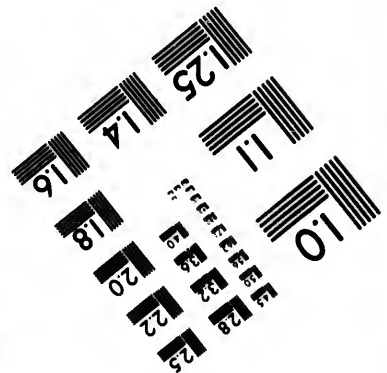
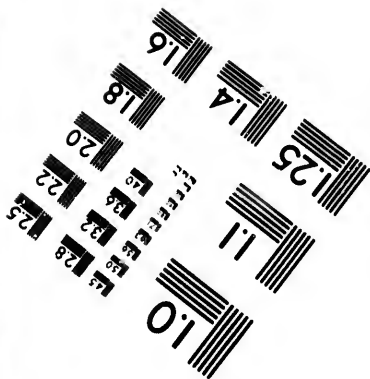
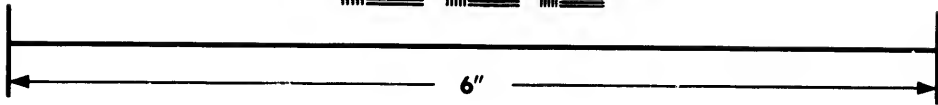
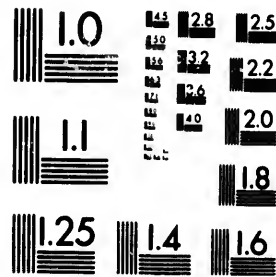


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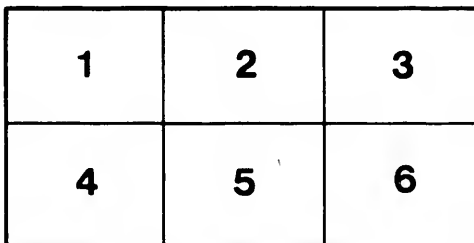
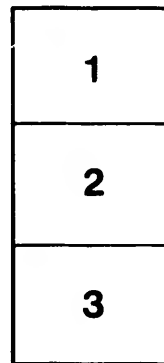
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**JOURNALS**  
OF THE  
FIRST, SECOND AND THIRD VOYAGES  
FOR THE DISCOVERY OF  
**A NORTH-WEST PASSAGE**  
FROM THE ATLANTIC TO THE PACIFIC,  
IN 1819-20-21-22-23-24-25,  
IN HIS MAJESTY'S SHIPS  
HECLA, GRIPER AND FURY,  
UNDER THE ORDERS OF  
**CAPT. W. E. PARRY, R.N. F.R.S.**  
AND COMMANDER OF THE EXPEDITION.

FIVE VOLUMES.

*WITH PLATES.*

VOL. I.

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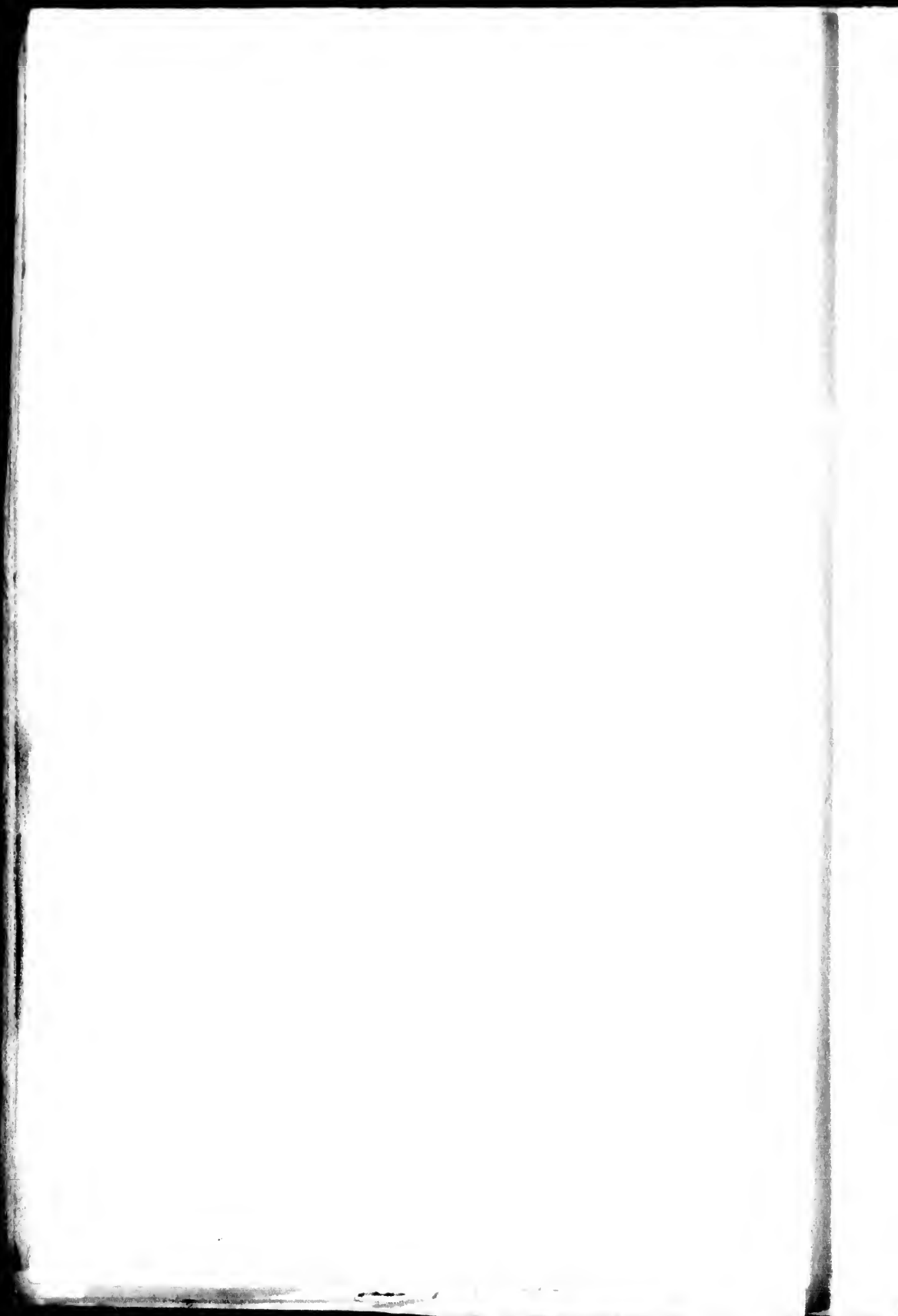


