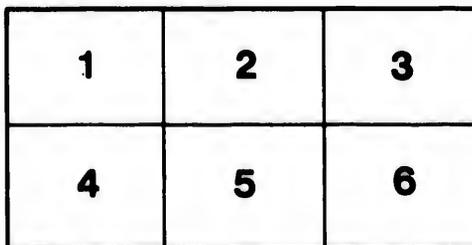
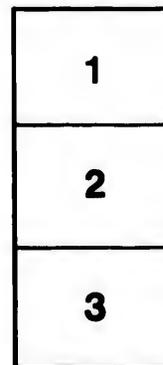
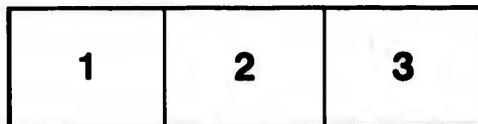
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Hambley Harbour Master 1838

SAILING DIRECTIONS

To St. Lawrence June 1855

FOR THE

GULF AND RIVER

OF

ST. LAWRENCE;

BY

HENRY WOLSEY BAYFIELD,

CAPTAIN ROYAL NAVY, F.R.A.S.

BEING THE RESULT OF A SURVEY MADE BY ORDER OF THE
LORDS COMMISSIONERS OF THE ADMIRALTY.

LONDON :

PRINTED FOR THE HYDROGRAPHIC OFFICE.

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1837

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INTRODUCTION.

FULL and clear directions are given in the following pages for entering the Gulf of St. Lawrence ; for passing the Magdalen Islands ; for approaching the River either on the north or on the south side of Anticosti ; and for navigating the Estuary of the St. Lawrence, under every change of circumstance, as far up as Bic and Green Island. Beyond those islands no stranger should venture to proceed without the assistance of a pilot.

They have been drawn up by that skilful officer, Captain Bayfield ; and, as they are perfectly sufficient to enable any seaman to conduct his vessel not only with safety but with confidence into pilotage-water, it has been thought proper not to withhold such highly important information from the public until the whole survey should be finished. The survey is still in rapid progress ; and, when complete, these Sailing Directions will be extended around the entire circuit of the Gulf, and will also minutely describe all the navigable channels of the River as far as the cities of Quebec and Montreal.

Hydrographic Office,
November 9, 1837.

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CONTENTS.

PART I.

CHAPTER I.

General Remarks.

	Page
1. Former Charts of the St. Lawrence	1
2. Massey's Sounding Machine	2
3. Variation	3
4. Deviation	3
5. Magnetic Action of the Shore	3
6. Ice	4
7. Fogs	4
8. Winds and Weather	5
9. The Marine Barometer	7

CHAPTER II.

General Remarks respecting the Currents and Tidal Streams in the St. Lawrence.

10. Prevailing Currents	11
11. Currents at the Entrance of the Gulf	11
12. Current in through the Strait of Belle Isle	12
13. Its Course after entering the Gulf	12
14. Main Current of the River	13
15. Its Course and Rate	17
16. Round Point de Monts	18
17. Along the South Coast	18
18. Remarks on the Tides of the North Coast, Eastward of Point de Monts	19

CHAPTER III.

General Directions for Navigating the Gulf and River of St. Lawrence.

19. Vessels entering the Gulf should endeavour to make the Island of St. Paul	20
20. St. Paul Island to the Bird Rocks and Magdalen Islands	21
21. Bird Rocks to the Island of Anticosti	22
22. The Passage Northward of Anticosti	23
23. The Passage Southward of Anticosti	25

	Page
24. Anticosti to Point de Monts, with fair and with beating Winds	26
25. Point de Monts to Bicquette Island, with easterly winds and thick weather. An Instance of the fatal consequences of neglecting the Deviation of the Compass. Pilots	28
26. Point de Monts to Bicquette, with southerly and with northerly Winds. Instances of the effects of the Currents and Tides.	32
27. Bicquette to Green Island Lighthouse	34
28. Beating up the Estuary with westerly Winds	36
29. Returning down the Estuary and Gulf	39

CHAPTER IV.

The Islands in the Gulf of St. Lawrence.

30. Island of St. Paul	43
31. Bird Rocks	44
32. Bryon Island	46
33. Deadman Islet	47
34. Magdalen Islands	48
35. Description of the Southern side of the Magdalens, and the Reefs and Anchoring places, with Directions	50
36. Description of the Northern side of the Magdalens, and the Dangers, with Directions	58
37. Tides and Currents around the Magdalens	60
38. The Island of Anticosti, general Description, Provision Posts, and Lighthouses	62
39. Description of the Southern Coast of Anticosti, with Directions	66
40. Description of the Northern Coast of Anticosti, with Directions	71
41. Remarks upon the Currents and Tides around Anticosti	75

CHAPTER V.

The South Coast of the Gulf and River of St. Lawrence, from Gaspé to Green Island.

42. Preliminary Remarks	77
43. Cape Despair and Leander Shoal, Bonaventure Island. Percé Rock. Mal Bay. Point Peter, and Flat Island	78
44. Gaspé Bay. Cape Gaspé, and Flower-pot Rock. Seal Rocks. Douglas Town, and Roadstead. River St. John	80
45. Gaspé Harbour. The N. W. and S. W. Arms. The Basin	82
46. Tides, Currents, Winds, and Soundings	85
47. The South Coast from Cape Gaspé to Cape Chatte. Cape Rozier. Griffin Cove. Great Fox River. The Great Pond. Magdalen River. Mont Louis River. St. Anne and Chatte Rivers. Cape Chatte	86
48. Cape Chatte to Barnaby Island. River Matan. Little Metis. Grand Metis. Cock Cove, and Mount Camille. Father Point. Rimousky Road. Barnaby Island	89
49. Barnaby Island to the Razade Islets. Cape Arignole; its Bays and Reefs. Old Bic Harbour. Bic and Bicquette Islands; their Reefs, and the Alcide Rock. Anchorages at Bic. Tides. Edge of the South Bank	91

	50. The Razade Islets. Basque Island. Apple Island. Green Island, Lighthouse, Reef, Anchorage, and Tides	Page 102
--	---	-------------

CHAPTER VI.

The North Coast of the Gulf and River St. Lawrence from St. John River to Point de Monts; and from thence to Little Bergeron near the Saguenay.

32	51. General Description of the Coast from the River St. John to the River Moisie. Magnetic Nature of the Coast. Appearance of and Approach to the Shore	106
34	52. River St. John, Magpie River, Sawbill River, Shallop River, Manitou River, Basin River, Point St. Charles. River Moisie, and the Coast and Dangers	107
36	53. The Shoal to the westward of Point Moisie. Seven Islands Bay	113
39	54. The Coast from the Seven Islands to Point de Monts. River St. Margaret. Cawee Islands. Lobster Bay. Pentecost River. English Point. Egg Island and Reefs. Calumet River. Caribou Point. Trinity Bay. Point de Monts Lighthouse. Point de Monts, and detached Rocks	118
43	55. The North Coast of the Estuary, to Point St. Giles. St. Augustin Cove. Goodbout River. St. Nicholas Harbour. St. Pancras Cove. English Bay	126
44	56. Manicouagon River. Manicouagon Shoal. Outard River. Outard Bay. Bersimis River	129
46	57. Bersimis Point and Shoals. Jeremy. Cape Colombier. Guluare Shoal. Wild Fowl Reef. Plongeur Bay. Baie de Laval. Port Neuf River. The Port Neuf Sands	134
47	58. Point Milles Vaches. Milles Vaches Bay, and the Coast to the south-westward. Great and Little Bergeron Coves	137
48		
50		
58		
60		
62		
66		
71		
75		

CHAPTER VII.

The North Coast of the Gulf of St. Lawrence from Lake Island to the River St. John, including the Megan Islands.

77	59. General Description of the Coast, from Lake Island to Natashquan Point	139
78	60. Whittle Rocks. Wolf Bay and Islands	140
80	61. Coacocho Bay and its Harbours	141
82	62. Olomanoshebo, Wash-shecootai, and Musquarro	143
85	63. Kegashka Bay, Kegashka River, and the Coast between it and Natashquan Point. Mont Joli Cod Banks	144
86	64. General Description of the Coast from Natashquan Point to the Mingan Islands	147
89	65. Natashquan River. Little Natashquan Harbour. Washtawooka, Agwanus, and Nabesippi Rivers. Pashashebo. Mushkoniatawe. Washatnagunashka. Watcheesho. Quetachoo-Manicouagon. Peashtebai. Appeeletat	148
	66. The M'ngan Islands, general Description	152
91	67. St. Genevieve and Hunting Islands. The Saints. Bowen Rocks. The Harbours of St. Genevieve and Betchewin	154

	Page
68. Charles Island and the Bays on either side of it. Charles Harbour .	153
69. Clear Water Shoals. Walrus and Sea Cow Islands, with the Channels leading to Esquimaux Harbour. Green, Gull, Esquimaux, Fright, and Quin Islands, with their Reefs and the Channels between them. Quin Channel	160
70. Esquimaux Harbour	162
71. Niapisca Island. Quarry Island and Cove. Quarry Channel. Large Island. Middle Reef. Birch Islands. Mingan Island. The Perroquets	164
72. Mingan Channel between the Islands and the Main. Mingan Harbour. Long Point to St. John River	167

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SAILING DIRECTIONS
FOR THE
GULF AND RIVER ST. LAWRENCE.

PART I.

**THE BEARINGS ARE MAGNETIC—THE MILES ARE
60 TO A DEGREE—AND THE CABLES ARE 100
FATHOMS.**

CHAPTER I.

GENERAL REMARKS.

1. Former Charts of the St. Lawrence.—2. Massey's Sounding Machine.—
3. Variation.—4. Deviation.—5. Magnetic Action of the Shore.—
6. Ice.—7. Fogs.—8. Winds and Weather.—9. The Marino Barometer.

1. THE navigation of the Gulf and River of St. Lawrence has *Former Charts.* always been supposed to be attended with a considerable degree of difficulty and danger, and the numerous accidents which are constantly occurring to vessels there seem to show that the opinion is well founded. The want of soundings, in many parts, near the shores; the irregularity of the tides and currents; the severity of the climate, especially towards the close of the navigable season; and, above all, the frequent fogs, are difficulties which may well cause much anxiety in the mind of the seaman, and which call for the exercise of all his vigilance, prudence, and ability. Nevertheless, a very large proportion of the losses which annually take place, may, I think, be attributed to other than these natural and irremediable causes. Erroneous charts, a want of knowledge of the direction and strength of the tides and currents, and a false variation of the compass, are, although not the only, certainly the most frequent causes of shipwreck in the St. Lawrence. It is hoped that these last will be removed by the survey, which has been made by order of the Lords Commissioners of the Admiralty, and by these directions and remarks, written also by their command, in order to accompany that survey.

Des Barres' Charts.

Of the various charts of the St. Lawrence which have hitherto been in use, those of Major Holland, re-published by Des Barres in 1778, are the least inaccurate, yet the least in general use. The others appear to be taken from them, with alterations, which seem to rest on no better foundation than the fancy of the chart-makers, who, in their compilations from materials generally inaccurate, appear to have considered the latest as necessarily the best information. The effect of this has been the retention of old errors and the addition of new ones, for it so happens that the most recent charts of the St. Lawrence at present in use, are the most erroneous of any. In Des Barres' charts, although thus mentioned as the best, the errors and omissions are numerous and important. The soundings are generally incorrect, frequently so much so as to be directly contrary to the truth; for he occasionally shows a moderate depth of water, where there should be 100 fathoms or more, and in other places a great depth where there is bottom to be found with the hand lead. Commanders of ships having found that they could not trust to the soundings in these, and the other charts, have considered it of no use to sound, from which many fatal accidents have occurred within my own knowledge.

Massey's Sounding Machine.

2. In the Admiralty charts will be found accurate soundings, taken with Massey's patent sounding machine, which gives the exact perpendicular depth independent of the effect of currents or drift of the vessel. I strongly recommend the use of this excellent instrument, with which every vessel, in my opinion, ought to be furnished. It is not expensive, and will last with care for a long period of time: correct soundings may be obtained with it in 30 fathoms of water without heaving to, if the vessel be not sailing at a rate exceeding 7 knots; and no vessel ought to be permitted to run faster, in a thick fog, or dark night, when in the vicinity of land, or other danger. Furnished with this instrument, or, instead of it, with Burt's buoy and nipper, and with correct charts, a vessel may be run in safety up the St. Lawrence as high as Green Island. In short, there as elsewhere, correct soundings are the best of all guides to the navigator.*

* There is no difficulty in the use of Massey's patent sounding machine, and it is sold accompanied with directions for setting, reading its indications, &c. The common deep sea lead line is not strong enough to bear the strain of the lead and attached machine. When the vessel is going fast through

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3. The variation, given in Des Barres' charts, was probably *Erroneous Variation.* correct for the time when the charts were made; and though greatly changed since, has been copied nevertheless into most of the charts in general use. For instance, in some of those charts the variation at Anticosti is given as 17° west, too little by three-quarters of a point. The effect of this upon the run of a vessel from the entrance of the Gulf to Anticosti, or from the latter to Point de Monts, will be obvious to any seaman, and has doubtless occasionally been one cause of shipwreck.

4. There is another source of error, independent of charts *Deviation, or Local Attraction.* altogether, which it is astonishing to find obtaining so little attention, particularly in the merchant service, considering how much has been written concerning it of late years. I allude to the deviation, or local attraction of the needle. This subject may be seen fully treated in Mr. Barlow's treatise on magnetic attraction; and Scoresby in his works on the arctic regions, and on the Greenland whale fishery, gives many valuable and practical directions respecting the methods available under different circumstances, for finding its amount in various positions of the ship's head, and applying a correction accordingly to the course steered. The amount of error from this cause will be a point of the compass in most vessels, and, in particular circumstances, may become twice that quantity in those latitudes.

5. An opinion is prevalent that the compasses of vessels are *Magnetic action of the shore.* disturbed in the Gulf and River St. Lawrence, and such disturbance has been attributed to the magnetic ores of iron in the hills, particularly those of the north coast. The magnetic oxide of iron does exist abundantly, and attracts the needle very powerfully at some points, particularly along the coast from the Bay of Seven Islands eastward. Among the Mingan Islands, we found

the water, a superior line should be employed for the purpose. When sailing at a rate not exceeding 5 knots, bottom may be struck in 50 fathoms of water, and when going slower, at still greater depths; but the hollow cylinder of the wings will seldom bear the pressure, at depths much exceeding 100 fathoms. The deep sea lead line, with the machine attached, should be passed forward, from the weather quarter of the vessel, outside all, to the weather cathead, or bowsprit end. If going slow, it may be dropped, very conveniently, from the weather gangway, abast the fore rigging, taking care, in all cases, to drop it perpendicularly into the sea, and not to throw, or swing it, as is sometimes carelessly done. An iron staunchion, to ship and unship, on either quarter as required, with a small snatch-block attached, to pass the line through, will enable 4 or 5 hands to walk the lead line in with ease and expedition. Mr. Massey has recently much improved this machine.

*Magnetic
action of the
shore.*

the variation to vary from this cause from 19° to 31° west. A Port Neuf, and on Manicouagon Point, the needle was also disturbed. But these effects were only noticed when the instrument was placed on the shore. In two instances only, when sailing within two miles of the shore, have we observed any effect of the kind upon the compasses on board the *Gulnare*,* and then only to the amount of a few degrees.

*No effect at a
distance.*

When running from place to place, at greater distances from the coast, nothing of the kind has been noticed; so that I feel sure, that in nine cases out of ten where this source of erroneous reckoning has been alleged as the cause of accidents to vessels, they originated either in errors of the chart, or in the local attraction on board the vessels themselves.

Ice.

6. Among the difficulties of the navigation may be mentioned the ice. In spring the entrance and eastern parts of the Gulf are frequently covered with it, and vessels are sometimes beset for many days. Being unfitted for contending with this danger, they often suffer from it, and are occasionally lost; but serious accidents from this cause do not frequently occur, because the ice is generally in a melting state from the powerful effect of the sun in spring. In the fall of the year accidents from ice seldom occur, except when the winter commences suddenly, or when vessels linger imprudently late from the temptation of obtaining high freights.

Fogs.

7. But all danger from ice is far less than that which arises from the prevalence of fogs: they may occur at any time during the open or navigable season, but are most frequent in the early part of summer; they are rare, and never of long continuance during westerly winds, but seldom fail to accompany an easterly wind of any strength or duration. The above general observation is subject, however, to restriction, according to locality, or season. Thus winds between the south and west, which are usually clear weather winds above Anticosti, are frequently accompanied with fog in the eastern parts of the Gulf. Winds between the south and east are almost always accompanied with rain and fog in every part. E. N. E. winds above Point de Monts, are often E. S. E. or S. E. winds in the Gulf, changed in direction by the high lands of the south coast, and have therefore in general the same foggy character. I speak of

* The schooner in which the survey has been carried on.

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winds of considerable strength and duration, and which probably extend over great distances. Moderate and partial fine weather winds may occur without fog at any season, and in any locality. In the early part of the navigable season, especially in the months of April and May, clear weather, N. E. winds are of frequent occurrence, and they also sometimes occur at other seasons, in every part of the Gulf and River St. Lawrence.

The fogs sometimes last several days in succession, and to a *Lasting Fogs*. vessel either running up or beating down, during their continuance, there is no safe guide but the constant use of the deep sea lead, with a chart containing correct soundings.

The fogs, which accompany easterly gales, extend high up into the atmosphere, and cannot be looked over from any part of the rigging of a ship. They, however, are not so thick as those which occur in calms after a strong wind, and which are frequently so dense as to conceal a vessel within hail; whilst the former often, but not always, admit the land, or other objects, to be distinguished at the distance of half a mile, or more, in the day time.

The dense fogs, which occur in calms, or even in very light *Low Fogs*. winds, often extend only to small elevations above the sea; so that it sometimes happens, that when objects are hidden at the distance of 50 yards from the deck, they can be plainly seen by a person 50 or 60 feet up the rigging. In the months of October and November the fogs and rain, that accompany easterly gales, are replaced by thick snow, which causes equal embarrassment to the navigator.

8. The prevailing winds, during the navigable season, are *Prevailing Winds*. either directly up or directly down the estuary, following the course of the chains of high lands on either side of the great valley of the St. Lawrence. Thus a S. E. wind in the gulf becomes E. S. E. between Anticosti and the south coast, E. N. E. above Point de Monts, and N. E. above Green Island. The westerly winds do not appear to be so much guided in direction by the high lands, excepting along the south coast, where we have observed a W. S. W. wind at the Island of Bic become west, W. N. W., and N. W., as we ran down along the high and curved south coast, until it became a N. N. W. wind at Cape Gaspé. These winds frequently blow strong for 3 or 4 days in succession; the westerly winds being almost always accompanied with fine, dry, clear, and sunny weather; the easterly winds as frequently

Course of the Winds.

the contrary, cold, wet, and foggy. In the spring, the easterly winds most prevail, frequently blowing for several weeks in succession. As the summer advances, the westerly winds become more frequent, and the S. W. wind may be said to be the prevailing wind in summer in all parts of the River and Gulf. Light south winds take place occasionally; but north winds are not common in summer, although they sometimes occur. Steady N. W. winds do not blow frequently before September, excepting for a few hours at a time, when they generally succeed easterly winds which have died away to a calm, forming the commencement of strong winds, and usually veering to the S. W. The N. W. wind is dry, with bright clear sky, flying clouds, and showers. After the autumnal equinox, winds to the northward of west become more common, and are then often strong steady winds of considerable duration. In the months of October and November the N. W. wind frequently blows with great violence in heavy squalls, with passing showers of hail and snow, and attended with sharp frost.

Thunder Storms.

Thunder storms are not uncommon in July and August: they seldom last above an hour or two; but the wind proceeding from them is in general violent and sudden, particularly when near the mountainous part of the coast; sail should, therefore, be fully and quickly reduced on their approach.

Gradual change of the Winds.

Strong winds seldom veer quickly from one quarter of the compass to another directly or nearly contrary: in general they die away by degrees to a calm, and are succeeded by a wind in the opposite direction. I do not mean, however, by this observation, that they may not veer to the amount of several points. N. W. winds seldom or never veer round by north and N. E. to east and S. E; but they do frequently, by degrees, to the S. W., after becoming moderate. S. W. winds seldom veer by the N. W. and north to the eastward, but sometimes by the south to S. E. and east. Easterly winds generally decrease to a calm, and are succeeded by a wind from the opposite direction.

In the fine weather westerly winds of summer, a fresh top-gallant breeze, will often decrease to a light breeze or calm at night, and spring up again from the same quarter on the following morning: under these circumstances only may a land breeze off the north coast be looked for. I have observed the same off the south coast also, but not so decidedly or extending so

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far off shore. I have occasionally carried the north land wind nearly over to the south coast just before daylight, but have never observed the south land wind extend more than 5 or 6 miles off, and that very rarely. Under the same circumstances, that is with a fine weather westerly wind going down with the sun, a S. W. land breeze will frequently be found blowing off the north coast of Anticosti at night and during the early part of the morning. If, however, the weather be not settled fair, and the wind does not fall with the sun, it will usually prove worse than useless to run a vessel close in shore at night in the hope of a breeze off the land. Such is the usual course of the winds in common seasons, in which a very heavy gale of wind will probably not be experienced from May to October, although close-reefed topsail breezes are usually common enough. Occasionally, however, there are years, the character of which is decidedly stormy. Gales of winds, of considerable strength, then follow each other in quick succession and from opposite quarters.

9. The marine barometer, which is at all times of great use to the navigator, becomes particularly so in such seasons; and the following remarks upon its general indications, when taken in connexion with the usual course of the winds and weather in the St. Lawrence, may, therefore, be useful. The barometer has a range from 29 to 30·5 inches in the Gulf and River of St. Lawrence during the navigable season, and its changes accompany those of the winds and weather with a considerable degree of constancy. The fluctuations of the barometric column are much greater and more frequent there than in lower latitudes; and sudden alterations, which in other climates would be alarming, may occur there without being followed by any corresponding change either in the wind or weather. But the navigator should not be inattentive to those minor changes, as a constant attention to the instrument can alone enable him to appreciate those decisive indications of the mercury which seldom or never prove deceptive. The following remarks will apply to those well-marked changes which usually indicate the approach of a gale of considerable strength, or of a shift of wind and weather; the correct anticipation of which is often of the utmost consequence to the safety of a vessel, as well as to the length of her voyage. When, after a continuance of westerly winds and fine weather, the barometer has risen nearly to its greatest height,

*Marine Barometer.**Indications of Easterly Winds,*

say some tenths above 30 inches, or begins to fall a little, an easterly wind may be soon expected. If to this notice given by the barometer be added a warm hazy atmosphere during the day, and a heavy precipitation of dew at night, with very bright twinkling stars, or a coloured aurora borealis, the approach of an east wind is almost certain. If land be in sight at such a time, and appears much distorted by terrestrial refraction, or if vessels in sight have the relative proportions of their hull and sails changed by the *mirage*, or present double or treble images, such appearances will render the before probable indications of the barometer certain. At the commencement the easterly wind will probably be light with fine clear weather, but this will not last above a few hours if the barometer continues to fall; on the contrary, the wind will gradually increase, and as it does so the sky will become overcast by degrees until it is completely clouded. Rain and fog will follow, and continue during the continuance of the easterly wind with little intermission, until they are dissipated by a fresh breeze from the contrary quarter.

and of N. W. Winds.

If the fall of the barometer, during the continuance of the easterly wind, be very slow, the gale will probably continue, and not be very violent: if rapid, it will probably be of short duration, and of greater strength: at any rate, when the mercury falls towards 29 inches, a change is certainly at hand, and the gale will in general come from the N. W. The strength of this succeeding gale will be in proportion to the fall of the barometer, and to the strength of the easterly gale which preceded it. In such a case, there is seldom many hours interval between the one gale and the other. The east wind generally dies away to calm, and in a very few hours, or sometimes in much less time, the N. W. gale springs up. A heavy cross sea remains for some time from the previous gale. The barometer sometimes begins to rise in the interval of calm which precedes the N. W. gale, at others at its commencement: the fog and rain cease, and the weather becomes quite clear, generally in a few hours, and sometimes almost immediately. The strength of the westerly gale is usually greatest soon after its commencement, and diminishes as the barometer rises, veering gradually to the west and S. W. It is worthy of remark, that the circumstances just mentioned are exactly the reverse of those attending the easterly gale. The latter usually commences with clear weather and a high barometer, light at first

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from the south or S. E., and gradually increasing as it veers to *Marine Barometer.* the eastward, with a falling barometer. To return to the westerly gale.—If, after it has veered to S. W. and become moderate, the barometer remains steady at a moderate height, fine weather may be expected. If it remains at a considerable height, but still fluctuating and unsteady, within certain limits, variable, but not heavy winds, and variable weather may be expected. If, on the contrary, it rises quickly to a great height, a repetition of the easterly gale will not be improbable. We have experienced seasons in which the barometer may be said to have been no sooner blown up by one wind, than it has been blown down by another, and this stormy alternation to have continued for several months, whilst in others we have scarcely had a double-reefed top sail breeze during the whole summer.

There is in fact so great a difference in the phenomena of the weather in different seasons, that it becomes very difficult to write anything respecting it, that shall not be liable to many exceptions. There are, however, some strongly marked cases of connexion, between the indications of the barometer and changes of the winds and weather, which, within our experience of eight or nine years, have been subject to few, I might almost say no, exceptions. The first of these cases is that most common one, which I have endeavoured to describe, of an easterly gale, with a falling barometer, being always wet and foggy, and succeeded by a strong wind from the opposite quarter with a rising barometer. A second case, not of so frequent occurrence in common seasons, excepting in spring or early in summer, is the easterly wind with a rising barometer; which, although it may not be at first for a few hours, will almost always become fine and clear, and end in fine weather. A third case may be considered certain: if the barometer fall suddenly and greatly, at any time, a northerly, and most probably a N. W. gale, of great strength, may be confidently expected. It does not follow that it will be immediate, for it may be preceded by a strong gale from S. W., for a few hours, during which the barometer will seldom rise, and even, probably, continue to fall, but when the S. W. gale dies away, the northerly, or N. W. will soon succeed, with a rising barometer.

In conclusion, I may remark that as, on the one hand, a considerable fall of the barometer may occur, without being followed by a strong wind; so, on the other, a breeze of considerable

Certainty of its indications.

Marine Barometer.

strength may come on without any indication from the barometer: but not anything that deserves the name of a gale. There has never, within our experience, occurred a gale, so heavy as to be of serious consequence to a good vessel, the approach of which has not been indicated by the barometer. But it must be remembered that a high barometer, in this climate, and under the circumstances which I have mentioned, is often indicative of an easterly gale. It is remarkable that, in the gulf and estuary of the St. Lawrence, a high barometer may be considered as the forerunner of wet and foggy weather, which usually accompanies its fall: whilst a low barometer renders it equally probable that dry weather will ensue, since it often accompanies its rise. I am fully of opinion, that the marine barometer is of the greatest assistance in the navigation of the Gulf and River St. Lawrence, and that by attending constantly to its state and changes, with reference to the winds and weather which preceded them, combined with the indications afforded by the appearance of the sky, &c., those changes of the wind and weather, which are about to take place, may be anticipated with a degree of certainty sufficient, in most cases, to enable us to avoid being caught on a lee-shore, or in an unsafe anchorage, as well as to regulate our course in a voyage, in anticipation of the coming change.

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CHAPTER II.

GENERAL REMARKS RESPECTING THE CURRENTS AND TIDAL
STREAMS IN THE ST. LAWRENCE.

10. Prevailing Currents.—11. Currents at the Entrance of the Gulf.—12. Current in through the Strait of Belle Isle.—13. Its Course after entering the Gulf.—14. Main Current of the River.—15. Its Course and Rate.—16. Round Point de Monts.—17. Along the South Coast.—18. Remarks on the Tides of the North Coast, eastward of Point de Monts.

10. THE time of high water on the full and change days of the moon, and the rise in spring and neap tides at different places, will be found in the Table at the end of this book. Local peculiarities will be mentioned in their proper places. At present I shall chiefly confine myself to a general description of those great currents, and tidal streams, which, although they may be subject to occasional interruption and modification, seem, nevertheless, to depend on constantly existing causes. These currents extend over very large spaces, though varying according to locality and other circumstances, and they are altogether so important a feature in the navigation, that some general knowledge respecting them is indispensable both to the safety and expedition of vessels in the gulf and estuary of the St. Lawrence.

11. It is a generally received opinion that a current sets constantly to the south-eastward out of the Gulf of St. Lawrence, between Newfoundland and Cape Breton Islands, and also that it is frequently deflected to the southward, towards the shores of the island last named, by another current from the northward, which is said to enter the Gulf by the Strait of Belle Isle.

I have myself observed that a current sets out, between Cape Ray and St. Paul Island, during westerly winds and in calm weather; but it is checked by easterly winds, and I believe that it may sometimes run in a contrary direction from the same cause. Northerly winds, and perhaps also the above-named current from the northward, may cause the stream to set to the southward towards Cape Breton Island. But the truth is, that winds, both present and at a distance, possess so powerful and irregular an

*Prevailing
Currents.*

*Currents at the
entrance of the
Gulf.*

*S. E. Current
from the Gulf.*

Currents at the entrance of the Gulf.

Current in through Belle Isle Strait.

Sometimes it sets out.

Course of above Current up the Gulf.

action upon the set and strength of the currents and tides in this entrance of the Gulf, that I can say nothing certain or definite respecting them.

12. The reality of a current inwards through the Strait of Belle Isle, is confirmed by the presence of icebergs, which it transports into the gulf every summer, against the prevailing S. W. winds; frequently carrying them as far as Mecatina, and sometimes even to the neighbourhood of the east point of Anticosti. It is probable that this is a branch of the great current from Davis Strait, which is known to run along the coast of Labrador, and to transport numerous ice-bergs far to the southward every year. This current will be mentioned again under the head of the Strait of Belle Isle. Its strength is very much increased by a prevalence of N. E. winds: at such times it runs at the rate of 2 knots, through the strait, and for 30 to 40 miles further to the westward; diminishing gradually in force as it spreads out in the wider parts of the Gulf. Usually, however, its rate is much less. At times, when S. W. winds prevail, it becomes very weak; and it has even been reported to me, that a current has been observed setting out of the Gulf, in a contrary direction, to the N. E., for days together, but this was never observed by us during either of the three seasons which we passed there. There is, however, no doubt that this current is extremely irregular, as might be expected at the narrow outlet of a great inland sea, where winds, both within and without, must of necessity possess great influence.

13. After entering the Gulf, it runs along the north, or Labrador coast, at the distance of 2 or 3 miles from the outer islands; leaving a narrow space inshore, in which the streams of the tides, when uninfluenced by winds, are tolerably regular. Passing outside of Mistanoque, the islands of Grand Mecatina, and the South Maker's Ledge, it pursues a direction given to it by the trending of the coast, till it is turned gradually to the southward, by the weak current which is often found coming from the westward between Anticosti and the north coast, during westerly winds, and which is set off to the southward from Natashquan Point. The united streams continue their southern course at a rate diminishing as they become more widely spread, and which seldom exceeds half a knot: and, finally, joining the main downward current out of the St. Lawrence, of which an account will be given immediately,

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they all pursue a S. E. direction towards the main entrance of the Gulf, between Cape Ray and the Island of St. Paul. It is this current, from the northward, which is felt by vessels crossing from off the Bird Rocks towards Anticosti: and which, together with neglecting to allow for the local attraction of the compass, has been the principal cause of masters of vessels so often finding themselves, unexpectedly, on the south coast. Many shipwrecks have arisen from this cause near Cape Rosier, Gaspé, Mal Bay, &c.

Both these currents, viz., that from the northward, and the main downward current of the St. Lawrence, are modified by the tides, but in a way directly contrary: for the northern current, in through the Strait of Belle Isle, is accelerated by the flood, and checked by the ebb; whilst the other is accelerated by the ebb, and checked by the flood tide. These modifying causes, namely, the tides and winds, give rise to various combinations, and consequent irregularities, in the direction and strength of these streams, which it is extremely difficult at all times to estimate and allow for correctly.

14. The current along the south coast appears to be superficial: at least we found it so in the lower parts of the estuary, where observations upon the specific gravity of the water on the surface, and taken up from different depths, proved to us that the water of the St. Lawrence and its numerous tributary streams was widely diffused over the Estuary.* It has also been observed

* I give the following out of a number of observations, made by Dr. Kelly on board the *Gulnare*, not alone with reference to the nature of the current, but as also showing, that a very moderate degree of agitation of the water is sufficient at times to mingle the warmer surface water with the colder substrata, which always exist at a few fathoms of depth, and thus, by a reduction of temperature of the surface, produce, if the state of the air and dew point be favourable, one of those low fogs, which can often be seen over from the mast-head.

On the 8th July, 1831, we crossed from near Matan, on the south coast, to St. Nicholas Harbour, on the north, with a light S. W. wind and fine weather, and during the flood tide; when near the middle of the Estuary, we had 132 fathoms over a bottom of blue mud. The temperature of the air 64° Fahrenheit.

Dew Point by Daniel's Hygrometer 58°	Specific gravity (examined at 50° Fahr.)
Water at the surface 60°	1.0180
„ 30 fathoms 35°	1.0260
„ 50 fathoms 34°	1.0265

A fresh breeze from the westward commenced in the evening, and con-

Main Current of the River. that the current is strongest in spring, soon after the opening of the navigation, when the rivers are swelled by the recently dissolved snows of the winter. But, although, generally speaking,

Temperature of the river. continued all night, which reduced the temperature of the surface water to 39° by 9 A.M., on the morning of the 9th, when the temperature of the air was 62° with a dense fog, the wind having died away to a light breeze, The fog was seen ever from the rigging 40 or 50 feet above the sea. At noon it was calm, and the temperature of the surface had risen to 57°, and the fog in consequence had nearly, but not entirely disappeared.

On the 9th July, 1831, at noon, we were becalmed 2 or 3 miles to the southward of Point de Monts, and carried to the S. S. E., at the rate of 1½ knots, by the current. It was nearly high water by the shore, and, consequently, about an hour and a half before the time when the stream of flood ceases.

			Specific gravity (examined at 50° Fahr.)
The temperature of the air	. . . . .	62°	
„ Dew Point	. . . . .	61°	
„ water at the surface	. . . . .	57°	1·0172
„ „ ½ a fathom	. . . . .	44°	By Six's
„ „ 5 fathoms	. . . . .	40°	Register
„ „ 10 fathoms	. . . . .	38°	Therm.
„ „ 100 fathoms	. . . . .	35°	1·0275

During the night we had a very strong breeze, which, by the morning of the 10th, had reduced the temperature of the surface water to 37°, and the air to 44°.

On the 19th June 1832. Point de Monts, N. 61° E. distant 7 miles. Time of tide, half ebb. Wind light, from the westward. Rate of current, 2 knots to the S. S. E.

			Specific gravity (Examined at 50° Fahr.)
The temperature of the air	. . . . .	49°	
„ Dew Point	. . . . .	44°	
„ water at the surface	. . . . .	44°	1·0189
„ „ 10 fathoms	. . . . .	37½°	1·0232
„ „ 20 fathoms	. . . . .	39°	1·0246
„ „ 47 fathoms	. . . . .	33°	1·0262
„ „ 104 fathoms	. . . . .	36°	1·0275

On this last occasion, the line and attached machine remained perpendicular, from which we inferred that the whole body of water moved down the Estuary in the ebb tide. At the time of the preceding observations the line remained perpendicular only as long as the machine was not lowered down beyond 3 fathoms from the surface. At 5 fathoms the line drew strongly out to the N. N. W., and still more strongly when the machine was lowered to greater depths. Hence it appeared, that in the flood tide, only a thin superstratum of comparatively light and warm water moves down, and that the colder and heavier water beneath is either stationary, or moving up the Estuary.

It also appears from the preceding, and many other similar observations, that in fine weather, the comparatively warm and fresh water of the St. Lawrence, and its numerous tributary streams, floats on the surface, but that when the waters are agitated, by any cause, it becomes mingled with the constantly cold water beneath. The temperature of the surface, therefore, depends less upon the warmth than upon the strength of the winds.

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there seems no doubt that this current is the tribute of the St. Lawrence on its way to the ocean; yet, in the upper part of the estuary it is not alone, and at all times, caused by the discharge of the St. Lawrence, but depends also upon peculiarities in the set of the tides. Thus, when our observations had confirmed the truth of the report, that the current always ran down on the south side of the Estuary from a few miles below Red Island towards the Island of Bic, we could not at first account for the fact; for it appeared impossible that this could be the comparatively fresh water of the St. Lawrence flowing on the surface towards the sea, when we knew that the whole body of water a few miles above, from shore to shore, on either side of Hare Island, and also in the Saguenay River, was running up during the flood tide. Attention, and numerous observations, together with an examination of the temperature and specific gravity of the water, informed us that this was an eddy flood, which is thus explained.

The flood tide ascends in a wide channel more than 100 fathoms deep: when it arrives at the comparatively narrow pass formed by Green Island, Red Islet Reef, and the extensive shoals off the entrance of the Saguenay River, it is obstructed thereby, as well as by the shoalness of the channel to the southward of Hare Island. There is not room for so great a volume of water to pass, and part of it is in consequence turned back, and forms an eddy flood, setting from below Red Islet Reef, towards the Razade Islets, as shown by the arrows in the chart. During the ebb tide, the stream of the Saguenay sets over to the southward in the same direction, hence the current on that side is always down.*

* Since the eddy flood above mentioned exercises a considerable influence over the climate near the shore off which it runs (its course being from the Red Islet Reef passing near the Razade Islets to the Island of Bic); and also, occasions those dense and low fogs, and peculiar forms of mirage, or terrestrial refraction, which depend upon a temperature of the surface water lower than that of the air, or its dew point; it may not be altogether devoid of interest to give a few additional remarks concerning it.

Of the fact of its being really the stream of flood, although running down the Estuary, we had ample opportunity of convincing ourselves; especially during the nine or ten days we were employed in sounding within the limits above mentioned; and during which we made many observations with the object of ascertaining the set, strength, and course of this peculiar stream. I select the remarks made on the 19th July, 1831, as being alone nearly sufficient to establish the fact of this part of the general downward stream, or current, being the flood tide. The Gulnare was then at anchor, in 10 fathoms, about 1 mile N.E. of the eastern Razade Islet. In the

*Main Current
of the River.*

*The Eddy Flood
unites with the
downward
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*Low Fogs pro-
duced by this
eddy flood.*

*Proofs of its
being the eddy
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Eddy Flood.

There is no upward stream of the tide (excepting so close in-shore as to be useless to ships) all along the south coast from

last quarter ebb the stream ceased, being prevented from coming to us by the shoals, which are dry at low water, between Green and Basque Islands, and the main, but it still continued to run strongly down a short distance outside of our anchorage.

There was no stream at the vessel until it was past a quarter flood by the shore, when the downward stream commenced and continued during the remainder of the flood at a greater rate than during the preceding or following ebbs. Soon after high water by the shore the downward stream again ceased for a short time, after which the first of the ebb came off the shoals, and then turned down the estuary as before. Now it appears that the eddy flood did not reach us till the end of the first quarter flood by the shore, because time was necessary for the tide to ascend the deep and unobstructed channel to the northward, and to rise and accumulate at the obstructed part of the channel above us, before it was compelled in part to retrograde, and descend to us through a distance of 16 or 17 miles. It ceased again soon after high water, because the stream of flood had ceased above, there being only a few minutes' difference in the times of high water at the two places.

A ship becalmed below the Red Islet Reef was brought down to us by the eddy flood, and drifted past about half a mile outside of us. And, on another occasion, during the flood tide, when we sailed from near Red Islet to off Bicquette, passing within 2 or 3 miles of the Razades, we were carried a-head of our reckoning at the average rate of $2\frac{1}{2}$ knots per hour. When beating again, a westerly wind, on many occasions, between the Island of Bic and the Razades, we never could gain ground to windward, excepting during the last quarter of the ebb and the first of the flood tide.

The specific gravity of the water of this stream during flood tide was found to be nearly as great as the surface water of the Gulf, and higher than that of the Estuary lower down; and it was also, like the latter, when taken from considerable depths, or when violently agitated by strong winds, extremely cold. Its temperature was usually between 38° and 45° , and was never found higher than 49° , Fahrenheit. We have seen it as low as 39° in every month from June to September inclusive, and that at times and under circumstances when the surface water of the Estuary in other parts was usually about 60° , and when the fresh water of the St. Lawrence above was at an equally high temperature. The great specific gravity and low temperature of this stream are incompatible with the popular supposition of its being, in this part, the lighter and fresher water of the St. Lawrence flowing on the surface towards the sea.

To the same cause which gives rise to the retrograde course of this stream of flood must also be attributed its superior specific gravity and low temperature. For as the great body of the flood tide, moving in the deep North Channel, meets with resistance at the shoals of the Saguenay and Red Islet, the cold water of the Estuary, which everywhere exists at a very moderate depth, is forced to the surface, and thus, together with the irregular bottom, gives rise to the violent whirls and ripples which abound in that vicinity. The thin superstratum of warmer water is thus mingled with, and lost, in the superior quantity of colder water from beneath, and a great reduction of temperature effected.

Cause of Newfoundland Eddy. May not the low temperature often found over shoals in the sea be attributed to a similar cause, and especially the lower temperature of the water

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Cape Gaspé to a few miles below Red Islet, in consequence of the union of this eddy flood with the main current of the river; and they have, therefore, so much influence on the navigation that I shall endeavour to trace their course more particularly.

15. Commencing from a short distance below the Red Islet Reef, the current is there very strong—about 4 knots. It decreases in velocity as it proceeds to the south-eastward, slanting over towards the Razade Islets; off which its rate is from 2 to 3 knots. It runs strongly along the northern edge of the Bank of Soundings off the south coast, upon which, especially in spring tides, a weak stream of flood will be found flowing in the opposite direction, and the boundary of the two streams is usually marked by a strong ripple. From Father Point to Cape Chatte, the rate of the downward current varies from a half to 2 knots, according to the tide, direction of the winds, and season of the year.

*Course and
Rate of the
Main Current,*

During the ebb tide the stream runs down on both sides, *during the Ebb,* stronger on the south than on the north coast, and weakest in the middle of the Estuary. It is deflected, or turned off to the southward, by the Points Mille-Vaches, Bersimis, Manicouagon, and Point de Monts, and by the ebbing streams of the large rivers between them: a circumstance which should be carefully attended to by vessels coming up with a northerly wind; as they will infallibly be set over to the southward upon a lee-shore, if they do not make the necessary allowance by keeping their wind well over to the northward.

During the flood tide this stream still continues to run down *during the Flood,* outside the Bank of Soundings off the south coast, although with diminished velocity, and is felt about half way over towards the north shore. In the middle of the Estuary there is usually sluck water; whilst along the north coast the stream of flood is regular in its recurrence, increasing in force as we ascend the Estuary. The strength of the stream of flood is greatest in-shore, and diminishes as we proceed over to the southward, till at the distance of about 3 leagues it becomes insensible. These differences in the strength and direction of the streams produce strong ripples in *produces Ripples.*

on the Bank of Newfoundland, as compared with the neighbouring sea? for the great current, which brings the icebergs down along the coast of Labrador from the northward, must meet with obstruction in its course to the southward from these Banks, and the cold water, in consequence, be forced to the surface; and, if this be so, we may probably find a reason for the prevalence of fogs upon these Banks.

Main Current, various parts of the Estuary, but their position varies with the different times of tide, and perhaps from other causes, so that they cannot safely be trusted for any guidance to the seaman.

round Point de Monts,

16. Round Point de Monts there is little or no stream of flood, excepting very close in-shore: the downward current is constant, or nearly so off that point; and it requires a fast-sailing vessel to beat round it against a westerly wind. Point de Monts turns this current over to the S. S. E., at a rate varying from 1 to 2 knots; so that a vessel, having a west wind, and standing over to the southward on the starboard tack, will be carried towards the south coast at a rapid rate, having the current on her weather quarter; during her board back to the northward, she will be retarded, the current being then directly opposed to her course. When sailing at the rate of 4 knots, it will usually require only about half the time to go from near Point de Monts over to the south coast, that it will take to return from the latter to the former. This is a most important circumstance, which it is necessary to carefully guard against, when beating up the Estuary in this part during dark nights, and, especially, in foggy weather.

below Point de Monts it crosses to the S. coast.

17. Below Point de Monts the current is no longer felt near the north coast, nor, indeed, anywhere to the northward of a line joining Point de Monts and Anticosti. It is confined to the neighbourhood of the south coast, which it follows in its curve to the southward, running strongly past Cape Gaspé, Flat Island, and Bonaventure Island; whence curving gradually to the south and S. E., it continues its course towards the entrance of the Gulf, with a rate very much lessened in consequence of the great space over which it is now spread. The usual breadth of this stream from Magdalen River to Cape Gaspé is 3 or 4 leagues; but this, I believe, is not uniform. When S. W. winds prevail, it appears that this current, or a branch of it, is driven over from the vicinity of Magdalen River towards Anticosti; part of the stream running round the west point of that island, sets across nearly towards Large Island, (one of the Mingans,) whence turning gradually down outside the Mingan and Esquimaux Islands, and along the north coast, it sweeps round the curve to the westward of Natashquan Point, and is turned off to the southward, as has been already mentioned, (art. 13). The other part sweeps round the large curve, or bay, between the west and S. W. points of Anticosti, and is turned off to the south-

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ward by the latter point, frequently causing a great ripple off it, *Main Current*, which has been mistaken for breakers on a much more extensive reef than exists there.

I have noted the rate of this current, off different parts of *its strength very variable.* the south coast between Capes Chatte and Gaspé, in the months of June, July, August, and September, and in different years, and scarcely ever found it the same. It varied between 1 and 2 knots in westerly winds. It was weaker, often nearly insensible, in easterly winds; and in one instance, off Mont Louis River in a calm which was followed by a strong breeze from the eastward, it could not be perceived.