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VOYAGE  
FOR THE DISCOVERY OF A  
NORTH-WEST PASSAGE.

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PRELIMINARY CHAPTER.

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LIEUTENANT PARRY was appointed to the command of his Majesty's ship the Hecla, a bomb of 375 tons, on the 16th of January, 1819; and the Griper, gun brig, 180 tons, commissioned by Lieut. Matthew Liddon, was at the same time directed to put herself under his orders. The object of the expedition was to attempt the discovery of a North-West Passage into the Pacific. On board Lieut. Parry's ship was an astronomer, Capt. Edw. Sabine, R. A. and a competent

number of officers, a Greenland master, and a Greenland mate. Every individual engaged in the expedition was to receive double the ordinary pay of his Majesty's navy. The vessels were rigged after the manner of a barque, as being the most convenient among the ice, and requiring the smallest number of men to work them. They were furnished with provisions and stores for two years ; in addition to which, there was a large supply of fresh meats and soups preserved in tin cases, essence of malt and hops, essence of spruce, and other extra stores, adapted to cold climates and a long voyage. The ships were ballasted entirely with coals ; an abundance of warm clothing was allowed, a wolf-skin blanket being supplied to each officer and man, besides a housing-cloth, similar to that with which waggons are usually covered, to make a sort of tent on board. Various kinds of presents were furnished to secure the friendship of the natives, and a number of valuable astronomical and philosophical instruments were put on board each ship. The following account of the expedition is chiefly from the

official journal kept by Lieut. Parry, on board the *Hecla*, and care has been taken to avoid the use of technical expressions as much as possible. In their official instructions from the Admiralty, they were ordered to make the best of their way to the entrance of Davis' Strait, and, if the ice would permit, they were to endeavour to explore the bottom of Sir James Lancaster's Sound, and if possible to pass through it to Behring's Strait. This was the most favourable supposition; other directions were given, in case the route here marked out should not be found to be practicable. If they got through Behring's Straits, they were to proceed to Kamtschatka, and forward duplicates of all their journals through the hands of the Russian Governor, to St. Petersburg, to be conveyed from thence to London. The expedition was then directed to proceed to the Sandwich Islands, or to Canton, there to refit, and then lose no time in returning to England. They were enjoined to cultivate a good understanding with any Esquimaux or Indians they might fall in with, and it was left to

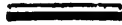
Lieut. Parry's judgment when on the spot, to decide upon the propriety of wintering on the coast of America, to follow up any expectations or hopes of success next season, or to return to England, to report the result of his observations. Minute directions were given as to the observations to be made by the various valuable philosophical instruments on board; and though the finding a passage from the Atlantic to the Pacific was the main object of the expedition, yet the ascertaining many points of natural history, geography, &c. was considered a most important object, never to be lost sight of. After they had passed the latitude of  $65^{\circ}$  north, they were from time to time to throw overboard a bottle, closely sealed, containing a paper, stating the date and position at which it was launched. Whenever they landed on the northern coast of North America, they were to erect a pole, having a flag, and bury a bottle at the foot of it, containing an abstract of their proceedings, and future intentions, for the information of Lieut. Franklin, who had been sent on a land

expedition to explore that coast from the mouth of the Copper Mine River of Hearne.

Before beginning the narrative, it may be observed, that the search for a North-West Passage from the Atlantic to the Pacific ocean, commenced with Henry VII., was warmly patronized by Elizabeth, and has never been entirely laid aside in succeeding reigns ; and if the expedition did not completely attain its object, yet it can never cease to be a source of exultation, that the honour of the discovery of an open passage from Baffin's Bay into the Polar sea was reserved for the British navy.

According to the official instructions, the interests of science were not neglected, many important facts were made out, amongst the most curious, it may be mentioned that it appears to be proved that the North Pole is not the coldest point of the Arctic hemisphere, but that the place where the expedition wintered is one of the coldest spots on the face of the globe. The position of the Magnetic Pole, if not precisely ascertained, would appear most probably to be about latitude  $72^{\circ}$  in longitude  $100^{\circ}$  W.