18. Vessels beating up the St. Lawrence against westerly *Tides regular on N. coast, E. of Point de Monts.* winds usually experience little difficulty in making good way to windward, after having weathered the west point of Anticosti and arrived on the north coast; because there is seldom any current on that side, and the tides, although weak, are tolerably regular. It is in general very easy to beat from the Seven Islands to Point de Monts; for there the stream of flood is stronger than the ebb; the latter, as well as the current, being turned off to the southward by Point de Monts. There seems, at times, also to be an eddy current there, sweeping round the great bay or curve between the above-named points. It sets off from about Egg Islet to the S. S. W.; and is the probable cause why vessels, which shape a direct course for Point de Monts with a leading N. W. wind off the land at night, so often find themselves obliged to haul up for, or unable to fetch, the light.

Any further remarks respecting the tides and currents will be of a more local nature, and will, therefore, be best given where the particular places or parts of the coast are described. The object here was to give a condensed view of the principal streams which mainly affect a vessel in her voyage either up or down through the Gulf and Estuary; and in the following Chapter will be found their usual effects, and the allowances which should be consequently made.

CHAPTER III.

GENERAL DIRECTIONS FOR NAVIGATING THE GULF AND RIVER OF ST. LAWRENCE.

19. Vessels, entering the Gulf should endeavour to make the Island of St. Paul.—20. St. Paul Island to the Bird Rocks and Magdalen Islands.—21. Bird Rocks to the Island of Anticosti.—22. The Passage northward of Anticosti.—23. The Passage southward of Anticosti.—24. Anticosti to Point de Monts, with fair and with beating Winds.—25. Point de Monts to Bicquette Island, with easterly Winds and thick weather. An instance of the fatal consequences of neglecting the Deviation of the Compass. Pilots.—26. Point de Monts to Bicquette with southerly and with northerly Winds. Instances of the effects of the Currents and Tides.—27. Bicquette to Green Island Lighthouse.—28. Beating up the Estuary with westerly Winds.—29. Returning down the Estuary and Gulf.

Lawfall.

19. VESSELS bound to Canada, or to any of the ports in the Gulf of St. Lawrence, should endeavour to make the Island of St. Paul, which, being of considerable elevation and bold all round, may, with care and a good look out, be made at night, or even in fogs, unless the former be very dark or the latter very thick.

Island of St. Paul.

On this island a lighthouse is about to be erected which will be of the utmost assistance to mariners; it lies in the main entrance to the Gulf of St. Lawrence, between Cape Ray, at the S. W. extremity of Newfoundland, and Cape North, near the northern extremity of Cape Breton Island. From the south point of the Island of St. Paul, Cape North bears W. S. W. $\frac{1}{4}$ W. by compass,* distant 13 miles; and from the north point of the same island, Cape Ray bears E. by N., distant $41\frac{1}{2}$ miles. In approaching St. Paul from the S. E. with northerly winds, the current, which I have before mentioned as at times coming from the northward, and setting towards the shore of Cape Breton, should be guarded against. The south coast of New-

* In these Directions all bearings are magnetic, or given by compass, unless when the contrary is expressed. The latitudes and longitudes of the principal points, variation, &c., will be found in a table at the end of the book.

foundland, eastward of Cape Ray, is broken, rocky, and dangerous. The tides and currents, being influenced by the winds, are irregular; whilst all southerly and easterly winds, and often also south-westerly winds, bring a thick fog, which is most dense near the lee-shore. On these accounts, this coast should not be approached, excepting with a decided northerly wind and clear weather. (For description of St. Paul, see art. 30.)

Avoid S. coast of Newfoundland.

20. After having made St. Paul, vessels bound to Canada should endeavour, if the weather be clear, to make the Bird Rocks, the largest or south-eastermost of which bears from the north point of St. Paul N. N. W. $\frac{1}{4}$ W., 55 miles.

From St. Paul to the Bird Rocks.

There is a deep channel between St. Paul and the bank on which the Magdalens, Bryon Island, and the Bird Rocks are situated. This channel is 12 miles wide, and no soundings have been found in it with 60 fathoms of line. Twelve miles N. W. from St. Paul, on the S. E. extremity of the bank above mentioned, there are 50 fathoms of water over a bottom of fine sand; and $13\frac{1}{2}$ miles from the island, on the same line of bearing, there are 35 fathoms, the bottom being the same, with the occasional addition of gravel. From this point the water shoals gradually towards the Magdalens, distant 42 miles. Following the eastern edge of the bank to the northward, inclining gradually to the N. W., regular soundings extend from 28 to 35 fathoms over sand, stones, and broken shells; the latter depth being where the Great Bird Rock bears W. N. W.; and when the same rock bears W. S. W. $\frac{1}{4}$ W., distant $13\frac{1}{2}$ miles, there will be 50 fathoms over fine sand on the edge of the bank, off which there is no bottom with 70 fathoms of line. At the distance of 10 miles from the Rock, and on the same line of bearing, there are 43 fathoms; and at 6 miles 33 fathoms, shoaling gradually in to 24 fathoms, within a mile of the Rocks. This bank is an excellent guide up to the Bird Rocks at night, or in thick weather, which almost always accompanies easterly and southerly winds: but under such circumstances it will be safer to run along the northern edge of the bank, taking care not to come into less than 40 fathoms, than to attempt to make the Bird Rocks. When well past them by the reckoning, a course can be shaped up the Gulf.

Bird and Magdalen Islands' Bank.

In northerly winds the weather is usually clear; and, if the ship be far enough to windward, it will be advisable to stand to

St. Paul to the Magdalen Islands.

Magdalen Islands.

the westward and endeavour to make Entry Island, taking care to avoid Doyle Reef and the Sandy Spit off the east end of the Magdalens, by not approaching the islands in that part nearer than 20 fathoms. Under the lee of these islands a smooth sea will be found, sufficient guidance by the soundings, and good shelter and excellent anchorage in Pleasant Bay. (See Chap. IV. for a description of these islands.)

Another advantage of following this course arises from the circumstance that the N. W. winds very generally veer to the S. W., so that, if a vessel has passed to leeward of the Magdalens with the northerly or N. W. winds on the starboard tack, the succeeding S. W. wind will enable her to stand on the opposite tack towards Cape Gaspé.

From the north point of the Island of St. Paul to the east point of the Magdalens the course is N. W. $\frac{1}{4}$ W., distance 56 miles; and to Entry Island, N. W. by W. $\frac{3}{4}$ W., 63 miles.

Bird Rocks to Anticosti.

21. From the north Bird Rock the lighthouse on the S. W. point of the Island of Anticosti bears N. $46^{\circ} 13'$ W. true, or N. N. W. by compass, 134 miles; and the east point of Anticosti N. $14^{\circ} 46'$ W. true, or N. $\frac{3}{4}$ E. by compass, 80 miles.

Soundings between them.

After leaving the Bank of Soundings, northward of the Bird Rocks, the water is very deep all the way until near the shores of Anticosti, there being no bottom with 80 fathoms of line, nor probably at much greater depths. In making this part of the voyage up the Gulf, the frequent current from the northward, mentioned (art. 13) as having been one of the causes of shipwrecks in the neighbourhood of Capes Rozier and Gaspé, Mal Bay, &c., should be considered. Accidents, however, from this cause can never occur if the lead be used; for, upon consulting the chart, it will be seen that there are soundings to be obtained nearly all the way upon, and to the southward of, a line joining the Bird Rocks and Cape Gaspé, whilst a few miles to the northward of that line there is no bottom with 80 fathoms of line.

Revolving Light on S. W. Point of Anticosti.

With a fair wind the object should be to make the lighthouse or revolving light upon the S. W. point of Anticosti; and, with westerly winds, any part of the coast of that island which can be attained. When the lighthouse on Heath Point shall be lighted it will be easy to make the east end of the island at night, if the weather be clear; and, if the weather be thick, the Bank of Soundings, which extends off it 28 miles to the south-eastward,

Heath Point Light.

may seem to determine the vessel's position by the lead. At the distance from the island above named there are 62 fathoms of water, shoaling gradually in towards the island, as will be seen by the chart.

22. In the event of a vessel being near the eastern extremity of *Passage North of Anticosti*, and having succeeded in making the east point, or the light on Heath Point, with a S. W. wind, it will often be preferable to proceed to the northward of the island, where there is a good channel, rather than to tack and stand back to the southward and eastward. Under the lee of Anticosti she will, in this case, have a smooth sea, and often also clear weather, whilst there is a heavy swell and frequently a thick fog to windward of it. She will, moreover, avoid the current out of the St. Lawrence, which runs constantly with westerly winds between the south coast and Anticosti; and thus be able, at all times, to make way to the westward in moderate weather. At night, or in foggy weather, the Bank of Soundings off the north coast, and further westward the banks off the Mingan Islands, will safely guide her, even although the land should not be visible.

All the way from Natashquan Point to the River St. John, *Banks between Natashquan and St. John river.* westward of the Mingan Islands, there are banks of sand, gravel, broken shells, and bits of coral extending off the coast many miles. Off the Mingan Islands these banks extend halfway across to Anticosti. The depth of water upon them is very various: to the eastward, or below the Mingan Islands, it is *Irregular depths.* in general between 30 and 50 fathoms; but in some few places it exceeds the latter depth, whilst in others there is as little as 19 fathoms. Abreast the islands there is still less water occasionally; but to the southward of these banks, and between them and Anticosti, there is a very deep channel; in which, from opposite the east point to opposite the west cliff, the soundings exceed 100 fathoms. Proceeding westward, the soundings gradually decrease to 60 fathoms off the north point, where they become irregular for a few miles, varying from 50 to 70 fathoms, with occasional rocky bottom; and then deepen again, with mud bottom, further to the westward. In all this deep water channel, *Blue mud in the deep channel.* with the single exception which has been stated, the bottom is, for the most part, of blue mud. Such a remarkable difference in the nature of the bottom, as well as in the depth of water, renders it comparatively easy to take a ship through this channel at night

*Passage North
of Anticosti.*

or in foggy weather. But in order to effect this with safety the vessel should be furnished with Massey's patent sounding machine and lead, or other similar instrument, which must be freely used as she runs along the southern edge of the banks of sand, gravel, and shells, sheering occasionally to the southward into the deep water and muddy bottom, to make sure of not getting too far to the northward.

*Reefs off St.
Genevieve and
Hunting Is-
lands.*

The dangers of this channel may be said to commence with the reefs off St. Genevieve and Hunting Islands; on approaching which from the eastward, the chart should be carefully consulted, for they are very dangerous, and there are some deep water soundings, between 50 and 70 fathoms inside the outer banks, which might lead to a mistake if care were not taken to keep on the southern edge of the outer banks.

*Deceitful holes
in the Banks.*

These deep water soundings commence off the high peninsula Watcheeshoo, and extend, irregularly, being deep holes in the banks, to within a very short distance of Bowen Rocks off St. Genevieve Island. But the ship, if properly conducted, will be at least 3 leagues to the southward of the rocks off St. Genevieve; and as there are soundings, in a moderate depth of water, 5 or 6 miles from Collins Shoal, the outer danger off Hunting Island, and the channel, excluding the reefs, is there 23 miles wide, there seems no difficulty in this part which may not with common prudence be avoided. Proceeding westward, the channel contracts gradually to the narrowest part, which is between the reefs off the north point of Anticosti and off Mingan Island, where it is $13\frac{1}{2}$ miles wide. To pass this safely, at night or in foggy weather, it is necessary that the lead should be kept constantly going as the vessel runs along the southern edge of the bank off the Mingan Islands, and she should not be allowed to go to the northward into less than 30 fathoms of water.

Collins Shoal.

If the vessel should be met by a westerly wind, down the channel, it will be attended with clear weather, and the white cliffs of Anticosti, which extend from the east point westward to opposite St. Genevieve, will easily be seen. A vessel may stand in without fear to within a mile or two of this part of the coast, which, with the exception of the reefs off Fox Bay, is bold and free from danger. Further westward the coast is low and shelving, and reefs extend further off. In the board to the northward at night, the soundings on the bank will show when to tack.

Fox Reefs.

It has been remarked already (art. 17) that, in westerly winds, *Passage North of Anticosti.* there is a weak current down this channel, but it is not constant, and its rate seldom exceeds half a knot. Sometimes it is imperceptible during the flood tide, and runs even the other way on the approach of easterly winds. *Current down this channel.* Vessels, however, should be aware that on arriving off the north point of Anticosti with a west or S.W. wind, this current will almost always be found setting over to the N. E., being turned off into that direction by the west end of the island. Confined within a comparatively narrow channel, it is here stronger than elsewhere, running, in the ebb tide, about a knot, and in the flood tide, half a knot in the offing.*

23. Vessels meeting with a westerly wind in the south channel *Passage South of Anticosti.* should stand over towards the Island of Anticosti, and make boards, off and on, of 3 or 4 leagues, to avoid the current out of the St. Lawrence. In beating between Cormorant Point and South Point, off which there is a dangerous reef, keep the lighthouse on Heath Point open of Cormorant Point. In standing in shore at night to the eastward of the S. W. point, do not bring the revolving light to bear to the westward of N. N. W., or when standing into the westward of it, to the southward of S. S. E. $\frac{1}{2}$ E. Further particulars respecting the navigation along the shores of Anticosti will be found in the next Chapter.

In moderate weather a vessel will generally gain ground to windward all along the south coast of the island, but care should be taken to avoid being becalmed, near the shore, between the S. W. and west points, where both the swell and current set in shore, and where the bottom being of clean flat limestone, an anchor will not hold. It is by no means uncommon off this part of the coast, for the fine weather N. N. W. breeze of summer to die away suddenly to a calm, so that a vessel beating here, should stand off shore on the first appearance of a decrease of wind. In the month of August of two following years, I was nearly driven on shore, under St. Mary Cliffs, by a sudden calm. The sea was at first perfectly smooth, but a heavy swell from the south-westward soon commenced, and continued for 3 or 4 hours before the breeze which caused it made its appearance. *Danger of a calm in this channel.*

*Remarks on the tides in-shore, and on the dangers in this channel, will be found in the following Chapter under the head of Anticosti, and also in Chapter VII., which will describe the north coast of the Gulf from Nantashquan to Mingan Island.

*Passage South
of Anticosti.*

From the S. W. point of Anticosti to Cape Henry (Ellis Bay) the bearing is N. $52^{\circ} \frac{1}{2}$ W. true, or N. N. W. $\frac{1}{2}$ W. by compass, and the distance 39 miles; and 8 miles further, nearly in the same direction, brings us to the west point of the island.

Having made South-west Point, and being 4 or 5 miles off it, with a fair wind, a course should be steered along the coast, so as to pass 8 or 10 miles to the southward and westward of Cape Henry and West Point. N. W. $\frac{1}{2}$ N. will be a safe course at night or in thick weather, when the lead should be hove every half hour. With this precaution there is no danger of being set too near the coast, since there are soundings in less than 40 fathoms, at a distance varying from 5 to 3 miles off shore all the way from the S. W. point to the west end of the island.

*Anticosti to
Point de Monts.*

24. From the west point of Anticosti, the south extremity of Point de Monts bears S. $73^{\circ} \frac{1}{2}$ W. true, or W. $\frac{1}{2}$ N. by compass, distant 116 miles.

*Soundings be-
tween Seven
Islands and
Anticosti.*

An inspection of the chart will show that there are soundings in various depths, between 50 and 100 fathoms, from the western end of Anticosti to nearly opposite the Seven Islands, whilst to the southward there is no bottom at a much greater depth. These may be of use in discovering the situation of a vessel when light winds and fogs prevail for several days in succession, and the land in consequence has not been seen.

*Course to Point
de Monts.*

When the vessel has arrived off the west point of Anticosti, with a fair wind still continuing, a course should be steered well to the northward, especially with northerly winds, say for about Egg Island. She will thus avoid the strength of the current, and the possibility of being set over too near the south shore by its acting on her starboard-bow. When she has run about half way across she should haul more to the southward, so as to insure clearing Point de Monts.

*Making the
Light at Point
de Monts.*

If the weather be clear, there will be no difficulty in making the lighthouse on Point de Monts,* and the fixed light at night can be seen, under favourable circumstances, 7 or 8 leagues

* Point de Monts received its name from the Sieur de Monts, a celebrated French commander, who was there in the beginning of the 17th century. Point *des* Monts is an inaccuracy, and Bald Mountain Point is absurd, as there is no mountain near the Point.

Cape *Chat* should be Cape de Chatte, so called from the commander who preceded the Sieur de Monts; and the Cape *Misho* of the old charts should be Cape Michaux.

from the fore-yard of a ship. But if the weather be thick, as it commonly is with a fair wind for running up, great caution is necessary. In such circumstances, after having run within about 15 miles of Point de Monts by the reckoning, sail should be reduced, so as to have the vessel under complete command, and she should be rounded to, and a good deep cast with Massey's patent lead obtained, so as to insure that she is not to the north-eastward of the Point, and this should be repeated every half hour, until the light be seen, or it is certain that it is past.

If the vessel be to the north-eastward of Trinity Bay, soundings will be obtained in less than 60 fathoms, from 4 to 6 miles off shore. Directly off Trinity Bay, there is the same depth 3 miles off shore; whilst, at the same distance off Point de Monts, there is no bottom at 100 fathoms. If the distance to Point de Monts has been run by the reckoning without finding bottom at 70 fathoms, it will be almost certain that the vessel is not to the northward; but still, as the effects of currents cannot be exactly calculated, and reckonings are liable to error, it will be prudent to shape a course well to the southward of the Point, till there remains no doubt of its having been passed.

In making the light on Point de Monts, remember that it is not on the extremity of the Point, but has been placed (as I think, very improperly) $1\frac{1}{4}$ miles to the north-eastward, along the coast towards Trinity Bay.

Point de Monts may be approached as nearly as three-quarters of a mile with safety, but not nearer in a large ship, since there is a ledge of rocks, with only 9 feet at low water, nearly half a mile south-eastward of the extremity of the Point, and south-westward of the lighthouse. There are also one or two patches of rock, with 12 feet water, to the southward and south-eastward of the lighthouse, but these are not more than a third of a mile off shore at low water.

The foregoing remarks apply where the object is to make the lighthouse, or light, on Point de Monts, which should always be attempted when there is any chance of success, because it is extremely desirable to obtain a fresh departure before running up the comparatively narrow Estuary. But if the weather be so thick, as to leave no reasonable hope of succeeding, or if the wind be from the southward, a course should be steered more to the southward, so as to pass well clear of the Point.

Making Point de Monts.

*the light. Hence stand on the
Bottarment ledge of rocks until
I think it is clear to pass well clear of
Point de Monts.*

position of the Lighthouse.

Rocks off Point de Monts.

*Anticosti to
Point de Monts.*

Vessels beating up against westerly winds should stand over to the northward, as soon as they can weather Anticosti, unless the barometer, or other indications, render it probable that the wind will veer to the southward. During the flood tides, make short boards off and on the north coast, to take advantage of it, for it runs strongest in-shore. During the ebb, keep further off the land, for that tide also runs strongest near the shore. The tides, in general, are weak along this coast, and a vessel will always make way to windward in moderate weather.

From the Seven Islands to Point de Monts is, in general, the easiest part of the passage, for the W. N. W. wind, which, in this part, is the most common westerly wind, is off the land, so that a vessel can frequently fetch up to Point de Monts in smooth water, particularly at night, when the wind, in fine weather, generally veers a point or two to the northward.

She will also have the benefit of the flood tide, whilst the ebb, being turned off by Point de Monts, is scarcely felt.

Trinity Bay.

If it blow fresh, and the flood nearly done on arriving near Point de Monts, there will be no use attempting to beat round it till the next tide, and then only in fine weather. In this case, Trinity Bay, where with westerly winds a pilot will generally be found, is a good anchorage with moderate depth of water, good ground, and plenty of room to get under weigh.

*From Point de
Monts to Bic-
quette Island.*

25. From the south extremity of Point de Monts, the north side of Bicquette Island bears S. 48° W. true, or W. S. W. by compass, 79½ miles; and the south point of the Manicouagan Shoals S. 84° W. by compass, 33 miles; but as this great shoal extends towards English Bay, its S. E. point is only 28 miles distant from Point de Monts.

*Entering the
Estuary.*

We have now arrived at the comparatively narrow Estuary, where the tides and currents are much stronger, and more various in their direction, than in the wider parts previously treated of: and where there are shoals extending on the north side several miles off the shore; hence, a good look out, and constant attention to the soundings, become indispensably necessary at night, or during the fogs which are so prevalent and embarrassing in this navigation.

*Current turned
off-shore by the
large rivers
and Points.*

After taking a departure from Point de Monts, the course to be steered must vary under different circumstances of wind and tide. The downward current is not only turned off to the southward by

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Point de Monts, but the Manicouagon and Bersimis Points also produce the same effect, although in a less degree, during the ebb tide; to which must be added the streams out of the large rivers Manicouagon, Outard, and Bersimis. During the flood tide, the streams out of these rivers cease, the general current is checked in the offing, whilst in-shore, within a few miles of the north coast, a stream of flood will be found. (Art. 15).

A vessel taking her departure from Point de Monts with the whole ebb tide before her, is therefore very differently circumstanced from one which does the same at the commencement of the flood; and must reckon upon being set over towards the south coast much faster in the former than in the latter case.

I will first give directions for a fair wind, and afterwards for beating winds.

Having made the light on Point de Monts, and being 3 or 4 miles off it to the southward, with the usual easterly winds, nearly or right up the Estuary, steer W. by S. by compass, until up nearly as high as the Manicouagon Shoals, then keep half a point more to the southward, W. S. W. $\frac{1}{2}$ W. These are safe courses with either ebb or flood, and if the vessel has left Point de Monts at or near the commencement of the ebb tide, will usually bring her into soundings off Metis, where 30 fathoms, over sandy bottom, will be found 3 miles off shore; and 50 fathoms 5 miles off shore, and on the edge of the bank.

If, on the contrary, the vessel has left Point de Monts early on the flood, she will probably be further to the northward. I say, probably, because the strength of the current is too uncertain to allow of my saying that she positively will be so. However, the degree of uncertainty, which the irregular rate of current gives rise to, must be met by the use of the lead. If, therefore, the weather be thick, and the land not be seen, round to in time, particularly if you have had the ebb tide against you, and get a cast of the lead, to make sure that you have not been set too near the south coast. If no bottom be found at 60 fathoms, the W. S. W. $\frac{1}{2}$ W. course may be continued, until you are up as high as Metis by the reckoning, then let soundings again be tried for, and if still without finding bottom, haul in gradually to the southward, under easy sail, and with the deep sea lead going, so as to endeavour to strike soundings on the bank off Father Point, which may be accomplished safely, since the bank in that part extends several

*From Point de
Monts to Bic-
quette Island.*

miles off shore. When Father Point bears south, by compass, distant 5 miles, the depth is 30 fathoms, over a bottom of soft clay: and with Barnaby Island on the same bearing, distant 7 miles, the same soundings will be found.

*To pass Bic-
quette Island
at night.*

If the object be to pass the islands of Bic and Bicquette in the night, or foggy weather, run along the northern edge of the bank of soundings, with the lead going, taking particular care not to go to the southward into less than 30 fathoms. When you judge that you are approaching near to Bicquette, having passed Barnaby Island, haul out a little to the northward until you are out of soundings, and then steer W. S. W. $\frac{1}{2}$ W., still heaving the lead, and having the vessel under moderate sail for the purpose of getting bottom, till you are certain that you are well above the north-west reef off Bicquette. If you strike soundings at all, whilst running past this dangerous island, on which many vessels have been wrecked, you must haul off immediately to the northward out of soundings, and then steer as before.

When you are undoubtedly past Bicquette and its reefs, haul in to the southward by degrees, till you get hold of the edge of the bank again, and keep it up to Green Island.

*Bicquette
Reefs.*

Bicquette and its dangerous north-west reef lie very near the northern edge of the Bank of Soundings, and were difficult to pass safely, without a chart containing correct soundings; but now that that want is supplied, it may be safely accomplished with the assistance of Massey's patent sounding machine, by any seaman of common prudence and intelligence. Two miles north of Bicquette there are 30 fathoms: and only $1\frac{1}{2}$ miles north of the N. W. reef there is the same depth, with sandy bottom. Further off no bottom will be found at 50 or 60 fathoms. Both the island and reef are very bold to the northward, having 12 fathoms close to them.

*Bic Island
inner passage.*

I do not recommend vessels, without a pilot, to attempt running inside of the Island of Bic in foggy weather, unless very well acquainted. If, however, it be necessary to do so, for the purpose of anchoring, see directions for that island.

*Deviation of the
Compass must
be considered.*

It must be remembered, that the courses which I have recommended are independent of the *deviation*, or local attraction; and also, that its effect, although varying in amount in different vessels, is always to make it appear that they are steering less to the southward than they are in reality, if the compass be, as

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usual in the after part of the ship, and if there be no large masses of iron, as an iron tiller for instance, still further aft: for, in this latter case, the attraction of all the rest of the iron in the vessel may be neutralized or overcome by that of the iron abaft and close to the compass. I believe, however, that it very seldom is so, since the iron tiller and rudder chains in the Gulnare produced no such effect. To render the effect of deviation apparent, I will suppose it to amount to a point of the compass, no uncommon occurrence on a 6 or 8 point course, and the ship to be steering W. S. W. $\frac{1}{2}$ W. by the compass in her binnacle. She will then in reality be making a S. W. by W. $\frac{1}{2}$ W. course, which would soon put her on shore on the south coast, an event that would be accelerated by the current, which, instead of stemming, she would have on her starboard bow checking her in-shore.

A case exactly similar to the one I have supposed occurred on the night of the 8th September, 1831, when the ship *Jane*, of Belfast, having several large chain cables, and other extra iron on board, by which the deviation must have been greatly increased, ran stem on to Bicquette, with a fair wind, but thick fog. She was steering the regular course up the middle of the Estuary; but her master was quite unaware of the effect of the great mass of iron in her hold upon her compasses, and equally so, that previous to the accident which caused the total loss of his vessel, he had been running for many miles in less than 20 fathoms water, the Bank of Soundings not being laid down in his chart.

These remarks, and others which I have made respecting the deviation, will, I trust, show how important a knowledge of it is to the safety of a vessel, and will, moreover, point it out as the duty of every commander, to endeavour to ascertain its amount during the voyage, and before he arrives in a difficult navigation like the St. Lawrence, where the fogs may frequently oblige him to run as high as Green Island without having been able to obtain a pilot.

Pilot schooners are often to be met with off Point de Monts, *Pilots*. and pilot boats frequently wait off Caribou Point, at Trinity Bay, near the lighthouse on Point de Monts, and in St. Augustin Cove. If, however, a pilot should not have been obtained, and it be in the daytime, you may safely stand in under easy sail and

From Point de Monts to Bicquette Island.

Fatal consequence of neglecting the deviation.

Pilots. with the lead going, and endeavour to make the houses on Father Point, although the weather be thick; running along the land from the eastward for that purpose, and going no nearer than 10 or 11 fathoms, at low water. Many pilots live there, and there is almost always one to be obtained.

Father Point. Even in a foggy night you may form a tolerably correct opinion whether you are up to Father Point, or not; for an inspection of the chart will show, that the soundings shoal more gradually in to the southward there than they do further to the eastward. If you heave to, in 10 or 11 fathoms, low water, with the ship's head off shore, a gun or two will be almost sure to bring off a pilot, unless the weather be very bad, for the pilots are fearless and excellent boatmen.

From Point de Monts up the river, with Southerly wind. 26. I have hitherto been speaking of the case when vessels are running up with easterly winds and thick weather; but a second case is when the wind is from the southward, then the direct course, W. by S. $\frac{1}{2}$ ° S., may be steered, if the vessel be, as before, close off Point de Monts, or W. by S. if she be nearer the south coast: allowing still for the set of the current to the southward, according to the tide, and sounding in time if the land be not in sight. Whenever the weather is foggy, and the land cannot be seen, the object should always be to strike the Bank of Soundings along the south coast about Metis, or Father Point at farthest, and then follow it as a guide to the westward.

with Northerly wind. A third case, of frequent occurrence in the autumn, is when there is a fresh northerly wind. The weather is then invariably clear, and, as the land can be seen, there is no danger of getting on shore with a good look out; but the strength of the current to the southward is increased by this wind, and therefore the vessel must be kept well to the northward, to prevent being set over to the lee-shore, and being, in consequence, obliged to tack (upon the wind veering a point or two to the westward) and stand all the way back again.

Supposing the ship to be in the same position as before, 3 or 4 miles to the southward of Point de Monts, you may fearlessly steer west for the first 20 miles, or as long as you can see the light. Take the bearing of the light every half hour, and lay it down on the chart, in order that you may perceive the effect of the current; and if you thus find that it sets you very fast to the southward, as you probably will, particularly during the ebb tide,

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haul up still higher, but take care not to bring the light to bear to the eastward of E. by N., lest you get too near the Manicouagon Shoals. When you reckon yourself up to the Manicouagon Shoals luff up in the wind, and get a deep cast of the lead, for although those Shoals are very steep on their east side, and also to the western of Manicouagon Point, yet there are soundings off their south point. When the Manicouagon Point bears north by compass, you will have from 50 to 60 fathoms, at the distance of $5\frac{1}{2}$ miles off shore, and from 30 to 40 fathoms when you are 4 miles off shore, the bottom being of very fine sand. In the first case, you will be $3\frac{1}{2}$ miles off the south point of the shoals, and in the latter case, only $1\frac{1}{2}$ miles.

*From Point de
Monts up the
river with
Northerly
wind.
Manicouagon
Shoals.*

When past these dangerous and extensive shoals, the south point of which extends $2\frac{1}{2}$ miles off a low point of the same name, which can seldom be clearly distinguished at night, in consequence of the higher land behind it; you may haul well up under the north shore, coming no nearer than 3 miles, and taking care to avoid the shoal off Bersimis Point, which extends nearly $1\frac{1}{2}$ miles off a low point, also difficult to be seen at night.

Bersimis Shoal.

There is also a rocky shoal, first discovered by us, and named the Gulnare Shoal, which lies nearly 2 miles off Cape Colombier. And, lastly, give a good berth to the low Point Mille-Vaches, which the shoals extend 2 miles, as will be seen by the chart. All these shoals are extremely steep, and there is, in consequence, no trusting to the lead in approaching them with a vessel going fast.

*Gulnare Shoal.
Mille-Vaches
Shoal.*

After passing Point Mille-Vaches, the north coast is bold, and without anchorage, all the way to within 3 miles of the Saguenay River.

Although I have said that the strength of the current down the Estuary of the St. Lawrence is uncertain, yet it may be useful to give an idea of its rate and effect, as experienced on two occasions.

*Instances of the
effects of the
South-easterly
Current.*

First, when running up from close off Point de Monts, which we left at the commencement of ebb tide, with a strong breeze from the northward, we found that we were retarded by a stream of 2 miles per hour, and that the set to the southward, at right angles to our course, was at the same time 11 miles in 7 hours, the wind being free and the rate of sailing 8 knots. This occurred in the month of October.

The second refers to an effect of the tidal stream, which is more

Instance of the effects of the South-easterly Current and Ebb Tide. local, and higher up the Estuary, but of which it is most important to the safety of a vessel to be aware.

We had been becalmed 5 or 6 miles south of Bersimis Point, when a breeze sprang up from the eastward, at 10 h. 30 m. P. M. Although we steered W. S. W., and S. W. by W. $\frac{1}{2}$ W., yet at 4 A. M. we saw Bicquette bearing south 2 or 3 miles, and were obliged to haul up to clear the N. W. reef. Had this occurred in a vessel where the lead was neglected, and had the weather chanced to be foggy, she would have run on shore, and been in all probability lost. On this occasion, the ebb tide appears to have set diagonally across the Estuary, about E. S. E. by compass, and at the rate of 2 miles per hour; being evidently thrown off to the southward by Point Mille-Vaches and its shoal. During the flood tide, however, it must be remembered, that no such stream will be found; on the contrary, I have reason to believe, that the remark of Mr. Lambly (the experienced harbour-master of Quebec) will then prove correct, that "the current between Bicquette and Point Mille-Vaches sets to the N. E., instead of E. S. E.," for the eddy flood (art. 14) meets the proper flood flowing up along the Bank of Soundings, and between Bicquette and Bic, and the united streams are turned off to the northward after the first quarter flood, as we have ourselves observed.

From Bicquette Island to Green Island Lighthouse.

27. From the north side of Bicquette Island, the lighthouse on Green Island, which shows a fixed light, bears S. 44° W. true, or S. W. by W. $\frac{1}{2}$ W. by compass, distant $30\frac{1}{2}$ miles; and the light can be seen, in clear weather, from a distance of 17 or 18 miles, if the observer be elevated 60 feet above the sea. The lighthouse stands on the north side of the island, and when first seen, from a vessel on the south Bank of Soundings, appears like a white sail a short distance from the shore.

Green Island Lighthouse.

In running up to Green Island, after passing the N. W. reef of Bicquette, a W. S. W. course, by compass, will, in general, take a vessel along the edge of the bank, up as high as the Razades; but above those islets both flood and ebb set to the S. E., and render it necessary to steer more to the westward, or even to the northward of west with a scant northerly wind. But the lead, and a reference to the soundings in the chart, are the only sure guides. With an easterly wind the fog will seldom be so thick as to prevent either the Razades, Basque, or Apple Islands from being seen in the day-time. They may be safely

Tides above the Razade Islets.

approached by the lead, and I recommend the attempt to make the two last, especially Apple Island, which is very bold on the north side, in order that the position of the vessel may be exactly ascertained before hauling out into deep water, for the purpose of clearing the dangerous Green Island Reef. In the circumstances which I am supposing, of an easterly wind with fog in the day-time, it is much more safe to attempt to make Apple Island than the lighthouse, since a vessel can approach within less than two cables of the former, but would be ashore before she saw the latter, if the fog were thick, since the reef extends nearly $1\frac{1}{2}$ miles to the north-eastward of it.

Having succeeded in making Apple Island, the vessel may be sheered out to the edge of the Bank of Soundings; and as the distance is short, it is easy to judge when the vessel is coming near the reef, taking, of course, the tide into account, whether it be flood or ebb, and keeping the lead constantly going. Then, if the lighthouse be not seen, sheer out to the northward into more than 30 fathoms water, and shape a course up towards the Brandy Pots, according to the tide, as will be directed in Part the Second of these Directions.

If the lighthouse be seen, or the light at night, there is still less difficulty in avoiding the reef, and regulating the course afterwards, provided the chart be consulted, the lead used, and the tide considered.

But Green Island Reef is extremely dangerous, and is rendered doubly so, by the strong tides which set upon it, and which produce breaking ripples, that try the nerves of strangers during a dark night, or foggy weather. Therefore, in a strong easterly gale, dark night, fog, or snow so thick that there is little chance of seeing the light, I consider the attempt to run through between Red and Green Islands to be attended with great risk, especially during the ebb tide, which, coming from between Hare Island Reef and Red-Islet, sets over towards the Green Island Reef, at the rate of 5 knots. It requires an experienced pilot to take a ship safely through this dangerous passage under these circumstances: I should, therefore, recommend, in the case of a vessel approaching Bic, in such weather, towards the close of the day, and without a pilot, rather to heave to, or stand on and off the south bank, than run this risk, although there may be some danger in so doing from other vessels running up. If the found-

From Bicquette to Green Island Lighthouse.

Apple Island.

Green Island Reef.

Danger of passing between Red and Green Islands, especially on the Ebb.

Better to remain off Bic Island.

From Bicquette to Green Island. ings about Bic be well known, or that island, or Bicquette, has been seen, the safest plan would be to run under the lee, and anchor to the westward of them, in from 8 to 10 fathoms low water (according to the directions for Bic and Bicquette), where the holding ground is excellent, and the vessel would ride in perfect safety till daylight. Even as far as 6 or 7 miles to the westward of these islands, in from 12 to 13 fathoms at low water, I have rode out a very heavy breeze from the eastward; the sea, although considerable, being nothing in comparison with that which was running, at the same time, in the deep water outside of us and off the bank.

Anchorage West of Bic Island.

Beating to the Westward from Point de Monts. 28. In beating up from Point de Monts to Green Island, against westerly winds, which are almost always accompanied with clear weather, there is little difficulty, with the assistance of the Admiralty charts, other than that which arises from the set of the tides and currents.

It requires a tolerably good sailing vessel, and a flood tide, to beat past Point de Monts against a wind right out; but short boards round the Point, and along the north coast, up to Cape St. Nicholas, will most readily succeed. It is not, however, advisable to keep this shore close on board much further to the westward, lest the wind should fall to a calm, for there is a strong indraught towards the mouth of Manicouagon river, during the flood tide; and if an easterly wind should chance to spring up, after the vessel had been drifted in near the mouth of English Bay, it might be difficult to beat out, or to weather the eastern side of the Manicouagon Shoals. The light on Point de Monts cannot be seen on any bearing to the southward of east, being intercepted by the high land to the westward of it; and when it disappears, a vessel off Goodbout River will be only 1 mile from the Bar, or off Cape St. Nicholas little more than 2 miles off shore: so that it is a safe rule, in standing in towards the coast at night, to tack as soon as the light bears E. $\frac{1}{2}$ N.

When the ebb makes, stretch over to the southward into the middle of the Estuary, where that tide is less strong than near either shore; but do not go further to the southward, and be back again to the north coast at the return of flood.

The best time to get past Point de Monts, when fine weather and westerly winds prevail, is at night, or in the first hours of the morning, for then vessels are often assisted by a northerly

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land wind. If it has blown freshly from the westward during the preceding day, a heavy head sea may be expected off the pitch of the Point: the flood from along the land in the direction of the Seven Islands meeting the downward current off the Point assists in causing this.

Heading to the Westward; from Point de Monts.

If, after passing Point de Monts in the morning, with a northerly land wind, there are signs of its dying away, or veering to the westward as the day advances, continue the board to the southward and westward, instead of tacking to keep the north land on board, as directed when the wind is settled right down; for the land wind of the night will be probably succeeded by the fine weather day wind, which usually becomes a steady breeze about 9 A. M., after commencing at W. S. W., and thus affords an advantageous board towards the north coast.

In the fine weather of the summer the wind will probably veer by degrees during the day back to west and W. N. W., thus offering another good board to the south-westward. Pilots and others, who are experienced in reading the indications of the winds and weather, frequently gain more ground to the westward by calculating upon these probable changes of the wind, than by keeping on the north shore out of the current.

With the exception of the low Points Manicouagon, Bersimis, and Mille-Vaches, of which I have already warned the seaman (art. 26), the land can in general be plainly seen at night during the continuance of westerly winds; and where its features are sufficiently remarkable, there will be little difficulty in making it out, from its representation in the Admiralty charts. Mount Camille, especially, being an isolated mountain, 2036 feet above high water mark, can easily be distinguished; as well as the summit of the high land of Bic, 1234 feet high. Their bearings will often be of great service to vessels in clear nights, and will show when they are high enough up to fetch Father Point; where a pilot should be sought for, if one has not been already obtained.

Mount Camille.

High Land of Bic.

Pilots at Father Point.

On arriving off Father Point, or anywhere between it and Bic, if the flood be dove, and the wind be light, it will be better to anchor on the Bank of Soundings, weighing again, if there be a breeze, in sufficient time to stand over and meet the first of the flood on the north shore. By this mode of proceeding, vessels will gain much more ground to the westward than by remaining

Anchorage off Father Point.

*Beating to the
Westward
above Point de
Monts,*

on the south shore, for although there be a weak stream of flood upon the Bank of Soundings, from Father Point to the Island of Bic, yet there is little above that island, and none after the first quarter flood, excepting so close in shore as to be useless to large vessels.

*between
Mille-Vaches
and Saguenay
River,*

From the Bay of Mille-Vaches to within 3 miles of the entrance of the Saguenay River, with the exception of a shoal extending a short distance off shore from the bay next westward of Cape Bondesir, as will be seen in the chart, the coast is moderately high and very bold, the flood strong, and the ebb comparatively weak. Vessels should, therefore, make short boards along this shore until up to Bergeron coves, and then stretch over to the anchorage under Green Island Reef, to wait for the next flood; for it will require a whole tide, even with a good working breeze, and a fair sailing merchant vessel, to beat through between Green Island and Red Islet, and reach good anchorage above, before the ebb makes.

*near Red-
Islet Reef.*

*Beacon for
this Reef*

In standing across from the north shore, beware of the Red-Islet Reef, which extends $2\frac{1}{2}$ miles to the eastward, from the low shingle islet of the same name. There is a beacon above and behind the lighthouse on Green Island, which has been erected at the recommendation of Mr. Lambly, the harbour-master, to lead vessels clear of this danger, and it answers the purpose extremely well. It is white, like the lighthouse, but much smaller; and when they are in one bearing, S. S. E. $\frac{1}{2}$ E., by compass, the beacon appears in the middle of a lane cut through woods behind it. A vessel standing over with this leading mark on, will pass over the tail of the Red-Islet Reef, in from 5 to 8 fathoms, according to the time of tide. This beacon will be readily distinguished in the day-time, but if a stranger should have any doubt of it, let him be sure not to bring the Green Island lighthouse, or light at night, to bear at all to the eastward of S. S. E., and he will be in no danger. Crossing, below the reef, with the light upon that bearing, there will be found from 9 to 12 fathoms, according to the time of tide, at a mile distance from the reef.

*Ripples near
Red-Islet.*

Violent breaking and whirling rippings of the tide, which can be heard at a great distance in a still night, will be met with in crossing, and are alarming enough to strangers, but there is no danger with the lead going, and an anchor clear to let go in the event of its suddenly falling calm near the reef.

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The Red-Islet Reef is, however, very dangerous, and the first *Beating to the Westward above Point de Monts.* of the flood sets strongly over it, in a direction from Bergeron coves towards Green Island. The ebb out of the Saguenay also sets upon it, so that a stranger should not make too free with it. *Tides set over Red-Islet Reef.*

If a vessel cannot fetch the anchorage under Green Island Reef, she may anchor anywhere, in fine weather, along the south bank between Bic and Green Island, and will have good ground in 12 fathoms, at low water, and plenty of room to get under weigh. *Anchorage between Bic and Green Islands.*

In coming up with a N. W. wind, the north shore should be kept close on board until up to Bergeron, and if it be flood tide, the vessel may pass either northward or southward of Red-Islet, as may be preferred; but the former passage should not be attempted with this wind during the ebb, or yet the other, unless by those who are well acquainted with the set of the tides. *Passages N. and S. of Red-Islet.*

Although the passage to the northward of Red-Islet is the *Northern passage, risk in attempting.* quickest, there being a much stronger stream of flood in that channel, yet I do not by any means recommend it: on the contrary, I think it should never be attempted unless the breeze appears certain to continue, for if it fell calm, the vessel would run great risk of being drawn in by the stream of flood among the dangerous shoals off the mouth of the Saguenay, or being set down upon Red-Islet Reef when the rapid ebb made out of that river, which is so strong, and the water so deep, that no anchor would hold.

To pass to the southward of Red-Islet with the same wind, *Southern passage.* haul round the east end of the reef, and as close to the southward of it as is prudent, coming no nearer than 20 fathoms until past the islet. To those who are well acquainted both with the soundings and set of the tides, it may be desirable to keep closer in attempting the passage with an ebb tide, but I cannot recommend it to strangers.

More full directions for this part of the river will be given at the commencement of Part the Second, which will begin at Green Island.

29. For the return voyage, down the Estuary and Gulf, little *Returning down the Estuary.* or no instruction seems necessary, as long as the wind remains fair and the weather clear, beyond what may be gathered from the Admiralty charts and the preceding remarks. But where vessels are met by easterly winds and thick weather anywhere above Point de Monts, great caution, attention to the soundings

*Returning
down the
Estuary.*

and set of the tides and currents, becomes necessary to ensure safety, particularly during the long nights and ~~the~~ weather in the fall of the year.

*Wait for fair
wind at the
Brandy Pots,*

Vessels beating down the St. Lawrence usually stop at the Brandy Pots for a fair wind. But supposing, after they have passed Green Island, that the fair wind fails, and they are met with an easterly wind before they have arrived near the island of Bic, I should recommend them, in that case, to run up again to the Brandy Pots, especially if late, or very early in the navigable season; for all that they will gain by beating about in thick weather, probably for several days and nights in succession, will not be worth the risk. But if they have reached far enough down at the commencement of the adverse wind, the island of Bic affords good shelter and anchorage, which should be sought in time, before the fog commences. (See directions for Bic.)

*or anchor under
Bic Island.*

*No other an-
chorage except
Gaspé and the
Seven Islands.*

There is no other anchorage which I can recommend lower down nearer than the Seven Islands, and after that Gaspé. There are other places, which will be mentioned hereafter, in some of which vessels ride for taking in timber, but there they are moored close in shore, with lower yards and topmasts struck, by which means they ride out very bad weather, with very indifferent shelter; but such places are not fit for occasional anchorages, or for a heavy laden ship to run for on an emergency.

*Beating down
along South
shore.*

In a vessel beating down, the south bank should be the guide in thick weather, or at night. She should tack from it, after striking soundings on its edge, and should not stand to the northward more than half-channel over in any part: thus keeping in the strength of the downward current, and avoiding the possibility of accident from the shoals of the north coast, which being very steep, and affording little or no warning by the lead, have proved fatal to many vessels under these circumstances.

*Smooth water
on South shore
Bank of Sound-
ings.*

It will be almost always seen when the vessel comes upon the south Bank of Soundings, by there being so much less sea there than in the deep water, and strength of the weather current, outside: a strong ripple will be observed at the edge of the bank during the flood tide.

*Effect of either
Tide in stand-
ing off.*

In the board from near Bicquette, during the flood tide, the vessel will go to the northward rather faster than to the southward back again, whilst in the ebb, the contrary will be the case. But above the Razade Islets, she will go much faster to the

Lead

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southward than to the northward, in both tides. Lower down the Estuary, and as far down as Cape St. Anne, she will generally go faster to the southward than to the northward during the ebb tide: whilst in the flood, an indraught into the river will be felt on approaching near the north coast from Bersimis Point, nearly down to Cape St. Nicholas. The lesst reflection upon what has been said of the set of the tides and currents (arts. 15 and 16) will account for these effects.