Of objects of natural history, the specimens brought home are more varied and of a more interesting description than might have been supposed to exist in the dreary regions in which they were procured; they have been described and arranged in an Appendix, which will long be resorted to, as a most valuable detail of facts and observations collected and made in a part of the globe where, in all human probability, it may never again fall to the lot of man to repeat them, or to make others.



## CHAPTER I.

*Passage across the Atlantic—Enter Davis' Strait—  
—Unsuccessful attempt to penetrate the Ice to  
the Western coast—Voyage up the Strait—  
Passage through the Ice to the Western coast—  
Arrival off Possession Bay, on the southern side  
of the entrance into Sir James Lancaster's  
Sound.*

IN the beginning of May, 1819, the Hecla and Griper were towed down the river by the Eclipse, steam-boat; the guns and gunner's stores were received on board the 6th; and the instruments and chronometers were embarked on the evening of the 8th, when the two ships anchored at the Nore. The Griper, being a slower sailer, was occasionally taken in tow by the Hecla, and they rounded the northern point of the Orkneys at the distance of two miles and a half, on Thursday the 20th of the same month.



It is recommended by the most experienced of the Greenland Masters, to cross the Atlantic to Davis' Strait, about the parallel of  $57\frac{1}{2}^{\circ}$  or  $58^{\circ}$ , and I shaped our course accordingly. A bottle was thrown overboard, containing a printed paper, stating the date and the situation of the ships, with a request, in six European languages, that any person finding it would forward it to the Secretary of the Admiralty, with a notice of the time and place where it was found. One bottle, at least, was thrown out daily during the voyage, except when the ships were "beset" in the ice.

Soon after noon we made Rockall; its latitude, by our observations, was  $57^{\circ} 38' 40''$ , and its longitude  $13^{\circ} 47' 42''$ .

There is, perhaps, no more striking proof of the infinite value of chronometers at sea, than the certainty with which a ship may sail directly for a single rock like this, rising like a speck out of the ocean, and at the distance of forty-seven leagues from any other land.

Nothing of moment occurred for several

days, but the wind veered to the westward on the 30th, and increased to a fresh gale, with an irregular sea, and heavy rain, which brought us under our close-reefed topsails. At half-past one, P.M., we began to cross the space in which the "Sunken Land of Buss" is laid down in Steel's chart from England to Greenland; and, in the course of this and the following day, we tried for soundings several times without success.

This being the anniversary of His Majesty's birth-day, and the weather being calm and fine, I directed an additional allowance of grog to be served out, or, in seamen's phrase, "the main brace to be spliced." In the evening, being then in lat.  $55^{\circ} 01'$ , and long.  $35^{\circ} 56'$ , we tried for soundings with two hundred and fifty fathoms of line, without finding bottom.

From the 1st to the 14th of June, we experienced a continual series of unfavourable winds and unpleasant weather, so that very little progress could be made to the westward.

On the 15th, a breeze sprung up from the

eastward, and at noon we very unexpectedly saw land at a great distance, bearing due north, which could be no other than the land about Cape Farewell. This accounts for a remark which is common among the whalers, that they always make this headland, in coming from the eastward, sooner than they expect; a circumstance which they naturally attribute to the effect of a westerly current. If the latitude of Cape Farewell be so far to the northward as  $59^{\circ} 37' 30''$ , which is the mean of nine different authorities, our distance from it this day must have been more than forty leagues. It is by no means impossible that the bold land of Greenland may be distinguished at so great a distance; and it is proper to remark, that the weather, at the time we saw it, was precisely that which is said to be most favourable for seeing objects at a great distance, namely, just before or after rain, when the humidity of the atmosphere increases its transparency.

Early in the morning of the 18th, in standing to the northward, we fell in with the

first "stream" of ice we had seen, and soon after saw several icebergs. At daylight the water had changed its colour to a dirty brownish tinge. We had occasion to remark the same in entering Davis' Strait in 1818, when no difference in its temperature was perceptible. The temperature of the water this morning was  $36\frac{1}{2}^{\circ}$ , being  $3^{\circ}$  colder than on the preceding night; a decrease that was probably occasioned by our approach to the ice. We ran through a narrow part of the stream, and found the ice beyond it to be "packed" and heavy. The birds were more numerous than usual; and, besides the fulmar petrels, boatswains, and kittiwakes, we saw, for the first time, some rotges, dovebies, or black guillemots, and terns, the latter known best to seamen by the name of the Greenland swallow.

On the 21st and 22d, we sailed to the W.N.W. in an open sea; and, on the 23d, at noon, being in lat.  $62^{\circ} 43' 09''$ , long.  $61^{\circ} 38' 25''$ , we saw several icebergs, and some loose ice, to the north-westward. We obtained soundings in the evening in two hun-

dred fathoms, fine sandy bottom, being close to a large iceberg, from which copious streams of water were flowing on the side next the sun.

On the clearing up of a fog, on the morning of the 24th, we saw a long chain of icebergs, extending several miles in a N.b.W. and S.b.E. direction ; and, as we approached them, we found a quantity of “ \*floe-ice ” intermixed with them, beyond which, to the westward, nothing but ice could be seen. At noon we had soundings, with one hundred and twenty fathoms of line, on a bottom of fine sand, which makes it probable that most of the icebergs were aground in this place. In the afternoon, we sailed within the edge of the ice, as much as a light westerly wind would admit, in order to approach the western land, as directed by my instructions. Some curious effects of atmospheric refraction were observed this evening, the

\* An extensive sheet of ice, whose limits, however, can be distinguished from a ship's mast-head : the extent of what is called a field of ice cannot be distinguished from the same point.

low ice being at times considerably raised in the horizon, and constantly altering its appearance.

The weather being nearly calm on the morning of the 25th, all the boats were kept a-head, to tow the ships through the ice to the westward. It remained tolerably open till four P.M., when a breeze, freshening up from the eastward, caused the ice, through which we had lately been towing, to close together so rapidly, that we had scarcely time to hoist up the boats before the ships were immoveably "beset." The clear sea which we had left was about four miles to the eastward of us, while to the westward nothing but one extensive field of ice could be seen. It is impossible to conceive a more helpless situation than that of a ship thus beset, when all the power that can be applied will not alter the direction of her head a single degree of the compass. On the 26th we were in lat. by observation,  $63^{\circ} 59' 29''$ , and long.  $61^{\circ} 48' 07''$ , having one hundred and twenty-five fathoms, on a fine sandy bottom. The deep-sea line indicated a drift to the S.b.W.

Some of our gentlemen, having walked a mile or two from the ships, imagined that they saw the marks of a sledge upon the ice, but, as no traces either of dogs or of one human foot appeared, they were perhaps mistaken.

A large black whale, being the first, was seen near the ships. It is usual for these animals to descend head-foremost, displaying the broad fork of their enormous tail above the surface of the water; but, on this occasion, the ice was so close as not to admit of this mode of descent, and the fish went down tail-foremost, to the great amusement of our Greenland sailors.

As long as the wind continued to blow strong towards the ice, so as to keep it close, the ships lay securely sheltered from the sea; but at nine in the evening, when it veered a little to the westward, the ice became more slack, and we began to feel the effects of the swell which was thus admitted from without: each roll of the sea forced the heavy masses of ice against the rudder and counter with such violence as would

have greatly endangered a ship built in the ordinary way; strengthened as ours were, however, they escaped without damage. Frequent endeavours were made to heave the heads of the ships round, in order that they might receive the heaviest pressure on their bows, but every attempt proved unsuccessful, and we remained in the same unpleasant situation during the whole of the 28th.

While in this state, a large white bear came near the Griper, and was killed by her people, but he sunk between the pieces of ice. This animal had, probably, been attracted by the smell of some red herrings which the men were frying at the time. It is a common practice with the Greenland sailors to take advantage of the strong sense of smelling which these creatures possess, by enticing them near the ships in this manner.

The swell had somewhat subsided on the 29th, but the ships remained firmly fixed in the ice as before. In the course of the day we saw land bearing N.  $69^{\circ}$  W. about thirteen leagues distant, appearing from the



mast-head like a group of islands, and situated near to the entrance of Cumberland Strait; the soundings were one hundred and thirty-five fathoms; the temperature of the sea at that depth  $30^{\circ}$ ; that of the surface being the same; and of the air  $34^{\circ}$ . On the 30th, the ice began to slacken a little more about the ships; and, after two hours' heaving with a hawser on each bow brought to the capstan and windlass, we succeeded in moving the Hecla about her own length to the eastward, where alone any clear sea was visible. The ice continuing to open still more in the course of the day, we were at length enabled to get both ships into open water, after eight hours' incessant labour.

Our first attempt to approach the western coast having thus failed, I consulted the Greenland Masters, as to what were the most likely means to be adopted for effecting this object. Mr. Allison thought it would be advisable to run a degree or two back again to the southward; while Mr. Fife was of opinion, that it might be attempted, with a better chance of success,

about the latitude of Mount Raleigh, which forms one side of the narrowest part of Davis' Strait. I determined on the latter, as being more conformable to the tenor of my instructions; and a course was accordingly shaped close along the edge of the ice, which led us considerably to the eastward of north, in order to take advantage of any opening which might occur. On getting into clear water, we found that the rudders were much rubbed by the blows they had received while beset in the ice.