In a vessel beating down in a dark night, or thick weather, there is no safety unless the lead be kept constantly going: when she is approaching the south coast, in the board to the southward, sail should be sufficiently reduced for soundings to be easily obtained, and everything in readiness to tack, or veer, at the shortest notice. These precautions become the more necessary as the vessel descends the Estuary, and the Bank of Soundings becomes narrower. Off Matan there are 30 fathoms, sandy bottom, $1\frac{1}{2}$ miles off shore; and 60 fathoms, at 3 miles off: whilst, at the distance of 5 miles from the land, no bottom will be found at 100 fathoms. The south bank becomes narrower still to the eastward of Matan, and ceases, in consequence, to be of use to vessels. Off Cape Chatte there are 30 fathoms of water, little more than half a mile from the shore; a short distance further off there are no soundings at 70 fathoms; and between it and Point de Monts, from 150 to 170 fathoms, blue mud bottom.

Below Point de Monts there is plenty of sea-room, and although the lead will there be of little use, yet the south coast is so high and bold that it may generally be seen, if the fog be no thicker than is usual with a regular easterly wind up the St. Lawrence.

Lower down still, with a beating wind and thick weather, soundings may be struck off the west end of Anticosti, or between the west and S. W. points of that island, if it be wished to ascertain how far the vessel is over to the northward before night. Eastward of the S. W. point of Anticosti, to Pavilion River, the Bank of Soundings off the south side of the island is very narrow; but from the latter to the east point, there is plenty of warning by the deep sea lead, as will be seen by the soundings in the chart.

I do not recommend the channel to the northward of Anticosti, in the voyage down the St. Lawrence, because there is not only

*Returning
down the Estu-
ary.*

*Constant use of
the LEAD in-
dispensable,*

*especially where
the Bank nar-
rows.*

*Soundings off
Anticosti.*

*Returning
across the
Gulf.*

*Belle Isle
Strait.
Icebergs.*

less room, but also less current in favour. Neither do I recommend the route by the Strait of Belle Isle, on account of the straggling icebergs, which are in general to be met with there through all the navigable season. Towards the fall of the year, however, vessels occasionally pass through it, in anticipation of the northerly winds which prevail at that season in the Atlantic : they should be well acquainted with the currents, and should know the anchorages on the north side of the Strait. Instructions for making this passage will be given in a future Chapter.

I have purposely not interrupted the foregoing general directions, by particular descriptions of the coasts, or places, alluded to. The latter, together with directions for the harbours, anchorages, and dangers, will be found in the following Chapters.

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CHAPTER IV.

THE ISLANDS IN THE GULF OF ST. LAWRENCE.

30. Island of St. Paul.—31. Bird Rocks.—32. Bryon Island.—33. Deadman Islet.—34. Magdalen Islands, general Description.—35. Description of the Southern side of the Magdalens, and the Anchoring Places and Reefs, with Directions.—36. Description of the Northern side of the Magdalens, and the Dangers, with Directions.—37. Tides and Currents around the Magdalens.—38. The Island of Anticosti, general Description, Provision Posts, and Lighthouses.—39. Description of the Southern Coast of Anticosti, with Directions.—40. Description of the Northern Coast of Anticosti, with Directions.—41. Remarks upon the Currents and Tides around Anticosti.

ISLAND OF ST. PAUL.

30. THE ISLAND OF ST. PAUL is composed of primary rocks, *Description of St. Paul.* principally mica slate; dipping at an angle of not less than 45° to the southward. Its appearance and shape will be better shown by the views and the chart, than by any written description. It is partially wooded with dwarf and scrubby spruce trees, useless, excepting for fuel. The only inhabitants are two men in charge of a depôt of provisions for the relief of shipwrecked persons, supported by the government of New Brunswick. These men reside on the north point of Trinity Cove, where there is a dwelling-house and store. They grow a few potatoes, and shoot ducks during the winter, and also in the spring and autumn. A very few foxes are the only wild animals upon the island: there is no feathered game, or anything else to support life. The ocean however compensates for the deficiencies of the land. Codfish and halibut are often plentiful around the island, and mackerel and herrings may be taken at times, in their seasons.

St. Paul Island is $2\frac{1}{2}$ miles long, by 1 mile broad. Its N. E. point is a small detached islet, although it does not appear as such from the sea. This islet is separated, by a very narrow channel, from a peninsula, between 3 and 400 feet high, which, together with the isthmus, is so precipitous as to be nearly inaccessible. The remaining greater part of the island, which is also very steep and precipitous towards the sea, has two parallel

*Description of
St. Paul.**Water.**Anchorage.*

ranges of hills, that on the Atlantic coast being the highest, and attaining an elevation of about 450 feet. A valley runs through between these hills, having 2 small lakes or ponds, 2 or 300 feet above the sea. These supply the principal stream on the island, which is about a fathom wide, of yellowish-brown water, well tasted and wholesome, and descending into the sea in the southern part of Trinity Cove. There are several other, but much smaller, runs of water, one of which is into Atlantic Cove. These two coves are nearly a mile from the S. W. extremity of the island, the first being on the Gulf side, and the other on that which is towards the Atlantic, as its name implies. They afford the only shelter for boats, and the only good landing on the island, which is easier of ascent from them than at any other part. Off the two coves just mentioned, small fishing schooners anchor, with the wind off shore, in 10 or 12 fathoms, sand and gravel bottom, and at the distance of 2 cables' length from the rocks. In very fine weather, large vessels might venture to ride with a stream anchor, in from 25 to 30 fathoms about half a mile off shore, but should be in constant readiness to weigh, at the first sign of a change in the wind or weather. Further off shore the water becomes extremely deep, as will be seen in the chart, so that there is little or no warning by the lead in approaching this island in foggy weather. On this account, although so bold and high, it is extremely dangerous, and many shipwrecks have taken place upon its shores, attended with a most melancholy sacrifice of human life. In few parts of the world would a lighthouse have prevented a greater loss of property or a greater amount of misery, and it gives us, therefore, infinite satisfaction to announce, that the Commission recently appointed to determine on the most generally useful position for it, has already made their report to Her Majesty's Government.

The irregularity of the tidal streams and currents add much to the danger arising from the fogs, which prevail in southerly, easterly, and often also with S. W. winds. During the whole of a fine calm day, at the end of June, we observed the current to set to the S. E., at the rate of 1 knot, past the north point of the island.

BIRD ROCKS.

*Description of
the Bird Rocks.*

31. THE BIRD ROCKS are of coarse red sandstone, or conglomerate, in strata dipping very slightly to the S. W., and are

constantly diminishing in size from the action of the sea. They *Description of the Bird Rocks.* present perpendicular cliffs on every side; yet it is possible to ascend them, with great difficulty, in one or two places, but there is no landing upon them excepting in the calmest sea. Every ledge and fissure of the cliffs are occupied by gannets, and the summits of both rocks are literally covered with them. The white plumage of these birds gives these rocks the appearance of being capped with snow, and renders them visible, through a night glass in a clear and moonlight night, from the distance of 7 or 8 miles.

The two Rocks bear from each other N. N. W. $\frac{1}{2}$ W. and S. S. E. $\frac{1}{2}$ E., and are 700 fathoms apart. Sunken rocks leave only a boat passage between them. The south-eastermost is the largest and highest, though scarcely 200 fathoms long, and not more than 140 feet high above the sea. The other is divided into two precipitous mounds joined together by a low ledge. The lesser of these mounds resembles a tower. A reef extends 700 fathoms *Reef.* to the eastward, from the Little, or N. W. Bird Rock, and there is a patch of breakers nearly midway between the two, and rather to the S. W. of a line drawn from one to the other. The Great, or S. E. Bird Rock, is quite bold, excepting in the direction of the other Rock. The Little, or N. W. Bird Rock, bears N. E. by E. $\frac{1}{4}$ E., distant $16\frac{1}{2}$ miles from the east point of the Magdalens, and E. $\frac{1}{2}$ S., $10\frac{1}{2}$ miles from the east end of Bryon Island.

The soundings off the Bird Rocks to the eastward have been *Bank of Soundings.* already stated, (art. 20); they extend still further off to the northward, so as to afford the most ample warning and assistance to vessels at night, or in foggy weather, as will be seen in the chart. Between them and the east point of the Magdalens, the depth nowhere exceeds 16 or 17 fathoms, over a bottom of reddish sand, and sea-eggs are very frequently brought up by the lead.

Between the Birds and Bryon Island, there is a ridge of rocky *Foul Ground between the Birds and Bryon Island.* and foul ground, on some parts of which, it has been said, there is as little as 4 fathoms of water, because bottom has been seen in calm weather. We, however, could not find less than 7 fathoms, but it may nevertheless exist, so that a large ship had better not cross this ridge when there is much sea running. The two cliffy points, on the north side of Bryon Island, in one, mark the northern limits of this rocky ground.

BRYON ISLAND.

Description of Bryon Island. 32. BRYON ISLAND, which is uninhabited, is rather more than 4 miles long, in a W. by N. and E. by S. direction, with the extreme breadth of rather more than a mile. Its eastern end bears from the east point of the Magdalens, N. by E. $\frac{1}{2}$ E. $10\frac{1}{2}$ miles, but its S. W. point approaches to within $8\frac{1}{2}$ miles of the north cape of these islands.

Bryon Island is formed of alternating and nearly horizontal strata of red sand-stone, red ochreous clay, and shaley grey sand-stone. These rocks are soft and friable, forming perpendicular or overhanging cliffs nearly all round the island, which are broken in holes and caverns, showing how fast they are giving way to action of the waves.

The soil is similar to that of the Magdalens. A great part of the island is wooded with dwarf spruce trees, and there is a large upland tract covered with good native grass. Water is neither plentiful nor easy to be obtained, but it may be had in small quantities by digging, and there is a spring on the north side of the narrow isthmus which joins the eastern peninsula to the remainder of the island.

Water.

I had no opportunity of measuring the height of Bryon Island, but I conceive it nowhere exceeds 200 feet above the sea. The cliffs on the north side are much higher than those on the south, where there are several small coves in which boats may land easily with the wind off shore. There are three reefs off Bryon Island. One off its east end extends near three-quarters of a mile to the north-eastward: another off the west end extends $1\frac{1}{4}$ miles to the westward, and the third, off the sandy S. W. point, $1\frac{1}{4}$ miles to the southward. No marks can be given for clearing these reefs, but the bearings of the land, as shown in the chart, will afford sufficient guidance to the seaman. The reef off the S. W. point is so much in the way of vessels passing between it and the Magdalens, that it may be useful to add, that from the southern ridge of this reef, Bryon Island subtends an angle of 97° , so that with the island subtending any less angle the reef may be passed. The south reef assists greatly in turning off the sea from the roadstead to the eastward of it, where vessels may safely anchor in 6 fathoms water and a sandy bottom, at the distance of a mile or more from the shore, and with all winds from N. E. round by

Reefs.

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north to W. N. W. Small vessels in heavy N. W. gales lie at anchor close under the reef. *Description of Bryon Island.*

There are regular soundings, from 9 to 11 fathoms, with sandy bottom, between Bryon Island and the Magdalens, with the exception of an extensive patch of foul and rocky ground, lying between S. W. $\frac{1}{2}$ W. and W. S. W. from the west end of Bryon Island, and having a clear channel on either side of it, as will be seen in the chart. We could find no less than 5 fathoms here, and although the fishermen see bottom upon it in calm weather, I have every reason to think that there is no less water. Nevertheless, large ships had better not run over it, when there is a heavy sea running, for a small point of rock, with a few feet less water, might escape the most rigorous examination. *Adjacent Soundings.* *Foul ground.*

These rocky places are called fishing-grounds by the inhabitants of the Magdalens, because codfish abound upon them. There is one with 11 fathoms of water, $2\frac{1}{2}$ miles north of Bryon Island, and which extends a considerable distance parallel to the island. The bottom is sandy, and a greater depth of water within this range, and vessels may anchor, in fine weather and southerly winds, off the bay on the north side of the island. The soundings extend so far off Bryon Island to leeward in every direction, that there is no possibility of a vessel on a voyage being endangered by it, if the lead be used. But great caution is requisite in approaching the reefs, for they are very steep, especially that which extends to the southward. *Rocky fishing-grounds.* *The Reefs are very steep.*

DEADMAN ISLET.

33. THE DEADMAN bears N. 52° W., $7\frac{1}{4}$ miles nearly, from the west cape of the Magdalens; and is very small, being not more than 300 fathoms long, in an E. S. E. direction, and less than half that breadth. It is about 170 feet high, with steeply sloping sides, meeting at the summit like a prism, so that when seen end on, it resembles a pyramid. When seen from a distance with its longest sides presented to view, its outline very much resembles that of a body laid out for burial, from which circumstance its name is derived. It is composed principally of trap rocks, and when seen close to, on a bright sunny day, with the white surf dashing against its variously coloured sides, it is a very beautiful object. It is so bold on the west side, that a vessel *Description of Deadman Islet.*

Deadman Inlet. may pass within a couple of cables' length with perfect safety, but a reef extends towards Amherst Island one-third of a mile.

Rocky fishing-grounds. About a mile to the northward of it there is a rocky fishing-ground with 8 fathoms least water; and 6 miles S. S. W. $\frac{1}{2}$ W. of it, there is another with 11 fathoms. There is no danger nearer than the "White Horses," to be mentioned hereafter, and vessels may safely pass between it and Amherst Island. It is, however, much in the way of vessels passing round the west end of the Magdalens, and they should beware of it at night, or in foggy weather, for the lead will give little warning, since there is nearly as much water within half a mile of it, as at the distance of several miles.

THE MAGDALEN ISLANDS.

Description of the Magdalen Islands. 34. THE MAGDALENS are a chain of islands, assuming an irregular curved direction, the greatest length of which, from the S. W. cape of Amherst Island to the east point, is 35 miles; but if the smaller isles be included, as they evidently form a part of the Magdalen group, the whole length of the range, from the Deadman to the Great Bird Rock, will be 56 miles, in an E. N. E. direction.

The central parts of these islands rise into hills, with rounded and frequently dome-shaped summits, attaining an elevation above the sea varying from 200 to 580 feet, and which are in general of igneous, or trap rocks. Around, and on the flanks of these hills, are stratified deposits of sandstones and ochreous clays, with gypsum in the hollows and basins, and also occasionally in veins. No rock-salt has been found upon the islands, but the water of many springs and small streams is sufficiently saline to be nearly unfit for use. The gypsum forms an article of commerce, and some valuable ochreous pigments are also found upon the islands, but the principal dependence of the inhabitants is upon the cod-fishery. The herring and seal fisheries are also prosecuted to a limited extent.

Fisheries.

Wood.

Cattle.

The islands are partially wooded, but the trees are small, and mostly spruce, juniper, birch, and Canadian poplar. The unwooded parts produce good grass, and afford pasturage for cattle and sheep; but they are far less abundant than the pigs, which are fed upon the offals of the fish, and make very bad meat in consequence. The general character of the soil is sterile, for

although good vegetable mould may occasionally be met with, yet, on examination, it usually proves to be superficial, being only a few inches in depth, and having beneath it either the rock or siliceous and ferruginous sands. The climate is severe; not quite so cold as at Quebec in winter, but less warm in summer. Rains, and especially fogs, are extremely frequent, and without this humid atmosphere the islands would be deprived of the little fertility which they possess; the dry and meagre soil requiring copious and continued supplies of moisture.

There are at present upon the islands about 1100 inhabitants, the majority of whom are of French extraction, and who all inhabit Amherst, Grindstone, and Alright Islands, with the exception of about 11 or 12 families divided between Entry Island, Grosse Isle, and East Island, near the N. E. extremity of the chain. Ships may obtain limited supplies of fresh provisions, especially at Entry Island, and water most readily from Amherst Harbour, either from a spring which issues from under the Demoiselle Hill, or from a small stream which falls into Ance à la Cabane, near the S. W. cape of the island. Wood for fuel becoming scarce near the settlements. Large spars are not to be had, unless when they chance to be saved from wrecks, but small ones, of spruce and juniper, may be obtained. The latter, of which the inhabitants build their fishing-boats and shallops or smaller schooners, somewhat resembles larch-wood; it is said to be extremely strong and durable.

When first made from sea, the Magdalens appear like several hilly islands, with channels between, but, on a nearer approach, they are seen to be all connected together, with the exception of Entry Island, by a double line of sand-bars and beaches, inclosing extensive lagoons, having very narrow entrances, by which the tide finds access and egress. These sand-bars are in some parts only a few feet above the sea, whilst in others they rise into hills of blown sand of considerable elevation. They appear to be increasing, since there are generally ridges of sand with from 9 to 12 feet water parallel to, and from 50 to 100 fathoms outside the beach. There are 3 and 4 fathoms of water between these ridges and the shore, a circumstance which has often proved fatal to the crews of vessels wrecked upon these shores. These hilly islands thus disposed in a curvilinear shape, and connected together by sand-bars, inclosing lagoons, reminds

*Description of
the Magdalen
Islands.*

one forcibly of those islands in tropical seas which are connected together by coral reefs.

In a bright sunny day of summer, the cliffs of various colours in which different shades of red predominate, and the yellow of the sand-bars contrasted with the green pastures of the hill sides, the darker green of the spruce trees, and the blue of sea and sky, produce an effect extremely beautiful, and one which distinguishes these islands from anything else in the Gulf of St. Lawrence. In stormy weather, the appearance is equally characteristic. Isolated hills and craggy cliffs are then dimly seen through the rain and mist which accompany an easterly gale, and appear joined by long ranges of breakers, which almost hide the sand-bars. At such times it is dangerous to attempt making the islands, for in approaching the lower parts, the breakers would probably be the first thing seen from a vessel.

*Three harbours
for small craft.*

The Magdalens possess no harbour for ships, but three for small vessels, named Amherst, House, and Grand Entry Harbours, which will be noticed in the following concise description of the shores of the islands and the dangers off them.

East Point.

35. The East Point of the Magdalens is of low sand, inclosing several shallow ponds, and having several sand-hills, some of which are near its extremity, while others, of greater elevation and further to the westward, extend in a chain nearly to the N. E. cape. These last-mentioned sand-hills are inland, and on the margin of the north-eastern part of the great lagoon. The N. E. cape is a hill on East Island, which stands at the head of Grand Entry Harbour. It is a very remarkable cape, and its isolated cliffs, being 230 feet high, can be seen over all the sand-hills and sand-bars, so that when these last are below the horizon, the N. E. cape appears to be the eastern extremity of the chain.

Long-Spit.

LONG-SPIT is a ridge of sand, with from 2 to 3 fathoms water, which extends off the East Point S. E. $\frac{1}{2}$ S. rather more than $1\frac{1}{2}$ miles, and for $1\frac{1}{2}$ miles further in the same direction, the depth is from 4 to 6 fathoms. To clear this spit observe the following remarks and directions. The southern part of Coffin Island is a peninsula, forming the southern shore of the Oyster Pond, and connected to the remainder of the island by a low neck or isthmus at the west end of the pond. Now, the mark for the 3 fathoms extremity of the spit is the north side of this peninsula on with

Clearing Mark. the Old Harry Head. And the south side of the northern

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part of Coffin Island, (where the narrow neck joins it, as above mentioned,) on with the Old Harry Head will lead over the spit in 4 fathoms. A person with our charts before him will have little difficulty in making out these leading marks, but may, if he pleases, pass round the spit, by the lead, in 5 or 6 fathoms, taking care not to bring the Old Harry to bear to the southward of west. To know when a vessel from the eastward has passed it, observe, that the ¹¹ of the summit of the north cape on with the east side of the ⁷ cape clears it nearly ¹ mile to the S. W., which mark will also be useful to a vessel approaching it from the westward. The tides set rapidly over this spit, and, together with the shoal water, cause a heavy breaking sea. *Tides set across the spit.* It is extremely dangerous, and vessels should take care not to get becalmed near it without an anchor clear.

DOYLE REEF lies S. $\frac{1}{2}$ E. distant $6\frac{1}{2}$ miles from the East *Doyle Reef*. Point, and consists of pointed rocks. It is very small, being only 300 fathoms long, and 50 fathoms wide from 6 fathoms to 6 fathoms. The least water is 3 fathoms on one spot nearly in the centre, and there are 12 and 13 fathoms all round it. The only mark for this reef is the North Cape of the Magdalens open two-thirds of its breadth to the N. E. of the North-East Cape. On the reef, the angle between these marks and the western point of Coffin Island is $24^{\circ} 27'$.

Lying completely in the way of vessels, and very seldom showing, the sea breaking upon it only in heavy gales, Doyle Reef may justly be considered as one of the worst dangers off the Magdalens. It has been examined and laid down by us for the first time, and was previously known only to a very few persons on the Magdalens. These persons reported that they had at different times seen vessels disappear, which they concluded had struck upon it.

Proceeding to the south-westward from the East Point, the first *Old Harry Head* headland is the Old Harry, the S. E. point of Coffin Island, bearing from the east point W. S. W., by compass, $4\frac{1}{2}$ miles. Between them is a sandy bay, in which vessels may anchor, with good shelter, in all winds from west round by north to N. E. : but it is not a place to be recommended, because a vessel would be there very much embayed by the shoals on either side, and might find it difficult to get out on the occurrence of a sudden shift of wind either at night, or attended with fog.

The Old Harry Head has red sandstone cliffs of a moderate height, with a reef off it to the south-eastward one-third of a mile.

Columbine Shoals.

From the Old Harry $2\frac{1}{2}$ miles S. S. W. $\frac{1}{2}$ W., and S. E. by S., 2 miles from the east end of the cliffs, westward of the entrance of the Oyster Pond, lies the outermost of the COLUMBINE SHOALS, a patch of rocks, with 3 fathoms at low water. Within this, and towards Coffin Island, are numerous small shoal patches and pointed rocks, on some of which there are not more than 3 feet at low water, as will be seen in the chart. These shoals are extremely dangerous, and much in the way of vessels hauling round the east point of the Magdalens with northerly winds. To clear the east side of them, the whole of the high N. E. Cape must be kept well open to the eastward of the Old Harry. There are no good marks for clearing the west side, or for leading clear outside of them, so that the only guide for the latter purpose is not to bring the East Point to bear to the eastward of N. E., and, for the former, is not to bring the west end of Coffin Island to bear to the westward of N. W. $\frac{1}{2}$ N. But although there are no good marks, an angle with a quadrant will answer the purpose as well and as easily. On the outer edge of these shoals, the angle between the Old Harry Head and the left or west extremity of Coffin Island is 77° : consequently, with these points subtending any less angle, the vessel will pass outside of the shoals. Coffin Island extends 4 miles to the westward of the Old Harry, having on its south side a lagoon with a very narrow outlet, called the Oyster Pond, and which boats can only enter in fine weather. Off the coast of Coffin Island there are several rocks, besides the Columbine Shoals, but as these are in-shore, and out of the way of vessels, it is sufficient to refer to them, and to remark, that this is a very dangerous part of the islands, which should never be approached at night or in foggy weather.

Grand Entry Harbour.

At the N. W. end of Coffin Island, and between it and the sandbars to the westward, is the entrance of GRAND ENTRY HARBOUR, which has water enough within for large vessels, and is superior, in this respect, to any other in the Magdalens. But its entrance is extremely narrow, not exceeding 50 fathoms in breadth, and the narrow channel leading to it, between sandy shoals which are said to shift, extends $1\frac{1}{2}$ mile to the westward. These circumstances render instructions for entering it of no avail. A native pilot should be employed, or the channel buoyed or staked, and even

then the entrance should not be attempted excepting with a leading wind, flowing tide, and fine weather. The depth that can be carried in, at low water, is 10 feet : at high water, neap tides, 12 feet ; and in spring tides, 13 feet. There are 28 feet water at, and immediately within, the entrance. The ebb tide runs out with great rapidity, and the flood in is also strong. There are no settlements at Grand Entry Harbour, but there are a few families in the vicinity of the N. E. cape who breed cattle, and are of British extraction.

Within this harbour there is a large expanse of water, from 1 to 3 fathoms deep, extending north-eastward to the southern shores of Grosse Isle, and communicating by a very narrow channel with a large shallow pond, which washes the base of the N. E. cape, and extends to within about 2 miles of the eastern extremity of the chain. This great lagoon also extends south-westward, between a double line of sand-bars, to the eastern shores of Grindstone Island, and is, in all, 23 miles long, and from half a mile to 3 miles wide. Throughout its whole extent there is a communication for boats, at high water, perfectly sheltered from the sea. There are, at present, 3 entrances into this lagoon from the sea, namely, Grand Entry Harbour, already mentioned ; another $3\frac{1}{2}$ miles to the westward, which is very shallow ; and House Harbour, near its S. W. extremity, between Alright and Grindstone Islands. There were formerly others, which have been closed since the time of Des Barres, 1778 : and, on the other hand, the second, mentioned above, has opened since his time.

SHAG ISLAND is small and low, and of sandstone, lying about half a mile from the sand-bars, nearly midway between Coffin and Alright Islands, and out of the way of vessels.

CAPE ALRIGHT bears from the Old Harry Head, S. 72° W., $16\frac{1}{2}$ miles. It is the southern point of Alright Island, and a very remarkable headland. The cliffs, of a greyish-white colour, with occasional brick-red low down, are 400 feet high, at the highest part, which is about a mile to the eastward of the cape, and those to the westward of the cape, towards House Harbour, are also very high, and of the same colour.

Nearly a mile inland is the summit of Alright Island, 420 feet above the sea. Between this summit and the cape there is a very remarkable hill, named Bute-Ronde. The south extremity of the cape is low, with a small rock close off it.

Alright Reef. ALRIGHT REEF lies S. 80° E. $3\frac{1}{2}$ miles from Cape Alright to the outer edge of the reef, which is 400 fathoms long, by 300 fathoms wide. It is of white and pointed rocks having

Marks. over them 6 feet least water. On this reef the Bute-Ronde is on with the summit of Grindstone Island; the west side of Cape Alright is on with the west side of Cape Moule: and the whole of the woody Wolf Island is just open to the westward of

Clearing Mark. Shag Island. Therefore to clear the S. W. side, keep the well marked summit of Grindstone Island open to the south-westward of Cape Alright; and to clear the south-eastern side of this reef, keep the east side of the woods of Wolf Island (seen over the sand-bars) open to the eastward of Shag Island.

The N. E. point of Entry Island bears S. $\frac{1}{2}$ E. 7 miles, from Cape Alright; and the channel between them leads into Pleasant Bay, passing previously between Alright Reef and the Pearl Reef.

Pearl Reef. THE PEARL REEF is small and dangerous, and of white pointed rocks, like most of the reefs round these islands. It is round, and about 200 fathoms in diameter, with 9 feet least water. It bears S. 41° E., $8\frac{1}{4}$ miles from Cape Alright; and N. 80° E. $4\frac{1}{2}$ miles, from the N. E. point of Entry Island. Even with a moderate swell the sea breaks heavily upon it. The

Marks. marks on this reef are the Demoiselle Hill, open one quarter of a point to the northward of the cliffs of Entry Island, and exactly on with the extremity of the N. W. spit, above water, of the same island. This spit, however, can be seldom seen from the reef. The cross mark is the three high cliffs, on the S. W. side of Alright Island, nearly in one, bearing N. 44° W., when the north-westward of those cliffs will be seen over the middle one,

Clearing Marks. and between it and the south-eastmost. Hence, keeping all those cliffs open will clear the reef to the westward, and the north-westmost cliff completely shut in behind the other two will clear it to the eastward. The Demoiselle Hill shut in behind the north side of Entry Island will clear it to the southward; and, lastly, the Demoiselle kept more than half a point open to the northward of Entry Island will clear it to the northward.

To the N. W. of Cape Alright, and distant $2\frac{3}{4}$ miles, is the entrance of HOUSE HARBOUR, a narrow and crooked channel, with only 6 feet at low water.

From Cape Alright, S. 80° W. 5 miles, across the bay in which *Red Cape*. is the entrance of House Harbour, brings us to Red Cape, the southern point of Grindstone Island, and the north point of Pleasant Bay. The opposite point of the bay, Sandy Hook, is the east point *Sandy Hook*. of Amherst Island, and bears from the Red Cape S. by E. $\frac{1}{2}$ E., 6 miles. From this line to the shore of Amherst Island at the head of the bay, the distance is $4\frac{1}{2}$ miles. Between Red Cape and *Cape Moule*. House Harbour is Cape Moule, of grey sandstone, off which there is a rock, with 5 feet of water; and there is another rock, with 3 feet, off the west side of Alright Island. These will be seen in the chart, and as they lie out of the way of vessels, require no further notice.

GRINDSTONE ISLAND is the second largest of the chain, being, *Grindstone Island*. in this respect, intermediate between Amherst and Alright Islands. Its summit is elevated 550 feet above the sea at high water.

AMHERST ISLAND, the largest and south-westernmost of the Mag- *Amherst Island*. dalens, is connected with Grindstone Island by a double line of sand-bars, inclosing an extensive lagoon, 5 or 6 miles long, and from 1 to 3 miles wide, the southern part of which is called Basque *Basque Harbour*. Harbour. This lagoon is full of sands, which dry at low water, and has 30 outlets into Pleasant Bay, the southernmost being the deepest, but having only 3 feet water over its bar at low water. The others, including three through the sand-bars of the N. W. coast, will only admit boats at high water, and when the surf is not too high.

The hills in the interior of Amherst Island rise to the height of 550 feet above the sea. Towards the south-east part of the island, and about a mile to the N. W. of Amherst Harbour, is the very remarkable conical hill, named the DEMOISELLE, of trap *Demoiselle Hill*. rock, and 280 feet high. The perpendicular and dark red cliffs of the Demoiselle are washed by the waters of Pleasant Bay.

AMHERST HARBOUR is formed by a peninsula, presenting cliffs *Amherst Harbour*. of grey sandstone to seaward, in the S. E. corner of Pleasant Bay. Its entrance, between this peninsula and the sands to the southward, is $2\frac{1}{2}$ miles within, or to the westward of the extremity of Sandy Hook, which is a long and narrow sandy point with sand-hills. This harbour is the easiest of access and egress of any in the Magdalens, and has, moreover, the advantage of an excellent roadstead outside, where vessels may wait their opportunity of running in. Nevertheless, its entrance is extremely narrow and

Amherst Harbour. rather crooked, so that, without a pilot, it would be necessary to buoy or stake the channel. The depth over the bar, which is rocky, is 7 feet at low water, and from 9 to 10 feet at high water, according as it may be neap or spring tides. Within the harbour there are from 12 to 17 feet, over a bottom of soft, black, and fetid mud, well sheltered from every wind.

Pleasant Bay. PLEASANT BAY is the best roadstead in the Magdalens, and the only one where vessels can venture to lie with all winds, during the three finest months of summer, June, July, and August. In those months, a gale of wind from the eastward, so heavy as to endanger a vessel with good anchors and cables, does not occur above once in 3 or 4 years. The riding, however, is often heavy and rough enough in north-east gales, and a vessel should be well moored with a whole cable on each anchor, an open hawse to leeward, and all snug aloft.

The best and most sheltered anchorage is in 4 fathoms, with the rocky point of entrance of Amherst Harbour bearing S. W. $\frac{1}{2}$ W., two-thirds of a mile, and a little more than half a mile from high water mark on the sandy beach to the southward, when a remarkable and high sand-hill will bear S. $\frac{1}{2}$ E. A large ship should anchor further off, and should take notice, that there is only from 3 to $3\frac{1}{2}$ fathoms in one part of the bay, as will be seen in the chart. The bottom is everywhere excellent for holding, and of red sandy clay. A vessel, anchored as I have recommended, will be sheltered from E. N. E. $\frac{1}{2}$ E. round by the southward and westward to N. E. $\frac{1}{2}$ N., and will, consequently, have only 3 points completely open. Even when the wind comes right in, the sea is much lessened by passing over so much of shoal water; nevertheless, I am of opinion, that the attempt to ride out a heavy easterly gale, either before June, or after August, would be attended with great danger, and do not recommend Pleasant Bay as a pleasant place under such circumstances at any time of the year. In the northern and western parts of the bay, sandy flats extend more than a mile from the beach.

Sandy-hook Channel.

From the Sandy Hook to the N. W. point of Entry Island, the bearing is east, by compass, $2\frac{1}{2}$ miles. There is an extensive flat sandy shoal running out 2 miles from Sandy Hook towards Entry Island, which last has also rocky shoals off its west side. Sandy-hook Channel, between them, is two-thirds of a mile wide, and 4 fathoms can be carried through it by a good pilot, but $3\frac{1}{2}$ fathoms

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is the utmost that can be safely reckoned on by a stranger. *Sandy-hook Channel.* There are several rocky patches of $2\frac{1}{2}$ fathoms off the S. W. point of Entry Island, reaching to fully three-quarters of a mile from the shore. The ebb tide sets strongly through this channel, and over Sandy-hook Flat, so that large vessels should go round to the eastward of Entry Island rather than encounter so many difficulties. To run through Sandy-hook Channel from the sea, keep the east side of Alright Island just open to the westward of the shingle and sandy spit forming the N. W. point of Entry Island, until abreast of the S. W. point of the last named island, then haul up for the summit of Grindstone Island, looking out for the edge of the land shoal to the westward, which can generally be seen.

ENTRY ISLAND is the highest of the Magdalens, its summit *Entry island.* being 580 feet above the sea at high water. Its red cliffs are magnificent and beautiful, rising, at the N. E. point, to 350 feet; and at the south point to 400 feet of perpendicular height. Off the N. E. point there is a high rock about half a cable's length from the cliffs, and on its north side the remarkable Tower Rock, of red sandstone joined to the island, and which can be seen from the S. W. over the low N. W. point, as well as from the N. E.

Vessels occasionally anchor under Entry Island in northerly and easterly winds, but it is rough riding, by reason of the sea which rolls round the island.

The inhabitants of Entry Island raise cattle and sheep, depending more upon the sale of fresh provisions than the fisheries. Vessels may, therefore, almost always obtain supplies.

From Sandy Hook the south coast of Amherst Island, consisting *South coast of Amherst Island.* of sand-hills and beaches, with shoal water half a mile off, curves round to the westward, for 6 or 7 miles, to the entrance of a basin, which extends nearly across the island to within less than half a mile of Pleasant Bay. The Basin is now so nearly closed *The Basin.* with sand, that boats can only enter at high water, and in the finest weather; but, formerly, the entrance was deep enough for large schooners, and it has been frequented by those vessels within the memory of the elder inhabitants.

There is good anchorage off the entrance, in from 6 to 9 fathoms sandy bottom, and with winds from N. W. round by north to east.

Amherst Cliffs. A mile-and-a-half to the westward of the entrance of the basin, cliffs commence and continue, except in Cabane Bay, to the west cape, which is the highest cliff of Amherst Island, its summit being 300 feet above the sea. There is a remarkable

Detached Rock. rock above water close to the shore, and about a quarter of a mile to the southward of it.

Cabane Bay. CABANE BAY is a small bight, between the south and S. W. capes of Amherst Island, where vessels may safely anchor with northerly and easterly winds, and where good water may easily be obtained. The best berth is in 8 or 9 fathoms, sandy bottom, off the centre of the bay, with the south cape and Cape Percé in one, three-quarters of a mile off shore.

36. From the west cape, the remainder of the sea-coast of Amherst Island consists of red cliffs, without beach, but having shoal water one-third of a mile off shore, all the way to West Lake, a small pond at the S. W. end of the sand-bars, which join Amherst and Grindstone Islands. At the N. E. extremity of these sand-bars is GULL ISLET, which is small, rocky, and close to the western point of Grindstone Island, and has shoal water off its west point to the distance of one-third of a mile. About $1\frac{1}{2}$ mile south-westward of it, nearly $1\frac{1}{2}$ miles off the N. W. outlet of Basque Harbour, and with the west side of Gull Islet and Gros Cap in one, lies a rocky shoal with 3 fathoms at low water, and leaving no good passage between it and the shore. Close to the N. E. of Gull Island is the Etang du Nord, a small inlet, affording good shelter to boats.

Hospital Rock. The northern shore of Grindstone Island is of red sandstone cliffs, less high than those of Amherst Island. Near their N. E. extreme lies the Hospital Rock, close to the shore, and also some rocky 3 fathom patches, more than half a mile from the shore, as will be seen in the chart.

White Horse. THE WHITE HORSE is the name of a very dangerous reef, lying N. 60° E., 7 miles, from Deadman Islet; and due W. N. W. $5\frac{1}{2}$ miles, from Gull Islet. It is extremely small, being scarcely more than a cable's length in diameter; and having 10 feet least water over pointed rocks, on which the sea often breaks. On this reef the summit of Entry Island is seen over a low part of the sand-bars at the N. E. outlet of Havre Basque, but this mark cannot be easily discerned by a stranger,

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nor is there any other; but the bearings and distances, together *White Horse*, with the chart, will be a sufficient guide. To those that can take a terrestrial angle with a quadrant, a matter so simple that it is astonishing that it is not more generally known and practised, the following may be of use. When on the reef the western extremity of Amherst Island and Hospital Cape (the north-eastern extremity of the cliffs of Grindstone Island) subtend an angle of $91^{\circ} 30'$; consequently with these points subtending a less angle by 3 or 4 degrees, the vessel will pass outside of the reef. With a greater angle, 94 or 95 degrees, she will pass inside of it, or between it and the shore.

There are irregular soundings and foul ground between this reef and the shore, but nothing less than 5 fathoms, excepting what has been already mentioned.

THE PIERRE DE GROS CAP is another dangerous reef of rocks, *Pierre de Gros Cap*, nearly of the same size as the White Horse, and having 18 feet least water. This reef is seldom seen, as the sea breaks upon it only in very heavy weather. It lies N. 62° E., 6 miles, from the White Horse; due north from the west point of Etang du Nord; N. 56° W. from Hospital Cape, and $3\frac{1}{2}$ miles off Cape le Trou, the nearest point of Grindstone Island. The marks on this reef are—First, The summit of Alright Island seen over the N. E. point of Grindstone Island, which is in the lagoon, and very nearly on with Hospital Cape. Secondly, the Bute de Portage, a hill of Amherst Island, situated about $1\frac{1}{2}$ miles N. W. of the Demoiselle, midway or in the centre of the narrow passage between Gull Island, and the west point of Etang du Nord. These marks kept open will clear the reef to the N. E. and S. W., and a vessel will pass well clear outside of it, and also of the White Horse, if Deadman Islet be not brought to bear to the westward of S. W. $\frac{1}{2}$ W.

From Hospital Cape to Wolf Island, off which there is a rocky 3 fathom shoal nearly half a mile from the shore, the northern coast of the Magdalens consists merely of sand-beaches and sand-hills for a distance of 9 or 10 miles. The low sandstone cliffs of WOLF ISLAND, which is about three-quarters of a mile long, interrupt the continuance of the sandy shore for only half a mile; the sand beaches then recommence, and continue, with high sand hills occasionally, 9 or 10 miles further, to the

north cape. In all this part the sand-bars may be safely approached by the lead as near as 9 or 10 fathoms of depth of water.

North Cape.

The NORTH CAPE of the Magdalens is the northern point of Grosse Isle, and a precipice of considerable height, but not so high as the west point of the same island, which is in the great lagoon, and 300 feet above the sea.

*North Cape
Rocks.*

The NORTH CAPE ROCKS, some of which always show, lie to the westward of the cape, the outermost being 600 fathoms off shore. The west end of these rocks bears S.S.E. from the high S.W. side of Grosse Isle, and their extent to the eastward is marked by the N. E. sides of the north and N. E. capes in one. Therefore, in running down from the westward to anchor under the north cape, do not come nearer to the shore than 1 mile until the above-named marks open. In this anchorage, namely to the eastward of the north cape, vessels may ride in 8 or 9 fathoms, over sandy bottom, with all southerly winds, and will find good holding ground, and plenty of room to get under weigh. Water may be had in small quantities near the houses on the east side of the north cape, but there are no good watering-places excepting those already mentioned.

The coast continues from the north cape, in a curved line of sand-beaches and sand-hills, for about 6 miles, which distance again brings us to the east point, and completes the description of the Magdalens.

*Making the
Magdalens
from the South-
ward.*

37. Although, I have given a general description of the appearance of the Magdalens, yet as vessels passing to the southward of them have been directed to endeavour to make Entry Island, it may be useful to add, that that island, when first made from the eastward, will appear like a double peaked hill, sloping somewhat abruptly down to perpendicular and high cliffs on either side. The S. W. point of Amherst Island is also a steep cliff, but of less height, and as there is no land to the southward and westward of it, it cannot be mistaken. The land rises from it in undulations to the highest parts of the island. Should the weather be foggy the soundings, as shown in the charts, will safely guide vessels passing to the south-eastward of the islands. The general soundings around the Magdalens, which extend off them so many miles in every direction, and which have now

for the first time been correctly laid down by us, thus affording an invaluable assistance to vessels at night or in foggy weather, will be better understood from the charts than by any written directions.

I have now only to notice the important subject of the *Tides and Currents.* set of the currents or tidal streams around these islands, respecting which I can say nothing that will not be subject to exception, for they are so irregular, that the most experienced and intelligent pilots for the islands, who are also fishermen, who have passed their lives in fishing craft around them, can give no certain account of their rate and direction, but all agree in stating, that they vary in both respects, either from the effects of winds, or other and unknown causes.

Nevertheless, the following observations will hold good as a general rule, and although subject to occasional interruption the set of the tidal streams, which I am about to describe, will be found to recur with considerable constancy in fine weather.

A few miles outside of Bryon Island and the Bird Rocks, there appears to be usually a current setting to the south-eastward, out of the Gulf; but the stream of flood tide flows between them and the Magdalens. The stream of flood comes from the S. E., and is divided by the east point of the Magdalens. One branch of the stream sets strongly over the Long-spit, which, with the Old Harry Head and the shoals off it, turn it off to the south-westward towards Entry Island, leaving nearly slack water in the bay between Coffin Island and Cape Alright, and also in Pleasant Bay. The other branch, to the northward of the islands, follows the shore from East Point round to the south-west cape of Amherst Island, whence the greater part of the stream continues its course to the S. W.; whilst the remainder, following the shore runs round, and along the southern coast of Amherst Island, until it meets the before-mentioned other branch of the stream from the east point setting off the east side of Entry Island; it is overcome by this other branch and turned gradually round to join the general weak stream of flood to the westward in the offing. *Flood Stream.*

On the S. E. side of the islands, the stream of the ebb tide *Ebb Stream.* sets strongly out of the lagoons and out of Pleasant Bay, between the Sandy Hook and Entry Island. It is also often found running to the westward along the southern shores of Amherst

Tides.

Island, and right round it in like manner, but contrary in direction, to the course of the flood already described. In the offing, at the same time, the stream of ebb is from the S. W., and sets over the sandspit off the Sandy-hook Point, where it meets the stream from the N. W., which has followed the north shore of the islands, round from Amherst Island to the east point. The meeting of these two streams of the ebb tide, together with the shoalness of the water, causes so heavy a breaking sea in strong easterly winds, that the fishing shallows dare not venture at times to pass the point.

The rate of either stream seldom amounts to a knot, excepting close in shore, or round the points. The ebb, however, is generally the stronger stream, and its rate is increased by westerly winds, as is that of the flood by winds from the eastward.

ANTICOSTI ISLAND.

*General
Description of
Anticosti.*

38. The island of Anticosti, situated in the entrance of the N. W. arm of the Gulf of St. Lawrence, is 122 miles long, 30 miles in extreme breadth, and about 270 miles in circumference, following the coast from point to point across the bays.

Limestone.

Its shores are everywhere of rock, belonging to one great formation, namely, a very ancient secondary limestone, affording in some parts excellent building stone, of which the two light-houses have been constructed.

Dwarf Trees.

On and near the coasts, the limestone is covered with a thick and often impenetrable forest of dwarf spruce, which, in some exposed situations, is only a few feet in height, with gnarled branches, so twisted and matted together, that a man may walk for a considerable distance on their summits. Extensive banks of limestone shingle, bush, swamps, morasses, and also beds of peat, are of common occurrence.

Timber.

The interior of the island is probably less sterile, for I have seen white spruce spars large enough for the masts of a schooner of 60 tons, and others of juniper; with a species of larch of excellent quality, and of sufficient size to form the keel of a vessel of the same dimensions. Black and white birch, and ash, the latter of bad quality, complete the list of trees which attain to any size upon the island. These, indeed, are not indicative of a very good soil anywhere, but when they attain to large dimensions some soil at least will be found.

Land birds appear to be very scarce, probably because there are few wild fruits for their support, the cloud berry, on the peaty morasses, being the only one we observed in any plenty. Even the common Canadian partridge, or wood grouse, to be found almost anywhere else, is said not to exist upon this island. In winter, however, the white partridge, probably ptarmigan or willow grouse, is seen in the interior. There are as few varieties of quadrupeds as of the feathered tribes. The squirrel and Canadian hare, without which I have rarely seen an island of any size in the Canadas, were never seen by us, and are reported not to exist here. If I may believe the account of M. Gamache, who has resided and hunted here for many years, there are only 4 or 5 species of quadrupeds upon the island, namely, the black bear, fox, otter, martin, and a few mice. I was also informed, that there are neither snakes, toads, nor frogs, nor did we ever see any; and that rats, which have occasionally landed from wrecks, have soon disappeared.

General Description of Anticosti. Birds. Quadrupeds.

The climate, from its proximity to an open sea, is probably not more severe in winter than that of Quebec, although further to the north, but the summers are cold, wet, and stormy, with frequent fogs. Frosts are common in August, and in some severe seasons they occur in every month of the year. It is probable that no other grain but barley would ripen here, unless it might be oats occasionally in sheltered situations. Potatoes are frequently prevented by early frosts from coming to perfection, although planted in the most favourable situations.

Climate.

It appears, therefore, that not much can ever be expected from the products of the soil, but the forests, the rivers, the reefs, and the surrounding sea, contribute in affording a profitable return to the industry of the few persons who reside upon, or frequent the island.

Streams of excellent water descend to the sea on every part of the coasts. They are generally too small to admit boats, becoming rapid immediately within their entrances, and even the largest of them, Observation River, to the westward of the S. W. point, is barred with sand, excepting for short intervals of time after the spring freshets or heavy rains.

Rivers. Trout and Salmon.

Many of these streams abound with trout, and are visited periodically by great numbers of salmon, which are taken by the 2 or 3 resident families, and salted for the Quebec market.

*General
Description of
Anticosti.
Codfish.*

Seals frequent the flat limestone reefs, and are killed annually in great numbers for their skins and oil.

*Bears.
Exports.*

Codfish are taken occasionally off several parts of the coast, in small schooners from the Magdalens, and other parts of the Gulf. Their crews often join the occupation of wrecker to that of fishermen. The black bears are very numerous, and may frequently be seen wandering along the shores. Their skins, together with a few of the other animals named, salted salmon, seal skins, and seal oil, are the only exports, and are taken to Quebec, together with occasional cargoes of goods and people saved from wrecks in M. Gamache's schooner, the only vessel belonging to the island. Wild geese, outards, and ducks of various species are abundant, and breed upon the island.

Elevation.

Anticosti is estimated to be nowhere higher than 700 feet above the sea. Its south coast is low and shelving, with reefs of flat limestone which dry at low water. There is, however, a range of highlands in rear of the S. W. point, and extending for some miles both to the north-westward and south-eastward of it. The north coast, for 70 or 80 miles to the westward of the east point, is bold, precipitous, and of considerable elevation. Pictureaque headlands, the eastern terminations of parallel ridges of table land, that rise gently with the strata from the S. W., end in magnificent cliffs of limestone, which are externally so nearly white from the effects of weathering, as to resemble chalk. Some of these cliffs are upwards of 400 feet in perpendicular height. The remainder of the north coast is low, with reefs of flat limestone, like the southern shores.

No harbour.

It is unusual to find an island so large as Anticosti without a good harbour. Limestone coasts are in general characterised by deep inlets and bays, peninsulated points, and detached islets and rocks, but nothing of the kind will be found here, and there is not a single detached shoal off any part of the coasts.

*Dangers of its
coasts.*

This island has been generally believed to be extremely dangerous. Its reefs of flat limestone, extending in some parts to $1\frac{1}{2}$ mile from the shore, the want of anchorage off most parts of the coast, and above all the frequent fogs, justify this belief in part, but not in so great a degree, as to render reasonable the dread with which it seems to have been occasionally regarded, and which can only have arisen from the natural tendency to magnify dangers of which we have no precise knowledge.

The people in charge of the lighthouses and provision-posts, and one man at Fox Bay, are the only resident inhabitants of the island. The provision-posts have been established by the government and legislature of Lower Canada, for the relief of the crews of vessels wrecked upon the island. Vessels are more frequently lost here in the bad weather at the close of the navigable season, than at other times, and their crews would perish from want and the rigours of a Canadian winter, if it were not for this humane provision. The first of these posts is at Ellis Bay, the second at the lighthouse at the S. W. point, the third at Shallop Creek (sometimes called Jupiter River), and the fourth at the lighthouse on Heath Point.*

The lighthouse, on the extremity of the S. W. point, has been built of a very beautiful greyish-white encrinital limestone, quarried on the spot. The tower is of the usual conical form, and 75 feet high. The light, which is bright, and revolves every minute, can be seen from N. N. W. round by west and south to S. E. by E. The lantern is elevated 100 feet above the sea at high water; consequently the light can be seen from a distance not exceeding 15 miles, when the height of the observer's eye is 10 feet above the sea. When the height of the eye is 50 feet, the greatest distance from which the light can be seen will be about $19\frac{1}{2}$ miles, and if the eye be elevated 100 feet the light will be visible as far off as 23 miles nearly, in the average state of the refraction. Hence by ascending the rigging till the light just shows above the horizon, and then measuring the height of the eye above the sea, a very near estimate of the vessel's distance at night may be obtained. This lighthouse, and attached provision-post, are in charge of Lieutenant Harvey, on the half-pay of the navy.

The other lighthouse, on the southern extremity of Heath Point, is of the same form, dimensions, and colour, as the above,

* There are direction boards erected on the shore, or nailed to trees, from which the branches have been cut off, near the beach, and on various parts of the coast. These direction boards are intended to point out to shipwrecked persons the way to the provision posts. The direction boards were placed on the following parts of the shore, as I find from Mr. Lambly's remark-book, for I have not seen them all:—1st. On the west point. 2nd. Four leagues south-eastward of Ellis Bay. 3rd. Ten leagues westward of Shallop Creek. 4th. Seven leagues eastward of Shallop Creek. And there were formerly others on Heath Point and the S. W. point, which the lighthouses have rendered unnecessary.

General Description.
Inhabitants.
Provision Posts.

Lighthouse on the South-West Point.

Lighthouse on Heath Point.

Direction Boards.

Description of Anticosti, South Coast. and is also built of the island limestone. It has not as yet been lighted, from want of funds, but is intended to show a bright fixed light from W. N. W. round by S. to N. E. by N. The lantern will stand 100 feet above the sea.

Having given this general description of the island, I will now notice more particularly its shores, reefs, and anchoring places.

East Cape. 39. THE EAST CAPE OF ANTICOSTI is a perpendicular cliff of limestone, rising to the height of 100 feet above the sea. The ridge, of which it is the south-eastern termination, trends to the westward inland, and the extremity of the very low land to the southward of it is Heath Point, on which is the lighthouse, bearing from the east point N. E. $\frac{1}{4}$ N., $3\frac{1}{4}$ miles. Between the 2 points is Wreck Bay, which is dangerous and affords no anchorage. Off to the S. E. from the east cape a reef extends rather more than one-third of a mile.

Heath Point. HEATH POINT is of limestone, about 10 feet high, with a superstratum of peat, in which there are several ponds of dark bog water. Being so low, this Point disappears below the horizon at the distance of a few miles, the lighthouse then appears like a sail off the island, and is extremely useful, in marking the extent of the low land to vessels, either from the eastward or westward, as well as in showing its position from the southward, from which direction it cannot be made out at night, being hidden by the high land behind, or to the northward.

Heath Point Reef. The most dangerous reef off this end of the island, runs out from Heath Point to the E. S. E., nearly 2 miles, at which distance there are 5 fathoms of water. Within that distance the reef is composed of large square blocks of limestone, with very irregular soundings varying from 2 to 5 fathoms. The rocky and irregular soundings from 5 to 7 fathoms extend nearly 3 miles off Heath Point, so that I recommend vessels not to approach nearer, on any bearing from the Point between S. E. by S. and E. by S. With the east cape bearing N. by W. the vessel will pass just outside of the shallow and irregular soundings in about 20 fathoms of water.

Heath Point Anchorage. Off Heath Point, to the southward and westward, the shoal water does not extend beyond three-quarters of a mile, and further off on that side there is one of the best open anchorages on the island. The best berth is in 10 fathoms, over sand and mud bottom, with the lighthouse E. by N., and Cormorant Point

not to be approached nearer than 3 miles, or in 20 fathoms water.

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nothing to the westward of W. N. W. The vessel will then be *South Coast.*
2 miles off shore, and will be sheltered from all winds from
W. N. W. round by the N. to E. by N.

From Heath Point Cormorant Point bears W. by N., 6 miles; *Cormorant Point.*
and the south point bears W. N. W. $16\frac{1}{2}$ miles from Cormorant
Point. In this distance the coast is low, and undulating, with
points of low limestone cliffs, and beaches of sand and shingle in
the bays, inclosing large ponds or lagoons, into many of which
the tide flows, and also small streams from the interior of the
island. This part of the coast may safely be approached by the
lead, as will be seen in the chart, for the reefs nowhere extend
further off than three-quarters of a mile till we come to the south
point.

The SOUTH POINT is a cliff of sandy clay, resting upon lime- *South Point.*
stone. It is estimated not to exceed 60 feet in height, and there
is nothing remarkable in its shape; but there is no other clay
cliff near it, and as it is an extreme point, there will be little
difficulty in distinguishing it by the trending of the land. The
reef off it to the southward, runs out nearly $1\frac{1}{2}$ miles, and the sea *Reef.*
usually breaks upon it. The light on Heath Point and Cor-
morant Point in one, bearing E. by S., clear this reef at the
distance of 2 miles, but I fear that the light will seldom be seen
up to the reef, which is distant 22 miles from it. The leading
mark will nevertheless be of use to vessels between South
Point and Cormorant Point.

From South Point to the lighthouse on the S. W. point, a *South Coast.*
distance of 56 miles, there is such a sameness in the character of
the coast, that it is very difficult to make out one part from
another.

The houses, however, of Mr. ~~Hamilton~~ *Hamilton*, in charge of the pro- *Shallop Creek.*
vision-post, at Shallop Creek, will be seen 13 miles north-west-
ward of the south point, and at the first limestone cliff to the
north-westward of those houses is Pavilion River, 24 miles from *Pavilion River.*
South Point. In this distance the coast is very low, and may
be approached safely by the deep sea lead, the soundings in
moderate depths extending from 5 to 8 miles off, as will be seen
in the chart. The coast begins to rise at Pavilion River, there
being a high ridge close in rear of the coast all the way to the
south-west point, and beyond it for some miles. This distance of
32 miles, between Pavilion River and the S. W. point, comprises

Description of Anticosti, South Coast. the boldest parts of the south coast of the island, but should be very cautiously approached in foggy weather, as there is little or no warning by the lead. When far enough to the westward, the light on South-west Point bearing nothing to the westward of N. N. W., as before directed (art. 23), will be a sufficient guide.

Reefs off the South-West Coast. In the whole distance from South to South-west Points, the reefs nowhere extend further off from high water mark than one mile, and the island may therefore be safely approached to within 2 miles.

Salt-lake Bay. Eleven miles south-eastward of South-west Point, is SALT-LAKE BAY, which has fine sandy beaches, enclosing lagoons or ponds, into which the tide flows. Off the centre of this Bay, and with its N. W. point bearing N. by E. $\frac{1}{2}$ E., distant $1\frac{1}{2}$ miles, there is very indifferent anchorage, in 7 fathoms, over sandy bottom.

Foul ground. Vessels should be careful not to anchor further to the southward and eastward, since there is some foul and rocky ground about a mile in that direction from the position which I have recommended. There are 7 fathoms rocky bottom marked in the chart on the spot to which I allude, and there is probably less water between it and the south-eastern point of the Bay, so that no one should attempt to pass between it and the shore.

South-West Point. The S. W. point of Anticosti is a low projecting ridge of limestone, having a small cove on its north side, which forms it into a peninsula. The land rises gradually, in the rear of this, to the summit of the ridge above-mentioned. On the south side of the point there is a beach of limestone gravel on which boats may land, as well as in the cove on the north side, when the wind is off the land, and the sea smooth.

Landing Beaches. On the north side of the point, and for several miles along the coast to Observation River, the cliffs are perpendicular and washed by the sea. The lighthouse (page 65) stands on the western extremity of the point, and forms a very conspicuous land-mark. A reef extends out from the point, to the west and S. W., not more than half a mile; and 2 miles off, in the same direction, there are 30 fathoms, over rocky bottom, deepening rapidly to 65 fathoms, with sand and shells, at the distance of 3 miles. At the distance of 6 miles, to the southward and westward of the point, the depth is about 110 fathoms, with mud bottom, and increases to 200 fathoms nearly midway towards the south coast

Lighthouse. A reef extends out from the point, to the west and S. W., not more than half a mile; and 2 miles off, in the same direction, there are 30 fathoms, over rocky bottom, deepening rapidly to 65 fathoms, with sand and shells, at the distance of 3 miles. At the distance of 6 miles, to the southward and westward of the point, the depth is about 110 fathoms, with mud bottom, and increases to 200 fathoms nearly midway towards the south coast

Reef from S. W. Point.

Soundings.

There is a bay on the north side of the point, in which vessels *West Coast.* may anchor in 12 or 13 fathoms, over a bottom of sand, gravel, *Anchorage at* and broken shells, and with the extremity of the point bearing *South-West Point.* S. S. W. $\frac{1}{2}$ W., distant three-quarters of a mile, when the cliffs to the eastward will be at the same distance. The shelter is from N. by E. round by E. to S. by W., and small vessels may lie closer under the point, but it is a dangerous state to be caught in by westerly winds, which are preceded by a heavy swell. The ground, I think, is not to be trusted, so that, altogether, I do not recommend any vessel to anchor here unless in case of necessity.

There is no anchorage from South-west Point to Ellis Bay, *No anchorage from thence to Ellis Bay.* and as I have already given directions respecting this part of the western coast (art. 23) little remains to be noticed. The reefs of flat limestone extend from it, in most parts, fully a mile; and often have 10 or 12 fathoms of water close outside of them; but vessels, with the lead going, may safely stand in as near as 2 miles, or, which will be safer than an estimated distance, had better tack in 17 fathoms.

OBSERVATION RIVER, $5\frac{1}{2}$ miles northward of South-west *(Observation River.* Point, is the largest stream on the island, having 5 or 6 feet of water in its entrance after the melting of the snows in the spring of the year, but soon becomes barred with sand by the S. W. gales. It becomes shoal and rapid immediately within, though it has a course from the eastward of many leagues. Its source does not appear to be known to the people of the island. Immediately to the northward of this river there are very conspicuous, and high, *High Sandy Cliffs.* sandy cliffs. The St. Mary Cliffs, 21 miles from South-west *St. Mary Cliffs.* Point, are also of sand, less high, and less remarkable, but yet not difficult to distinguish.

BEESCIE RIVER is a very small stream, at the head of a small *Beescie River.* cove affording shelter to boats, and where there is a hut, at which a hunter and fisherman occasionally resides. It is 7 miles north-westward of the St. Mary Cliffs, and 12 miles south-eastward of Ellis Bay.

ELLIS BAY affords the only tolerably sheltered anchorage *Ellis Bay.* in the island. Vessels, whose draught is not too great for a depth of 3 fathoms, may safely lie there during the three finest months of summer, namely June, July, and August; but they should moor with an open hawse to the southward. Larger vessels, whose object is to remain for a few hours only, may

Description of Anticosti, West Coast. anchor further out, and in $3\frac{1}{2}$ and 4 fathoms, but neither the ground nor the shelter will be found so good as further up the bay.

Best Anchorage in Ellis Bay. The best berth is in a line between Cape Henry and the white cliff, bearing W. S. W. $\frac{1}{2}$ W., and E. N. E. $\frac{1}{2}$ E. respectively from each other. Gamache house, N. by E., and Cape Eagle between S. S. E. $\frac{1}{2}$ E., and S. S. E. $\frac{1}{4}$ E. The vessel will then be in 3 fathoms, over muddy bottom, distant about 300 fathoms from the flats on either side, and about half a mile from those at the head of the bay. The extremities of the reefs, off Capes Henry and Eagle, will bear S. W. by S., and S. $\frac{1}{2}$ E. respectively; thus leaving $3\frac{1}{2}$ points of the compass open, but in a direction from which heavy winds are of very rare occurrence, and never last long. Moreover, when they do chance to occur, the sea is much less at the anchorage than might be expected, although very

Reefs from Capes Henry and Eagle.

heavy in the entrance between the reefs. These reefs are of flat limestone, and dry at low water; and as the tides only rise from 4 to 7 feet, the sea always breaks upon them when there is the least swell. The reef off Cape Henry runs out nearly a mile to the southward, and that off Cape Eagle nearly three-quarters of a mile to the westward. The entrance between them is 600 fathoms wide, from 3 fathoms to 3 fathoms. Extensive flats project from these reefs quite round the Bay, and do not entirely dry at low water, excepting in very low spring tides, but there are immense boulder-stones upon them which always show. These flats occasion the landing to be very bad, excepting at high water, which is the only time that supplies of good water can be obtained from Gamache River.

Bad landing.

Good Water.

Gamache River.

Ellis Bay can be easily made out from sea, for Cape Henry is a bluff point, and the land being very low at the head of the Bay, occasions the opening to show distinctly. On a nearer approach Cape Eagle and White Cliff on the east side, and the houses near the head of the bay, will be easily recognized with the assistance of our chart; whilst two ridges, or hills, will be seen far back in the country, and to the northward and eastward.

Cape Eagle easily recognised.

Directions for entering Ellis Bay.
Cap. A. Bay

The long line of breakers on either side, and the numerous large stones so far from the shore a-head, will present anything but an agreeable appearance to those who may approach this Bay for the first time, but there will be no danger, if the following direction be attended to. In approaching the Bay from the west-

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ward, with westerly winds, run down along the outside of the *West Coast*. reefs off Cape Henry by the lead, and in 10 fathoms, until the *Ellis Bay*. following leading marks come on; namely, the west side of *Entrance* White Cliff on with the east side of the westernmost of two hills, *Marks.* far back in the country, and bearing N. E. $\frac{3}{4}$ N.; then haul up with these marks on, and they will lead you into smooth water close under Cape Henry Reef, in $3\frac{1}{2}$ fathoms. Continue running in, with these marks on, till Gamache house bears N. by E.; then haul up for it, and anchor in the berth which I have previously recommended. The lead should be kept going; and the reefs on either side should not be approached nearer than 3 fathoms, in any part, until you arrive at the anchorage.

In running for the Bay from the south-eastward, with an easterly wind, come no nearer to the west point of Cape Eagle Reef than 7 fathoms, until the east side of White Cliff come on with the east side of the same hill as before; then haul up with this mark on till the houses bear N. E., and proceed as above directed. Take notice that the west side of White Cliff is used for the leading mark in westerly winds, and the east side in easterly winds, the intention being to keep the vessel in either case from going too near the lee side of the channel.

On the outside of Cape Henry, and continuing to the west *Reefs between* point of Anticosti, reefs extend $1\frac{1}{4}$ miles from the shore; and *Cape Henry* vessels approaching it should keep the lead going, and attend *and West Point.* to the soundings in the chart.

40. WEST POINT is low and wooded, with reefs which do not *West Point.* extend beyond a mile from the shore, and vessels may pass it in 15 fathoms at the distance of $1\frac{3}{4}$ miles.

The north coast of Anticosti, between the west and north *North Coast.* points, is low, with reefs of flat limestone, extending 1 mile from the shore. There are soundings, in moderate depths, for more than 1 mile out from the reefs. Vessels should not go nearer than 25 fathoms. In the rear of the coast, and about halfway between the west and north points, are the two hills or ridges, mentioned as forming one of the leading marks for Ellis Bay. From North Point to High Cliff, a distance of 13 miles, the coast is rather more bold and elevated, parallel ridges, in an east and west direction, and with small streams between them, beginning to abut upon the coast. NORTH POINT is wooded,

Description of Anticosti, North Coast. of very moderate height, and without any cliff. It is so little remarkable as to be only distinguished by the change which takes place at it in the direction of the coast. High Cliff Cape is easily recognised, being the only cliff on the island that has a *talus* in front of it, or that has not its base washed by the sea at high water.

From High Cliff to White North-cliff. From High Cliff to White North-cliff, a distance of 26 miles, the coast is low in front, with ridges of considerable elevation a few miles back in the country. This is the most dangerous part of the north coast, for the reefs extend nearly 2 miles out from high water mark, beginning at some low cliffs 7 miles eastward of High Cliff Cape, and continue to do so for 4 or 5 miles to the south-eastward, after which they gradually diminish in breadth, till at White North-cliff they are not more than half a mile from the shore. There is, however, less warning by the deep sea lead all along this part of the coast until we approach White North-cliff, off which there are 70 fathoms, at the distance of $1\frac{1}{2}$ miles from the surf.

White North-cliff. White North-cliff is very remarkable, for there is no other high cliff near it. It appears like a white patch on the land, and can be seen from a distance of 6 or 7 leagues.

Carleton Point. Anchorage, Wood, and Water. Cape Observation. Low cliffs commence 4 miles south-eastward of White North-cliff, and continue to Carleton Point, under which vessels may anchor in fine weather and westerly winds, and obtain wood and water. Ten miles further to the south-eastward is Cape Observation, a bold, high, and remarkable headland. On its west side there is a magnificent range of greyish white cliffs several hundred feet high. At the extremity of the cape, these cliffs become suddenly much lower, and then rise again to their former elevation for a short distance on the east side. As this is well described in the chart the cape will be easily recognised. Vessels may anchor under it with westerly winds and fine weather, and obtain supplies of wood and water very conveniently. Twelve and a half miles further south-eastward, along a bold coast with high greyish white cliffs and small bays between, brings us to Bear

Anchorage, Wood, and Water. Head, also of greyish white cliffs 400 feet high, and resembling in some degree Cape Observation. This last named cliff has no equally high cliffs to the westward of it, whilst Bear Head has a difference which will prevent the one from being mistaken for the other.

From the West Cliff to Bear Head the coast is extremely bold, *North Coast.* there being in most parts 100 fathoms of water within 3 miles of the shore.

BEAR BAY is situated between Bear Head and Cape Robert, *Bear Bay.* which are distant nearly 6 miles from each other, in a N. N. W. $\frac{1}{4}$ W. and S. S. E. $\frac{1}{4}$ E. direction nearly. It is by far the best roadstead *Good Roadstead.* on the north coast of Anticosti, and, indeed, the only one in which a large ship would like to anchor, unless she had some particular object in view. It is sufficiently roomy, the bottom is excellent for holding, the depth of water moderate, and the shelter extends from N. N. W. round by west and south to S. E. by S. In order to recognise this anchorage, it may be observed that Cape *Cape Robert.* Robert consists of cliffs of the same colour and elevation as those of Bear Head; and that there are two other points of cliffs 300 feet high within the bay, the south-eastmost of which is named Tower Point. Between Tower Point and Cape Robert, at *Tower Point.* a distance of one mile from the former, as well as from the western shore, and in 13 fathoms of water over a bottom of brown mud, is the best anchorage, where Tower Point will bear N. W. $\frac{1}{4}$ W., Cape Robert S. E. $\frac{1}{2}$ S., and Bear Head N. by W. $\frac{1}{4}$ W.

Bear Bay is divided into three smaller bays by the two high points of cliff which I have mentioned. In each of these bays there are fine bold beaches of sand and limestone shingle, and streams where water may be easily obtained. But the principal *Water.* stream is Bear River, which enters the southernmost of the three bays close to the S. E. side of Tower Point. It is too shallow and rapid to admit boats, but the water is clear and good. The cliffs in Bear Bay are magnificent: they are of greyish white limestone, in thin strata dipping very slightly to the southward, and are perpendicular or overhanging. At the extremities of the points the cliffs are rounded by the action of the waves and atmosphere so as to resemble towers, which resemblance is rendered stronger by the masonry-like appearance of the rock. The trees are of diminutive growth.

From Cape Robert to Table Head, a distance of 19 miles to *Table Head.* the south-eastward, the coast is broken into small bays, with shingle beach and small streams between high headlands, terminating in perpendicular cliffs, the bases of which are washed by the sea. None of these bays afford good anchorage. Table

Description of Anticosti, East Coast. Head is rendered remarkable by the hill from whence it derives its name, and which rises immediately from the summit of the cliffs.

Fox Point. Fox Point is 4 miles further to the south-eastward, and much lower than Table Head. FOX BAY, which is a little less than

Fox Bay. 2 miles to the southward of Fox Point, is about 1 mile wide and deep, with sandy beach at its head, where there is a considerable stream issuing from a small lake. Boats may enter the outlet of this lake at high water. The house and store of

Stream and Lake. Godin's House. M. Godin are on the N.W. side of the head of the Bay, and are the scenes of the dreadful sufferings and melancholy fate of the crew and passengers of the ship Granicus, wrecked on this coast in November, 1828, and who all perished from want of food, after enduring the most horrible misery before the following spring.

Reef Point. REEF POINT, of very low limestone, is the southern point of Fox Bay, from which a reef of flat limestone, covered with only a few feet of water, runs out to the distance of fully $1\frac{1}{2}$ miles. There is a depth of 10 fathoms close off the end of this reef, so that it is extremely dangerous. To be sure of clearing it to the north-eastward a vessel should not be brought nearer by the lead than 17 or 18 fathoms; or if any of the land to the north-westward of Table Head be open clear of it, she will pass in safety.

Marks for South Reef. From the northern point of Fox Bay, which is a cliff of moderate height, another reef runs out more than half a mile to the south-eastward. A point of the southern reef, before mentioned, extends to the northward in such a way as to overlap the reef off the northern point, leaving an entrance from the north-eastward between the two only a quarter of a mile wide, and 13 feet deep at low water. Inside there is a space half a mile wide from 2 fathoms to 2 fathoms, and with 16 feet in the middle over muddy bottom. A wind from E. by N., or E. N. E., blows right into the Bay; but I am told that the sea does not roll in, but in heavy weather breaks on the reefs and in the entrance. This account I believe to be correct, and that small vessels would be perfectly safe there during the summer months.

Fox Bay Anchorage. Between Fox Bay and East Cape, the coast is of limestone cliffs 100 feet in height, bold and free from danger. Between Cape Sand-Top and East Cape vessels may anchor with all westerly winds in from 16 to 20 fathoms, over fine sand, at a distance of 1 mile from the shore

From thence to East Cape.

Anchorage.

41. The tides and currents around Anticosti are so irregular *Currents and Tides on North side of Anticosti.* that I can add very little to that which has been already stated (art. 17 and 23.)

I have seen the stream run along the land for a whole day at the rate of a mile per hour, in either direction, without any apparent cause, and altogether regardless of the change of tide. At other times I have found the tides regular in shore. Under these circumstances it is evident that the set of the stream, at any time or place, cannot be reckoned upon with certainty.

However, in addition to my previous remarks, I may observe that there is usually very little stream in any direction on the north coast from White Cliff south-eastward to Table Head. From the latter to East Cape, on the contrary, there is very frequently a stream from the northward, running at a rate varying from a half to one knot. In one or two instances I have seen this stream commence and end with the flood tide, so that I have been led to imagine a connexion between them; and, if this be the case, it may arise from the circumstance of its being high water sooner on the north coast, up as high as the Esquimaux Islands, than at the east point of Anticosti. The waters having thus attained a higher level to the northward may, in consequence, flow to the southward. On the other hand it must be mentioned that I have observed this stream during the ebb tide.

It frequently happens that, when this current from the northward is running, another from the W. N. W. comes along the south coast, in which case they meet at the reef off Heath Point, and cause a great ripple or irregular breaking sea. When this has been observed by us there has been usually a fresh breeze along the land on either side of the island; the wind on the north side of the island being from the north or N. by E., whilst that along the south side was W. N. W. I have seen both these winds blowing a smart double-reefed topsail breeze at the same time, and for a whole day together, and yet never meet round the east end of the island, which is nowhere more than 200 feet in height. Between the two winds there was a triangular space of calm and light baffling airs: the base of this triangle extended from Heath Point to East Cape, and its apex from 5 to 8 miles to the eastward of the island. I mention this circumstance because it would be dangerous for a vessel to stand into the calm space between the two winds, where the high cross *Northerly and Westerly Winds meet off East Cape.* *Dangerous baffling space between those winds.*

Anticosti.

sea and constantly changing light airs might leave her at the mercy of the current, in no small danger of being set on the Heath Point Reef.

I have been for hours endeavouring to get out of this singular space, trimming sails to light airs, which did not remain steady to any one point for a minute of time; and I was finally, in spite of every effort to the contrary, carried over the reef by the current, seeing the rocks distinctly under the vessel's bottom, but fortunately drawing too little water to strike upon them.

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CHAPTER V.

THE SOUTH COAST OF THE GULF AND RIVER OF ST. LAWRENCE
FROM GASPÉ TO GREEN ISLAND.

42. Preliminary Remarks.—43. Cape Despair and Leander Shoal. Bona-venture Island. Percé Rock. Mal Bay. Point Peter, and Flat Island. —44. Gaspé Bay. Cape Gaspé, and Flower-pot Rock. Seal Rocks. Douglas Town, and Roadstead. River St. John.—45. Gaspé Harbour. The N. W. and S. W. arms. The Basin.—46. Tides, Currents, Winds, and Soundings.—47. The South Coast from Cape Gaspé to Cape Chatte. Cape Rozier. Griffin Cove. Great Fox River. The Great Pond. Magdalen River. Mont Louis River. St. Anne and Chatte Rivers. Cape Chatte.—48. Cape Chatte to Barnaby Island. River Matan. Little Metis. Grand Metis. Cock Cove, and Mount Camille. Father Point. Rimousky Road. Barnaby Island.—49. Barnaby Island to the Razade Islets. Cape Arignole; its Bays and Reef. Old Bic Harbour. Bic and Biquette Islands: their Reefs and the Alcido Rock. Anchorages at Bic. Tides. Edge of the South Bank.—50. The Razade Islets. Basque Island. Apple Island. Green Island, Lighthouse, Reef, Anchorage, and Tides.

42. PURSUING the system which I have hitherto followed of describing the coasts from east to west, in the order in which they would be seen by a stranger on a voyage to Canada, I shall commence my remarks and directions for the south coast of the Gulf and Estuary, from the high land of Gaspé; beginning with Cape Despair, at the entrance of the Bay of Chaleur, and leaving all to the southward of a line from thence to the island of St. Paul for a separate part of this book; not only for the sake of a more distinct geographical arrangement and facility of reference, but also because the southern parts of the Gulf are obviously connected with another line of navigation.

In the last Chapter I gave full descriptions of the appearance and nature of the coasts, because the information which I conveyed was often new, and because it was necessary to describe clearly those objects which were to be referred to as natural beacons for guiding the mariner clear of the numerous dangers with which those coasts and islands abound. But in this Chapter

I shall more freely refer him to the charts for the appearance of the coast, so as to avoid swelling these remarks to an inconvenient size. Besides which, the dangers are few, and for the most part of small importance.

Cape Despair. 43. CAPE DESPAIR, the N. E. point of the Bay of Chaleur, consists of red sandstone cliffs, without beach, and of a moderate height above the sea.

Leander Shoal. LEANDER SHOAL bears from Cape Despair S. S. E., distant rather more than $1\frac{1}{2}$ miles. It is about a quarter of a mile in diameter, from 4 fathoms to 4 fathoms, and has 16 feet least water on one spot, which, however, it is very difficult to find. It is a rocky shoal, and there is a clear passage between

Outer Passage. it and the cape. The leading marks are as follow: the line of the White Head, in one with the inner or N. W. end of Percé Rock, passes just outside of the shoal, in 7 fathoms; therefore the whole of Percé Rock, well open to the eastward of the White

Inner Passage. Head, will lead clear outside of all. From a half to the whole of the Percé Rock, shut in behind the White Head, will lead clear between the Leander and Cape Despair.

BONAVENTURE ISLAND has bold and perpendicular cliffs of red sandstone and conglomerate on all sides excepting the west. These cliffs, in some parts, attain an elevation of 250 feet above the sea, and their ledges and fissures are the habitation of innumerable gannets. From the west side, shoal water extends to the distance of a quarter of a mile, and there is anchorage in 15 fathoms between it and White Head; but the riding is insecure and heavy in consequence of the swell, which, in bad weather, rolls round the island. The channel between Bonaventure Island and the Percé Rock is about $1\frac{1}{2}$ miles wide, and free from danger.

Percé Rock. THE PERCÉ ROCK is 288 feet high, precipitous all round, and bold to seaward. It is narrow, and about one-third of a mile long in a S. N. direction, being an outlier to the range of cliffs on the S. W. side of Mal Bay. It is rendered remarkable by two large holes which have been perforated through it by the waves, and through one of which a boat can pass at high water. Between this rock and the White Head is the Bay of Percé, having a reef at the distance of half a mile to the S. W. of the Percé Rock, and extending out nearly half a mile from the shore, as will be seen

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in the chart. Small vessels engaged in the fisheries anchor on either side of this reef with winds off the land, but it is a dangerous place, and not to be recommended for large vessels. *Percé Bay and Reef.*

The town of Percé, principally inhabited by persons engaged in the fisheries, occupies the shores of the Bay, and Mont Percé, or, as it is sometimes called, the Table Roulante, rises, immediately from it, to the height of 1230 feet above the sea. This mountain is very remarkable, and can be seen at sea from a distance of 40 miles. A reef connects the Percé Rock with Point Percé, and off the N. E. side of the latter small vessels anchor with westerly winds. There is generally a regular tide of flood and ebb, of about a knot, between Bonaventure Island and the mainland: the flood tide running to the S. W. round Cape Despair and up the Bay of Chaleur; and the ebb in the contrary direction. Two or three miles outside, or to the eastward of Bonaventure Island, the current to the southward out of the St. Lawrence, will often be found running regardless of the tides. (Art. 17.) *Percé Town. Mont Percé. Tides. Outside Current.*

MAL BAY is between 5 and 6 miles wide, by 4 miles deep, and entirely open to the S. E. On its S. W. side, and under the Percé Mountains, there are magnificent cliffs 666 feet in perpendicular height above the sea. Its N. E. side has low cliffs of sandstone, with occasional beaches. A fine broad sandy beach extends right across the head of the Bay, and incloses a shallow lagoon. A considerable river, and several small streams, discharge their waters into the lagoon, which has an outlet in the N. W. corner of the Bay, called the Tickle, admitting boats at high water and in fine weather. There is anchorage all round the shores of Mal Bay, but as a heavy sea and thick fog often precede a S. E. gale, and render it difficult for a vessel to beat out, it cannot be recommended. There is an open cove or small bay on the N. E. side, in which a vessel can be occasionally moored close to the shore, and in 3 fathoms water, but this is of no use for the general purposes of navigation. *Mal Bay. Percé Mountains. The Tickle.*

POINT PETER is the N. E. point of Mal Bay, and the south point of Gaspé Bay; it is of low sandstone, and thickly covered with the white houses of the fishermen. FLAT ISLAND lies about 400 fathoms off Point Peter; and is small, low, and of sandstone. There is a clear channel between the island and the point, but no good anchorage; for although vessels occasionally *Point Peter. Flat Island.*

anchor to the northward of the island, yet the ground is so foul, that there is great danger of losing an anchor from its hooking the rocks.

From Flat Island to Cape Gaspé, across the mouth of Gaspé Bay, the course is N. N. E., $7\frac{1}{4}$ miles.

Gaspé Bay.

44. The admirable bay of GASPÉ possesses advantages which may hereafter render it one of the most important places, in a maritime point of view, in these seas. It contains an excellent outer roadstead off Douglas Town; a harbour at its head, capable of holding a numerous fleet in perfect safety; and a basin where the largest ships might be hove down and refitted.

The course up this Bay from Flat Island to the end of Sandy-beach Point, which forms the harbour, is N. by W. $\frac{1}{2}$ W. rather more than 16 miles. From the Flower-pot Rock to the same point, the course is N. W. $\frac{1}{2}$ N., and distance nearly $11\frac{1}{2}$ miles.

*S. W. side of
the Bay.*

From Point Peter the land rises in undulations to the chain of mountains about 5 miles inland from the south-western shore of the Bay. These mountains, in some points, attain an elevation of 1500 feet above the level of the sea, and sweeping round Mal Bay, terminate with the Percé Mountains, before mentioned. The south-western shore of Gaspé Bay, from Point Peter to Douglas Town, a distance of 12 miles, presents a succession of precipitous headlands; the cliffs, of bituminous shale and sandstones, being, in their highest parts, 200 feet above the sea. Shoal water extends nearly a third of a mile from the cliffs, and vessels beating should beware of this, since the water shoals too rapidly to allow of much warning by the lead.

Cape Gaspé.

CAPE GASPÉ is an extremely remarkable headland, of limestone, having on its N. E. side a magnificent range of cliffs, which rise from the sea to the height of 692 feet. Flower-pot Rock lies close off the S. E. extremity of the Cape, and is also a very remarkable object; the base of it being worn so small by the waves, that it appears astonishing that it can resist their force, or the pressure of the ice. It is sometimes called the "Ship's Head," at others the "Old Woman," by the fishermen, and is so bold, that vessels may haul round it into the Bay within the distance of a quarter of a mile. Boats may pass between it and the Cape when there is no surf. The limestone of Cape Gaspé dips to the

*Flower-pot
Rock.*

S. W., so that the cliffs within the Bay are very much lower than *Gaspé Bay*. those on the outside of the Cape previously mentioned.

The N. E. side of the Bay is thickly covered with the houses of the fishermen for a distance of 5 miles within Cape Gaspé; the principal fishing establishments belonging, as at Percé, to Jersey merchants. There is an anchorage with good holding ground, but in not less than 17 fathoms, except within a quarter of a mile of the shore, abreast of St. George Cove, Grande Grève, and Little Gaspé. The word Cove is, however, inappropriately applied to any part of the shore between Grande Grève and the Cape, for though there are fishing establishments there, there are no coves whatever. This side is bold, and free from danger in every part, with the exception of the Seal Rocks, which are the only detached danger in the Bay.

The SEAL ROCKS are $6\frac{3}{4}$ miles within Cape Gaspé, one mile S. E. *Seal Rocks*. by S. from Cape Brulé, and half a mile off-shore. [The length of this reef from 3 fathoms to 3 fathoms, and in a direction parallel to the shore, is half a mile: and its breadth a quarter of a mile. The least water is 4 feet, and there are $3\frac{1}{2}$ fathoms between it and the shore. When on the outer edge of the Seal Rocks, Cape Brulé is in one with the next cliffy point up the bay, bearing N. 35 W. by compass, and this only mark is sufficient for the safety of vessels beating, for the rocks are out of the way with fair winds.

At Grande Grève, $3\frac{1}{2}$ miles within Cape Gaspé, the ridge *Grande Grève* of land dips and narrows, so that there is a portage across it, leading to the settlements at Cape Rozier. On the N. W. side of the portage a range of mountains commences, and they continue along the N. E. side of the bay, and the N. W. arm, till they are lost to view in the interior of the country. Opposite to the basin of Gaspé, they rise to the height of 1500 feet above the sea.

DOUGLAS TOWN is a village of fishermen and farmers, standing *Douglas Town*. on the rising ground at the south side of the entrance of the river St. John: its position in relation to Point Peter has been already mentioned. The water is very deep in the outer parts of the bay, being from 30 to upwards of 60 fathoms, over mud bottom; but on approaching Douglas the depth decreases regularly to the anchorage.

Gaspé Bay. The roadstead off the town of Douglas is extensive, vessels may anchor in any part of it, and in any depth from 11 to 6 fathoms, over sand and clay bottom; but the best berth is in 7 fathoms, with the entrance of the River St. John bearing N. W. by W. $1\frac{1}{2}$ miles. The course and distance from Cape Gaspé to this anchorage is N. W. by W. $7\frac{1}{2}$ miles. There is, however, no shelter from winds between S. E. by E. and S. S. E. which blow directly into the bay, and roll in a heavy swell. The riding is, nevertheless, much less heavy on such occasions than might be expected; and, as the ground is excellent for holding, a vessel may safely anchor here during the summer months.

Water. Water may be obtained by ascending the River St. John to *River St. John* islands, a distance of 2 miles. In the spring of the year there is often 9 feet of water in the entrance of this river, which is between 2 points of sand, as will be seen in the chart: and there are 12 feet of water in the narrow channel for some distance within. At the islands the river becomes shallow and rapid.

Cape Haldimand. Cape Haldimand, 2 miles northward of Douglas, is a bluff point of cliff, and the south-eastern termination of the range of hills which separates the harbour, basin, and S. W. arm, from the valley of the River St. John.

Gaspé Harbour. 45. From the N. E. side of Cape Haldimand, Sandy-beach Point runs out to the northward, and forms the Harbour of Gaspé. It is a very low and narrow point of sand, convex to seaward, on which side the water deepens gradually from high water mark to the depth of 3 fathoms, a distance of nearly half a mile: on the inside it is as bold as a wall. Thus this spit, apparently so fragile, becomes a natural dam or breakwater, upon which the heavy swell, which often rolls into the bay, can produce no effect, expending its strength in the shoal water, before reaching the beach. The water deepens immediately outside of 3 fathoms, all along the outside of Sandy-beach Point, and also off its north extremity; so that it is both dangerous and difficult to beat in or out of the harbour at night; the lead giving little or no warning.

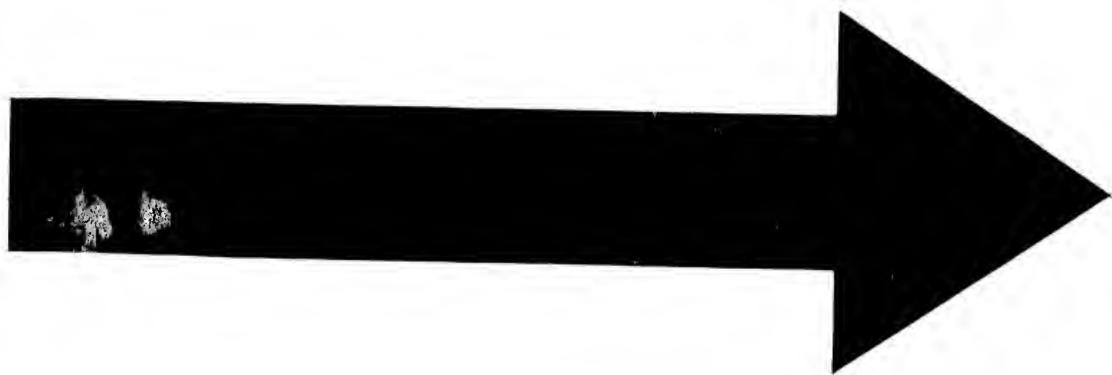
Peninsula. To the northward of Sandy-beach Point, at the distance of nearly a mile, is the Peninsula, which is a low sand, covered with spruce trees, and it has several whale sheds near its west point. Between the shoal water in the bay to the eastward

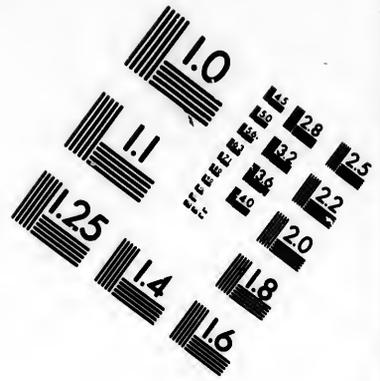
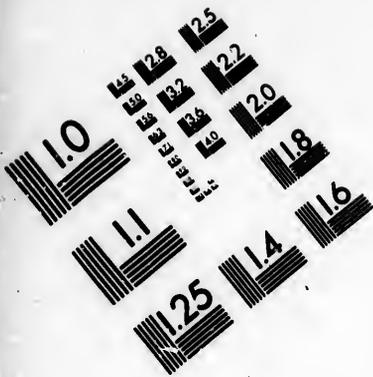
of the Peninsula, and that which extends from the extremity of Sandy-beach Point, is the narrowest part of the entrance to the harbour, which is 420 fathoms wide from 3 fathoms to 3 fathoms, and upwards of 11 fathoms deep in the centre.

To run into the Harbour of Gaspé attend to the following directions and remarks. On the N. E. side of the N. W. arm, there is a wooded point with low clay cliff, $2\frac{1}{2}$ miles above the Peninsula. This point appears as if it were the extreme on that side, when seen over the end of the Peninsula from a vessel approaching the entrance of the harbour, and is called Point Panard. Now this point (seen over the Peninsula, in one with the inner or north side of the whale sheds here mentioned, is the mark for the northern extreme of the spit off Sandy-beach Point. The extremity of the spruce trees is as far within the whale sheds, as these last are from the sandy extremity of the Peninsula. On the inner side of Sandy-beach Point, and near to its junction with the mainland, stands a wooden windmill. Keep Point Panard in one with that extremity of the spruce trees on the Peninsula, bearing N. 47 W., until the windmill, just mentioned, comes in one with the west or inner side of the end of Sandy-beach Point, bearing S. $\frac{1}{2}$ W., when you may haul into the anchorage under the point, or steer for the basin, as may be desired.

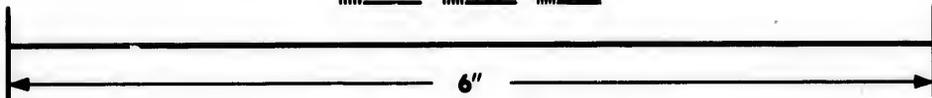
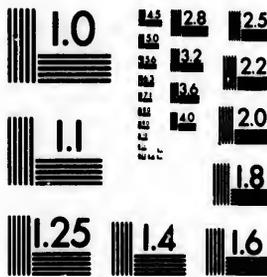
When beating in, tack by the lead from the N. E. side of the bay, and in the board towards Sandy-beach Point, put the helm down the instant the marks for leading in, just given, come in one.

At night, when neither Sandy-beach Point, nor the Peninsula can be seen, it becomes rather a difficult affair to tack a vessel into the harbour. The only guide then is the lead. There should be a hand in each chains, one heaving when the other cries the soundings. Soundings should be first struck on the N. E. side of the bay, about 2 miles outside of the entrance of the harbour, and the edge of the shoal water on that side should be followed, in from 5 to 7 fathoms, until you judge, by the distance run, and the change which takes place in the direction of the edge of the bank which you are running upon, that you are approaching the Peninsula and have passed Sandy-beach Point, and can in consequence venture to haul to the southward into the anchorage. To form this judgment accurately is the diffi-





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Gaspé Harbour.

cult part of the process, and as to fail in this would probably cause the loss of the vessel, if the usual heavy swell should be rolling into the bay with S. E. winds, I recommend a vessel rather to trust to her anchors off Douglas Town than to make the attempt. In case of a vessel which has lost her anchors, the directions which I have given may prove of use. Within Sandy-beach Point, that is in the Harbour of Gaspé, the shelter is complete from all winds; the bottom is mud, and the depth nowhere exceeds $11\frac{1}{2}$ fathoms.

Having now given directions to enable the seaman to take his vessel into a place of perfect security, from which he may proceed to the basin, or to any other part of the harbour, with the assistance of the chart, or of a pilot, I shall not swell these remarks by a minute description of the interior of the harbour, which the chart renders unnecessary, and which is not in any way essential to safety.