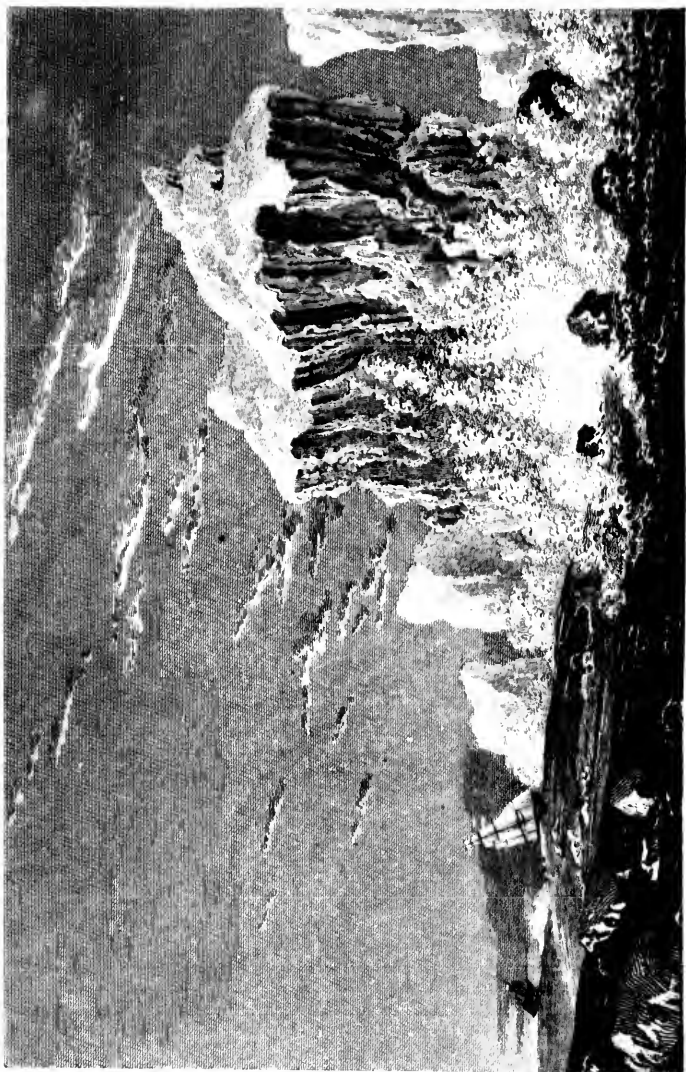
On the 1st and 2d of July, we continued to keep close to the edge of the ice without perceiving any opening in it. Its outer margin consisted of heavy detached masses, much washed by the sea, and formed what is technically called "a pack," this name being given to ice when so closely connected as not to admit the passage of a ship between the masses. Within the margin of the pack, it appeared to consist of heavy and extensive floes, having a bright ice-blink over them; but no clear water could be discovered to the westward. The birds, which had hitherto

been seen since our first approach to the ice, were fulmar petrels, little auks, looms, and a few glaucous gulls.

On the morning of the 3d the wind blew strong from the eastward, with a short breaking sea, and thick rainy weather, which made our situation for some hours rather an unpleasant one, the ice being close under our lee. Fortunately, however, we weathered it by stretching back a few miles to the southward. In the afternoon the wind moderated, and we tacked again to the northward, crossing the Arctic circle at four P.M., in the longitude of  $57^{\circ} 27' W$ . We passed at least fifty icebergs in the course of the day, many of them of large dimensions. At a quarter past five P.M., we sounded in one hundred and fifteen fathoms; the water at the surface of the sea had the same brownish tinge which has already been noticed, but no difference in its temperature or specific gravity could be detected. Towards midnight, the wind having shifted to the south-west, and moderated, another extensive chain of very large icebergs appeared to the north-

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and

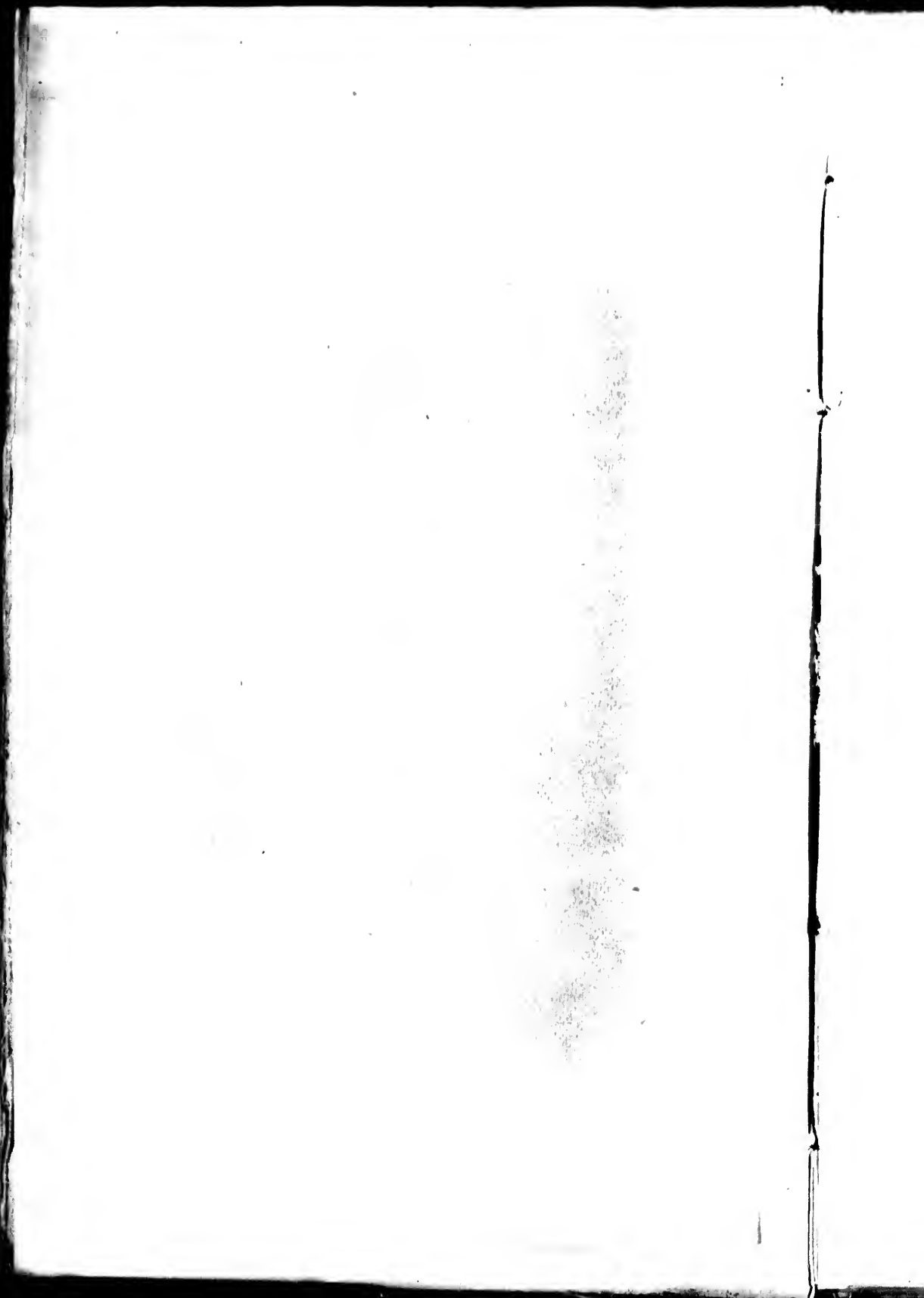
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View from the Lighthouse

View from the Lighthouse  
The Lighthouse is situated on a rocky point  
The view from the Lighthouse is  
very fine and the sea is  
very blue





ward: as we approached them the wind died away, and the ships' heads were kept to the northward, only by the steerage way given to them by a heavy southerly swell, which, dashing the loose ice with tremendous force against the bergs, sometimes raised a white spray over the latter to the height of more than one hundred feet, and being accompanied with a loud noise, exactly resembling the roar of distant thunder, presented a scene at once sublime and terrific. We could find no bottom near these icebergs with one hundred and ten fathoms of line.

At four A.M. on the 4th, we came to a quantity of loose ice, which lay straggling among the bergs; and as there was a light breeze from the southward, and I was anxious to avoid, if possible, the necessity of going to the eastward, I pushed the Hecla into the ice, in the hope of being able to make our way through it. We had scarcely done so, however, before it fell calm; when the ship became perfectly unmanageable, and was for some time at the mercy of the swell,



which drifted us fast towards the bergs. All the boats were immediately sent a-head to tow; and the Griper's signal was made, not to enter the ice. After two hours hard pulling, we succeeded in getting the Hecla back again into clear water, and to a sufficient distance from the icebergs, which it is very dangerous to approach when there is a swell. At noon we were in lat.  $66^{\circ} 50' 47''$  long.  $57^{\circ} 07' 56''$ , being near the middle of the narrowest part of Davis' Strait, which is here not more than fifty leagues across. Davis, on returning from his third voyage, sets it down at forty leagues;\* and in another place remarks: "In the latitude of sixtie-seuen degrees, I might see America, west, from me, and Desolation (Greenland), east."† The truth of this last remark had been much doubted, till the observations made on our expedition of 1818, by determining the geographical position of the two coasts thus seen by Davis, served to

\* HAKLUYT'S *Collection of Voyages*.

† *The Worlde's Hydrographical Discription*, 1595.

confirm the accuracy of that celebrated and able navigator.

On the 5th, it was necessary to pass through some heavy streams of ice, in order to avoid the loss of time by going round to the eastward. On this, as on many other occasions, the advantage possessed by a ship of considerable weight in the water, in separating the heavy masses of ice, was very apparent. In some of the streams, through which the Hecla passed, a vessel of a hundred tons less burthen must have been immoveably beset. The Griper was on this, and many other occasions, only enabled to follow the Hecla by taking advantage of the openings made by the latter.

At noon, on the 6th, being in lat.  $67^{\circ} 44' 05''$  long.  $57^{\circ} 51' 13''$ , we had soundings in one hundred and seventy-two fathoms, on a bottom of shining sand, mixed with small black specks. A number of looms were killed, which being very good to eat, were served to the officers and ships' company. A herd of sea-horses being seen lying on a piece of ice, our boat succeeded in killing one of

them. These animals usually lie huddled together, like pigs, one over the other, and are so stupidly tame, as to allow a boat to approach them, within a few yards, without moving. When, at length, they are disturbed, they dash into the water in great confusion. It may be worth remarking, as a proof how tenacious the walrus sometimes is of life, that the animal killed to-day struggled violently for ten minutes after it was struck, and towed the boat twenty or thirty yards, after which, the iron of the harpoon broke; and yet it was found, on examination, that the iron barb had penetrated both auricles of the heart. A quantity of the blubber was put into casks, as a winter's supply of lamp-oil.

The ice was so compact that it was impossible to penetrate to the westward, and nothing remained to be done, but to make the best way we could, by beating to the northward along the edge of the pack, until on the 10th a thick fog came on, which made great caution necessary in sailing, there being a great many icebergs near us. There is,

however, even in the thickest fog, a strong reflexion of light from these immense bodies of ice, which, with an attentive look-out, is generally visible at a sufficient distance to enable the navigator, if in smooth water, to avoid coming in contact with them.