N. W. Arm.

I shall merely add that the harbour is divided into the N. W. and S. W. arms. The N. W. arm has deep water for nearly 3 miles above the Peninsula, and continues navigable for keeled boats about 3 miles further, where the principal river of the harbour enters the arm between Marsh and Meadow Islands.

S. W. Arm.

The entrance of the S. W. arm is about 180 fathoms wide, and between two sandy points, but the navigable channel is contracted by shoals on either side to about 60 fathoms; and 5 fathoms of water can be carried in. The deep water part of the S. W. arm, which continues for three-quarters of a mile within the entrance,

Basin of Gaspé.

is called the Basin of Gaspé; it has a depth of from 5 to 9 fathoms, over a mud bottom, and is sufficiently capacious to hold a very great number of vessels as securely as in a dock. Boats can ascend this arm by a narrow channel, between shoals, about 3 miles, as in the N. W. arm, and the navigation, for all but canoes or flat-bottomed boats, is terminated in the same manner, by shallow channels between Marsh and Meadow Islands; above this part of the river it becomes contracted and rapid, and the water fresh. A small rivulet in the bay, on the inside of the south point of the entrance of the basin, is the most convenient watering place in the harbour. The Collector of Customs, and the principal families, reside on the shores of the basin. Most of these families, as well as those of the N. W. arm and the harbour generally, are farmers, but several of them are also engaged in

the whale fishery, which they prosecute in small schooners. The *Gaspé Fisheries*.
cod fishery is carried on by the people of the bay outside, for the
most part in connexion with the Jersey merchants. The great
majority of the fishermen are either from Jersey, or descended
from the people of that island whose language they retain.

46. There are regular but weak streams of flood and ebb in the *Tides*.
entrances of the harbour and basin. For the time of high water,
and rise of the tide, see the Table at the end of the book. In the
bay the streams of the tides are so irregular, that I can say
nothing certain respecting them. They are, however, usually
almost imperceptible, excepting near the shores, and even there
they are so weak as to be of little or no consequence to a
vessel.

The current down the St. Lawrence runs strongly past Flower- *Outside Cur-*
pot Rock over towards Flat Island, especially in the ebb tide, *rent,*
which often increases its rate to 2 knots, and this should be re-
membered by vessels making the bay with a northerly wind.
This current, when it meets the swell which so often prevails from *makes a mis-*
the south and S. E., causes a high, short, and breaking sea, all *chievous Sea.*
along the coast from above Cape Rozier to Cape Gaspé, and ex-
tending across the entrance of Gaspé Bay. When the wind is
light, a vessel becomes quite unmanageable in this sea, and it is
extremely dangerous to be caught in it, close to the shore, by a
light breeze on the land.

In fine summer weather there is often a sea-breeze blowing *Sea and Land*
right up the bay from about 9 A. M. until sunset. At such times *Breezes.*
there is generally a light land-breeze at night down the arms,
which often extends for several miles out into the bay. In the
outer part of the bay, however, it will generally be found to be
calm, even at times when a fresh breeze is blowing outside Cape
Gaspé and Point Peter. The wind at sea on such occasions is
generally from the S. W.

The soundings off this part of the coast will be seen in our *Soundings*,
charts for the first time; they will prove of very great use to ves-
sels running up in foggy weather, and had they been previously
known, might have saved many vessels. We had an opportunity *effect of neglect-*
of judging of this last spring, when a large ship, full of emigrants, *ing them.*
ran stem on to Whale Island in Gaspé Bay. She was under all sail
before a moderate S. E. wind, in a thick fog, and steering N. W. :
from which it appears that she must have been running in sound-

Soundings. ings from 20 to 40 fathoms, for at least 4 leagues, and, probably, for 3 hours before she struck. No lead was hove, the existence of the soundings being unknown. The vessel was conceived to be well to the northward, and, consequently, to be steering a safe course. One cast of the lead would have dispelled this delusion, and might have saved the vessel. Let this be a warning to seamen.

Rocky Patches off Cape Gaspé. In the prolongation of the line of Cape Gaspé nearly, there are several rocky patches frequented by the fishermen. They all lie in the same direction from Flower-pot Rock, S. S. E. $\frac{1}{2}$ E. The first is a small patch with 8 fathoms least water, the second has 16 fathoms, and the third 10 fathoms. Their distance from the Rock are seven-eighths, $1\frac{1}{2}$, and 13 miles respectively. There is deep water and irregular soundings between them, and the last mentioned is on the banks of soundings which I have already alluded to, as lying off this coast.

Cape Gaspé to Cape Chatte. 47. The bold and high coast between Cape Gaspé and Cape Chatte, a distance of 117 miles, will require only a brief notice, as it is free from dangers and destitute of harbours. The mountains everywhere approach the shore, which is steep and rocky, displaying cliffs, often of great height, and without beach. After heavy rains, waterfalls, which are not to be seen at other times, descend from great heights, and small bays, with sandy beach and rapid streams at their heads, occur occasionally; yet these features are not generally so strongly marked as to enable a stranger to make out one part of this coast from another with facility.

Cape Rozier. CAPE ROZIER, which is nearly 7 miles N. $\frac{1}{2}$ E. from Cape Gaspé, is low, and of greywacke and slate rocks. The shoal water does not extend off it above one-third of a mile, but in the bay to the southward of it, at the distance of $1\frac{1}{2}$ miles, there is a reef which runs out a mile from the shore. Vessels may find shelter under Cape Rozier from N. W. winds, but the ground is not very good, and the easterly swell that frequently rolls in, renders it a dangerous anchorage. There are fishing establishments on Cape Rozier, and in its vicinity.

Griffin Cove. GRIFFIN COVE and River are $6\frac{1}{2}$ miles N. N. W., nearly, from Cape Rozier. A small bay here affords shelter to the boats of the fishermen, whose houses will be seen around it. There are from 2 to 3 fathoms of water in this bay, over sandy bottom. It is of

no use to shipping, except to obtain supplies of water, wood, and, occasionally, fresh provisions.

GREAT FOX RIVER is $11\frac{1}{2}$ miles N. N. W. nearly from Cape *Great Fox River.* Rozier. It is a mere brook which enters a small bay about three-quarters of a mile wide, and half a mile deep. Off each point of the bay there are reefs, which diminish the breadth of the entrance to less than a quarter of a mile, and afford shelter to boats, and to very small schooners, in from 2 to $2\frac{1}{2}$ fathoms, over a bottom of fine dark sand. Round the head of the bay there is a fine sandy beach. Outside the reefs, which extend only a very short distance to seaward, there are 15, 18, and 24 fathoms, over a bottom of sand and broken shells, at the distance of a quarter, half, and 1 mile respectively. In fine summer weather a vessel might anchor off this place and obtain water, wood, and supplies of fresh provisions; but it is otherwise of no use to shipping. Seven families of fishermen and farmers resided here when I visited it in 1829, and had plenty of cattle, sheep, and awine.

GREAT POND is a small creek which affords shelter only to *Great Pond.* boats, and will be known by the houses and stages of the fishermen. It is 16 miles N. W. $\frac{1}{2}$ N. from Great Fox River, and there are no more houses, along the coast, till we arrive at the River St. Ann.

The next place worthy of notice is the **MAGDALEN RIVER**, *Magdalen River.* which is 24 miles from Great Pond, in a N. W. $\frac{1}{2}$ W. direction nearly. The mouth of this river is on the N. W. side of a sandy bay, and close under Cape Magdalen its N. W. point, which *Cape Magdalen.* is rocky, with cliffs of moderate height, and juts out a very short distance from the range of hills which forma the coast line. A reef of rocks, which dry in part at low water, extends from Cape Magdalen, about 200 fathoms to the S. E., parallel to the coast, and shelters the entrance of the river from the northerly winds. The river is 30 yards wide at the entrance, and 7 feet deep at low water; within, for a very short distance, there are 10 feet over a clean bottom of fine sand. Further up, the river becomes shallow and rapid, winding its way through a romantic valley between the mountains. Thirteen feet of water can be carried into this river at spring tides, so that it is a considerable stream, and is occasionally visited by schooners from 30 to 80 tons, which warp in when the sea is smooth and the weather fine. The bay is not deep, being merely a gentle curve with a sandy beach for about a

Anchorage off Magdalen River. mile to the S. E. of the river. Vessels may anchor here in 7 fathoms, over a bottom of sand, fine gravel, and broken shells, at the distance of three-quarters of a mile from the sandy beach, and from the N. W. point bearing W. N. W. The shelter is from W. N. W., round by S. W., and S. to E. S. E., but it is only a fine weather anchorage, which may be of use to vessels wanting wood and water.

Tides. During two occasions, on which I anchored here, I observed a regular alternation of the stream of flood and ebb. The flood extended about $1\frac{1}{2}$ mile from the shore, running 1 knot, and at the line of junction with the almost constant downward current there was a strong ripple.

Mont-Louis River. MONT-LOUIS RIVER is 16 miles further along the coast to the W. N. W. It is a much smaller stream than the Magdalen River, being 20 yards wide at the entrance, and capable only of admitting a small boat at low water. There are 7 feet in the entrance at high water, and for a short distance within. The small bay, with sandy beach at its head, into which this river falls, is a mile wide, and nearly three-quarters of a mile deep. Vessels may anchor in it during fine weather, in from 8 to 16 fathoms, mud bottom, nearer the west than the east side. The holding ground is excellent; but since a vessel ought not to be more than 300 fathoms distant from the west side of the bay, there is not much room to work out, and therefore it would be dangerous for a large vessel to be caught there by a wind on the land. Small vessels, or ships having occasion to stop for a few hours for wood or water, may safely anchor there in fine weather, and will find shelter in all winds, from W. N. W. round by S to E. S. E. Mont-Louis River may be thus recognized. In a vessel off this part of the coast, four well marked openings will be seen in the high land in a space of 10 miles. The eastern opening is Grande Matte River, the next westward is Mont-Louis River, and the two others Claude and Pierre Rivers. None of them affords good anchorage excepting Mont Louis. On approaching near the shore, an attention to the cliffs, shown in the chart, will point out Mont-Louis River beyond a doubt.

Four openings in the land. There is nothing worthy of remark for 26 miles further westward to Cape St. Anne, after which the mountains begin to recede a little from the shore, and to diminish in height. There is, however, another range of mountains in the rear of the coast, as will

Cape St. Anne. There is nothing worthy of remark for 26 miles further westward to Cape St. Anne, after which the mountains begin to recede a little from the shore, and to diminish in height. There is, however, another range of mountains in the rear of the coast, as will

be seen in the chart. These are the St. Anne Mountains, which can be seen from a distance of 80 or 90 miles, under favourable circumstances; and their highest peak, which is about 14 miles behind Cape Chatte, is 3970 feet in height above the sea. These are therefore the highest mountains in British North America.

*St. Anne
Mountains.*

ST. ANNE RIVER, which is 6 miles west of the high cape of the same name, and 10 miles east of Cape Chatte, can be entered by small schooners at high water. It flows into the sea through the sandy beach of a bay which affords very indifferent anchorage, the depth of water being too great, excepting at a less distance from the shore than would be considered prudent for any but small vessels. Several families reside here, from whom supplies of provisions can in general be obtained, and also from those at Cape Chatte River.

*St. Anne
River.*

CHATTE RIVER, 2½ miles eastward of Cape Chatte, is much smaller than the River St. Anne, and enters a much smaller sandy bay, affording no anchorage for ships. The east point of this bay, 2 miles eastward of the river, is a low spit with a reef off it half a mile. Small coasting schooners occasionally anchor under it in westerly winds.

Chatte River.

CAPE CHATTE, when seen from the eastward or westward, so that it appears as the extreme point, can easily be distinguished, being a round hill separated from, but of less height than the land behind it.

Cape Chatte.

The long line of coast, which has formed the subject of this article, and been found so free from danger, is nevertheless to be guarded against in dark foggy nights, since the water is, everywhere along it, too deep to afford sufficient warning by the lead for the safety of vessels. The shore along its whole extent, excepting in some of the bays, is of highly inclined slate and greywacke rocks, which would cut through a vessel's bottom in a very short time; and such is the impracticable nature of the country, that those who might escape to shore would run great risk of perishing from want before they could reach a settlement.

*Fogs dangerous
on this bold
coast.*

48. The south coast of the Estuary from Cape Chatte to Matan, is straight, bold, and of the same rocks as that which has been described in the last article. Although not a high coast, it is still of considerable elevation above the sea, and the St. Anne Mountains continue in the rear of it, at the distance of about 5

*Cape Chatte to
Matan.*

leagues, to their south-western termination, which is 15 miles south of Cape Balance, the last being 25 miles westward of Cape Chatte. Several detached hills will be seen further to the westward, which are also at a considerable distance from the coast.

Paps of Matan. Two of these have been named the Paps of Matan, though they can with difficulty be made out when bearing S. W. ; on any other bearing it is still less easy to distinguish them, but they are of no use except to enable a vessel, obtaining a sight of the land, to judge how far she is up the Estuary.

Capuchin Cove. Capuchin Cove, and another cove on the west side of Cape Michaux, afford shelter to boats. Settlements commence at Little Matan, a small stream 3 miles eastward of the River Matan.

Matan River. THE RIVER MATAN is a fine stream 33 miles W. $\frac{1}{2}$ S. from Cape Chatte. It is reported to have its source in a lake of considerable dimensions, about 60 miles, following the stream, inland. The depth of water over the bar is usually 4 feet at low

Tides. water, and 15 at high water spring tides. The rise of the tides is, however, very irregular, and although there is often 12 feet at high water neap tides, yet I have seen as little as 10 feet. The depth of water seems to depend so much upon the winds which prevail in the Estuary, that it is impossible to calculate it at any time exactly. In the last days of July the morning tides rose 2 and 3 feet higher than the evening tides of the same day. Easterly winds were observed to cause high tides, and westerly winds the contrary.

Entrance of Matan River. The channel is very narrow, and there are several large boulder stones in it, lying on the sand, which diminish the depth 2 feet, and are extremely dangerous when there is any swell. The bar is continually shifting from the effects of gales of wind, so that I can give no directions for sailing in. There are pilots residing here, and no vessel should attempt the entrance without one. The bar when I was there ran out in a circular form from the east point of entrance, and was met so nearly by another point of sand, running out from the small isolated cliff on the west point of entrance, as to leave only a very narrow channel. The bar dried at low water, and no part of it extended more than 300 fathoms outside the entrance of the river. Inside the bar the entrance, between two sandy points, is not more than 30 fathoms wide, and a very rapid current runs out during the ebb tide. There is not room enough for a vessel to lie safely afloat inside,

but, nevertheless, considered as a tide harbour, it is a useful place to coasting schooners, which ground at half tide on a good bottom of mud and stones. To a vessel which had lost her anchors, or which had received injury, this river would afford a place of refuge in which she could be safely repaired and refitted. The sandy beach extends about a third of a mile to the eastward of the entrance, and incloses a large space dry at low water, with the exception of the narrow and rapid channel of the river which is full of stones. The tide ascends about a mile, to a rapid over a ledge of rocks, above which the stream is swift, shallow, and navigable for canoes, to the lake before mentioned.

Outside the bar there is anchorage in 5 fathoms half a mile off-shore, and in 10 fathoms a little further out, the bottom being of sand and clay. *Outer Anchorage.*

Supplies of provisions can usually be obtained at this river; *Supplies.* and it will be easily made out from a vessel, since the entrance shows plainly. The cliffy mound on the west side of the entrance, and the buildings, will also serve to point it out.

Matan is the name of a seignory containing about 500 inhabitants, most of whom live by the combined means of fishing, farming, and piloting. The soil is good, and gives good crops of wheat and other grain, excepting in bad seasons, which have been very frequent of late years, and in which the crops sometimes totally fail. *Matan Seignory.*

The coast from Matan to Metis is low, rocky, wooded, unbroken, and may be approached with care by the lead, the bank of soundings becoming gradually wider as we proceed to the westward. (Art. 25.) *Matan to Metis.*

LITTLE METIS BAY is 23 miles W. $\frac{3}{4}$ S. nearly, from Matan. It is small and divided into two rocky coves, which are open to the eastward and dry at low water. *Little Metis Bay.*

Little Metis River, a small stream, is at the head of the southern cove. There are several buildings, and a fishing establishment on Metis Point, the outer point of the bay. A reef which is very bold on its north side, runs out from this point nearly three-quarters of a mile to the eastward, and enables small vessels to remain at anchor, in 3 fathoms, over mud bottom, with the wind as far to the northward as N. W. Some of its rocks are always above water. In this berth vessels lie midway between the eastern end of the reef, and a large Round Rock near the *Little Metis River.*

Outer Anchorage.

shore on the S. E. side of the bay. Larger vessels may anchor further out in 5 or 6 fathoms of water, but not in the stream of the reef, where the ground is foul and rocky.

Round Rock.

The east end of the reef may be passed by the lead in 4 fathoms, or with the Round Rock bearing S. E., but large vessels had better not bring it to bear to the eastward of S. S. E. This rock, which is about $1\frac{1}{2}$ miles E. S. E. from the reef off the outer point of the Bay, will serve to point out Little Metis to strangers. It cannot be mistaken for Grand Metis with our charts, since there is no resemblance in the shapes of the bays. Neither place can be easily made out from a greater distance than 5 or 6 miles, because the points are very low.

Grand Metis Bay.

GRAND METIS BAY is separated from Little Metis by Metis Point. Grand Metis River, a small stream 5 miles westward of Little Metis, is near the west end of the Bay, and is nearly dry outside of the very narrow entrance at low water. The Bay is rather more than 3 miles wide, and three-quarters of a mile deep; but it is all shoal. Small vessels may anchor in $3\frac{1}{2}$ or 4 fathoms, under its east point, close to the edge of the shoal water, and in tolerable shelter from winds along the coast, but there is no shelter for shipping. Nevertheless vessels lie here all the summer months for the purpose of taking in timber. They are usually moored in 6 fathoms, at low water, over mud bottom, and with the river bearing about S. S. W., distant $1\frac{1}{2}$ miles. In this position they are half a mile from the 3 fathoms edge of the shoal water which extends from the shore; and as they are outside of the line joining the points of the Bay, they are exposed to the prevailing winds along the coast, and must ride very heavily at times. There is, however, seldom much sea with these winds so close in shore, and the northerly winds seldom blow strong until September. After the commencement of that month, I consider this a dangerous anchorage, but at other times, and in fine weather, vessels may safely anchor anywhere off the Bay in from 6 to 12 fathoms: the bottom being everywhere good, and plenty of room to get under weigh.

Cock Cove.

COCK COVE affords good anchorage for schooners, in 3 fathoms at low water, well sheltered from the winds along the coast. The summit of Mount Camille, already mentioned (art. 28), bears from the west point of Cock Cove S. E. by S. 8 miles, and will serve to point out its position to a stranger.

It may be remarked here, that large vessels may anchor, in fine weather, all along the coast from Metis to Green Island. *Anchorage all along this Coast.*

FATHER POINT bears from the west point of Grand Metis Bay W. by S. $\frac{1}{4}$ S., $14\frac{1}{2}$ miles. It is low, covered with houses, and the regular rendezvous of the pilots, many of whom reside there. *Father Point. Pilots.*

The eastern point of Barnaby Island is 3 miles W. by S. from Father Point, and between them is the anchorage or Road of Rimousky, where vessels ride throughout the summer to take in cargoes of lumber. They lie moored in 4 or 5 fathoms at low water, with excellent holding ground, and sheltered from W. by N. round by S. to E. N. E. The best sheltered berth is with the eastern point of Barnaby Island bearing W. by N., Rimousky church S. S. W. $\frac{1}{2}$ W., and Father Point E. N. E.: the depth will then be 4 fathoms at low water spring tides over mud bottom. Small vessels may anchor further to the westward in 3 fathoms at low water, with the east end of the rocks, off the eastern point of Barnaby Island, bearing N. W. by W., and distant a quarter of a mile. The reef does not extend above a quarter of a mile off the eastern point of Barnaby Island, and may be passed by the lead in 4 fathoms. *Rimousky Road.*

BARNABY ISLAND is $3\frac{1}{2}$ miles long, and very narrow: it is of slate and greywacke rocks, like all the coast and islands on this side of the Estuary. It is low, wooded, and uninhabited. In the interior of the Island there is a long pond of fresh, but not good water, which last must be obtained from the River of Rimousky. *Barnaby Island.*

The channel between the Island and Rimousky is dry at low water. From 7 to 12 feet can be carried through it at high water, according as it is neap or spring tide, but at no time should a vessel drawing more than 8 feet attempt this passage, since there are rocks and large stones here and there, and also fish stakes.

The church of Rimousky to the eastward of the river, and many houses, will be seen directly opposite the Island. *Rimousky Church.*

Off the outside of Barnaby Island there is a 3 fathom shoal, extending out fully two-thirds of a mile, and the reef off its western end runs out in the direction of the island more than three-quarters of a mile. Between the western end of Barnaby Island and the mainland there is a large high and Bare Rock, *Barnaby Shoal.*

Barnaby Road, which is distant from the island about two-thirds of a mile. Midway between the western points of the island and Bare Rock, bearing north and south from each other, there are 2 fathoms at low water, in Barnaby Road, over muddy bottom, affording good anchorage to small vessels in all but westerly winds. Rimousky church in one with the eastern end of the rock will lead over the tail of the reef off the west end of Barnaby, and into this anchorage.

Bearings from Barnaby Island. 49. From the eastern point of Barnaby Island to the eastern point of Bicquette Island the course is west, and distance $14\frac{3}{4}$ miles. From the western point of Barnaby Island to the eastern end of the S. E. reef off the island of Bic the course is also west, and distance $8\frac{3}{4}$ miles. From the western point of Barnaby Island to the N. W. extremity of Cape Arignole the course is W. by S. $\frac{1}{2}$ S., and distance 10 miles.

Ha-Ha Bay. There are bays on either side of Cape Arignole, but they dry at low water. The bay on the west side of the Cape is named Ha-Ha Bay. With easterly winds, there is excellent anchorage off its entrance in 4 fathoms at low water, and further in for small vessels in 3 fathoms; but it is seldom used, because the equally safe and more roomy anchorage under Bic is justly preferred.

Arignole Reef. Arignole Reef consists of two rocks lying across the mouth of the bay, on the east side of the Cape. The west end of the western rock of this reef is always above water, and bears south $2\frac{3}{4}$ miles from the east end of the S. E. reef of Bic, and E. $\frac{1}{4}$ N. $1\frac{1}{2}$ miles, from the N. W. extremity of Cape Arignole; but it is distant only a quarter of a mile from the rocks off the east side of the Cape. This western rock is a quarter of a mile long, and very narrow. The eastern rock is small, covered in high tides, and one-third of a mile east from the other. These two rocks are very bold to the northward, and there are 5 or 6 fathoms of water between them. Vessels may pass between them and the main bay by keeping close to them, but can seldom have occasion to try so dangerous a passage.

Old Bic Harbour. The west point of Old Bic Harbour bears E.S.E. $\frac{1}{2}$ E., 1 mile from the east end of the reef. This harbour, as it is called, dries

at low water, and has many rocks in it. Two round and high rocky islets, called the Bicoques, will be seen extending to the westward of its east point, and diminishing the breadth of the entrance to two-thirds of a mile.

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Midway between these rocky islets and the west point of the *Old Bio Road*. harbour small vessels may anchor in Old Bic Road in 3 fathoms at low water, with muddy bottom, and with the point bearing west, distant one-third of a mile. To run in to this anchorage from the N. W., keep the westernmost of the two rocky islets its own breadth open to the eastward of the west point of the harbour, and you will clear the eastern rock of the Cape Arignole reef, which is the only danger in the way.

The summit of the high land southward of Cape Arignole, *High land of Bic.* otherwise called the high land of Bic, 1234 feet above the sea at high water, bears S. W. by S. from the N. W. extremity of the Cape, distant nearly 2½ miles. The hills in this neighbourhood are composed of high and narrow ridges of greywacke rocks, parallel to the coast, and to each other, and declining gradually in elevation on either side of the summit just mentioned. When these ridges are seen nearly end on, from either up or down the Estuary, they present an outline so remarkable that this land can be made out from very great distances.

BIC ISLAND lies directly off Cape Arignole, at the distance *Bic Island.* of nearly 2½ miles, and is about 3 miles long, without including the reefs, in a direction parallel to the coast, and 1 mile broad. Its shores are of slate rocks; it is thickly wooded, uninhabited, and in height does not exceed 150 feet above the sea.

Supplies of water can only be obtained from the bay between *Water.* the east and S. E. points of the island, and not always there in dry seasons. But vessels may supply themselves from the river in the S. E. corner of Old Bic Harbour, or from a stream on the west side of a small bay of the mainland, 4 miles westward of Cape Arignole.

BICQUETTE ISLAND, three-quarters of a mile to the northward *Bicquette Island.* of Bic, is half a mile long, by a quarter of a mile broad, and about 100 feet high above the sea. Several large rocks above water extend one-third of a mile to the east and S. E. of the island, and diminish the breadth of the channel between it and Bic to little more than half a mile. Off the west end of Bicquette, in *West Reef.* a S. W. by W. ½ W. direction, there are two large rocks always above water, and a third which covers at high water; these lie nearly in a line, and extend to the distance of a mile from the island.

THE N. W. REEF OF BICQUETTE is the greatest danger, lying *N. W. Reef.*

*Bicquette
N. W. Reef.*

due west from the west end of the island, and at the distance of $1\frac{1}{4}$ miles. The cross mark for it is the west end of Bic in one with the N. W. point of Ha-Ha Bay, bearing S. S. E. $\frac{3}{4}$ E. ; but this last named point can seldom be plainly made out, in

Clearing Mark.

consequence of the high land behind it. In approaching this reef from the westward, the north extremity of Cape Arignole should not be shut in behind the west point of Bic. This reef is composed of two rocks about 150 fathoms long, and which just cover at high water : both it and Bicquette are very bold to the northward (art. 25). There is deep water all along the line from the north side of Bicquette to this reef, and also between the latter and the rocks to the S. E. of it, but these are dangerous passages, which ought not to be generally tried, though it is useful to know of their existence in case of emergency.

*Bicquette Chan-
nel.*

I must apply the same remarks to Bicquette Channel, between Bic and that island, which was not known before this survey : there are no leading marks for running through, but it may easily be done with the assistance of our charts in case of necessity. The south-western reef off Bicquette is most in the way, and there are also two small round rocks on the Bic side, 200 fathoms off shore, and bearing nearly south from the west end of Bicquette. To avoid the first of these dangers, do not bring the south extremity of the rocks off the S. E. side of Bicquette to bear to the eastward of E. N. E. $\frac{1}{2}$ E. ; and if you do not bring the north side of Bic, near its east end, to bear to the northward of E. $\frac{1}{2}$ N., you will clear the second, which, however, always shows, excepting in very high tides. These directions are, however, insufficient without the chart, which must be carefully consulted, for this is an intricate and dangerous place. The best time to run through is at low water, when all the dangers show, and a vessel, keeping in mid-channel between them, will have from $9\frac{1}{2}$ to 5 fathoms, with irregular soundings and foul ground occasionally.

*Bic Island.
S. E. Reef.*

Bic has another set of dangers of its own. The first of these is the S. E. REEF, which extends out from the S. E. point of the island to the distance of nearly $1\frac{1}{4}$ miles in an E. by S. direction. The outer part of this reef is formed of three rocks lying in a straight line, and always above water. The two easternmost are the largest, and are nearly joined together, whilst the westernmost of the three is detached, so as to leave a channel through the reef 150

*Narrow 5
fathoms
Channel.*

fathoms wide, and 5 fathoms deep. Large vessels should not attempt to pass between these rocks, or between them and Bic, for the tides are rendered irregular by the uneven bottom, and there is much foul ground about, as will be seen by the chart. Small schooners can pass on either side of the western rock, keeping close to it, if they pass to the westward. The shoal water does not extend beyond a cable's length from the east end of the S. E. reef: the rocks above water are bold, both on their north and south sides. The inner part of the reef, extending under water from the S. E. point of Bic, reaches further to the southward than the direction of the rocks, and must be avoided by not bringing the south side of Bic to bear to the southward of W. by S.

THE N. E. REEF OF BIC is a small patch of black rocks, which shows at low water, lying N. E. by E. 400 fathoms from the N. E. point of the island, and N. W. $\frac{1}{2}$ W. rather more than one mile from the east end of the S. E. reef. To clear this reef to the eastward, keep both the rocky islets on the east side of Old Bic Harbour open to the eastward of the S. E. reef, bearing nothing to the eastward of S. E. by S.

THE WEST GROUNDS OF BIC are an extensive flat of slate, which partly dries at low water. The outer point of these Grounds, in 3 fathoms, bears W. $\frac{1}{2}$ S. from the west point of the island, distant nearly three-quarters of a mile; and they may be approached by the lead, as nearly as 5 fathoms, at low water.

THE ALCIDE ROCK has no connexion with Bic, but as it is extremely dangerous, and lies much in the way of vessels passing through the Bic Channel, between that island and the main land, I shall notice it here. It is a small rock, about 6 feet long, and 2 wide, having 4 feet water on it at low water, and standing on a small rocky shoal, 100 fathoms long, parallel to the coast, and about half as wide. This shoal is so bold all round that there is no warning whatever by the lead. It lies due S. W. from the west point of Bic, at the distance of nearly $3\frac{1}{4}$ miles. From the N. W. extremity of Cape Arignole it bears W. $\frac{1}{2}$ S., distant 5 miles; and it is rather more than $1\frac{1}{4}$ miles distant from the shore to the southward. There is no close leading mark for clearing this Rock, but if Mount Camille be not entirely shut in behind Cape Arignole, vessels will be in no danger from it.

The above mark, together with the bearings, which I have

Bic Channel. given, will be a sufficient guide to vessels beating through between Bic and the main, in their board to the southward. In their board to the northward, towards the West Grounds of Bic, vessels must not shut in the S. E. reef behind the south side of Bic. All along the south side of Bic, and the S. E. reef, they may safely stand in to 7 fathoms at low water, not, however, without remembering what I have said respecting the inner part of the latter. Cape Arignole and its reef are quite bold to the northward, and further to the eastward, between Old Bic Harbour and Barnaby Island, vessels may safely stand in to $4\frac{1}{2}$ fathoms at low water: the ground is all clean sand and mud bottom, with excellent anchorage in every part.

With this full description of the dangers around Bic and Bicquette, and the assistance of our charts, vessels will have no difficulty in passing on either side of these islands in clear weather: and as I have already given directions for running past Bicquette at night, or in foggy weather (art. 25), it therefore only remains to point out the best places for anchoring, and to give directions for approaching them.

Anchorage off Bic recommended in foggy weather.

There is excellent anchorage under either end of Bic, and also between it and the main land, according to the wind; and vessels, which may be met by an easterly wind, had better anchor than attempt to beat down the Estuary in the long and foggy nights of the fall of the year. More shipwrecks have arisen in consequence of vessels obstinately endeavouring to beat down against an easterly gale, with its accompanying fog, than from any other cause, and yet all that they can gain by such a course might be run in a few hours of fair wind.

Directions for Bic Anchorage.

A vessel being to the north-eastward of Bic, with the first of an easterly gale, should bear up before the weather becomes thick, and steer for Bic Channel. The S. E. reef will be seen, and vessels may pass a quarter of a mile to the southward of it, or by the lead, coming no nearer to it and the south side of Bic than 7 fathoms at low water. Having run to the westward $1\frac{1}{4}$ miles past the west end of Bic, haul to the northward with the lead going, and taking care not to approach the West Grounds nearer than 6 fathoms at low water, until the south side of Bic bears E. $\frac{1}{4}$ N., and the north side N. E. by E. With these bearings anchor with 7 fathoms at low water, over muddy bottom. In this position you will have the S. E. reef shut in

behind the south side of Bic : Bicquette and its rocks will be *Bic Anchorage*. all open to the N. W. of Bic : the N. W. reef of Bicquette will bear N. $\frac{1}{2}$ E., rather more than $1\frac{3}{4}$ miles : you will be fully half a mile to the westward of the 3 fathom mark on the outer extremity of the west reef of Bic, and consequently will have plenty of room to get under weigh with the first of the westerly wind, when you should cast to the southward and run through Bic Channel to the eastward. A wind from the southward, together with the set of the ebb tide, might perhaps render it preferable to run out to the northward, round the N. W. reef of Bicquette ; in which case do not go to the eastward into less than 8 fathoms, at low water, nor shut in the north extremity of Cape Arignole behind the west point of Bic.

If it be night, and yet not so dark but that the principal *Taking Bic Anchorage at night.* features of the land can be made out, although it might be dangerous to attempt to make the low S. E. reef, another mode of proceeding may be adopted, under the circumstances above contemplated, and supposing the position of the vessel to be known. In that case, run in to the southward, towards the main land, half way between Barnaby Island and Bic, until you shoal to 5 fathoms, at low water ; then steer west *by compass, but corrected for deviation*, and you will deepen your water gradually. When you arrive at 9 fathoms you will be past Old Bic, and will probably see the opening of that harbour to the southward of you. When you arrive at 11 or 12 fathoms, you will be past the Cape Arignole Reef, and will soon begin to shoal again on the Bic side of the channel. If it be too dark to see the island, go no nearer than 7 fathoms. When you judge yourself far enough to the westward, haul gradually to the northward into the stream of the island, and anchor as near the position previously pointed out as you can. It is not, however, necessary that you should be in that position, although it has been recommended as the best sheltered ; for you may anchor, and will ride easily, anywhere under and within 3 miles of the island, in 8, 9, or 10 fathoms at low water ; and large and heavy ships would, perhaps, wish to lie further off than I have recommended.

In the case of a vessel to the northward of Bic, and wishing *Approaching Bic Anchorage from the northward.* to run to the same anchorage from the N. W., so as to pass to the westward of the N. W. reef of Bicquette, run to the westward ; going no nearer to Bicquette and the N. W. reef than

30 fathoms, till the extremity of Cape Arignole becomes open to the S. W. of Bic, bearing S. E. $\frac{1}{2}$ E.: then haul to the southward, going no nearer to the reefs of Bicquette than 8 fathoms, and anchor as before directed.

Taking Bic Anchorage in thick weather.

Should the weather be so thick that no land can be seen, either mode of proceeding may be adopted. I, however, recommend the latter as attended with less risk; but in such case, the distance run must be carefully attended to, due allowance made for the tide, and the soundings in the chart consulted. The principal thing is to make sure that you have run far enough to the westward to insure clearing the N. W. reef, when you haul to the southward, for whether you anchor within 1 or 3 miles of Bic, will make no other difference than that the water will be smoother at the less than at the greater distance.

Bic Eastern Anchorage with Westerly winds.

Vessels running down from the westward to anchor under Bic should keep Mount Camille open to the northward of Cape Arignole to clear the Alcide Rock. Then running along the south side of Bic, and the S. E. reef, they should haul round the east point of the latter, no nearer than a quarter of a mile, nor than 8 fathoms, and anchor, with the east point of the S. E. reef bearing S. W. $\frac{1}{2}$ S., three-quarters of a mile, in 10 fathoms, at low water, over clay bottom. The N. E. point of Bic will then bear west a little southerly, the N. E. point of Bicquette W. $\frac{3}{4}$ N., and the whole of Cape Arignole will be just open to the southward of the S. E. reef. Large ships may anchor further off to the eastward if they please, but in the berth which I have recommended, a vessel will have plenty of room to cast to the southward, and weather the S. E. reef, in case of a sudden shift of wind. Should she, however, prefer going to the northward round Bicquette, let her beware of the N. E. reef of Bic, the position of which has been already described, and also, particularly if the wind be light, of the indraught of the flood tide between Bic and Bicquette.

Anchorage in Bic Channel with Northerly winds.

With northerly winds vessels may anchor anywhere in Bic Channel, but the best berth is off a small sandy point, nearly in the middle of the south side of Bic Island, in 8 $\frac{1}{2}$ or 9 fathoms at low water, over muddy bottom, at three-quarters of a mile off shore.

Tides near Bic Island.

To the westward of Bic the first of the flood comes from the N. E., but there is very little stream of flood in neap tides between Bic and the main land, excepting close to the latter.

In spring tides it runs through the channel at the average rate of $1\frac{1}{2}$ knots, being strongest near the main land. It also runs between Bic and Bicquette, but the stream extends only a very short distance outside the latter island.

The stream of flood continues its course close along the main land, passing inside, and also very close outside, of the Razades, Basque, and Apple Island; but nowhere extending a sufficient distance off shore to be of use to ships beating to the westward much below Green Island. That part of the stream of flood which passes further out towards Bic, and also that which passes between Bic and Bicquette, runs at its full rate only until half flood, after which, it becomes gradually weaker, turning to the N. W., round the west end of the island, and finally, to the north and N. E. towards the end of the tide.

The stream of flood becomes weaker, and of less duration, as we proceed to the westward of the islands. Half way between Bic and the Razades there is slack water for about an hour at the end of the ebb; after which a weak flood makes during the first quarter of that tide, at the rate of a quarter of a knot; and this is succeeded by the eddy flood at the rate of $1\frac{1}{2}$ knots, or $2\frac{1}{2}$ at the edge of the Bank of Soundings, which comes from the westward, running in the same direction as the ebb during the remainder of the flood tide.

From these remarks it will be seen, that vessels will make little way to windward against a westerly wind on the Bank of Soundings between Bic and the Razades; and indeed, all the way to Green Island.

The set of the latter part of the flood to the northward past the west end of Bic should be remembered by vessels weighing from the western anchorage, or approaching the island with light winds, especially in the night, or thick weather.

The first of the ebb sets off shore, or from the southward, and this is more particularly remarkable at the eastern anchorage, but it only lasts for a very short time, after which the stream runs fairly between the islands, and along the coast to the eastward for the remainder of the tide. Its rate, in westerly winds, varies from 2 to $2\frac{1}{2}$ knots, according as it is neap or spring tides, but it does not run so strongly in easterly winds.

The chart will show how extensive the south bank is both to the eastward and westward of Bic and Bicquette, and the assistance

South Bank. which the soundings on it may afford to vessels at night, or in fogs, will be evident. If vessels on approaching those islands from either direction, will but use their leads in reference to the soundings in the chart, and attend to the directions given (art. 25), they can scarcely run foul of Bicquette, or its reefs, as has so often occurred in times past.

Edge of the South Bank.

It has been mentioned (art. 25), that the 30 fathoms edge of the south bank is 7 miles north of Barnaby Island, and $1\frac{1}{2}$ miles north of the N. W. reef of Bicquette. Between those points the edge of the bank continues in a slightly undulating line. Everywhere within that line there is much less water, and to the northward of the south bank, in every part, there is no bottom with from 60 to 80 fathoms of line, quite over to the north coast. The 30 fathoms edge of the bank is $4\frac{1}{2}$ miles north of the N. E. Razade Islet, and is nearly straight from that point eastward to off the N. W. reef of Bicquette.

From Bic Island to the Razade Islets.

To the westward the south bank becomes gradually wider, its northern edge pursuing a direction from off the Razades towards the north side of the Red-Islet Reef. There is nowhere more than 36 fathoms at low water upon it, until we arrive within 2 miles of the line joining the N. E. extremities of the Red-Islet, and Green Island Reefs, and this increase in the depth of water is a valuable indication to a vessel approaching that dangerous pass in thick weather, when the Green Island light cannot be seen. There is anchorage in 10 or 12 fathoms, with good holding ground, all along the south coast from Bic to Green Island.

The coast of the main land between Bic and the Razades is high and rocky. With the exception of the Alcide Rock already noticed, it is free from danger to small vessels, which may stand close in: but ships should not stand in further than 7 fathoms at low, and 9 fathoms at high water, because of a long ridge of rocky ground extending 5 miles to the E. N. E. from the N. E. Razade Islet with 17 feet least water near its eastern end. To clear every part of this ridge, keep Basque Island its own breadth open to the northward of the N. E. Razade.

The Razades.

50. The RAZADE ISLETS are two large rocks about a quarter of a mile long; they are low, bare of trees, and bear from each other S. W. $\frac{1}{2}$ W. $1\frac{1}{2}$ miles. The north-eastermost of these Islets bears from the N. W. reef of Bicquette S. W. $\frac{3}{4}$ W., nearly 15 miles,

and is distant $1\frac{1}{2}$ miles from the main land to the southward. There is no passage for vessels between them and the shore.

BASQUE ISLAND is 5 miles W. S. W. from the N. E. Razade Islet, *Basque Island*. $1\frac{1}{2}$ miles long parallel to the coast, and 200 fathoms wide. Its greatest height above the sea does not exceed 100 feet: it is rocky, wooded, uninhabited, and there is no passage for ships between it and the shore, from which it is distant 2 miles.

Near the S. W. end of this island a sandy spit runs out, a *Basque Spit, and deep hole*. quarter of a mile to the southward. Close off the end of this spit, there is a long and narrow hole 4 or 5 fathoms deep at low water, in which small craft may be secured.

The shoal water extends half a mile to the northward of *Basque Reefs*, *Basque Island*, and there is a reef of rocks to the N. W. and west of its west point. On the western extremity of this reef, and about 600 fathoms distant from the island, is a round rock which *and half tide Rock*. shows at half tide.

APPLE ISLAND is W. S. W. $\frac{1}{2}$ W. $2\frac{1}{2}$ miles from *Basque Island*. It *Apple Island*. is formed by one principal and several smaller rocks; the whole covering a space one mile long parallel to the coast, by 150 fathoms wide. It is 30 or 40 feet above the sea at high water, without any trees, and distant $2\frac{1}{2}$ miles from the nearest point of main land. There is no passage for ships between it and the shore, but its north side is very bold, there being 4 fathoms at the distance of a cable's length.

The east end of **GREEN ISLAND** is a long and narrow point of *Green Island*. rocks, always above water, and running out more than half a mile from the trees towards Apple Island, which is distant from it $2\frac{1}{2}$ miles in an E. N. E. direction. Half this distance towards Apple Island is occupied by reefs of slate which dry at low water. In the remainder, there are a few feet of water, affording a passage for very small schooners, which run in between Green Island and the main at high water. And here I may mention, that the line of shoal water is continuous from each of these islands to the other, and may be safely approached with care to 7 fathoms at low, or 10 fathoms at high water; as may also the islands.

GREEN ISLAND LIGHTHOUSE stands on the north point of the *Green Island Lighthouse*. island, nearly 2 miles from the eastern extremity of the rocks above water off its east point; and W. S. W. $\frac{1}{2}$ W., $4\frac{1}{2}$ miles from Apple Island. It shows a fixed light 60 feet above the sea, and can be seen in clear weather, and in the ordinary state of the refraction,

Green Island. from the distance of about 12, 14, or 17 miles, according as the height of the observer's eye is 10, 20, or 60 feet. The tower is square, white, and 40 feet high. Behind the Lighthouse at the distance of about a quarter of a mile, and bearing S. S. E. $\frac{1}{2}$ E. from it, there is a white beacon for leading clear of the tail of the Red-Islet Reef, as described in (Art. 28).

White Beacon for Red-Islet.

Green Island Reef.

The GREEN ISLAND REEF, which is extremely dangerous, runs out from the lighthouse N. N. E. $\frac{1}{2}$ E. $1\frac{1}{2}$ miles to the 3 fathom mark. From its N. E. extremity it trends, with a serrated outline, E. by S. till it joins the shoal water connecting Green and Apple Islands. Its N. W. side is straight, running S. W. by S. from its N. E. extremity, to the shore close to the westward of the lighthouse, off which it extends only 200 fathoms to the N. W. Its shape is therefore irregularly triangular, and the rocks on it dry at low water, nearly three-quarters of a mile out from the high water mark..

Extent.

Sleep to, except on eastern side,

On the eastern side this reef may be safely approached by the lead to 7 or even 6 fathoms at low water, but on the north, N. W., and west sides there is no bottom with the hand lead until close to it. Half a mile north, and N. W. of it, there are between 20 and 30 fathoms of water. At the distance of one mile N. W. from its N. E. extremity, there are between 40 and 50 fathoms; and at the distance of $1\frac{1}{2}$ miles, in the same direction, there is no bottom for a short space with 50 fathoms of line.

yet the Lead is the only guide.

Deep as the water is to the northward of this dangerous reef, there is no other guide, in a thick fog when the light cannot be seen, but the soundings: yet it will never do to lose command of the vessel by rounding to, in the rapid ebb tide, (which sets upon the reef at the rate of 5 knots,) for the purpose of getting bottom in the usual way by the common deep sea lead. Here then it is that Massey's patent sounding machine becomes of invaluable service to the seaman, enabling him to obtain correct soundings despite of the rapid tide, and without interfering with the course and rate of his vessel.

Ebb sets over it.

Clearing Mark.

To clear Green Island Reef, in the daytime and clear weather, keep the summit of the high land to the southward of Cape Arignole (or the high land of Bic) open to the northward of Basque Island.

Green Island Road.

There is excellent anchorage in westerly winds under the Green Island Reef, and it is the general rendezvous of vessels waiting for

the flood to beat through between Green and Red Islands. But as *Green Island*, the first of the flood comes from the northward, and sets on the shoals, vessels had better not anchor with the light bearing to the westward of S. W. $\frac{1}{2}$ W., or in less than 7 fathoms at low water. With that depth, on that bearing, they will be $2\frac{1}{2}$ miles from the light, one mile from the eastern edge of the reef, and the same distance from the shoal water to the southward. If they wish still more room, they may choose their berth in 9, 10, or 11 fathoms, and will find a bottom of stiff mud in either depth.

When lying at anchor, with the light bearing S. 55° W., and distant 3 miles, and in 8 fathoms at low water, I observed that the first of the flood came from the northward; the vessel then tended gradually round with her head to the N. E., east, and S. E. at the end of the tide. The vessel continued to go round with the first of the ebb, which came from the southward off the shoals, to the S. W., west, and N. W., which latter point she reached at about 2 hours ebb; and she continued with her head in that direction, from which the tide came, until near the end of the tide. She then began to tend again, with her head to the north and N. E. as before, going completely round the compass in 12 hours. It was never entirely slack water, the stream continuing to run, more or less, during the whole time. The rate of the ebb was 3 knots, and that of the flood 2 knots. This occurred in a perfectly calm day.

Tides in Green Island Road.

CHAPTER VI.

THE NORTH COAST OF THE GULF AND RIVER OF ST. LAWRENCE
FROM ST. JOHN RIVER TO POINT DE MONTS; AND FROM
THENCE TO LITTLE BERGERON NEAR THE SAGUENAY.

51. General Description of the Coast from the River St. John to the River Moisie. Magnetic Nature of the Coast. Appearance of, and Approach to the Shore—52. River St. John, Magpie River, Sawbill River, Shallop River, Manitou River, Bason River, Point St. Charles. River Moisie, and the Coast and Dangers.—53. The Shoal to the westward of Point Moisie. Seven Islands Bay.—54. The Coast from the Seven Islands to Point de Monts. River St. Margaret. Cawee Islands. Lobster Bay. Pentecost River. English Point. Egg Island and Reefs. Calumet River. Caribou Point. Trinity Bay. Point de Monts Light-house. Point de Monts, and detached Rocks.—55. The North Coast of the Estuary, to Point St. Giles. St. Augustin Cove. Goodbout River. St. Nicholas Harbour. St. Pancras Cove. English Bay.—56. Manicouagon River. Manicouagon Shoal. Outard River. Outard Bay. Bersimis River.—57. Bersimis Point and Shoals. Jeremy. Cape Colombier. Gulnare Shoal. Wild Fowl Reef. Plongeur Bay. Baie de Laval. Port Neuf Sands.—58. Point Milles Vaches. Milles Vaches Bay, and the Coast to the south-westward. Great and Little Bergeron Coves.

*General
Description of
the shore.*

51. FROM the River St. John to the River Moisie the course is W. N. W. $\frac{1}{4}$ W., and the distance 69 miles. The whole of this long line of coast, with the exception of its two extremities, that is to say all between Magpie and Trout Rivers, is composed of primary rocks rising immediately from the sea in steep, although often rounded hills, which are either bare, or partially wooded with small trees of the pine species. The hills in front, or next to the sea, seldom exceed 200 or 300 feet in height: but others, a short distance back from the shore, form a range of greater elevation, varying from 500 to 700 feet, and nowhere exceeding 1000 feet of height above the sea.

Elevation.

*Magnetic
Nature of the
Coast.*

The black oxide of iron, besides, being a constituent mineral in the granitic rocks of this coast, is found abundantly in nests and veins, particularly in the vicinity of Sawbill River. Its magnetic action on the needles of compasses on shore is such as to

cause the variation obtained by them to vary from 14 to 29 degrees west. Whilst sounding in the boats, we sensibly felt this disturbing influence, which diminished or increased as the boat receded from, or approached towards the shore. In the Gulnare, at the distance of 2 or 3 miles, the error, from this cause, never exceeded half a point, and at the distance of 5 or 6 miles it became insensible.

The appearance of this coast from a vessel is slightly undulating, bold and unbroken, presenting features so little diversified that it is very difficult to make out one part of it from another at a distance of 2 or 3 leagues; but upon a nearer approach, the mouths of the rivers, taken in connexion with the features of the neighbouring land, will in general supply distinguishing characters, by which the situation of a vessel may be ascertained.

This coast is not by any means so bold as it appears from a distance, for there are many rocks along it both above and under water, several of which are very dangerous, and nearly 1 mile from the shore.

There are soundings off every part of this coast, as will be seen in the chart; but I advise those who may not be fully acquainted with it not to approach the shore between Magpie and Bason Rivers nearer than 20 fathoms. Still greater caution becomes necessary between the last-named river and Point St. Charles, where 40 fathoms is as near as a large ship can approach with prudence, for that depth in several places will be found within 1 mile of the rocks.

52. THE RIVER ST. JOHN is a large stream occasionally frequented by fishing-schooners early in the season, and which our boats ascended 6 miles, following the winding of its channels, with a depth of water varying from 1 to 3 fathoms at low water. The tide flows no further than the distance just mentioned, where the river becomes too rapid to be navigated by other than canoes or flat-bottomed boats. The course of the river, for several leagues up from the entrance, is between high cliffs of stratified sand and gravel over clay, with small sandy islands occasionally. The country, on either side, is covered with a thick growth of small spruce trees. Five or six leagues from the sea, following the stream, there are reported to be high falls over granite rocks. At the entrance, between the clay cliffs on the west and a sandy

Appearance of the Coast.

The Coast not quite bold.

Approach to it by Soundings.

River St. John.

Breadth.

River St. John. point on the east side, the river is 130 fathoms wide. The breadth increases to nearly half a mile immediately within the entrance, and then decreases again gradually, being nowhere less than 100 fathoms wide in the first 6 miles.

There are two log-houses on the west bank, half a mile within the entrance, where a party of men occasionally reside to fish for salmon; and vessels may lie close to them in 2 fathoms at low water.

Shifting Bar. An extensive bar of sand, half a mile out from the entrance, shifts with every gale of wind, and has seldom more than 3 or 4 feet over it at low water; at high water there are 7 or 10 feet on the bar, according as it may be neap or spring tide. Southerly and westerly winds cause so heavy a surf as to render the bar impassable. There is good anchorage outside the bar, which may be safely approached by the lead, the soundings decreasing gradually from 20 to 3 fathoms over sand and clay bottom; the greater depth being at $2\frac{1}{2}$ miles, and the lesser at three-quarters of a mile, from the river's mouth. The entrance of the river lies nearly $6\frac{1}{2}$ miles N. 31° W. from the Perroquets, which are

*Anchorage
outside.*

Mount St. John. the westernmost of the Mingan Islands; and Mount St. John, an isolated, saddle-backed hill, 1476 feet above the sea at high water, bears N. E. $\frac{3}{4}$ N., 11 miles from the entrance.

Between the St. John and Magpie Rivers the coast consists of white clay cliffs, with a superstratum of sand, which is fast consolidating into sandstone by means of the red oxide of iron furnished by numerous small streams.

Magpie River. MAGPIE RIVER, nearly in the centre of Magpie Bay, and 5 miles N.W. $\frac{1}{2}$ N. from the River St. John, is a large and rapid stream, with several rocks above and under water off its east point of entrance, and one-third of a mile off shore.

The entrance of this river, between steep rocks, is only 10 fathoms wide, and the ebb tide rushes out of it in a torrent 5 fathoms deep. One hundred and fifty fathoms within this narrow entrance the river falls about 30 feet over granitic rocks. There are from 7 to 9 feet at low water over the bar outside, but as this river is of no use either to vessels or boats it is unnecessary to describe it further.

Waterfall.

Shoal.

Rather more than three-quarters of a mile to the westward of the river, and nearly one-quarter of a mile off shore on the west

side of Magpie Bay, there is a rocky shoal, on which the sea *Magpie Bay* almost always breaks at low water.

The course and distance across Magpie Bay, from the River St. John to Magpie Point, is W.N.W. 8 miles. There is good anchorage, with winds off the land, in Magpie Bay; and vessels may stand in to 7 fathoms at low water in every part of it, but the southerly and westerly winds roll in a very heavy sea.

Three and a half miles W. N. W. $\frac{1}{4}$ W. from Magpie Point is *Four Fathoms Ridge of Rocks*, from which a long and narrow ridge of rocky ground, with from 4 to 6 fathoms at low water, extends $4\frac{1}{2}$ miles to the westward across a bay, wherein there is one large and several small rocks above water. The western side of this rocky ground is nearly 1 mile off to the southward of Thunder Point. There is a very heavy sea upon this ridge at times, and it then becomes dangerous to large ships. There are 20 fathoms of water close outside of it in some parts, and 30 fathoms is quite near enough to its west end.

SAWBILL RIVER, situated in the bay between Sheldrake and *Sawbill River* Ore Points, and $23\frac{1}{2}$ miles westward of the River St. John, is the next place worthy of notice. It may be distinguished by the clay cliffs immediately within the entrance, and by the peculiar hills on either side of it, which are barren and of grey felspar, thickly studded with small round mounds.

This river affords shelter to boats and very small coasting craft; but it can only be entered in very fine weather, in consequence of the heavy surf. It has scarcely any bar; but the entrance, at the western extremity of a long and narrow spit of sand, which extends across the river's mouth, is very narrow, and from 4 to 11 feet deep, according to low or high water, in ordinary spring tides. At high water neap tides there is seldom more than 9 feet of water. The same depth continues only for a very short distance within the entrance.

Nine miles S. by E. from the entrance of this river there is a *Cod-Bank* bank of sand, gravel, and broken shells, on which codfish abound, and there are upwards of 60 fathoms between it and the shore.

SHALLOP RIVER, $7\frac{1}{2}$ miles further to the N.W. by W., affords *Shallop River* shelter only to boats, and can only be entered when there is no surf. There are several rocks, both above and under water, off this river, and also off Sandy River, a small stream about $2\frac{1}{2}$ miles

further westward. The outermost of these rocks lie fully half a mile from the shore.

Manitou River. MANITOU RIVER is the next in order, being $4\frac{1}{2}$ miles N.W. by W. of Shallop River. It is the largest on this coast, excepting the Rivers St. John and Moisie, and it is distant to the westward from the first of these rivers 35 miles. It may be readily distinguished from a vessel several leagues off the coast by two remarkable patches of clay cliff, one of which is close to the eastward, the other about 1 mile to the north-westward of its entrance.

To enter this river, keep close along the rocky west side of Manitou Point, leaving on the larboard side the sandy spit close within it, which stretches out from the sandy west point of the entrance. The channel is always in this position, but it is more or less wide and deep according to the season and the winds which may have recently prevailed. In general the channel is about 30 fathoms wide and 5 feet deep at low water, whilst at high water 9 feet in neap tides, and 12 feet in spring tides, may be carried in. Strong southerly and westerly winds cause a heavy surf, and render the entrance impracticable. A short distance within the entrance there are 9 feet at low water, deepening gradually to 5 fathoms at the first rapid, one mile up the river. Half a mile further up, the river falls 113 feet perpendicularly, over sienite and porphyry, in one unbroken sheet of water, forming one of the most beautiful cascades in Lower Canada.

*Magnificent
Waterfall.*

*Anchorage off
Manitou River.*

There is good anchorage off this river. Ships may safely anchor in fine weather with the wind off-shore, having the entrance of the river bearing N. E. $\frac{1}{2}$ E., $1\frac{1}{2}$ miles, where they will have 15 fathoms over mud bottom, and be more than 1 mile distant from Manitou Point, the nearest point of the shore. If they require water they will find it at a small stream on the western shore, a short distance within the entrance; or they may row up the river until they find the water fresh.

Buchan Point.

Small vessels may anchor further in-shore to the westward of the bar, and in the bay between Points Manitou and Buchan, which are 3 miles from each other; for the soundings decrease regularly in towards the shore, with sand and clay bottom, and there is no other danger but a small rocky shoal which bears W. by N. $2\frac{1}{2}$ miles from the entrance of the river, S. E. $\frac{1}{2}$ S.

nearly a mile from Point Buchan, and which is about three-quarters of a mile off-shore. There are 7 fathoms within this shoal, and 9 fathoms close outside of it, so that it should be guarded against by vessels beating along the coast.

Buchan and Fall Rivers, and also Hotteurs River, fall in cascades into the sea, or close to it, and thus serve to point out to a vessel her position off the coast; and there is, moreover, a remarkable white patch close to the westward of Buchan River. *Cascades of Buchan and two other Rivers mark the Coast.*

BASON RIVER, which is $10\frac{1}{2}$ miles W. N.W. $\frac{1}{4}$ W. from Manitou River, has a spit of large stones extending about 150 fathoms out from its east point of entrance. The entrance is very narrow, with a varying depth, which is less or more according to the prevalence or infrequency of the S.W. winds; but there is in general enough water for very small coasting craft or large boats. There are rapids a quarter of a mile within the entrance. *Bason River.*

Cape Cormorant, $1\frac{1}{4}$ miles west of Bason River, is a small peninsula, on the inner side of which there are the log-huts of a trading post not always occupied, and which cannot easily be seen from the sea. *Cormorant Cape.*

Blaskowitz Point is $5\frac{1}{2}$ miles W. N.W. $\frac{1}{2}$ W. from Cape Cormorant. Between them are the Cormorant Islets, joined to the shore at low water, and not readily distinguishable from the main land. *Blaskowitz Point. Cormorant Islets.*

A small and dangerous reef, called Cormorant Reef, lies off those islets, and about a mile from the shore. It has 12 feet least water, and bears W. $\frac{1}{2}$ N. $2\frac{1}{2}$ miles from Cape Cormorant. On it, Points Blaskowitz and St. Charles are in one, bearing W. N.W. nearly, so that vessels approaching this part of the coast should keep the latter point open. The coast between Cape Cormorant and Point St. Charles is broken into coves, two of which are nearly 1 mile deep, full of rocks, and afford shelter only to boats. The shore is here fringed with rocks both above and under water, and should not therefore be made too free with. *Cormorant Reef.*

POINT ST. CHARLES will readily be known by the cove on the east side of it, and by the trending of the land on the west side northward towards Trout River. *St. Charles Point.*

THE REEF off Point St. Charles is extremely dangerous, being so bold that there is no warning by the hand lead, and very little with the deep sea lead. It is composed of a great number of rocks near to each other, but having a considerable depth of *St. Charles Reef.*

St. Charles Reef.

water between them. Some of them always show, but the outermost patches are always covered. These last lie rather more than three-quarters of a mile off to the S. S.W. from the southern extreme of Point St. Charles; and the reef continues to the first cove, $1\frac{1}{2}$ miles to the north-westward of the point, but does not there extend so far off-shore as off the point itself.

Vessels beating to the westward should take care not to becalmed to the westward of this reef, lest the heavy swell from the S.W., so frequent on this coast, should heave them towards the reef, for the water is too deep to anchor until close to the breakers.

Moistic Bay.

Moistic Bay intervenes between Points St. Charles and Moistic River, the course across it is west, and distance 11 miles, with a depth of between 50 and 60 fathoms nearly all the way. Trout River, a small stream, is in the centre of this bay, and $6\frac{1}{2}$ miles N. W. $\frac{1}{2}$ W. from Point St. Charles. Here the rocky shores terminate, and the bold sandy beach, which extends $6\frac{1}{2}$ miles S.W. by W. to the River Moistic, commences.

*Trout River.**Seal-house Cove.*

Seal House Cove, on the east side of the bay, and $2\frac{1}{2}$ miles from Point St. Charles, affords shelter only to boats. There are two log houses there, which are occasionally occupied as a fishing and trading post.

The soundings are regular in the bay, with deep water, over clay and sand bottom.

The granitic hills, which leave the shore at Trout River, continue inland until they join the ridges in rear of the Bay of Seven Islands. Between the hills and the sea there is an extensive tract of low sandy country, thickly wooded, and which seems to have been formed, in the course of ages, by the united action of the rivers and the sea.

Moistic River.

THE RIVER MOISTIC enters the sea on the east side of the point of the same name, which is the southern extremity of the sandy country just mentioned. It is a larger river than the St. John, discharging a great quantity of water in the spring after the melting of the winter snows, and bringing down from the interior great quantities of sand, which so obstruct its wide and shallow channel in the first $2\frac{1}{2}$ miles from the sea that boats cannot ascend at low water. The river becomes shallow immediately within the entrance, expanding into a wide place full of sand-bars dry at low water. In the above-named distance from the sea,

the breadth of the river decreases from $2\frac{1}{2}$ miles to half a mile, *Moisic River.* and at the end of that distance the sand-bars cease. The river has then a clear channel of 9 feet deep, between steep sandy shores or cliffs for 1 mile further, where its breadth is a quarter of a mile. Here our examination was terminated by a head-wind and the rapidity of the current in the spring of the year. The traders report that flat-bottomed boats can ascend to the first rapids at the distance, following the stream, of 6 or 7 leagues from the sea. The bar, which is of sand, dry at half tide, *Bar.* runs out from the long, low, and narrow east point of entrance, nearly half a mile to the south-westward, and nearly parallel to the east side of the west point of entrance.

The entrance of the River, between this bar and the west point, *Entrance.* is from the S.W., and continues for 600 fathoms with a breadth of a quarter of a mile, and a depth varying with the seasons and the winds which prevail; those from the southward and eastward having a tendency to block up the channel. I believe that there *Depth.* is seldom a less depth than 9 feet at low water, the same as inside close under the west point of entrance, which is the only place where a small vessel can find shelter, close to two log-houses occasionally employed as a salmon-fishery by the people of the Hudson Bay Company. The shelter here is extremely imperfect in gales of wind from the southward and eastward, which send in so heavy a sea that, after breaking completely over the bar and across the entrance, it still retains power enough to seriously affect a small vessel. The tides rise *Tides.* from 5 to 8 feet.

53. Although the bar of the River Moisic is so bold that there *Moisic Bank.* are 50 fathoms of water at the distance of three-quarters of a mile from it to the south and S. E., yet the shallow water continues from it to the westward $3\frac{1}{2}$ miles past Point Moisic in such a manner as to form an extensive triangular sandy shoal, with from 3 to $1\frac{1}{2}$ fathoms on it at low water.

The S. W. extremity of this shoal, near which there is a *Moisic Rock,* patch of rock with 9 feet least water, bears W. by S. $\frac{1}{2}$ S. $2\frac{1}{2}$ miles from Point Moisic, and is nearly $1\frac{1}{2}$ miles from the shore. This is an extremely dangerous shoal, being as bold as a wall. *very dangerous.* There are 25 fathoms of water alongside of its south and S. W. edges, and upwards of 30 fathoms at the distance of two cables. It can generally be seen, in fine weather, from the change in the

Moisie Rock. colour of the water, and from heavy breakers when there is much sea running.

Mark. There is no close leading mark for avoiding this shoal, so that the only direction I can give to a vessel standing towards it, is to tack when the northern side of the Manowin Island comes on with the southern point of the Great Boule Island: she will then be $1\frac{1}{2}$ miles from the edge of the shoal, and in upwards of 30 fathoms water.

East Rocks. The East Rocks, which are low, bare of trees, and always above water, lie in Boule Bay between this shoal and the Boule Islands, as will be seen in the chart. They are out of the way of vessels, which ought not to go into this embayed place, since there is generally a heavy southerly swell rolling in, which would render it difficult to beat out.

The south point of Great Boule Island bears west, and is distant $9\frac{1}{2}$ miles from Point Moisie.

The Seven Islands. THE SEVEN ISLANDS are high and steep, of primary rocks, very thinly wooded, and can be made out from a distance of 7 or 8 leagues, being unlike anything else in the Gulf. The easternmost of these islands are the Great and Little Boule, the former of which is the highest of them all, its summit being 695 feet above the sea at high water. Next, westward, and parallel to these two, are the Little and Great Basque Islands; the first named being, as before, the outer island. Great Basque Island is 500 feet high. Manowin and Carousel lie to the S.W. of the Basques. The former island is 457 feet high; the latter much lower, and the southernmost of the islands. The West Rocks lie between Manowin and the peninsula, which forms the west point of the Bay of Seven Islands. They are too small and low to appear as the seventh island; but the peninsula has that appearance when seen at a distance from sea, being higher than any of the islands, and 737 feet above the sea at high water.

Seven Islands Bay. The relative situations of these Islands, their size, and the breadth of the channels between them, will be best seen from the charts; they are so placed as to completely shelter the magnificent bay within them, which is $2\frac{1}{2}$ miles wide at the entrance, between Point Chassé, the east end of the peninsula, and Sandy Point, which is opposite the northern end of Great Basque Island. From the entrance the Bay of Seven Islands extends about 6 miles to the northward and westward, being so nearly

landlocked as to resemble a lake, sufficiently extensive for the largest fleets to lie in perfect safety; the bottom is of clay, and there are no shoals, excepting the mud banks which fill up the northern part of the Bay. *Seven Islands Bay.*

A fine broad, bold, sandy beach extends for 3 miles northward from the east point of the Bay, to the entrance of the principal river, near which stands the Hudson Bay Company's trading post. The houses at this post cannot be seen from the outer parts of the Bay, but there is a wooden store on the beach off which vessels usually anchor. Water can be obtained from this river at high-tide.

To the northward of the Bay, at the distance of a few miles, there are two parallel ranges of mountains; the summits of the nearest are upwards of 1300, and those of the most distant upwards of 1700 feet above the sea. These mountains, the high peninsula, the bold and hilly islands, and the other features around the Bay, form a panorama of great beauty.

The narrow Passes between the two Boule Islands, the two Basque Islands, between Manowin and Carousel, and between Manowin and the West Rocks, require no further notice than to remark, that the tide sets strongly towards, and through them; the flood to the west, and the ebb to the eastward, a circumstance that should be attended to when becalmed at night, or when tacking in their entrances. The first and last of these channels have water enough for the largest ships; but the one is subject to sudden and baffling flaws of wind round the Boule Islands, and the other is rendered intricate by rocks which nearly cover at high water. *The narrow Passes.*

There are three obvious channels leading into Seven Islands Bay, namely, the eastern, the middle, and the western channels. The eastern channel, between Great Basque Island and Sandy Point, is seldom used, having a rock in its centre, which is covered only in high tides. A reef, with from 6 to 9 feet of water, extends for a quarter of a mile to the eastward of this rock. The passage on either side of it is from 13 to 15 fathoms deep, and 200 fathoms wide. Vessels should only attempt it with a fair wind, and should keep within a cable's length of Basque Island, or as near to the sandy point of the main land: the latter is recommended as preferable. This narrow eastern channel may be approached from between the Boule Islands and the East Rocks, or from between the Boules and Basques Islands, *Eastern Channel.*

Seven Islands Bay. both routes being entirely free from danger, for the islands are so bold that a vessel may approach them within a cable's length in every part.

Middle Channel. The middle (which is also the principal and best) channel is upwards of $1\frac{3}{4}$ miles wide, and so free from danger that the largest ship may approach the shore within half a cable's length in every part, excepting at Point Chassé, where a reef runs out 120 fathoms from the shore. This channel, between the Basque Islands on the east, and Carousel, Manowin, the West Rocks, and the peninsula on the west, is preferable in every wind, excepting the north and N. W., with which, to save beating, (since they blow out of the Bay,) it might be desirable to enter by the west channel. The course through the middle channel into the Bay is due north by compass.

West Channel. The west channel between the West Rocks and Point Croix, at the southern extremity of the peninsula, is three-quarters of a mile wide, and quite free from danger. There are 2 or 3 rocks a cable's length to the northward of the islets, called the West Rocks, but they always show, excepting in very high tides and the smoothest sea. The only direction necessary, therefore, is not to go nearer to the West Rocks than 2 cables' length; the peninsula side is quite bold. There is, however, a caution necessary here respecting the ebb tide, which is turned off by Point Croix towards the West Rocks, a circumstance which must be attended to in taking this channel with a scant northerly wind.

Marks unnecessary. There are no leading marks for these channels, nor are any required, for the two last described are so free from danger, that a person who had never seen them before might take the largest ship into the Bay, without either chart or pilot, by simply giving the shore a berth of 2 cables' length in every part.

The water is too deep for anchoring in any of these channels, and the bottom generally rocky, excepting to the eastward and northward of the Boule Islands. The ground is not fit for anchoring until well into the Bay.

Anchoring Berth. The best berth for a large ship to lie at anchor in Seven Islands Bay is with Sandy Point and the north side of Little Boule Island in one, and with Point Chassé on with the west side of the West Rocks. The N. W. extremity of the sandy beach near the entrance of the river will then bear N. by E. $\frac{1}{2}$ E.: the vessel will be in 9 fathoms at low water; over

clay bottom, nearly one mile from the sandy beach to the eastward, *Seven Islands Bay.* and nearly three-quarters of a mile from the 3 fathoms edge of the shoals, which occupy the northern part of the Bay. Smaller vessels may lie closer to the shore, in 6 fathoms at low water, which is as near as any vessel ought to anchor.

In this anchorage there is a considerable swell with a strong southerly wind, but never enough to endanger a vessel, although sufficient to prevent boats from landing. Those that may wish to lie perfectly smooth, may anchor in the S. W. part of the Bay in 13 fathoms, soft clay bottom, where they will be perfectly landlocked.

The rate of the stream of the tides in the Bay, and in the principal channels between the Seven Islands, seldom amounts to a knot; but in the narrow channel between the Boule Islands, the Basque Islands, and in the east and west channels, it may amount to 2 knots in spring tides, or even more in the narrowest of these channels when accelerated by strong winds. The flood, coming along the coast from the eastward, strikes the Boule Islands, and passes between them, and also between the two Basque Islands. It is turned off by the Great Boule towards Carousel Island, and the west channel; but the greater part of the stream, which passes within the Boule Islands, enters the Bay by the east channel, between the Great Basque Island and the main land. There is very little flood in the middle channel excepting an eddy *outward* stream close along the shores of the peninsula, and the narrow stream from between the Basque Islands, which sets across towards the west channel.

The ebb sets fairly out of the Bay, part of it by the east channel, and part by the middle channel, where it meets the stream through the west channel, which turns it to the eastward, past the southern points of the Basque and Boule Islands.

In fine nights the winds are almost always light and baffling *Baffling Winds at night.* between the islands, particularly if the wind be from the westward in the offing. At such times there is generally a northerly land wind in the Bay, but it does not often reach far out among the islands in the early part of the night, although it often does towards the morning.

The water is extremely deep outside of the Seven Islands, as will be seen in the chart, and the islands are so bold, that a vessel may stand close to their rocky shores.

*Seven Islands
to Point de
Monts.*

54. The course from the S. E. point of Carousel, the southermost of the Seven Islands, to Point de Monts lighthouse is S.W. by W. $\frac{1}{2}$ W., and the distance 60 miles.

This coast is less bold in appearance, being less elevated than that to the eastward of the Seven Islands. The hills are, for the most part, far back in the country, and the shores are of very moderate height above the sea. The country near the sea is formed of small and low granitic hills, partially wooded with spruce trees. Marshes and ponds are frequent between the hills; sandy beaches occur occasionally, and the sandy tracts in rear of them are always the most densely wooded parts.

*Bold Coast and
useful Sound-
ings.*

There are no detached dangers off this coast, which is much more bold than its appearance would promise; and although the water is deep off every point of it, yet in general, and with few exceptions, there are sufficient soundings with the deep sea lead, to give warning to a vessel of her approach to the shore.

The course from Carousel Island across St. Margaret Bay to Point St. Margaret, is W. by N. 14 miles; with very deep water all the way.

*St. Margaret
River.*

ST. MARGARET RIVER is nearly in the centre of the bay of the same name; being 6 miles N.W. by W. from Point Croix. This River, although a large stream, affords shelter to boats only. It has a bar of sand extending three-quarters of a mile out from the entrance, and having several small channels through it, with only 3 feet at low water. Immediately within the entrance, which is 170 fathoms wide, there are 6 feet, and only 3 feet can be carried up to the low falls, which are over granitic rocks, and $3\frac{1}{2}$ miles from the entrance. Below the falls, the River flows between cliffs of sand and clay, and is full of sand-bars, dry at low water. The water deepens gradually outside the bar, with sandy bottom, to 18 fathoms at the distance of a mile from the 3 fathom mark. There is sandy beach for a considerable distance on either side of the River's mouth.

*St. Margaret
Point.*

ST. MARGARET POINT is rocky, of very moderate height, and has a round hill a short distance within its extremity. There are several rocks, which cover at high water, and which extend to the distance of nearly one-third of a mile off this point. These rocks are extremely bold, and there is no bottom with the hand lead close outside of them, and no bottom with 70 fathoms of line at a less distance than 2 miles.

The course and distance from St. Margaret Point to Great *Rock River*.
Cawee Island is S. W. by W. $\frac{1}{2}$ W. 16 miles, across a bay in which
are Rock River, and many other small streams. The coast in this
distance is low, and fringed with small islets and rocks close to
the shore, which may with prudence be closely approached by the
lead; but 20 fathoms is near enough to it, for those who are not
fully acquainted. The deep sea soundings are very irregular off *Irregular*
this section of the coast, for in some parts there are not more than *Soundings off*
50 fathoms 4 or 5 miles off-shore, whereas in others, as off the *May Islets*.
May Islets, 6 miles north-eastward of the Cawee Islands, no
bottom will be found with 60 fathoms within 2 miles of the rocks.

THE CAWEE ISLANDS are two small and hilly islands of grey *Cawee Islands*.
granite, and nearly bare of trees. Great Cawee Island, which
is the largest, the highest, and most to the eastward, is about
three-quarters of a mile in diameter, and estimated to be about
250 feet high. Little Cawee Island, lying a mile further to the
south-westward, is composed of two contiguous islets, which occupy
a length of half a mile parallel to the coast; it has several rocks
above water close off it to the S. W., and a reef 120 fathoms to the
north and N. W. of its west point. Both of these islands are bold
as a wall to seaward, but there is a small and high round rock a
quarter of a mile S. W., from the south point of the Great Cawee,
and this is the only danger between the islands, being, like their
southern sides, so bold that a large ship might lie alongside of it.

There is a secure boat cove on the N. E. side of the Great *Great Cawee*
Cawee, with plenty of water, but too small and narrow in the *Cove*.
entrance for vessels. Off the mouth of this cove to the N. E., and
at the distance of 200 fathoms from the island, there is a rocky *Great Cawee*
shoal 100 fathoms in diameter, and with 15 feet least water. *Shoal*.
The mark for this shoal is the north side of Great Cawee and the
point of the main land to the westward in one, bearing W. S. W. $\frac{1}{2}$ W.
Half a mile N. E. by N. from this shoal is a small round ledge, *Cawee Ledge*.
a wash at low water, and one-third of a mile from the main
land. The marks for this ledge are the south side of the large
rocks, between Great Cawee and the main, on with the point of
the main to the westward; and the south side of Little Cawee
just shut in behind the north side of Great Cawee Island.

At the distance of 200 fathoms from Great Cawee, between it and
the main, there are two large rocks close together, which are 150
fathoms from the main land, and have a reef off them 200 fathoms

to the S. W. by W. Nearly half a mile N. E. by E. from these rocks, and at the same distance from the main, there is a small rock which always shows.

*Anchoring Bay
in Great
Cawee.*

There is a bay on the inner or N. W. side of the Great Cawee Island; the anchorage is in the mouth of this bay, in 7 fathoms muddy bottom, and at the distance of a cable's length from the Island. The shelter is complete with winds from W. by S. round by north to N. E., and tolerably so with all easterly winds, although some swell rolls round the Island; but the S. W. winds blow right in, and send in a very heavy sea. To run into this anchorage from the eastward, steer N. W. past the N. E. side of Great Cawee Island, going no nearer than half a mile, (to avoid the shoal off the mouth of the cove,) until the point of the main land to the westward opens clear of the north side of the Island. Then steer for the point of the main land, keeping it midway between the north side of the Island and the large rocks to the northward of it. When you arrive between the rocks and the Island, haul into the mouth of the small bay, which you will see on the N. W. side of the latter, and anchor in 7 fathoms at low water. There are 12 or 13 fathoms in the middle of the channel, and upwards of 9 fathoms can be carried through.

In running for this anchorage from the westward, a vessel may pass between Little Cawee and the main, keeping in mid channel; but the better and safer way is to pass between Little and Great Cawee Islands, hauling close round the west point of the latter into the anchorage. By this route there is nothing in the way, excepting the round rocks to the south-westward of the south point of the Island, which can always be seen.

Tides.

The tides run fair through between the islands and the main land, at a rate which seldom exceeds $1\frac{1}{2}$ knots, and which is in general much less.

*Anchorage
between Great
Cawee and
the Main.*

From the foregoing description it will be seen that this is a very dangerous and intricate place; and the anchorage between Great Cawee and the main is too small for large vessels, the channel being only 200 fathoms wide. Still this anchorage, although too small for an occasional place of shelter, excepting for small vessels, may, nevertheless, be of great use as a place of refuge for a vessel in distress, from loss of masts, or other cause; for the ground is so good that I believe a vessel, well moored there, would ride out any gale which occurs during the summer months.

There is neither wood nor water in the Cawee Islands, but both may be obtained from the opposite main land.

Point Sproule, three-quarters of a mile to the north-westward *Point Sproule*, from Little Cawee Island, is the eastern point of Lobster Bay. A reef extends off its south side, a cable's length towards Little *Reefs*. Cawee; but the principal reef off it runs out 400 fathoms to the west and S. W.

LOBSTER BAY is between Point Sproule and the Crooked *Lobster Bay*. Islands, which are a group of small islets and rocks, running out from the shore 3 miles to the westward of Point Sproule. All the N. E. part, or head of Lobster Bay is occupied by an extensive flat of sand and boulders, dry at low water, and on which lobsters abound; but it is an excellent open roadstead, with plenty of room for the largest ships.

The Crooked Islands are bold to the southward and eastward, *Crooked Islands*, leaving the mouth of the Bay clear of all danger across to the reef off Point Sproule. Vessels may anchor midway between the reef and the islands, choosing their depth from 5 to 12 fathoms, according as they may wish to lie at the distance of half a mile, or of one mile from the 3 fathom edge of the flats in the head of the Bay. The bottom is of fine sand over clay, and the shelter from S. W. round by west and north to east, but all winds from east round by south to S. W. blow right in, with a heavy sea and thick weather.

PENTECOST RIVER enters the sea on the S. W. side of a rocky *Pentecost River*. point, $1\frac{1}{2}$ miles to the westward of the Crooked Islands: the opposite point of entrance is of sand. Two miles S. W. from the mouth of the River, there is a remarkable round and wooded hill. The first reach of the River is towards this hill, leaving a very narrow sandy ridge between it and the sea. Steep cliffs of sand and clay form the River's banks for $2\frac{1}{2}$ miles, to which distance only it is navigable for boats. The entrance of the River is only 15 fathoms wide, with a depth of 7 feet at low water, and there are 9 feet within for a short distance. At high water from 12 to 16 feet can be carried in, so that this River is capable of affording shelter to coasting schooners as well as boats: but it would be very difficult to take a sailing vessel in through so narrow an entrance, and could never be done in the ebb tide, which runs out with great rapidity.

A fine bold sandy beach extends from this River to English Point a distance of 7 miles to the S. W.

English Point. ENGLISH POINT is $1\frac{1}{2}$ miles to the northward and eastward from the north rocks of Egg Island, and has a shoal of large stones extending off it to the distance of one-third of a mile. On the S. W. side, or towards Egg Island, this shoal may be approached to 6 fathoms at low water, but on the S. E. and east it is very bold, there being 15 fathoms at the distance of one-third of a mile, and 30 fathoms at the distance of a mile from the 3 fathom mark.

Egg Island. EGG ISLAND bears from the south point of Great Cawee Island S. W. $\frac{1}{2}$ W. 14 miles. It is low, narrow, and of granitic rocks, without trees, and three-quarters of a mile long in a N. N. E. $\frac{1}{2}$ E. direction. The North Rocks, always above water, are 400 fathoms distant from the island to the N. N. E.; they form a low, narrow, black reef, which is 300 fathoms long in the same direction, bold towards the main land and also towards English Point. A reef under water runs out from these rocks in the direction of their length, (namely to the S. S. W.,) and to the distance of 250 fathoms, leaving only a very narrow 3 fathom channel between them and the island. The N. E. reef runs out to the distance of 600 fathoms from the N. E. point of Egg Island, and is the greatest danger between Seven Islands and Point de Monts. Some of the rocks upon the N. E. reef show in low tides, and the sea generally breaks on them at low water. This reef prevents the swell from rolling in between the north rocks and Egg Island, and thus assists in sheltering the anchorage.

*Dangerous
Reefs.*

*Egg Island
Anchorage.* The whole, that is the island, rocks, and reefs, form a natural breakwater, which is $1\frac{1}{2}$ miles long in a N. N. E. direction, and inclines slightly towards the shore at its northern end, in such a manner as, with the assistance of the shoal off English Point, to shelter the anchorage from N. E. winds. The northern end of this breakwater is distant from the main land nearly three-quarters of a mile, and the southern end more than a mile; but extensive flats extend from the main, and diminish the navigable breadth of the channel to 370 fathoms in the narrowest part, which is nearly opposite the northern end of Egg Island. The best anchorage is, however, to the S. W. of this narrow part, where the breadth, from the 3 fathom edge of the shoal off the main to Egg Island, is 600 fathoms.

All along water to the Rocks then very deep, to them. and the best time of the island, main land. towards the should have they might

In order depth of wa of a line join The best poi S. E. by S. Point will t In this anc north and v by the Islar maining poi strong, and shifting her over sandy

No direc from the s Island is q tween the l 9 fathoms, northward giving the length, unt a mile. Y may haul o by E. to av rocks and r reef off the

These d vessel to ru

All along the inner sides of Egg Island and of the reef under *Egg Island*. water to the S. S. W. of the North Rocks, as well of the North Rocks themselves, excepting near their northern end, the water is very deep, there being from 17 to 24 fathoms at low water close to them. The depth decreases gradually towards the main land, and the best depth to anchor in is 9 or 10 fathoms, according to the time of tide. The bottom is of clay in the deep water towards the island, and of sand from the depth of 9 fathoms towards the main land. There is little danger of dragging an anchor up hill towards the main, but, with violent squalls off the land, vessels should have a good scope of cable out, for should the anchor start, they might be on the rocks before they could bring up again.

In order to have as much room as possible, with a moderate depth of water, vessels should not anchor to the north-eastward of a line joining Roadstead Point and the centre of Egg Island. The best position is with the S.W. end of Egg Island bearing S. E. by S. and the inner side of the North Rocks N. E. ; English Point will then be open half a point to the westward of the latter. In this anchorage vessels will lie sheltered from N. E. round by north and west to S.W. by the main land, and from S. E. to N. E. by the Island, with its rocks and reefs. The winds from the remaining points, namely, those between S.W. and S. E., seldom blow strong, and even with them a vessel may find some shelter by shifting her berth to the eastward, where she will find 7 fathoms over sandy bottom.

No directions are necessary for running into this anchorage from the southward and westward, since the S.W. end of Egg Island is quite bold. But if it be intended to run through between the Island and the main, stand in to the northward to 8 or 9 fathoms, or until English Point is open half a point to the northward of the North Rocks, then steer for English Point, giving the inner side of the North Rocks a berth of a cable's length, until you have passed the North Rocks a full quarter of a mile. You will then be in about 7 fathoms at low water, and may haul out to sea, going nothing to the southward of S. E. by E. to avoid the N. E. reef. There is no danger between the rocks and reefs of Egg Island and English Point, excepting the reef off the latter already mentioned.

These directions, taken in the reverse order, will enable a vessel to run through from the eastward ; and I shall merely add

Egg Island. to them a caution not to approach the N. E. reef off Egg Islet, for there are 20 fathoms at the distance of a quarter of a mile from it in every seaward direction, and consequently little warning by the lead.

The anchorage at Egg Island is too small to be a favourite resort for large vessels, but in time of need, or as a place of refuge in case of distress, it would be found of great value on a coast so destitute of good harbours.

Water. There is no water on Egg Island, but it may readily be obtained from small streams on either side of Roadstead Point.

It is extremely difficult to make out Egg Island at night, by reason of the high land under which it lies, and which, coming from the westward, attains its nearest approach to the sea $1\frac{1}{2}$ miles in rear of English Point. But this high land, whilst it prevents the Island from being readily seen, points out its situation very nearly.

Tides at Egg Island. The rate of the tides between Egg Island and the main is from a half to one knot, and part of the stream of ebb sets towards and out through the narrow and dangerous 3 fathom channel between the island and the North Rocks. Part of the stream of flood comes in through the same channel.

Calumet River. CALUMET RIVER is a small stream $2\frac{1}{2}$ miles W. by S. from the S. W. end of Egg Island; along the shore for a mile to the south-westward of its entrance, there are reefs of large stones extending out 600 fathoms from the high water mark, and having 15 fathoms off them at the distance of half a mile to seaward. To the S. W. of these reefs as far as Trinity Bay the coast is free from danger, and may be approached with safety, if due caution be used. There are 20 fathoms at the distance of from half a mile to 1 mile, and 40 fathoms from 2 to 3 miles from the shore.

Caribou Point. CARIBOU POINT, $8\frac{1}{2}$ miles S. W. by S. from Egg Island, is a small rocky peninsula, having sandy coves on either side of its iathmus, in which pilot boats find shelter, and often remain on the look out for vessels.

Trinity Bay. TRINITY BAY is 5 miles further along the coast to the southward and westward. It is 2 miles wide, and nearly 1 mile deep, with a fine sandy beach extending from its S. W. point to Trinity River, which is a small and rapid stream, abounding with trout and salmon, where water can be had only at high water, because of the large stones about its entrance. The S. W. point of the Bay is rocky, and off the N. E. point there are two low

black rocks; the depth of water between the points of the Bay is from 5 to 7 fathoms at low water over sandy bottom. This Bay affords excellent anchorage, in a moderate depth of water, with good ground, and plenty of room to get under weigh in any wind. It is a very valuable stopping place, in westerly winds, for vessels bound up the St. Lawrence, to wait their opportunity to proceed round Point de Monts, and up the Estuary. Pilots are generally found waiting in the Bay for vessels when the wind is from the westward, but in easterly winds they take shelter in St. Augustin Cove.

*Trinity Bay
good stopping
place.*

*Pilots wait
there.*

In running down along the land for Trinity Bay, either from the N. E. or S. W. come no nearer than 15 fathoms until the Bay opens; then haul in, and anchor in 7 fathoms at low water; with the lighthouse on Point de Monts (seen just within a small rock about $1\frac{1}{2}$ miles to the south-westward of the Bay) bearing S. W. by W., the outer of the two rocks off the N. E. point of the Bay N. E. $\frac{1}{2}$ E., and the entrance of the river N. by W.; the vessel will then be rather more than three-quarters of a mile distant from the S. W. point of the Bay. Large vessels may anchor further out, and in deeper water, if they think proper, and small schooners in 3 fathoms close under the S. W. point.

*Point de Monts
Lighthouse.*

POINT DE MONTS LIGHTHOUSE is 5 miles to the south-westward from Trinity Bay; it stands low down and close to the sea, is of the usual conical form, nearly white, and 75 feet high. The lantern is elevated 100 feet above the sea at high water, showing a bright fixed light, which can be seen from distances of 15, 20, and 23 miles nearly, according as the height of the observer's eye above the sea may be 10, 50, or 100 feet respectively.

The extreme of the land to the north-eastward near Caribou Point bears N. E. $\frac{1}{2}$ E. from the light, which can be seen over the Point; and that bearing continued will pass little more than $2\frac{1}{2}$ miles outside of Egg Island at the distance of 20 miles from the light.

Vessels beating to the eastward in a dark night, when the land cannot be seen, had better tack when the light bears W. S. W. or even W. by S. will be near enough, if they be as near to it as Trinity Bay. They may, however, stand in nearer, using due caution by the lead. Vessels to the westward of the light should tack as soon as it bears E. $\frac{1}{2}$ N.; it cannot be seen to the southward of east, in consequence of high land which interposes.

When it disappears, a vessel off Goodbout River will be only one mile from the bar; see art. 28.

*Detached
Rocks off
Point de
Monts.*

The south extremity of POINT DE MONTS is rather more than $1\frac{1}{4}$ miles S. W. by W. $\frac{3}{4}$ W. from the lighthouse. S. W. from the light, S. E. from the extremity of the Point, and half a mile off shore, lies a ledge of rocks with 9 or 10 feet least water. S. S. W., half a mile from the light, is another rock with 2 fathoms least water, and there is a third with little more water, and nearly as far off from the light to the E. S. E. These dangers should be carefully guarded against in making the light in thick weather, or when keeping close to the land with a northerly wind, and 15 fathoms is quite near enough to them for a large vessel at any time, being no more than 2 cables' distant from the first, and about twice that distance from the 2 last of them.

*Point de Monts
to Point St.
Giles.*

55. The land, which on the eastern side of Point de Monts is rather low, begins to rise immediately from that Point to the westward, and granitic hills very sparingly wooded, and in no part estimated to exceed 1000 feet in height, form the north coast of the Estuary to Point St. Giles, distant $30\frac{1}{4}$ miles W. $\frac{1}{2}$ N. from Point de Monts. The section of coast just indicated is as bold as any in the St. Lawrence, there being little or no warning by the lead, neither is there any good anchorage sufficiently roomy for the occasional use of shipping.

*St. Augustin
Cove.
Pilots.*

ST. AUGUSTIN COVE, $1\frac{1}{2}$ miles westward of Point de Monts, affords shelter only to boats; and pilots are generally found waiting here with easterly winds.

GOODBOUT RIVER, $8\frac{1}{2}$ miles westward from Point de Monts, enters the sea at the extremity of a sandy point, and has a bar of sand, which extends out from the eastern point of entrance to the distance of nearly half a mile, dries in great part at low water, and is extremely bold to seaward. There is usually at low water not more than 4 or 5 feet over this bar, on which a heavy surf very frequently breaks; and the River is only of use to boats, because of the difficult and narrow entrance, although there are 15 or 16 feet of water over the bar at high water, spring tides. There is a trading and salmon fishing post of the Hudson Bay Company at this River, and the houses can readily be seen. It is possible to anchor on either side of the bar of Goodbout River, but too near to the shore to be of general use.

Cape St. Nicholas, a high bare point of granite, bears from *Cape St. Nicholas.*
Point de Monts W. by N. 17 miles.

ST. NICHOLAS HARBOUR is 3 miles N. E. by E. $\frac{1}{2}$ E. from *St. Nicholas Harbour.*
the cape of the same name; it is a narrow inlet between granitic hills from 500 to 700 feet in height, $1\frac{1}{2}$ miles in the direction of N. W. $\frac{1}{2}$ N. This Harbour is so perfectly secure, that a vessel might be laid on shore and repaired as if she were in a dock; on the S. W. side, a vessel may lie alongside of the rocks as alongside a wharf.

There is as much as $9\frac{1}{2}$ fathoms, at low water, in the deepest part of the Harbour, and the bottom is of mud.