A large bear being seen on a piece of ice, near which we were passing this morning, a boat was despatched in pursuit, and our people succeeded in killing and towing it on board. As these animals sink immediately on being mortally wounded, some dexterity is requisite to secure them, by first throwing a rope over the neck, at which many of the Greenland seamen are remarkably expert. It is customary for the boats of the whalers to have two or three lines coiled in them, which not only gives them great stability, but, with good management, makes it difficult for a bear, when swimming, to put his paw upon the gunwale, which they generally endeavour to do; whereas, with our boats, which are more light and crank, and therefore very easily heeled over, I have more than once seen a bear on the point of taking

possession of them. Great caution should, therefore, be used under such circumstances in attacking these ferocious creatures. We have always found a boarding-pike the most useful weapon for this purpose. The lance used by the whalers will not easily penetrate the skin, and a musket-ball, except when very close, is scarcely more efficacious.

We sounded at noon in two hundred and two fathoms, and in the afternoon, on the clearing up of the fog, we found ourselves so surrounded by ice, in every direction, that it became necessary to stretch to the eastward, to avoid the risk of being again beset, a circumstance which might have occasioned a serious loss of time. A great number of seals were seen as we sailed through the ice, but very seldom two together.

On the 16th, in running along the edge of the ice with a fresh breeze from the southwest, we passed the Brunswick whaler, of Hull, beating to the southward. She crossed within hail of the Griper, and the master informed Lieutenant Liddon that he had, on the 11th, left a large fleet of fishing-ships

about the latitude of  $74^{\circ}$ , unable to proceed farther to the northward. We had been stopped in a similar manner, and in the same place, on the voyage of 1818, which renders it not improbable, that, at this period of the year, the same obstruction will generally be found to occur about that latitude. The annual experience of the whalers has, indeed, long ago, made it evident, that the facility with which a ship may sail up Davis' Strait depends entirely upon the season at which the attempt is made. For the first fortnight in June, it is seldom practicable to get much beyond the Island of Disko, or about the latitude of  $69^{\circ}$  to  $70^{\circ}$ . Towards the 20th of that month, the ships usually reach the great inlet, called North-East Bay; and, by the end of June, the ice allows them, though not without great exertion, to penetrate to the Three Islands of Baffin, which lie just beyond the seventy-fourth degree of latitude. From that time till about the end of August, the ice presents almost daily, less and less obstruction; so that, if the object be simply to sail as far

north as possible into Baffin's Bay, without regard to the capture of whales, there is every reason to believe that a ship, entering Davis' Strait on the 1st of July, may sail into the latitude of  $74^{\circ}$  or  $75^{\circ}$ , without meeting with any detention on account of the ice, and, perhaps, without even seeing the land till she arrive in a high latitude.

On the 17th, the margin of the ice, appearing more open than we had yet seen it, and there being some appearance of a "water-sky" to the north-west, I was induced to run the ships into the ice, though the weather was too thick to allow us to see more than a mile or two in that direction. We were, at noon, in latitude  $72^{\circ} 00' 21''$ , longitude  $59^{\circ} 43' 04''$ , the depth of water being one hundred and ninety fathoms, on a muddy bottom. The wind shortly after died away, as usual, and, after making a number of tacks, in order to gain all we could to the westward, we found ourselves so closely hemmed in by the ice on every side, that there was no longer room to work the ships, and we therefore made them fast

to a floe, till the weather should clear up. The afternoon was employed in taking on board a supply of water from the floe. It may be proper at once to remark that, from this time till the end of the voyage, snow-water was exclusively made use of on board the ships for every purpose. During the summer months, it is found in abundance in pools upon the floes and icebergs, and in the winter snow was dissolved in the coppers for our daily consumption. The fog cleared away in the evening, when we perceived that no further progress could be made through the ice, into which we sailed to the westward about twelve miles. We were, therefore, once more under the necessity of returning to the eastward, lest a change of wind should beset the ships in their present situation. Previously, however, to our return, we made some observations, on the ice, for the variation and dip of the magnetic needle, the former of which was found to be  $80^{\circ} 55' 27''$  W., and the latter  $84^{\circ} 14' 9''$ .

A thick fog came on again at night, and prevailed till near noon on the 18th, when



we came to a close but narrow stream of ice, lying exactly across our course, and at right angles to the main body of the ice. As this stream extended to the eastward as far as we could see from the "crow's nest," an endeavour was made to push the ships with all sail through the narrowest part. The facility with which this operation, technically called "boring," is performed, depends chiefly on having a fresh and free wind, with which we were not favoured on this occasion; so that, when we had forced the ships about one hundred yards into the ice, their way was completely stopped. The stream consisted of such small pieces of ice, that when an attempt was made to warp the ships a-head by fastening lines to some of the heaviest masses near them, the ice itself came home, without the ships being moved forward. Every effort to extricate them from this helpless situation proved fruitless for more than two hours, when the Hecla was at length backed out, and succeeded in pushing through another part of the stream in which a small opening appeared just at

that moment. All our boats were immediately despatched to the assistance of the Griper, which still remained beset, and which no effort could move in any direction. We at length resorted to the expedient of sending a whale-line to her from the Hecla, and then, making all sail upon the latter ship, we succeeded in towing her out, head to wind, till she was enabled to proceed in clear water. The crossing of this stream of ice, of which the breadth scarcely exceeded three hundred yards, occupied us constantly for more than five hours, and may serve as an example of the detention to which ships are liable in this kind of navigation. In the course of the afternoon, one of the Hecla's boats was upset by the ice, and Mr. Palmer, with all her crew, thrown out of her; but, by getting upon the ice, they fortunately escaped with no other injury than a thorough wetting.