The breadth of the Harbour within nowhere exceeds 190 fathoms, and at the entrance is only 75 fathoms. The shoals on the east side of the entrance dry out so far as to leave a channel between them and Cross Point only 30 fathoms wide, and 5 feet deep at low water spring tides.

The depth that can be carried in at high water is from 14 to 17 feet, according as it may be neap or spring tides. The bottom in the entrance is of sand, with some few large stones upon it, which can be seen and avoided, if the tide be not high enough to pass over them. The entrance is situated in the centre of a small bay, three-quarters of a mile wide, and rather more than one-quarter of a mile deep to the rocky point on the west side of the entrance to the Harbour, which will be readily seen projecting out into the bay, and is named *Cross Point.* from a small wooden cross upon it. An extensive shoal of sand and boulders, which dry at half tide, extends from the east point of the bay 340 fathoms to the W. S. W., and continues northward to the entrance of the Harbour. This shoal can always be seen, is quite bold, and completely shuts out the sea from the Harbour in southerly and easterly winds. The shoals on the west side extend across a small bay on the west side of Cross Point, and continue for 400 fathoms out to seaward, extending off-shore to the distance of 100 fathoms.

The anchorage between these shoals, in the bay off the Harbour's mouth, is only 300 fathoms wide, and consequently too small to be considered a roadstead for large vessels, but the ground is good, and the depth convenient for anchoring preparatory to warping into the Harbour.

South-east winds blow right into the Harbour, and are consequently the most favourable for running in, but with a strong

*St. Nicholas
Harbour.*

wind in that direction, and at high water when the shoals are covered, there is generally some sea outside the narrow entrance; an accident at such a time might be attended with serious consequences, and therefore it is only in very fine weather that the entrance should be attempted with a S. E. wind.

North-west winds blow right out of the Harbour, and often with great violence. A W. S. W. wind is the safest for running in, for the entrance and bay outside are then quite smooth, the sea being turned off by Cape St. Nicholas; but this wind will seldom take a vessel completely in, it will usually only enable her to shoot so far within Cross Point that a line may be sent ashore, or a kedge ahead, for the purpose of warping in the remainder of the way, which may be quickly done if due preparation has been made beforehand.

The entrance should be attempted in the last quarter flood, then if the vessel touches the ground she will receive no damage, and there will be time for her to warp in before the tide begins to fall.

*Directions for
entering.*

To enter St. Nicholas Harbour attend to the following directions. Being off the mouth of the bay, bring the end of Cross Point to bear N. N. E., then steer so nearly for it as to leave it not more than 50 nor less than 30 yards distant on the larboard hand. If the wind will allow, continue to run in, at the same distance from the shore on the west side, until you deepen your water; but if you lose the wind, or be met with light baffling flaws out of the Harbour, as often happens in westerly winds, send a line on shore on the west side, or drop your anchor under foot as soon as your vessel loses her way, and warp into deep water. The shoal water, which may be called the bar, and commences at Cross Point, continues for 200 fathoms within it, and the channel is rendered narrow by shoals off the eastern side for an equal distance further up the Harbour. In order to have as much room as possible, a vessel should anchor further in than the three large rocks, which will be seen on the eastern side of the Harbour. To run out again a vessel must wait for a N. W. wind, or take advantage of the land wind in the early part of the morning, which often occurs in fine weather when westerly winds prevail; or, lastly, she must warp out, in a light breeze or calm, to the entrance of the bay outside, and to a position from which she can make sail.

Water.

There are several small streams, on the eastern side of the Harbour, where water can be obtained, and it can also be had at high

water from the two small rivers at the head of the inlet. The stones on the bar of this Harbour might be easily removed, and I ascertained, by boring, that the channel might be deepened to any extent that might be desirable.

ST. PANCRAS COVE, 9 miles W. N. W. from Cape St. Nicholas, *St. Pancras Cove.* being only 160 fathoms wide, between steep rocks, and open to the southward, with very deep water, is of no use to vessels. There are 32 fathoms in its entrance, shoaling gradually to 17 fathoms within a quarter of a mile of its head. The sea is never heavy in it, and a vessel might be saved there in time of need. It affords shelter to boats.

ENGLISH BAY, between Point St. Pancras and St. Giles Point, affords no good anchorage, in consequence of the great depth of water; a heavy sea rolls into it in easterly winds, and its shores are high and rocky. A vessel might anchor close to the shore on its west side, in 16 or 17 fathoms at low water, and be well sheltered from all but easterly winds; but she would be in great danger if a strong wind from that quarter came in, since there would be no possibility of weathering the eastern side of the Manicouagon Shoals during the flood tide.

56. Point St. Giles is $13\frac{1}{2}$ miles W. by N. from Cape St. *Point St. Giles.* Nicholas, and is high and rocky, like the coast to the eastward; while Manicouagon Point, which is $17\frac{1}{2}$ miles W. by S. from Cape St. Nicholas, is low and thickly wooded, with a broad sandy beach, like the rest of the coast westward to Outard Bay.

This complete change in the character of the coast points out to a vessel her approach towards the dangerous Manicouagon Shoals.

The entrance of the Manicouagon lies between the above two *Manicouagon River.* points, and is all dry at low water, with the exception of the narrow channels which lead up to the river.

The principal channel is on the north side, and there is a *North Channel.* deep place, or large hole, in it, $1\frac{3}{4}$ miles long, from half to *Anchorage Hole.* a quarter of a mile wide, and from 3 to 5 fathoms deep at low water, with muddy bottom. This large hole is close to Point St. Giles, and extends $1\frac{1}{4}$ miles within it. Although this place appears completely open to easterly winds, no swell of consequence rolls into it, and I believe a vessel well moored on its north side within Point St. Giles would be in safety. But to get in there it

Manicouagon River. is necessary to pass over a bar formed by the eastern part of the Manicouagon Shoal.

Bar. This Bar extends out 2 miles to the eastward from Point St. Giles, it has 7 feet over it at low water, and from 14 to 19 feet at high water, according as it may be neap or spring tides. The outside of the Bar is extremely bold, there being 30 fathoms sandy bottom close to it, and 50 fathoms mud bottom at the distance of one mile. The Bar then sweeps round till it joins the Manicouagon Shoal, which consists of sand with occasional boulders, and which is dry at low water for nearly 5 miles out in an E. by N. direction, from the northern end of Manicouagon Peninsula.

This is altogether too wild and dangerous a place to be of general use to vessels, but as, nevertheless, it might prove of use in time of need, I give the following brief directions for entering it.

Directions for the Anchorage Hole.

Bring Point St. Giles to bear W. by S., with Point St. Pancras, the eastern point of English Bay bearing north at the same time. Then steer directly for Point St. Giles; and when the head of English Bay bears north and Point St. Pancras N. E., you will be close to the bar. Continue to run over the bar on the same course, W. by S., until the points on the west side of English Bay bear N. by E. $\frac{1}{2}$ E.; you will then be within 1 mile of Point St. Giles, and must keep away a couple of points to the southward along the southern edge of the Shoal, which dries at low water off that Point, until you open out the Points on the north side of Manicouagon Bay to the southward of Point St. Giles; then haul up again so as to pass that Point at the distance of a cable's length, and anchor half a mile within it, in 3 or 4 fathoms at low water.

Falls.

Six miles west from Point St. Giles, the shallow channels between the Shoals unite in the inner entrance of the River, which is there narrow and 4 fathoms deep. The Falls, where the River discharges a great body of water down a narrow and sloping channel between steep granite rocks, are 3 miles further up in a N. W. direction, and a boat may approach close to them.

Tides.

The ebb runs out over the Manicouagon Bar to the eastward at the rate of about $1\frac{1}{2}$ knots, and the flood is nearly as strong.

THE MANICOUAGON SHOAL is of sand, with many large boulders scattered about its eastern and southern parts, and probably deposited there by the ice. The most eastern point of this dangerous and extensive Shoal is distant $2\frac{1}{2}$ miles from Point St. Giles in an E. S. E. direction, and $5\frac{1}{2}$ miles E. by N. from the N. E. end of Manicouagon Peninsula. *Manicouagon Shoal. Eastern Point.*

The bearing of S. W. by S. from Pancras Cove passes along the eastern side of the Shoal, which is so bold that there are 60 fathoms of water at the distance of little more than $1\frac{1}{2}$ miles, and 40 fathoms at half that distance from the breakers. On this side the Shoal dries nearly out to its edge in low tides. The south point of the Shoal extends $2\frac{1}{2}$ miles to the southward of Manicouagon Point, and here only is there any sufficient warning by the deep sea lead. With the extremes of Manicouagon Point bearing from N. to N. W. by N., 60 fathoms over a bottom of very fine sand will be found at the distance of $3\frac{1}{2}$ miles from the 3 fathom mark, to which the water shoals gradually, till close to it, where there are 17 fathoms. The Shoal dries out in low tides, in this part, and also further to the westward, from 1 to $1\frac{1}{2}$ miles from the beach. *Southern Point.*

The Shoal continues from its south point to the westward for a distance of 16 miles, the outline of its edge corresponding to the shape of the sandy shore as far as Outard Point, off which it extends to the southward $1\frac{1}{2}$ miles, and, filling up all the eastern part of Outard Bay, stretches out its western point fully $3\frac{1}{2}$ miles W. by S. from Outard Point. *Western Point.*

There is often a very heavy sea, particularly in a weather tide, off this Shoal, but all the terrific accounts which have been circulated of "strong and irregular eddies," in which vessels will not answer their helms during a fresh gale of wind, "and can with difficulty be kept from running on the bank, or driving against each other," are entirely unfounded. But without that exaggeration a shoal which extends so far from a low part of the coast, which is difficult to be made out at night, and which has such deep water close to it, must be sufficiently dangerous to demand the utmost prudence and vigilance of the seaman, without alarming him with imaginary perils. The tides are tolerably regular, and not very strong along the Shoal. I do not think that the rate of either tide exceeds 2 knots at any time, and I am certain that it is usually much less. But great ripplings are met *Tides and Ripplings.*

Manicouagon Shoal.

with occasionally, both near the shoals, and in the offing, where they are caused, as in other parts of the Estuary, by the unequal velocities or the opposing directions of the streams, as will be readily imagined when it is remembered that the current is always down on the south side, slack in the middle, and up during the flood on the north side of the Estuary. (Art. 15.) These rippings are very common off the eastern and southern parts of the Manicouagon Shoal, where I have observed them to move much faster than the streams of the tides, as was evident by their passing by the vessel in a calm. They often give to the tides the appearance of a rapidity which does not exist.

Outard Point. Outard Point is 11 miles to the westward of the south extremity of Manicouagon Point, and the shore between them is of low sandy cliffs, with a sandy beach.

Outard River. OUTARD RIVER flows on the north side of the Point of the same name, and can be ascended by boats to the Falls, over granitic rocks, which are 7 miles, N. E. by E., from the Point.

Falls. These Falls are only $1\frac{3}{4}$ miles from the Manicouagon River. The two rivers therefore form the low sandy country, between Points Outard and Manicouagon, into a great peninsula, which has probably been produced by the rivers in the course of ages.

The entrance to Outard River is by several intricate and narrow channels through the western part of the Manicouagon Shoal, and as there are only 2 or 3 feet of water through these channels at low water, for the distance of 4 or 5 miles, the place is useless to vessels, and therefore requires no further description.

White Water. The water of this River holds a white earth suspended, and frequently covers the whole surface of Outard Bay, floating on the heavier sea water beneath, and giving the whole Bay the appearance of being shoal. A vessel sailing through this superstratum of fresh water displaces it, and leaves a blue streak in her wake.

Outard Bay. OUTARD BAY, between Outard and Bersimis Points, has 3 small rocky islands in it, which appear as two from seaward, and serve to distinguish the Bay to strangers; they are far within the edge of the shoals, which extend quite round the Bay, and occupy the greater part of it, being a continuation of the Manicouagon Shoal. The water in this Bay is too deep close to the shoal for convenient anchorage, which is quite exposed to easterly winds.

Anchorage. The anchorage is on the west side of the Bay, in 14 fathoms at low water, over muddy bottom, with Bersimis Point bearing

S. W. by S. $3\frac{1}{4}$ miles. Manicouagon Point will then be open *Outard Bay*. 3 or 4 degrees to the sea eastward of Outard Point, the south side of which will bear E. by N., the first rocky point north-eastward of the river N. by W., and the vessel will be nearly half a mile from the 3 fathom edge of the shoal on the west side of the Bay; small vessels may lie closer in 7 or 8 fathoms.

In standing in for this anchorage with a westerly wind, beware of the bar of Bersimis River, which is extremely steep. If you can make out the first rocky point to the north-eastward of the River, and which bears from its entrance N. N. E. $4\frac{1}{2}$ miles, take care that it does not bear to the eastward of north, and you will clear the bar. When you have past it, you may haul in to the northward into soundings, going no nearer than 10 fathoms.

Vessels may anchor for a distance of three-quarters of a mile on either side of the position which I have pointed out, either further out to the S. S. W. towards Bersimis Point, or towards the small islands to the N. E., but the berth which I have indicated is the best. The tides are not strong in Outard Bay.

BERSIMIS RIVER enters the sea to the eastward, and $1\frac{1}{4}$ miles *Bersimis River*. N. E. from the south extremity of the Point of the same name. The south side of entrance of the River for more than three-quarters of a mile is of low and bare sand. The opposite point of entrance is also of sand, and bears N. N. W. at the distance of rather more than a mile from the south point, but this wide mouth of the River is closed by sands dry at low water with the exception of a very narrow channel. The River within for the first 3 miles is wide and full of sand shoals.

The Bar is of sand, which dries in parts at low water, and *Bar*. shifts frequently, being completely exposed to southerly and easterly gales; it extends nearly $1\frac{1}{4}$ miles to the eastward of the south point of entrance. Directions for entering the River must therefore be useless; but it may be as well to remark, that within the bar the channel is always close to the south point of entrance, and keeps on that side through the wide part within with a depth of 9 feet at low water. The depth that could be carried in over the bar, in the month of July, was 6 feet at low water, and from 13 to 18 feet at high water, according as it might be neap or spring tides.

This River discharges a great volume of water, especially in

the spring of the year, and the water is fresh enough for drinking, when the tide is out, 2 miles within its entrance.

Bersimis Falls. The Bersimis River is navigable to the Falls, which are 30 or 40 feet high, and over granitic rocks. These Falls are distant 30 miles N.W. $\frac{1}{2}$ N., in a direct line from the south point of entrance; but the distance is nearly 40 miles by following the windings of the river. The banks of the river are high and precipitous, being either of granite or cliffs of sand and gravel over clay. The basins and valleys between the hills are filled with these last-named deposits, which support a heavy-growth of trees of the pine and spruce species. There is good timber to be met with occasionally. The breadth of the river varies from 100 to 300 fathoms, and its depth is usually from 2 to 5 fathoms: there is a place in which the depth amounts to 12 fathoms; but 2 fathoms is as much as could be carried up to the foot of the Falls.

Tides in the River.

The stream of the flood tide is felt 10 miles up the river; and 6 miles up the channel is contracted by shoals of sand and boulders to the breadth of 50 fathoms for the distance of 1 mile. Through this narrow part the ebb runs 4 knots; above it, the rate of the current is from 1 to $2\frac{1}{2}$ knots. Boats could row up this River to the foot of the Falls, and a steamer could ascend it with ease; but the winds are generally too light and baffling between its high banks for a sailing vessel.

Bersimis Point.

57. **BERSIMIS POINT** is low, of sand, wooded with spruce trees, and difficult to be seen at night. On its east side, the low south point of the river extends to the distance of two miles from the trees, and the Bar $1\frac{1}{2}$ miles further; and to the southward, the sand shoal extends three-quarters of a mile from the sandy beach, yet it is so bold that the lead affords no warning, there being 60 fathoms muddy bottom at the distance of a mile from the edge of the shoal. On the east and west sides of the Point the shoals are equally steep, so that this Point is very dangerous, especially to vessels beating at night or in foggy weather. From the south extremity of Bersimis Point, Manicouagon Point bears E.N.E. $\frac{1}{2}$ E. 21 miles; and Point Mille Vaches S.W. by W. $\frac{1}{2}$ W. 29 miles. In all this last-named distance, if the extreme points be excepted, vessels will find, by reference to the chart, that the soundings off the shore afford some warning, although there are parts where great caution is necessary.

The tides are regular, but the flood is rather stronger than the

ebb within 6 miles from the shore, where the rate of either, *Tides off Bersimis.* as far as I have seen, never exceeds $1\frac{1}{2}$ knots, and is often much less.

The low sandy shore continues $5\frac{1}{2}$ miles W. $\frac{1}{4}$ N. from Bersimis *Jeremy Island.* Point to JEREMY ISLAND, which is very small, rocky, and close to the shore. There is a trading post of the Hudson Bay Company on the main, the buildings of which can usually be seen, but if not, its position will always be known by some patches of white sand and clay cliffs, which are close to the eastward of the island. Vessels may stand in by the lead, and anchor off this place; but it is a bad anchorage, and the shoal water extends a mile out from the shore.

CAPE COLOMBIER, 5 miles from Jeremy, along a rocky and *Cape Colombier.* broken shore, in a S.W. by W. $\frac{1}{2}$ W. direction, is a rocky peninsula, with a small islet on its west side.

THE GULNARE SHOAL, discovered by us in 1830, is a narrow *Gulnare Shoal.* ridge of granite rock nearly 2 miles long, parallel to the shore, and having from 2 to 3 fathoms over it at low water. The S.W. end of this Shoal bears S. by E., and its N. E. end S. E. by E. $\frac{1}{2}$ E. from Cape Colombier, from which they are distant $1\frac{3}{4}$ miles. The inner or north side of Laval Island nearly on with Point Orient, the east point of the Baie de Laval, and bearing west, leads clear outside of this Shoal at the distance of 2 cables' length, and in 20 fathoms of water. It is very dangerous, there being 23 fathoms close to the S. W. end, and also along its southern side. There are 4 or 5 fathoms between it and the shore.

WILD FOWL REEF, S. W. by W. $\frac{1}{2}$ W., 4 miles from Cape *Wild Fowl Reef.* Colombier, is a large bed of rocks, extending three-quarters of a mile from the shore between Plongeur Bay and the Baie de Laval. There are 9 fathoms off this Reef at the distance of one-third of a mile.

PLONGEUR BAY, between that Reef and Cape Colombier, may *Plongeur Bay.* be known by a round and rocky peninsula on its west side. The inner part of this Bay is full of rocks dry at low water, and the whole Bay is shoal out to the line joining Wild Fowl Reef and Cape Colombier.

Vessels should be careful in standing in towards the part of *Approach to the shore.* this coast from Wild Fowl Reef to the Gulnare Shoal inclusive: 30 fathoms is quite near enough, as they will see by the soundings in the chart. But to the south-westward of the Reef, until

within 2 miles of Port Neuf, they may stand in to 6 fathoms at low water with safety.

Baie de Laval. THE BAIE DE LAVAL, 4 miles west from the Wild Fowl Reef, and $8\frac{1}{2}$ miles N. E. by N. from Port Neuf, will be known by the rocky island in its mouth, and by the clay cliffs which commence $1\frac{1}{2}$ miles to the S. W. of it, and continue to within the same distance of Port Neuf.

This Bay within the island is all dry at low water. Vessels may safely stand in towards it, the water shoaling gradually from 10 fathoms, which is at the distance of $2\frac{1}{2}$ miles from the shore.

There is a good anchorage in 6 or 7 fathoms, over clay bottom, off the clay cliffs above mentioned.

Port Neuf. At PORT NEUF there is a fur-trading and salmon-fishing establishment, belonging to the Hudson Bay Company, who have a lease of the seignory of Port Neuf. At this post, which stands upon a steep sandy bank, and is 4 miles to the N. E. of Point Mille Vaches, there is a small wooden church for the Indians, a dwelling-house, a store, and several smaller buildings. These can readily be seen by a vessel off the coast.

S. S. E. from the church, and distant nearly three-quarters of a mile, is the S. W. end of a low and narrow sandy peninsula, with a clump of pine or spruce trees upon it, and which extends nearly 2 miles to the N. N. E., where it joins the sand and clay cliffs, which have been previously mentioned.

Port Neuf River. The entrance to Port Neuf River is from the S. W., and between this sandy peninsula and the post on the main land, but is so shallow that a boat cannot enter it at low water. At the junction of the peninsula with the sand and clay cliffs, the River turns abruptly inland: its sandy channel is too shallow for a boat at low water below that turn; and at the distance of $1\frac{1}{2}$ miles above it rapids commence. From 7 to 12 feet water may be carried in at high water between the peninsula and the main land, according as it may be neap or spring tide, and a small vessel may lie safely aground on the sand.

Sand Patch. E. by N. from the S. W. end of the sand and clay cliffs, N. E. by E. $\frac{1}{2}$ E. from the church at Port Neuf, and $1\frac{1}{2}$ miles from the cliffs, lies a patch of sand, with $3\frac{3}{4}$ fathoms least water, which might be dangerous to a large vessel in a heavy sea. This may be considered as the commencement of the Port Neuf and Mille Vaches Shoals.

THE PORT NEUF SANDS are exceedingly steep on every bearing *Port Neuf Sands.* to the southward of east from Port Neuf, and to the eastward of south from Point Mille Vaches. Off Port Neuf they extend three-quarters of a mile out from the sandy peninsula.

Half way between Port Neuf and Point Mille Vaches is the widest part of these sands, which there extend $1\frac{1}{2}$ miles from the beach. There are from 20 to 30 fathoms close along their edge, and from 40 to 50 fathoms at the distance of 1 mile.

58. POINT MILLE VACHES is low, sandy, and wooded with *Mille Vaches Point.* spruce trees. From its south extremity the N. W. reef of Bicquette bears S. S. E. $\frac{1}{4}$ E, $12\frac{1}{2}$ miles; and the navigable breadth of the channel is diminished by the Mille Vaches Shoals to little more than $11\frac{1}{2}$ miles. As the dangers on either side are so bold, and as the course of a vessel running up the Estuary must ever be more or less uncertain in consequence of the set of the tides and currents, this pass is justly considered dangerous to a vessel running up in dark nights or foggy weather. The only safe mode of proceeding, under such circumstances, is that which I have recommended in Art. 25.

THE BAY OF MILLE VACHES, on the west side of the point of *Mille Vaches Bay.* the same name, is very large, with several small rivers, which descend by falls or rapids down the granitic shores. The principal of these rivers is the Sault de Mouton, $4\frac{1}{2}$ miles west from the Point, and which has a fall of 80 feet visible from a vessel when abreast of it. All the interior of this Bay is occupied by shoals of sand, mud, and large boulders, which dry at low water.

In the western part of it the shoals are extremely steep and dangerous, but from where the Sault de Mouton bears north to where Point Mille Vaches comes upon the same bearing, comprising a space of $4\frac{1}{2}$ miles, there is a complete warning by the lead; the depth being 30 fathoms upwards of 2 miles from the 3 fathom edge of the shoals.

There is anchorage in this Bay in 15 fathoms, sand and mud *Anchorage.* bottom, with the south extremity of Point Mille Vaches, or with the inner or north side of the pine trees on the peninsula of Port Neuf, bearing N. E. $\frac{1}{2}$ E. at the distance of 2 or 3 miles from the Point, and three-quarters of a mile from the shoals. The shelter is from S. W. by W. round by north to N. E. by E. The ground is good and there is not much tide.

The course and distance across the Bay of Mille Vaches to two large rocks, which have three small ones nearly a mile to the S. W. of them, and are called the Esquamine Islets, is S. W. $\frac{3}{4}$ W., nearly 12 miles.

*Esquamine
Islets.*

The coast to the south-westward, from the Esquamine Islets to Little Bergeron, a distance of 16 miles, consists of granite rock, steep and bold, and free from all danger, excepting a flat which occupies a bay on the west side of Cape Bondeair, but which does not extend above a quarter of a mile outside of a line joining the points of the bay, and is consequently very little in the way of vessels. There are upwards of 53 fathoms water close to the rocks along this part of the coast.

Tides.

The tides are regular, increasing in strength as we approach the comparatively narrow pass on either side of Red Islet. The flood is the stronger tide of the two, the ebb being deflected over towards the southern shore by the stream out of the great river Saguenay. The flood does not extend above 5 or 6 miles off the north shore below Bergeron, and the closer to that shore the stronger is the stream. Its rate at Point Mille Vaches, where it does not extend far off-shore, is from $1\frac{1}{2}$ to 2 knots; and off Bergeron from 2 to 3 knots, in spring tides.

*Great and
Little Berge-
ron Coves.*

GREAT AND LITTLE BERGERON are two coves separated by a point. They are both full of large boulders, which dry at low water, and have small streams at their heads. Little Bergeron is of the two the most to the S. W. From it Green Island light bears S. by E. $\frac{1}{2}$ E. $11\frac{1}{2}$ miles, and the Saguenay Cliffs, at the east point of entrance of the River, S. W. by W. $5\frac{1}{2}$ miles.

I terminate this chapter at Little Bergeron, because the shoals off the entrance of the Saguenay, and the passage between them and Red Islet, belong, according to the arrangement which I have adopted, to Part the Second of these Directions.

CHAPTER VII.

THE NORTH COAST OF THE GULF OF ST. LAWRENCE, FROM LAKE ISLAND TO THE RIVER ST. JOHN, INCLUDING THE MINGAN ISLANDS.

59. General Description of the Coast, from Lake Island to Natashquan Point.—60. Whittle Rocks, Wolf Bay and Islands.—61. Coacocho Bay and its Harbours.—62. Olomanoshebo, Wash-shecotai, and Musquarro.—63. Kegashka Bay. Kegashka River, and the Coast between it and Natashquan Point. Mont Joli. Cod Banks.—64. General Description of the Coast from Natashquan Point to the Mingan Islands.—65. Natashquan River, Little Natashquan Harbour, Washtawooka, Agwanus, and Nabesippi Rivers. Pashashebo. Mushkoniatawee. Washatnagunnashka. Watcheeshoo. Quetachoo-Manicouagon. Peash-tehai. Appeletat.—66. The Mingan Islands, general Description.—67. St. Genevieve and Hunting Islands. The Saints. Bowen Rocks. The Harbours of St. Genevieve and Betchewun.—68. Charles Island and the Bays on either side of it. Charles Harbour.—69. Clear-water Shoals. Walrus and Sea-Cow Islands with the Channels leading to Esquimaux Harbour. Green, Gull, Esquimaux, Fright, and Quin Islands, with their Reefs, and the Channels between them. Quin Channel.—70. Esquimaux Harbour.—71. Niapisca Island. Quarry Island, and Cove. Quarry Channel. Large Island. Middle Reef. Birch Islands. Mingan Island. The Perroquets.—72. Mingan Channel between the Islands and the Main. Mingan Harbour. Long Point to St. John River.

59. From Cape Whittle, the S. W. point of Lake Island, to Natashquan Point, the course is S. $85^{\circ} \frac{1}{2}$ W. true, or N. 66° W. magnetic, and the distance 63 miles. With the exception of the first 13 miles eastward of Natashquan Point, where the shore is of sand, this coast is of granite, which rises into steep hills and ridges, with rounded summits, having between them morasses and stagnant ponds. The mainland is seldom higher than 200 feet, even in the heads of the bays, and it diminishes in height towards the sea, as do also the innumerable small islands, islets, and rocks, which fringe the coast, and which in some parts extend fully 5 miles from the nearest point of the mainland. The islands

*Coast from
Lake Island
to Natashquan.*

are bare of wood, and so also is the main, excepting up the bays or where sandy tracts occur, which are always covered with a thick growth of spruce, with occasional birch and poplar.

Difficult to recognize.

Seen from the distance of 4 or 5 leagues, this coast presents an outline so little diversified, that it is nearly impossible to distinguish one part of it from another; and it is only when a vessel approaches within 3 or 4 miles of the outer rocks, that its broken and dangerous nature becomes apparent.

The Rocks are steep to.

The outer rocks, both above and under water, are so bold that there is no warning from the use of the hand-lead; but, there are soundings with the deep sea-lead in moderate, but irregular, depths off every part of this coast. These deep water soundings are too irregular to admit of a concise description; I must, therefore, refer to the chart, with the remark, that they are sufficient to warn a vessel of her approach towards danger at night, or in fogs, since these depths do not amount to 50 fathoms at any less distance than 5 miles from the outer rocks.

Tides.

The tides are weak, irregular, and influenced, both in their strength and direction, by the winds. For the time of high water on the full and change days, and the rise of the tide at different places, see table at the end of the book.

Whittle Rocks.

60. There are many small rocks above and under water, off to the southward and westward from Cape Whittle. The two outermost of these, which are half-tide rocks, are distant from the cape $2\frac{1}{2}$ miles, and are called the WHITTLE ROCKS. All these rocks are steep, with from 20 to 40 fathoms of water between them, and small fishing and egging schooners find their way among them, as they do almost everywhere among the islands and rocks of this coast, being guided by the eye; for every danger upon which such small vessels would strike can be seen in clear weather.

Wolf Bay.

WOLF BAY, the first to the westward of Cape Whittle, is 6 or 7 miles deep. There is plenty of water in its intricate channels, and no dangers that do not show, but a number of rocks and ledges extend across its mouth from Cape Whittle to Wolf Island, and are so scattered about that no directions would be of the least use. If ever any circumstances should render it desirable for a vessel to enter so dangerous a place, it can only be done by looking out for the ledges from the mast-head, or fore-yard, in fine

clear weather, or by avoiding the broken water when there is a heavy sea running.

Wolf Island may be easily recognized, being higher and larger *Wolf Island*. than the outer islands usually are off this part of the coast. It is about three-quarters of a mile long, and makes in two hills, which are about 150 feet high.

Outer Islet is small, low, and about 1 mile further off to the S. W. *Outer Islet*. than Wolf Island. As its name implies it is the outermost of a chain of islands, which extends 4 or 5 miles out from the point of the mainland dividing Wolf and Coacocho Bays. It bears W. N. W. $\frac{1}{2}$ W. 7 miles from Cape Whittle.

61. COACOCHO BAY is the only place affording anchorage *Coacocho Bay*. to large vessels upon this part of the coast. It is not at all difficult of entrance, although the number of islets and rocks in every direction make it appear so. There is an excellent harbour in the head of the bay, called the Basin, and another formed by an arm running into the E. by N. and named Tertiary Shell Bay, which is equally safe. Further out than these harbours the bay is more than half a mile wide, and quite sufficiently sheltered from the sea, for the safety of any vessel with good anchors and cables. Coacocho means a great owl.

To enter this bay, attend to the following description and directions; Outer Islet, Wolf Island, and the islets and rocks between them and the mainland, may be considered as forming the south-eastern side of the bay; and the Audubon Islets and Rocks, as forming the north-western side of the bay. The entrance of the bay is, therefore, between the two extreme points, which bear from each other N. by W. and S. by E., and are distant about $2\frac{1}{2}$ miles.

There are two small and dangerous ledges outside, off the entrance of the bay. The first, which is called the South Breaker, *South Breaker*. shows only in heavy weather, and has 12 feet least water. It bears W. N. W. $\frac{1}{2}$ W. 2 miles from Outer Islet, and there is a clear channel between it and the islet. It lies further out than any other danger off this division of the coast, and has from 18 to 20 fathoms of water all round and close to it.

The S. W. Breaker has only 3 feet least water, and bears N. W. *South-West Breaker*. by N., $2\frac{1}{2}$ miles from the South Breaker, and west, $2\frac{1}{2}$ miles from Point Audubon. There is a clear and deep channel between these two ledges, which may be easily avoided by the chart, or if the

weather be clear they will be readily seen from the fore-yard of any vessel.

*Directions for
Coacocho Bay.*

In running for Coacocho Bay from the S. E., steer so as to leave Outer Islet, and the rocks to the northward of it, about 300 fathoms to the eastward of you. When abreast of these rocks, you will see, right ahead, a chain of low rocks, which project to the S. W. from Emery Island. Bring the point of this chain to bear N. E. $\frac{1}{4}$ N.; when it will appear on with the extreme point of the mainland on the N. W. side near the head of the bay. Steer in upon this leading mark, or bearing, until you are past some rocks which lie 600 fathoms from the east side of the Audubon Islets. These rocks are dry at low water, and can always be seen. You must leave these rocks on your larboard or N. W. side, and, having passed them, haul to the northward a little, so as to leave the Emery Rocks, which are quite bold, on your S. E. or starboard side. Their outer point bears N. N. E. $\frac{1}{4}$ E. 3 miles from Outer Islet, and when up to them you will see the bay open before you, and clear of danger. The bottom, outside, is either of rocks or sand, with a depth of from 12 to 30 fathoms; but as soon as you arrive within the points of the mainland, just within Emery Island, you will find mud bottom, with a depth of from 10 to 20 fathoms. The further in, the better the ground, and the less the swell with S. W. winds, which are the only winds that send any swell into the bay.

*Tertiary Shell
Bay.*

If you wish to run into Tertiary Shell Bay there is nothing in your way excepting a small rock above water, a quarter of a mile within the entrance, which you must leave on your starboard hand; and which, like the shores on either side, is quite bold. This bay is not more than 120 fathoms wide, half a mile from the entrance, but it becomes wider within, with from 5 to 11 fathoms water over mud bottom, and is there perfectly land locked.

*The Basin of
Coacocho.*

In running in for the Basin keep the N. W. side of the bay on board, leaving the entrance of Tertiary Shell Bay, and a point of low rocks to the northward of it, which are nearly joined to the shore, to the eastward, until you approach within half a mile of the island in the head of the bay. You must then steer over to the eastward, towards that island, to avoid a shoal of boulder stones which extends nearly 200 fathoms off the west side of the bay. The channel between this shoal and the island is only 100 fathoms wide, but deep enough for the largest ships. Give

the island a berth of 50 fathoms, leaving it to the eastward or on the starboard hand, and as you pass through you will deepen your water from 9 to 19 fathoms, the latter depth being just within the island. As soon as you are past the inner end of the island haul to the N. W., into the mouth of a small bay; and you will soon shoal your water to 8 fathoms, muddy bottom, where you must anchor, and you will be perfectly sheltered from every wind. The basin becomes quite shoal immediately above this anchorage, where there is another island lying in the entrance of Coacocho River.

On the east side of the entrance of the river there is a house *Coacocho River.* at which two men, who are engaged in the fur trade and salmon fishery, generally reside. This small river flows through a wide and shallow channel full of boulders; its shores are wooded with *Wood and Water.* spruce trees, and water may be obtained near the trading post.

In running for Coacocho Bay from the westward, you may *South and S. W. Breakers.* either pass between the S. W. and South Breakers, by bringing the inner or N. E. end of Wolf Island to bear east, and steering for it; or by bringing Outer Island to bear nothing to the southward of east, and running towards it, until you are within less than a mile, when you may haul in for the Emery Rocks, as before directed.

There is very little stream of tide in Coacocho Bay, but a *Tides.* weak and irregular stream of flood and ebb sets through between the islands.

62. The coast, for the first 4 leagues westward of Coacocho, *Olomano-shebo River.* is formed of innumerable islets and rocks to OLOMANOSHEBO, or Point River, which is called also by the Canadians, "La Romaine." This is a considerable river, falling 20 feet over granite into the head of a bay 4 miles deep, but so shoal that boats can scarcely enter it at low water. There is a trading post of the Hudson Bay Company on the east side near the falls, neither of which can be seen from the sea, being hidden by the islands; but the place may be known by the low sandy cliffs, thickly wooded with spruce trees, on either side of the entrance of the bay.

Treble Islet, and the Loon Rocks, lie to the westward, the *Treble Islet.* latter at the distance of 6 miles from the above bay. The Loon *Loon Rocks.* Rocks, which can always be seen, are distant 3 miles from the nearest point of the mainland, and are the outermost danger off this part of the coast.

Wash-she-cootai Bay.

WASH-SHECOOTAI (which means Cloudberry) Bay lies 10 miles to the westward of Olomanosheebo, is $2\frac{1}{2}$ miles wide, and has off its entrance several small rocky ledges that make it very difficult of entrance. Cloudberry Point is the west point of this bay, and is formed by the mainland. The east point of the bay is formed by small rocks and islets. At the distance of 3 miles within Cloudberry Point this bay contracts to a very narrow inlet, having several rocks and islets in it, and from 4 to $2\frac{1}{2}$ fathoms water over muddy bottom, for the first 4 miles up; after which it becomes shallow for 4 miles further, to the falls of a considerable river, where there is a trading post and salmon fishery of the Hudson Bay Company.

Cloudberry Point.

This inlet is completely open to winds from the southward and westward, and affords scarcely any shelter for the first 5 miles within Cloudberry Point. Vessels of considerable burthen might find shelter in it in time of need, but it is too intricate a place for the general purposes of navigation, or for any written directions to be of avail. Coasting schooners, which know where to look for all the ledges, enter it by keeping a person at the mast-head, or in the rigging.

Musquarro River.

MUSQUARRO RIVER, where there is a Hudson Bay Company trading and fishing post, is $4\frac{1}{2}$ miles westward of Cloudberry Point, and is situated 3 miles within the west point of a bay, full of small islets and rocks.

This river becomes rapid a short distance within the entrance; 6 feet can be carried in at low water, but it is a very intricate and dangerous place; useless excepting to boats, or very small schooners. It will be known by the houses which are on the east side of the entrance, and also by a remarkable red and precipitous ridge of granite, about 200 feet high, and about 2 miles to the westward of the river.

Curlew Point.

Curlew Point, at half a mile off which there are several low bare rocks, and ledges which always show, is $4\frac{1}{2}$ miles to the westward of Musquarro, and it is the east point of Kegashka Bay.

Kegashka Bay.

63. KEGASHKA BAY, situated between Curlew and Kegashka Point, is 3 miles wide, and $1\frac{1}{2}$ miles deep. In the western half of this bay there are several small islets, too wide apart to afford much shelter from the sea. It is only in the N. W. corner of the bay, within Kegashka Point, that a vessel can be secure from southerly winds; there is room there for several small schooners, but for only one vessel of the size of a sloop of war, and she must

be moored with an open hawse to the eastward, with a third anchor on-shore to the S. W., so as to be able to haul in close under the point when it blows hard from the southward. The depth of water within the islets is from 4 to 6 fathoms over fine sandy bottom.

Altogether, I consider this as a wild place, although small vessels may contrive to shelter themselves there sufficiently to run but little risk during summer months.

Wood and water may be obtained without difficulty in the western part of the bay.

KEGASHKA POINT is formed by an island, separated from a rocky peninsula by a very narrow channel, dry at low water; and the peninsula is united to the mainland by a narrow sandy isthmus covered with grass. Both the island and peninsula are distinguished by being partly covered with spruce trees. There are also a few spruce trees on an islet, three-quarters of a mile to the westward of the point, and as no other islands on this part of the coast are wooded, the bay may be recognized by that circumstance. There is a fine sandy beach, and low sandy cliffs in the N. W. corner of the bay: and there are also similar cliffs for about a mile to the westward of the isthmus above mentioned. This sandy tract is densely wooded with dwarf spruce, another circumstance which serves to distinguish this bay, and is the origin of its name, which signifies impenetrable woods. On a near approach the place will also be known by Green Island, which is of low granite covered with grass, and is the outermost and largest islet sheltering the bay: being about 300 fathoms in diameter, and situated three-quarters of a mile to the eastward of Kegashka Point. There are several small islets and rocks within, and also to the eastward of Green Island, and one small and low black islet between it and the inner part of Kegashka Point.

The safest channel into Kegashka bay is between this last named islet, and Kegashka Point, 170 fathoms wide, and 8 fathoms deep. The other channels have dangers in them, but this is quite clear, and the only direction necessary when coming from the westward is to give the south extremity of Kegashka Point a berth of a quarter of a mile, or to go no nearer than 8 fathoms: then run along the east side of the point, which is quite bold, leaving all the islets on your starboard hand. A distance of three-quarters of a mile on a N. E. $\frac{1}{2}$ N. course will

*Best entrance
to Kegashka
Bay.*

Kegashka Bay. bring you to the narrow channel before mentioned, between the westernmost islet and the inner end of Kegashka Point. Haul round the latter to the north-westward at the distance of half a cable, and when within it, not more than the same distance, let go your anchor in 5 fathoms, and secure your vessel by mooring, as has been before mentioned.

Approach from the eastward.

When approaching Kegashka from the eastward, give the low and small islets off Curlew Point a berth of half a mile, to avoid the ledges off them, which dry at low water: then steer N. W. $\frac{1}{2}$ N., or so as to pass outside of Green Island, going no nearer than 100 fathoms. Continue on that course till the inner or N. E. extremity of Kegashka Point bears north, which will be a distance of rather more than $3\frac{1}{4}$ miles from the ledges off Curlew Point; then haul in, and pass between the point and the westernmost islet, as before directed, giving the south side of that islet a berth of at least a cable's length.

Kegashka Bay has this advantage, that there are no ledges, or other dangers off its entrance: so that a vessel is no sooner outside of Kegashka Point than she has a clear sea before her.

Kegashka River.

KEGASHKA RIVER has falls 40 feet high, and a fishing station of the Hudson Bay Company a mile within its entrance; neither the falls nor the house can be seen from the sea. This river, affording shelter only for boats, is 3 miles to the westward of the bay of the same name.

At the distance of $2\frac{1}{2}$ miles further westward fine sandy beaches, in front of sandy cliffs, 70 or 80 feet high, and a country thickly wooded with spruce trees, commence and continue to Natashquan Point, a distance of $13\frac{1}{2}$ miles.

Shoal to the Eastward of Natashquan Point.

Three miles westward from the east end of the sandy beach, and $1\frac{1}{2}$ miles off shore at Long River, (a small stream,) there is a shoal which has not been examined, but on which breakers have been observed. Go no nearer to the shore than 17 fathoms, and you will avoid it.

and Cod Bank off the Point.

One and a half miles to the S. W., from the S. W. extremity of Natashquan Point, lies a small Cod Bank, with little more than 4 fathoms at low water, over gravel bottom.

Mont Joli.

MONT JOLI, mentioned in all former remark books, has no existence, at least there is no mountain, nor even anything that deserves the name of a hill; but near the termination of the sandy cliffs, which end at the S. W. extremity of Natashquan

Point, the sandy ridge with spruce trees rises into a slight mound, a very little higher than the rest of the country. This is Mont Joli; but so little remarkable in its appearance that we should not have noticed it, had it not been for its name.

Parallel to the coast from Musquarro to Natashquan, and at *Cod Banks*, distances varying from 6 to 11 miles, there are banks of sand, gravel, and broken shells, on which the depth of water is various, between 24 and 40 fathoms. There is more than 50 fathoms of water in some parts, between these banks and the shore. Codfish are often caught in abundance upon these banks, principally by American schooners.

The remarkable sandy promontory of Natashquan Point is *Natashquan Point*, the most southern point on the north coast of the Gulf, to the eastward of the Seven Islands, and seems naturally to separate the eastern division of the coast, which has been the subject of the preceding articles of this Chapter, from that further to the westward. As a concluding remark to the above account of the eastern division, it may be said that though there are few coasts more dangerous either to a vessel unacquainted with its nature, or unaware of its proximity in a dark night, or thick fog; yet with the assistance of the chart, due caution, and a constant use of the deep sea-lead, it may be approached with safety; and that a vessel may even stand close in to the outer rocks and breakers on a clear sunny day, provided there be a trusty person aloft to look out for shallow water, for the bottom can be seen in 4 or 5 fathoms of water.

64. From the south extremity of Natashquan Point, the east *Coast from Natashquan to the Mingans*, point of Anticosti bears S. $\frac{1}{2}$ E. true, 57 miles: so that the next division of the coast, which shall now be described, may be considered as forming part of the north shore of the channel to the northward of Anticosti. From the south extremity of Natashquan Point to Collins Shoal, the outer danger off St. Genevieve Island, the course is N. 84° $\frac{1}{2}$ W. true, or N. W. by W. magnetic, 52 miles. The coast included in this distance is low near the sea, rising a short distance back into mounds and ridges, but nowhere exceeding 400 feet in height. It is composed of primary rocks, with the exception of a sandy tract at the Agwanus and Nabesippi Rivers. The sandy tracts are always thickly wooded with spruce trees, and the country generally is here less bare than it is further to the eastward.

The coast is broken into numerous coves and small bays, affording shelter everywhere to boats, and occasionally to very small schooners. The small and bare islets and rocks are innumerable along it, but nowhere extend further out from the points of the mainland than 2 miles.

When there is a heavy sea running, all these dangers show, or they can be seen from the mast-head in clear weather: but under other circumstances, 20 fathoms is as near to them as a vessel ought to approach, that depth being in many places not more than a mile from the outer ledges.

The banks of sand, gravel, and broken shells, which extend off this coast for many miles, and the deep water channel between them and Anticosti, have been already mentioned in art. 22. and the soundings upon them are too irregular to admit of any other than the general description there given of them. I must therefore refer to the charts, in which the various depths and nature of the bottom are given in such a way as cannot fail to be of great assistance to vessels navigating this channel.

Current.

The current down along the coast in westerly winds has also been mentioned in articles 17 and 22; its rate seldom exceeds half a knot, and is usually much less, so that a vessel can always make way to windward in moderate weather.

Tides.

In shore there are weak tidal streams too irregular to be depended upon. It is however important to remark, that the flood draws strongly into Natashquan River, and the bay at Little Natashquan; while the ebb sets strongly off Natashquan Point to the S. E., and causes a very heavy sea upon the banks off it, in southerly winds.

On approaching St. Genevieve, a strong in-draught of the flood towards the channel, between that island and the main, will be experienced; and the ebb will be found setting strongly out in the contrary direction: that is, to the S. E. The rate of these streams seldom exceeds a mile per hour.

Natashquan River.

65 NATASHQUAN RIVER (the name signifying "where the seals land") cuts the sea on the west side of the point of the same name, and 3 miles north-westward from its south extremity. The mouth of the river, between low sandy points, is fully a mile wide, but nearly the whole of this space is occupied by a low sandy island, having narrow channels on either side of it. The northern channel is nearly dry at times, but the southern one has

a depth of 6 feet at low water, and from 9 to 11 feet at high water, according to neap and spring tides. There is the same depth within, and small schooners may lie alongside the steep sandy bank, where the houses of the Hudson Bay Company's trading and fishing post stand, on the south side of the river, half a mile within the entrance. The bar of sand, on which there is usually a heavy surf, extends out three-quarters of a mile, and is exceedingly steep to sea-ward, where 20 fathoms will be found within a quarter of a mile. Codfish are taken in great numbers off this bar in the month of June, and the river abounds with salmon. Above the trading post the river is full of sand-banks, dry at low water, and only navigable for boats for a few miles to the first rapids; above which it is said to be lost in a great morass, about 12 miles inland from the entrance. It discharges a great quantity of water in the spring of the year. The sandy beach continues for $3\frac{1}{2}$ miles to the N. N. E. of the entrance, terminating at the mouth of a small stream, called the Little Natashquan, which admits boats only at high water, and which is close to the eastward of the harbour of the same name.

LITTLE NATASHQUAN HARBOUR, formed by a number of islets and rocks, is only fit for vessels not exceeding 100 tons, although it has water enough for a sloop of war. The entrances, of which there are two, formed by a reef of rocks in the centre, are not more than 90 fathoms wide, between reefs, the extent of which under water cannot be seen, because the water is discoloured by the dark streams of the neighbouring rivers.

The depth that can be carried in at low water by the west channel is 3 fathoms, and 5 fathoms by that which is between the central reef and the islets on the east side. The space within the reefs in which vessels can ride in from 3 to 5 fathoms, over sand and mud bottom, is only 250 fathoms in diameter. This anchorage is defended by the main and islets from all winds excepting the S. W., in which direction there are reefs of rocks, some parts of which are always above water. In a strong S. W. wind, some sea comes over these reefs at high water, but never enough to endanger a vessel during the summer months. There are several rocky patches, with from $2\frac{1}{2}$ to 3 fathoms off the harbour's mouth; these, with the want of space to work in, and the difficulty of getting out with the prevailing southerly winds of summer, render this place of little use for the general purposes of navigation, but

*Natashquan
Harbour.*

it is a valuable harbour for the fishermen, whose schooners, of from 30 to 100 tons, are well suited to the size and nature of the place, which is contiguous to excellent fishing ground, and affords every facility for drying fish. The entrance of this harbour bears N. by E. 4 miles, from the southern entrance of Natashquan River, and a vessel, being off the bar of that river in 20 fathoms, should steer N. E. by N., nearly parallel to the sandy beach. When she has run rather more than 3 miles, and has decreased her depth of water to 12 fathoms, she will be about half a mile from, and will see the islets and rocks, which, commencing at the termination of the sandy beach, lie off the entrance of Little Natashquan Stream, and form the east side of the entrance to the harbour. The westernmost of these islets is much larger than those which lie further to the S. E., between it and the termination of the sandy beach. Bring the west point of that island to bear N. E. by N. in 12 fathoms of water, and the southernmost of the rocks at the termination of the sandy beach will bear E. $\frac{1}{2}$ N. From this position, by ascending the rigging for the purpose, you will be able to make out the reef on the west side of the harbour, which extends rather more than half a mile, S. W. by S. from a rather high and round-backed islet of grey granite, with a wooden cross upon it. This islet will bear N. by E. $\frac{1}{2}$ E. from the position above indicated, and the central reef, some part of which is always above water, will be seen between it and the islets and the point of the main, which, together, form the east side of the harbour. Steer N. by E. $\frac{1}{2}$ E. for the islet with the cross on it, until abreast of the outer part of the reef to the westward, which will be distant a long cable's length, and you will be in about 7 fathoms water. Change your course now sufficiently to the eastward, to pass on that side of the central reef which you may prefer, giving its rocks above water a berth of not less than 60 fathoms, if you take the west channel. The central reef is quite bold to the southward, and also on its east side, so that you may approach it within 20 fathoms when entering by the east channel; but you must remember in hauling round its north and N. E. ends that it extends 70 fathoms under water from the rocks, which always show towards the centre of the harbour. The best berth to anchor in is in 4 fathoms, sand and mud bottom, with the rocks above water of the central reef, bearing S. S. W. $\frac{1}{2}$ W., distant 180 fathoms: then the cross will bear

N. W. by W. $\frac{1}{2}$ W., and the vessel will be nearly in the centre of the harbour.

WASHAWOOKA (CROOKED) BAY, 5 miles north-westward of *Washawooka Bay*. Little Natashquan, is full of small islets, rocks, and ledges, affording shelter to shallops and boats. It is an intricate and dangerous place, and may be known by Shag Islet, a large black rock lying off it, and further out than the rest, being $1\frac{1}{2}$ miles S. S. E. from the projecting point of the main.

AGWANUS RIVER, 10 miles north-westward of *Agwanus River*, Little Natashquan, is a large stream, having rapids and falls $1\frac{1}{2}$ miles from the entrance, which is narrow, and 6 feet deep at low water. There is no bar, but many small rocks, both above and under water, lie off its mouth to the distance of $1\frac{1}{2}$ miles, and render the approach extremely dangerous. The east point of entrance is of rock, the other of sand, and there is a small islet, three-quarters of a mile from the river's mouth. From 9 to 12 feet can be carried up to *and Fairin*. this islet, above which the river expands into a basin, half a mile wide, and 5 fathoms deep, close up to the foot of the rapids. There is sandy beach for $1\frac{1}{4}$ miles to the eastward of this river, and also westward of it to Nabesippi.

NABESIPPI (MAN'S) RIVER, 5 miles north-westward from the *Nabesippi River*. Agwanus, enters the sea at the extremity of a sandy point, $17\frac{1}{2}$ miles N. W. $\frac{1}{2}$ N. from the entrance of Natashquan River. The Nabesippi is a much smaller river than the Agwanus, and will only admit boats in fine weather. On the west bank, a short distance within the entrance, stands a house and store, being a trading post of the Hudson Bay Company, which can be readily seen from the sea.

Pashasheeboo, Mushkoniatawee, and Washatnagunashka, are *Pashasheeboo Bay*. small bays, full of small islets and rocks, which render their entrances so difficult and dangerous, that no directions would be of the least avail. They are occasionally, but not often, entered by small coasting schooners intimately acquainted with the coast, and none but those who know every rock and ledge could either distinguish them, or take a vessel in. The first named is open to *Mushkoniatawee Bay*. the S. E.; the second, less intricate than the other two, is 200 fathoms wide, and 5 fathoms deep in the entrance, with an equal depth within. It is open to the southerly winds, but is nevertheless tolerably secure for small craft, which may lie close to the rocks. The third is $1\frac{1}{4}$ miles wide, with a chain of rocks above *Washatnagunashka Bay*.

and under water across its mouth, not large enough, or close enough to afford much shelter, yet too close and too numerous for a vessel to find her way through without great difficulty and danger. Three fathoms can be carried in, and there are 4 and 5 within.

Watcheeshoo Hill.

WATCHEESHOO, 18 miles N. W. by W. from Nabesippi, and 14 miles E. S. E. from St. Genevieve Island, is a hill of granite, 127 feet high, and bare of trees. It is a peninsula, but appears like an islet, higher than the rest, when seen in a vessel from a distance. There is a fishing post of the Hudson Bay Company in a cove among the rocks, to the westward of it. Watcheeshoo and the Saddle Hill, which is 374 feet high above the sea, are very remarkable, and serve to point out to a vessel her position off the coast. The latter is situated 6 miles inland from the former, in a north direction.

Saddle Hill.

Quetachoo-Manicouagon Bay.

Quetachoo-Manicouagon, and Peashtebai, are two contiguous bays, 4 miles north-westward of Watcheeshoo. The first is the most to the eastward, $2\frac{1}{2}$ miles wide, and from 3 to 14 fathoms deep, but so full of rocks and ledges as to be useless, excepting to

Peashtebai Bay.

the smallest schooners. It is open to the westward. The other is a much smaller bay, capable of affording shelter only to boats, and open to the southward.

Appeeletat Bay.

APPELETAT is a bay full of rocks, of no use to vessels, because of the ledges under water off its entrance, and also within. Four fathoms can be carried into this bay, which is not used even by small craft, because there is an excellent harbour within St. Genevieve Island, the S. E. point of which is distant only 3 miles from it in a S. W. by W. direction.

The whole of the dangerous coast which has passed in review in the foregoing articles of this chapter was surveyed for the first time by us, during parts of the years 1832 and 1833. Previous to that time there were no charts of it that deserved the name; the principal points were not laid down within 10 miles of their true position, even in latitude; and the names of the various bays and rivers were for the most part unknown.

THE MINGAN ISLANDS.

Mingan Islands. Formation.

66. The Mingan Islands are of limestone, containing ammonites, orthoceratites, and other organic remains, many of which are

similar to those of Anticosti. This limestone dips slightly to the *Mingan Islands*. southward, so that the islands are bold, and frequently cliffy, on their north, east, and west sides, whilst they are low and shelving towards the south, in which direction the reefs of flat limestone and other dangers exist.

Ancient beaches, formed of water-worn pebbles of limestone, and flower-pot rocks, precisely similar to those which are forming at present out of cliffs that are washed by the waves, are met with in most of the islands, far above the reach of the highest tides.

The general character of these islands is low, they are estimated *Height*. nowhere to attain an elevation exceeding 300 feet above the sea, and are in general much lower. They possess very little soil, but nevertheless are thickly wooded with spruce, birch, and poplar, *Trees*. on the side towards the mainland; though towards the sea, barren tracts often occur, composed either of bare limestone, or of banks and ridges of limestone gravel.

Supplies of wood and water can readily be obtained from the *Wood and Water*. principal islands; wild berries are abundant in their season, and so are different kinds of wild fowl. Quadrupeds are scarce, but there are plenty of seals upon the limestone reefs, and a few cod-*Seals and Cod*. fish off the coast.

The coast of the mainland, from St. John River to Mingan, is of sand and clay, low and thickly wooded, and with a fine sandy beach. Further eastward the shore is sometimes of granite, and at others of limestone, the latter rock lying immediately over the former.

Mount St. John, 1416 feet high, and described in the last *Mount St. John* Chapter, is the highest point of the mainland in this neighbourhood. *on the main-land*. There are other hills, estimated at 1000 feet above the sea, about 6 leagues further eastward, but 6 or 7 miles back from the sea, and nearly opposite Quarry Island. With these exceptions, the main is low, and it is particularly so opposite the Eastern Islands, where the hills are far back in the country.

The tides are not strong among these islands, never exceeding *Tides*. a knot, excepting in very narrow channels. They are often rendered irregular by the winds, but in fine settled weather there is a constant alternation of the streams or flood and ebb between the islands and the main, and also within the distance of 2 or 3 miles from the outer, or southern shores of the islands.

For want of good charts of these islands, they have not been *These islands not dangerous*.

Mingan Islands. much frequented by other than small coasting or fishing vessels, and the dangers of the navigation among them has been much exaggerated. With the exception of the rocks off St. Genevieve and Hunting Islands, which are very dangerous, and a shoal to the westward of Clear Water Point, there are no detached shoals outside the line joining the outer points of the islands, nor do the reefs of flat limestone extend further out from the high water than three-quarters of a mile in any part. The principal channels between the islands, and between them and the main, may be easily navigated with the assistance of our charts, and there are several excellent harbours capable of admitting the largest vessels.

Number of these islands.

There are 29 of these islands, in none of which are there any inhabitants; some of them are very small, and the largest does not exceed 11 or 12 miles in circumference. They are arranged parallel to the coast, and extend along it 45 miles from St. Genevieve Island, at the eastern end to the Perroquets at the western end of the chain.

Clear Water Point, which is 14 miles to the westward of St. Genevieve, projects out so as to interrupt the continuation of the chain of islands, and thus separates them into two divisions, the easternmost of which has been called the Esquimaux Islands, a name which should be confined to the island properly so called in the western division. I shall consider them all as the Mingan Islands, and treat first of the eastern division.

St. Genevieve Island.

67. **ST. GENEVIEVE**, the easternmost of the Mingan Islands, is about 5 miles in circumference. Its N. E. point is a bluff headland, being the termination in that direction of the highest part of the island, which is about 200 feet above the sea, and slopes irregularly down to the southward.

Mount St. Genevieve.

MOUNT ST. GENEVIEVE is an isolated table hill on the mainland, of limestone, 332 feet above the sea at high water, resting on the granite about a mile inland, and bearing N. $\frac{1}{2}$ E. rather more than 2 miles from the N. E. point of the island of St. Genevieve. This mountain, and the high N. E. point of the island, distinctly point out to a vessel at sea, the position of the channel between the island and the main.

Dangers off St. Genevieve Island.

There are two patches of rock which render it necessary to approach the island of St. Genevieve with caution, viz., the Saints, and the Bowen Rocks.

The Saints.

THE SAINTS are two low and bare rocks, lying rather more than

half a mile to the south of St. Genevieve. There is a channel of 5 fathoms deep, but with foul ground, between them and the island; and reefs under water extend from each of them fully 300 fathoms to the south, S. E., and S. W.

THE N. W. BOWEN ROCK, with 3 feet least water, lies $1\frac{1}{2}$ N. W. Bowen Rock. mile E. S. E. $\frac{1}{2}$ E. from the eastern Saint, and with the south side of the latter on with the centre of the western Saint.

THE S. E. BOWEN ROCK, with 6 feet least water, lies two-thirds S. E. Bowen Rock. of a mile S. E. $\frac{1}{2}$ S. from the north-west Bowen Rock, and S. E. by E. $\frac{1}{2}$ E., $1\frac{3}{4}$ miles, from the eastern Saint, which is just open to the northward of the western Saint. These very dangerous rocks lie nearly in a line from the S. E. point of St. Genevieve, at the distance of $1\frac{1}{2}$ and 2 miles respectively. There is very deep water between and close to them, and also for rather more than a mile to the southward of them and the Saints. The soundings are here Irregular Soundings. extremely irregular, varying from 4 and 6 fathoms rock, to 43 fathoms sand, sometimes in a single cast of the lead. The whole of this dangerous part should be avoided by vessels.

HUNTING ISLAND, the next westward of St. Genevieve, is low, Hunting Island. thickly wooded, broken into many coves, fringed with small islets and rocks on all sides, excepting towards the mainland, and is about 11 miles in circumference. Its longest diameter is parallel to the coast, and about 4 miles. Off its S. W. point, and extending Dangers off it. to the distance of $1\frac{1}{2}$ miles, lie Wood and Gun Islands, leaving Wood and Gun Islands. no passage between, and having reefs running out from them 300 fathoms to the southward. They are both low, and the latter is bare of trees, but covered with grass and peat, in which innumerable puffins burrow and rear their young.

THE GARDE ROCK, always above water, lies rather more than a mile off to the southward, from near the centre of Hunting Island; it would be highly imprudent for any ship to attempt a passage between it and the island, as there are many ledges scattered along the southern side of the island, and the Garde is itself the termination of a long ridge of sunken rocks. The south-eastern end of the island is likewise beset with several reefs, some of which extend three-quarters of a mile to the southward.

COLLINS SHOAL, a small patch of rocks, with 15 feet least Collins Shoal. water, lies $2\frac{1}{4}$ miles south, from the S. E. point of Hunting Island. The marks on this dangerous shoal are the east point of St. Genevieve just open to the eastward of the western Saint, bearing

N. 38° E. and the north point of Wood Island on with the south side of the Garde Rock, bearing N. W.

Irregular Soundings.

Between Collins Shoal and the reefs off the S. E. point of Hunting Island, the soundings are irregular, from 4 to 17 fathoms over rocky bottom, and vessels should not pass there, as in such a place it was impossible to be sure of having discovered every point of rock which may approach a few feet nearer the surface than the rest.

ST. GENEVIEVE AND BETCHEWUN HARBOURS.

St. Genevieve Harbour.

The first of these harbours is situated between the island of the same name and the mainland, and the second, between Hunting Island and the main. Both are excellent harbours, not difficult of access or egress with the assistance of a good chart, and fit for the largest ships.

There are two channels leading to these harbours; namely, the East and the Saints channels.

East Channel.

To enter by the East channel with an easterly wind, observe the following directions:—

Being at a distance from St. Genevieve Island, of not less than 3 miles, to be sure that you are further out than Bowen Rocks, bring the N. E. point of St. Genevieve in one with Indian Point, (a low wooded point of the main, forming the east point of Pillage Bay,) bearing N. 35° W. Run in with this mark on and you will leave the Bowen Rocks half a mile to the westward, and will pass them in between 20 and 30 fathoms over a bottom of fine sand and coral.

When the S. E. point of St. Genevieve and the west Saint come in one, change your course a little to the northward, so as not to go too near a flat shoal, which extends nearly 300 fathoms from the east side of St. Genevieve.

Give the N. E. point of St. Genevieve a berth of a cable's length, and passing as close to the shingly north point of that island as you please, bring up in 10 fathoms, mud bottom, half way between the latter and Anchor Island, which will be seen lying close within the N. W. point of St. Genevieve.

Betchewun Harbour.

If you wish to proceed to Betchewun Harbour instead of anchoring at St. Genevieve, pass to the northward of Anchor Island, which is quite bold on that side, and you will see the en-

trance of Betchewun (between the north point of Hunting Island *St. Genevieve* and Partridge Point) bearing W. by N. Mount Partridge, on *and Betchewun Harbours.* the N. E. side of the point of the same name, will be easily recognized, being a wooded and steep-sided hill, similar to, but much lower and smaller than Mount St. Genevieve. The north point of Hunting Island is also a cliffy mound, with a cove on the east side of it. It is quite bold, and you must pass close to it, to avoid the shoal off Partridge Point, which extends a full quarter of a mile to the southward, and diminishes the navigable breadth of the entrance to 350 fathoms. When in the entrance, you will see a low islet in the centre of the harbour; steer for it, and anchor with it bearing W. by N., and distant one-third of a mile. The depth of water in the harbour is from 9 to 18 fathoms over mud bottom.

The distance across from the N. E. point of St. Genevieve to the *Ledge Point.* main is about a mile, but the navigable breadth of the entrance is reduced to half a mile, by the rocks and shoal-water off Ledge Point, which is composed of numerous rocks of granite close together.

The shoal water extends from Ledge Point, directly across Pillage Bay, to Partridge Point, and you must not approach these shoals nearer than 7 fathoms.

This East channel is the best with easterly winds, and may be used with moderate westerly winds during the flood tide, by vessels not too large to work in such narrow channels, but they must be careful in their boards to the northward, especially in that towards Ledge Point.

To enter these harbours by the Saints channel observe the *Saints Channel.* following directions:—

Bring the west points of St. Genevieve and Anchor Island in one, bearing north, at a distance of not less than 5 miles from the former, to be sure that you are outside of Collins Shoal. Run in upon this leading mark, until the north sides of the two Saints come in one, bearing E. S. E. $\frac{1}{2}$ E. The east sides of Mount Partridge and of Hunting Island (or rather of an island joined to it at low water) will come in one at the same time, bearing N. W. by N.; steer upon this last named leading mark, (to avoid a reef which extends 280 fathoms from the S. W. point of St. Genevieve,) until the east side of Mount St. Genevieve, seen over the sandy S. E. point of Anchor Island, comes in one with

*St. Genevieve
and Betchewun
Harbours.*

the N. W. point of St. Genevieve Island, bearing N. N. E. $\frac{1}{2}$ E. Change your course now to north, which will take you in through the centre of the channel between St. Genevieve and Hunting Islands, and you may either proceed to St. Genevieve Harbour, round Anchor Island, giving its west end a berth of two cables' length, or to Betchewun Harbour along the N. E. side of Hunting Island, which is quite bold.

The directions just given for the Saints channel will lead a ship in between the dangers off St. Genevieve and Hunting Islands, in not less than 20 fathoms water, and she will not have a less depth until she is in as far as Anchor Island. The breadth of the channel between the shoal-water off the Saints, and the shoals off the S. E. point of Hunting Island, is a mile. It diminishes to half a mile between the reef off the S. W. point of St. Genevieve and the east end of Hunting Island, which is the narrowest part of the channel. Within this narrowest part, the ground becomes good for anchoring, as it is everywhere between St. Genevieve and Betchewun Harbours. Indeed so little sea comes in, that the whole space may be considered as a harbour capable of holding a great number of vessels of the largest class.

*Wood and Wa-
ter.*

Wood and water may be obtained, the latter from small streams, either on the main or on the islands.

*Betchewun In-
ner Harbour.*

There is an inner harbour at Betchewun, to the westward of the low islet which has been mentioned, but from thence there is no channel, excepting for boats, to pass out to the westward between Hunting Island and the main.

Tides.

The tides between St. Genevieve and Hunting Islands, and the mainland, are much influenced by the winds; but their rates seldom amount to a knot at any time, and are usually much less, excepting through the shallow and narrow channel at the west end of Betchewun Harbour, where there is at times a complete rapid.

Charles Island.

68. CHARLES ISLAND, the next westward of Hunting Island, is 3 miles long parallel to the coast, and $1\frac{1}{2}$ wide. It is about 200 feet high, bold, and free from shoals; but at the distance of three-quarters of a mile south from its east point there is a patch of rocky ground on which no less than 5 fathoms has been found, but which had better be avoided by large vessels.

The east point of Charles bears N. W. by W. nearly $2\frac{1}{2}$ miles from the west point of Gun Island. The former of these points is quite bold, and so is the latter to the N. W., but to the

S. W. it has a reef extending 200 fathoms. Between them is the entrance to Puffin Bay, which is open to southerly winds. Within *Puffin Bay*, the east point of Charles and half way towards a shoal cove in this island, there is good anchorage in 7 fathoms, mud bottom, at the distance of two cables from the island; but the S. E. winds send in a considerable swell. In the N. E. corner of this bay is the narrow entrance (between shoals off Ragg Point and Hunting Island) to Ragg Bay, which has tolerable anchorage in its N. W. *Ragg Bay*, part, but has very deep water on the side towards Hunting Island, and is separated from the western part of Betchewun Harbour by the shoal and narrow channel for boats between the island and the main, mentioned in the last page.

CHARLES HARBOUR, between the island and the main, though *Charles Harbour*, very narrow, is perfectly secure, and deep enough for vessels of any size, but its entrances are only 80 fathoms wide. Within, the harbour expands to a quarter of a mile wide by three-quarters of a mile in length parallel to the shore. Both entrances are 7 fathoms deep, but you must pass over 4 fathoms if you enter from the eastward through Puffin Bay. The depth within the harbour is from 4 to 6½ fathoms, with mud bottom.

Strong winds occasionally cause the tides to run at the rate of *Tides*. 2 knots in the entrances of the harbour, but in general there is only a weak stream with either tide.

To enter this harbour from Puffin Bay, bring the N. E. point of *Eastern Entrance*, Charles, which is high and clifty, to bear N. W., then steer for it, and give it a berth of between 100 and 180 fathoms, as you haul round it to the westward into the harbour.

To enter from Trilobite Bay, give the N. W. point of Charles *Western Entrance*, Island a berth of between 60 and 140 fathoms, as you haul round it to S. E. by E. into the harbour. All the way from the eastern narrow entrance into Charles Harbour there is a broad zone of shoal water, which curves round parallel to the mainland till it joins Whale Island, and nearly fills up all the N. W. part of Trilobite Bay.

WHALE ISLAND, lying one quarter of a mile from the east *Whale Island*, side of Ammonite Point, and with shoal water between them, is distant 800 fathoms to the westward of Charles Island. Both islands are bold and clifty, and Trilobite Bay is between *Trilobite Bay*, them with excellent anchorage, well sheltered from all but southerly

winds. The only danger to be avoided when working into Trilobite Bay is a reef off Ammonite Point, which includes a small islet, and extends half a mile off-shore. The mark to clear this reef, when running along the coast, is to keep Gun Island open to the southward of Charles Island, and when hauling in from the westward, into Trilobite Bay, keep the north point of Charles well open to the southward of Whale Island.

Clear Water Point.

CLEAR WATER POINT, about 2 miles westward of Ammonite Point, and $2\frac{1}{2}$ miles westward of Whale Island, is low, and the shoal water does not extend more than a quarter of a mile off it to the southward.

69. The coast forms a large bay between Points Clear Water and Esquimaux, along which there are high and conspicuous cliffs of sand and clay, that distinguish this part of the coast to a vessel at sea. The shoal water extends a considerable distance from the shore all round this bay, and opposite Sea Cow Island, the 3 fathom mark is a mile out from the sandy beach.

Clear Water Shoals.

Due west, and $1\frac{1}{2}$ miles from Clear Water Point, lies a rocky 3 fathom shoal; and there are three others, with 2 fathoms, lying to the northward of the first, and in a line from the point, towards Walrus Island; the outer or westernmost of them being rather more than 2 miles from the point.

The mark for the outermost of these shoals is the south side of the high land of Niapisca Island in one with the south point of Gull Island, bearing N.W. by W. $\frac{1}{2}$ W.; or the north point of Fright Island, on with the south side of Esquimaux Island, and open to the southward of Green Island, bearing N. W. by W.

The leading mark for passing outside these shoals, at the distance of half a mile, is the south points of Gull and Fright Islands in one, bearing N. W. by W.

Walrus Island. WALRUS ISLAND lies 4 miles to the W. N. W. from Clear Water Point, and Sea Cow Island is close to the N. E. of it. The two islands together cover the space of $1\frac{1}{2}$ miles in a N. E. direction, and are steep and precipitous, excepting to the southward, in which direction the reef off Sea Cow Island extends three-quarters of a mile, and thut off Walrus Island, 200 fathoms.

Sea Cow Channel.

There is a clear channel to the eastward of these islands, and also between them and the Clear Water Shoals. This channel is $1\frac{1}{2}$ miles wide, and, although not the best, may be used in pro-

ceeding to Esquimaux Harbour from the eastward, by running upon the leading mark, which has been given for clearing the shoals to the westward of Clear Water Point, until the east sides of Esquimaux and Walrus Islands come in one. Then steer for the N. E. side of Sea Cow Island, and haul round it, at the distance of not less than 2 cables, to the north-westward for the east entrance of the harbour.

GREEN ISLAND, small, low, covered with grass, with reefs *Green Island*. stretching north and south, 270 fathoms, but bold to the east and west, lies $\frac{1}{3}$ of a mile W. N. W. from Walrus Island, and a third of a mile E. S. E. from Esquimaux Island.

GULL ISLAND lies a mile W. $\frac{1}{2}$ S. from Green Island, which it *Gull Island*. resembles, excepting that it is rather smaller. It is distant half a mile from the S. E. point of Esquimaux Island to the S. W., but there is no passage for ships between them. The south point of Gull Island is bold, and may safely be passed at the distance of 2 cables.

ESQUIMAUX ISLAND, $2\frac{1}{4}$ miles long parallel to the coast, and $1\frac{1}{4}$ *Esquimaux Island*. miles wide, is 200 or 250 feet high towards its north side, sloping to the southward. From its S. W. point a shoal extends towards Fright Island, which also has a shoal stretching towards Esquimaux Island. The channel between these, leading north-eastward towards Esquimaux Harbour, (see art. 70.) is 380 fathoms wide, with extremely deep water, but as there are no leading marks for it, and the reefs on either side are extremely dangerous, it cannot be recommended.

FRIGHT ISLAND is nearly a mile from the west point of *Fright Island*. Esquimaux Island, and about two-thirds of a mile long, in a N. E. direction; it is bold on the south and S. W., on which sides vessels may pass at a cable's length, but reefs extend off it to the east, N. E., and N. W., to the distance of three cables.

QUIN ISLAND lies within, or N. E. by N. from Fright Island, *Quin Island*. from which it is distant a short half mile, it is nearly $1\frac{1}{4}$ miles long in a N. N. E. direction, and its shores are bold, with the exception of a broad reef running out half a mile to the W. N. W. from its north point.

There is a channel, which is deep, but only two cables wide, *Fright Channel*. between Quin Island and the reefs off Fright Island. This channel may be used with a westerly wind for proceeding to Esquimaux Harbour, by hauling up to the east of Niapisca till the south

end of Quin Island comes in one with the south side of the cove in Esquimaux Island, bearing E. S. E., then steering so as to pass close round the south point of Quin Island, which is quite bold, and thence E. by N. 2 miles, to the harbour.

Quin Channel. But the best channel from the westward towards Esquimaux Harbour is between Quin Island and the main, which, at Point aux Morts, is distant two-thirds of a mile to the N. N. E. from the north point of the island. The shoal water extends only a cable's length to the northward from the latter, but off Point aux Morts, and also off the small islets which lie rather more than a third of a mile to the W. N. W. from it, the reefs extend 200 fathoms to the southward, and the shoal water is continuous to the eastward, across the mouth of the wide bay, which is to the northward of the harbour, and between Point aux Morts and Esquimaux Point. The depth of water in Quin channel is from 5 to $7\frac{1}{2}$ fathoms, with rocky, gravelly, or sandy bottom.

Esquimaux Harbour.

70. ESQUIMAUX HARBOUR lies between the north and N. E. points of the island of the same name, and between that island and the mainland. The island is 400 fathoms from Esquimaux Point, which bounds the N. E. part of the harbour. Esquimaux Point, having the entrance of a small river on its west side, consists of sand, and is quite bold to the S. W., although shoals extend from it across the bays on either side, as has been mentioned. The north and N. E. points of Esquimaux Island are also bold, and may be passed at the distance of 70 fathoms by the largest ships. The depth within the harbour is from 5 to 15 fathoms, over a sandy bottom. The space in which vessels may anchor is nearly $1\frac{1}{2}$ miles long, in a N. W. $\frac{1}{2}$ W. direction, which is the bearing of the points of the island from each other, and the average breadth of the harbour four cables' length. There is therefore room for a great number of vessels, which, if they anchor well over towards the island, (that is, within the line joining its north and N. E. points, and in not more than 11 fathoms water,) will be sheltered from all winds. Supplies of good water may be procured from the river at Point Esquimaux, or from small streams on the island, and wood is plentiful.

Water.

Brief directions have been already given for Sea Cow, Frigate, and Quin channels, leading to this excellent harbour. I shall now describe the best channels from the eastward and westward.

Walrus Channel.

The best channel with easterly winds is between Walrus and

Green Islands. This channel is three-quarters of a mile wide, *Esquimaux Harbour.* with 8 fathoms least water, and it is only necessary to give either island a berth of 200 fathoms to be clear of all dangers. Being 2 or 3 miles outside of these islands, bring the N. E. point of Esquimaux Island to appear about half way between the two islands above mentioned as forming the channel, and it will bear about north. Steer for it, and giving it a berth of a cable's length, haul round it to the north-westward into the harbour, and anchor in the depth and position which has been recommended.

The best channel with westerly winds is to the westward of *Niapisca Channel.* Fright and Quin Islands, between them and Niapisca Island, in the first instance, and afterwards between Quin Island and the main. The extent and position of the reefs off Fright and Quin Islands have been already mentioned. Niapisca Island, however, has reefs of flat limestone extending half a mile to the southward; and also a quarter of a mile to the eastward, from its S. E. and east points, between which a very remarkable group of flower-pot rocks will be seen standing on the limestone just above high-water mark. From its east point, which is the south point of a bay in the island, another reef runs out half a mile to the N. E. by E., but there is ample space between these reefs and Fright Island, the channel being over a mile wide in the narrowest part, and between 30 and 40 fathoms deep.

In running for this channel from the westward observe the following directions.

First observe that the leading mark for clearing the south reef of Niapisca Island by more than two cables' lengths, is the N. W. point of Fright Island in one with the south end of Quin Island: do not therefore open those islands clear of each other, until you have brought Moniac Island (bearing N. $\frac{1}{2}$ E. $2\frac{1}{2}$ miles from the nearest point of Niapisca) in sight to the eastward of Niapisca. Having done so, haul in through the channel, steering N. N. E. $\frac{1}{4}$ E., and when you open Moutange Island (next westward of Moniac) to the northward of Niapisca, you will be clear of the N. E. by E. reef above mentioned. Haul up now, if necessary, to clear the reef, which projects half a mile W. N. W. from the north point of Quin Island, until you not only open the north point of Esquimaux Island to the northward of Quin Island, but also the north point of Sea Cow Island to the northward of Esquimaux Island. Run in between Quin Island and the main, with the last-

Esquimaux Harbour.

named marks just open, bearing about S. 54° E., and they will lead you past the north point of Quin Island, at the distance of about 200 fathoms.

Point aux Morts.

Take notice that the mark for the shoals off Point aux Morts, and the small islets westward of it, is the north and N. E. points of Esquimaux Island in one, bearing S. E. $\frac{1}{2}$ E.; if you open them before you are as far to the eastward as Quin Island you will be ashore.

Having passed Quin Island, continue your course towards the north point of Esquimaux Island; and haul round it to the south-eastward into the harbour.

Tides.

The tides usually run at the rate of about one knot through Esquimaux Harbour, the flood coming round Clear Water Point from the eastward, and passing to the westward between Quin Island and the main. The ebb flows in the contrary direction.

The flood also draws in between Frigate and Niapisca Islands, and the ebb sets out through the same channel. But these streams are much influenced, both in their rate and duration, by the winds, and the ebb is much accelerated by westerly winds in Esquimaux Harbour, running there at times fully 2 knots.

Niapisca Island.

71. NIAPISCA ISLAND, the reefs of which have been already mentioned, is rather more than 2 miles long, on a north and south line of bearing; it is only partially wooded, and has three principal hills, not exceeding 200 feet high.

Quarry Island.

QUARRY ISLAND, nearly $2\frac{1}{2}$ miles long parallel to the coast, and about the same height as Niapisca, is separated from the latter by a channel 370 fathoms wide, with a small islet in it, but no safe passage for shipping, because of a shoal in the bay to the southward, and of a reef which stretches beyond the small islet. Other reefs also run out one-third of a mile from the west side of Niapisca, and from the south side of Quarry Island.

Quarry Cove.

QUARRY COVE is on the north side, and two-thirds of a mile to the north-westward of the east end of the island. It is 230 fathoms wide, and about 400 deep, with 22 fathoms of water in the entrance, shoaling gradually to 5 fathoms with mud bottom close to its head. The islands and shoals along the mainland are distant only 3 miles to the northward of this cove, which thus becomes a completely land-locked, though very small, harbour. No other directions are requisite, than keeping the west side nearest on board in entering, and to anchor near the centre

in 9 or 10 fathoms. Good water may be obtained from a small stream in the S. W. corner of the cove.

There is a clear channel between Quarry Island and Large Island, *Quarry Channel.* which is the next westward. This channel is 400 fathoms wide from island to island, in the narrowest part, where the shoal water off Large Island diminishes the navigable breadth to 330 fathoms. The only directions necessary are to bring the channel to bear N. N. E., and then run in, keeping in its centre until two-thirds of a mile within the S. W. point of Quarry Island, after which you may keep that island close on board, as the remainder of the channel, $1\frac{1}{2}$ miles, is quite bold on that side, while the shoal water extends 150 fathoms from Large Island. The flood runs slowly *Tides.* in through this channel, and the ebb as slowly out.

LARGE ISLAND, of an oval shape, the longest diameter 4 miles, *Large Island.* and lying nearly north and south, is rather more than 11 miles in circumference, thickly wooded, and in its highest part estimated at 200 feet above the sea. Reefs of flat limestone extend off its south and S. W. points to the distance of nearly three-quarters of a mile, and the mark for the south point of these reefs, in 2 fathoms, is the south points of Niapisca and Fright Islands in one. On its west side, a mile to the northward of its S. W. point, there are many flower-pot and arched rocks, standing on the flat limestone above the present high-water mark.

The **MIDDLE REEF** lies just within the line joining the south points of Large and Mingan Islands, and 2 miles westward of the former. A part of this reef is always above water, but it is not 30 fathoms in diameter, though the shoal around it is half a mile long in a N. E. by N. direction, and one-third of a mile wide. The mark for the east side of this reef, in 4 fathoms, is the east sides of the two Birch Islands in one.

The navigable passage between this reef and Large Island is *Large Channel.* called Large Channel, and is $1\frac{2}{3}$ miles wide, with a depth of 54 fathoms. This is the channel that should be used by a vessel proceeding to Mingan Harbour with an easterly wind, and in doing so the only thing necessary to be observed is, that the reefs extend to the westward off the shore of Large Island, from 3 to 2 cables' lengths, as far in as the Flower-pot Columns, after which the island becomes bold. There is little or no warning by the lead on the Large Island side, but the Middle Reef may be approached to 13 fathoms, which, on the east side, is more than half a mile from it.

Further in, the Birch Islands form the west side of this channel, at the distance of nearly 2 miles from Large Island; the east side of the Outer Birch is quite bold, and the shoal water extends only 150 fathoms off the east end of the Inner Birch Island.

Middle Reef Channel.

THE OUTER AND INNER BIRCH ISLANDS lie to the northward of the Middle Reef, and in a line from it towards the west side of Harbour Island. The channel between the Outer Birch Island and the Middle Reef is almost a mile wide, and 30 fathoms deep, and the shoal water extends only 150 fathoms from the south point of the former. But there is a very dangerous reef off the west side of the Outer Birch Island extending 650 fathoms from the shore. The channel between the two Birch Islands is 300 fathoms wide, but the ground is all foul, and not more than $3\frac{1}{2}$

Birch Islands.

fathoms could be carried through by a stranger. The Outer Birch Island is about a mile in diameter, and about 300 feet in height, and it has a remarkable flower-pot rock on its S.W. point. The Inner Birch Island is rather larger; its N.W. point is long and low, extending half a mile to the westward from the body of the island, with a curve to the S.W.; off this point there is a reef running out half a mile to the westward, and having 12 fathoms within a cable's length of its edge.

Hulk Rock.

Half a mile to the S.W. of the same point, there is a small low islet, close to the south point of which stands a very remarkable rock, called the Hulk Rock, from its resemblance to the hulk of a wrecked vessel. The reef of flat limestone, dry at low water, which connects this islet and rock to the low west point of the Inner Birch Island, extends 300 fathoms off the rock to the S.W., and also 200 fathoms to the westward.

Tides.

The flood tide sets out to the S.W. between the Birch Islands, and also between them and the Middle Reef.

Birch Channel.

Birch Channel, between the Birch Islands and Mingan Island, is the best by which to proceed to Mingan Harbour with westerly winds. It is 3 miles wide, and all deep water.

Mingan Island.

Mingan Island, $3\frac{1}{4}$ miles to the westward of the Inner Birch Island, is nearly 2 miles long, in a N.N.E. direction: and, including two small islets close to its west side, nearly a mile broad. It is about 100 feet in height, and bare of trees. The shoal water does not extend above 300 fathoms off its south point, but to the S.W. and west the reefs, including the islets, run out nearly 600 fathoms. The island is bold on its north and east sides.

Mingan Patch lies S. W. $\frac{1}{2}$ S. $3\frac{1}{4}$ miles from the south point of *Mingan Patch*.
Mingan Island, and with the south point of the Outer Birch
on with the north point of Large Island; it is a patch of rocky
ground, with 9 fathoms on it least water, yet there is a very heavy
swell on it at times. There are 22 fathoms of water between
it and the island.

The Perroquets, the westernmost of the Mingan Islands, are four *Perroquets*.
small islets, low, and bare of trees. The north-westernmost is higher
than the others, surrounded with cliffs, and has a superstratum of
peat on its flat summit, in which great numbers of puffins burrow
and rear their young.

The two easternmost of these islets are distant 2 miles N.W. by W.
from the centre of Mingan Island, and have a reef of flat lime-
stone extending off them three-quarters of a mile to the S. S. W.
There is also a shoal to the northward of them one-third of a mile,
and a narrow channel between them and the other two, but of no use
to vessels. The north-westernmost islet has shoal water off it to the
distance of a quarter of a mile, both to the eastward and westward,
but a vessel may pass to the northward of it, at the distance of
200 fathoms, in 14 or 15 fathoms of water. Perroquet Channel, *Perroquet*
between these islets and Mingan Island, is $1\frac{1}{4}$ miles wide, and *Channel*.
with a depth varying from 30 to 40 fathoms in the centre.
Both the flood and ebb set out through the channel, the former to *Tides*.
the S. W., and the latter to the southward.

72. All the islands described in the last article are bold, and *Mingan*
free from danger on their north sides, so that Mingan Channel, *Channel*.
which lies between them and the main, is safe throughout

On the mainland side of this channel, *MONIAC ISLAND* is less *Moniac and*
than half a mile in diameter, and stands nearly opposite *Niapiasca*
Island, from which it is distant about $2\frac{1}{2}$ miles. *MOUTANGE*
Islands.
ISLAND, $1\frac{1}{2}$ miles further westward, is about $1\frac{1}{4}$ miles in diameter,
and situated off a bay full of little islets, and in which there are
several small rivers. Moutange is directly opposite Quarry Island,
at the distance of $2\frac{1}{4}$ miles. These islands, Moniac and Moutange,
are distant three-quarters of a mile from the nearest point of the
main, but the shoals within and between them are nearly dry at
low water.

The shoals do not project above three cables' length off to the
southward of these islands, but there is rocky ground, with irregular
soundings between 4 and 10 fathoms, out to the distance of a mile

Mingan Channel.

to the southward of them both; so that a vessel beating in the Mingan channel had better not stand over to the northward beyond $1\frac{1}{2}$ miles from the northern shores of the outer islands, or into less than 10 fathoms.

Sand Lark Reef.

SAND LARK REEF, $3\frac{1}{2}$ miles N. W. by W. of Moutange Island, $2\frac{1}{2}$ miles E. S. E. from Harbour Island Mingan, and rather more than a mile from the mainland, is small and low, but always above water. The shoal water does not extend off it above a cable's length, and there is a clear channel with deep water on all sides of it; but there is a rocky patch, with 5 fathoms of water, $1\frac{1}{2}$ miles from it on a line towards the south side of Moutange Island. This shoal water has not been particularly examined, and should therefore be avoided.

Mingan Channel abreast Birch Island,

Between the Inner Birch Island and Harbour Island, the Mingan Channel is $1\frac{1}{2}$ miles wide, with rocky and irregular soundings, between 7 and 20 fathoms. The deepest water is over towards the Birch Island, where the bottom is generally of sand, gravel, and shells.

abreast the Perroquets.

Between the Perroquets and Long Point, and also between Mingan Island and the latter, the Mingan Channel is $2\frac{1}{2}$ miles wide, and free from all danger, excepting a sandy shoal which extends off the shore, immediately to the westward of Long Point, to within a mile of the Perroquets. There is often a great ripple off this shoal caused by the flood tide being turned off by Long Point towards the S. W. This channel may be conveniently used, in going to Mingan Harbour with a northerly wind.

Long Point.

Long Point consists of sand, and there is a fine beach from thence to the eastward, as far as Mingan Harbour inclusive.

Mingan Harbour.

MINGAN HARBOUR is the narrow and well-sheltered space between Harbour Island and the mainland, which last is low and has a fine sandy beach, while the island is of limestone, about 100 feet in height, precipitous and bold towards the harbour, but shelving and shoal to the southward to the distance of a quarter of a mile from the shore. The length of the island is 2 miles, its greatest breadth does not amount to half a mile, and it is thickly wooded.

The reefs off the east and west ends of the island, and which are the principal things to guard against in entering the harbour, extend 240 fathoms out from the high-water mark.

The mainland recedes from the island in the eastern part of the

harbour, which would, in consequence, be exposed to easterly winds, if it were not for a sandy shoal, dry at low water, which extends 700 fathoms out from the entrance of the Mingan River. This river is only capable of admitting boats at high-water, and its mouth is opposite the east end of the island. The eastern entrance of the harbour, between the above sandy shoal and the island, is 200 fathoms wide, the western entrance between the mainland and the island is 170 fathoms wide, the whole breadth in both entrances being in deep water. The space within, in which vessels may anchor in safety, is about a mile long by 270 fathoms wide, with plenty of water for the largest ships, over a bottom of fine sand.

Although these entrances are so narrow, there is little difficulty in taking a vessel in of the size of a sloop of war, and large frigates have occasionally visited the harbour.

To enter Mingan Harbour observe the following directions. *Directions for entering.*

In approaching it from the eastward, bring the north or inner side of Harbour Island to bear N.W., and the houses of the Hudson Bay Company's post ought then to appear open fully their own breadth to the northward of the island. Steer for those houses so open, leaving the east end of the island 150 fathoms to the southward, or on your left, and taking care to keep the south side of the sandy point of the main, which forms the western entrance of the harbour, shut in behind the north side of the island, for when they are in one, you will be on shore on the sandy shoal off Mingan River. After you have passed the east end of the island, run along its north side at the distance of a cable, and choose your berth anywhere near the centre of the harbour in from 9 to 13 fathoms sand bottom.

When running for the harbour from the westward; run in towards the sandy beach of the mainland at the distance of three-quarters of a mile to the westward of the island, until the sandy point of the mainland, which forms the west end of the harbour, comes in one with the face of the clay cliffs, to the eastward of the Hudson Bay Company's houses, bearing E. by S., or until you are in 11 fathoms water. Run upon this mark, or course, along the beach, and give the above sandy point of the mainland a berth of half a cable, as you pass into the harbour, and choose your berth as before directed.

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170

GULF OF ST. LAWRENCE.

*Mingan
Harbour.*

Mingan Harbour is perfectly secure in all winds, and, like Esquimaux Harbour, it has this great advantage, that vessels can enter or leave it either with easterly or westerly winds.

Outer Banks.

The Banks of Soundings which extend off the Mingan Islands towards Anticosti have been already mentioned (art. 22.), and it is only necessary to add here, that their southern edge, in 50 fathoms, is no less than 5 miles off from the islands, and that the banks become wider, or extend further off, as we proceed to the westward. There is much greater depth of water in some of the channels between the islands, than there is on these banks, as will be seen by the chart.

*Long Point to
St. John River.*

From Long Point a broad beach of fine sand reaches to the river St. John, which was described in the preceding Chapter, and the chart will show that an irregular band of shoal water lies outside of this beach, at the distance of three-quarters of a mile.

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Mingan Islands
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