Early on the morning of the 21st, the fog cleared away, and discovered to us the land called by Davis, Hope Sanderson, and the Woman's Islands, being the first land we

had seen in sailing northwards into Baffin's Bay, from the lat. of  $63\frac{3}{4}^{\circ}$ . We found ourselves in the midst of a great number of very high icebergs, of which I counted, from the crow's nest, eighty-eight, besides many smaller ones. We tacked immediately to the westward, in order to take advantage of the only clear weather we had enjoyed for the last fourteen days, to examine the state of the ice, and observed at noon, in lat.  $72^{\circ} 58' 13''$ , the long., by chronometers, being  $58^{\circ} 43' 57''$ . The soundings were two hundred and twenty-eight fathoms, muddy bottom, having deepened from one hundred and six, in sailing eight miles to the westward.

Having now reached the latitude of  $73^{\circ}$ , without seeing a single opening in the ice, and being unwilling to increase our distance from Sir James Lancaster's Sound, by proceeding much farther to the northward, I determined once more to enter the ice in this place, and to try the experiment of forcing our way through it, in order to get into the open sea, which the experience of the former voyage led me to believe we

should find upon the western coast of Baffin's Bay. This determination was strengthened by the recollection of the serious obstructions we had met with the preceding year, in the neighbourhood of Prince Regent's Bay, where greater detention, as well as danger, had been experienced, than on any other part of that coast. Being now, therefore, favoured with clear weather, and a moderate breeze from the south-eastward, we ran into the ice, which for the first two miles consisted of detached pieces, but afterwards of floes of considerable extent, and six or seven feet in thickness. The wind died away towards midnight, and the weather was serene and clear. A large bear was seen on one of the floes, and we passed the tracks of many others.

On the 22d, the wind was light from the eastward, and we made very little progress. We had occasionally to heave the ships through with hawsers, between the heavy masses of ice, which became more and more close as we advanced, till, at length, towards the evening, we were fairly beset, there

being no open water in sight from the mast-head in any quarter of the compass. Some hands were kept constantly employed in heaving the ships through the ice, taking advantage of every occasional opening which presented itself, by which means we advanced a few hundred yards to the westward during the night.

At six A.M., on the 23d, a thick fog came on, which rendered it impossible to see our way any further. It often happens, in thick weather, that much distance is lost by ships taking a wrong "lead," as the channels between floes of ice are technically called; so that, on the weather clearing, it was discovered, when too late, that another opening, perhaps a few yards only from that through which they had sailed, would have conducted them into clear water. We, therefore, warped to an iceberg, to which the ships were made fast at noon, to wait the clearing up of the fog, being in lat.  $73^{\circ} 04' 10''$ , long.  $60^{\circ} 11' 30''$ . The soundings were one hundred and ninety-seven fathoms, on a muddy bottom, and the variation of the

needle  $82^{\circ} 33' 21''$  westerly. Some observations on the intensity of the magnetic force were made by Captain Sabine. At eight P.M., the weather cleared up, and a few small pools of open water were seen here and there, but the ice was generally as close as before, and the wind being to the westward of north, it was not deemed advisable to move. When ships are thus beset, there is a great advantage in securing them to the largest body of ice that can be found, and particularly to the bergs, as they are by this means better enabled to retain their situation, the drift of the ice being generally less, in proportion to its depth under water. Another advantage in securing a ship to an iceberg is, that these bodies usually keep a small space of clear water under their lee, in consequence of the quicker drift of the floes and loose ice to leeward. It not unfrequently happens that a ship is thus dragged into clear water, as the sailors express it; that is, that the whole of the floe-ice is carried to leeward past the berg

to which the ship is attached, leaving her at length in an open sea.

The afternoon of the 24th was occupied in obtaining azimuths on board the Hecla, with her head on different points of the compass, in order to ascertain the amount of the irregularities of the magnetic needle produced by local attraction.

The weather being clear in the morning of the 25th, and a few narrow lanes of water appearing to the westward, the Griper was made fast astern of the Hecla; and her crew being sent to assist in manning our capstan, we proceeded to warp the ships through the ice. This method, which is often adopted by our whalers, has the obvious advantage of applying the whole united force in separating the masses of ice which lie in the way of the first ship, allowing the second, or even third, to follow close astern, with very little obstruction. In this manner we had advanced about four miles to the westward, by eight P.M., after eleven hours of very laborious exertion; and having then come to the end of the clear water, and the

weather being again foggy, the ships were secured in a deep "bight," or bay in a floe, called by the sailors a "natural dock." An extra allowance of meat and spirits was served to the ships' companies, and all hands were permitted to go to rest till the state of the weather and of the ice should become more favourable.

Early on the morning of the 26th, there was clear water as far as we could see to the westward, which, on account of the fog, did not exceed the distance of three hundred yards. We made sail, however, and having groped our way for about half a mile, found the ice once more close in every direction, except that in which we had been sailing, obliging us to make the ships fast to a floe. I sent a boat away to endeavour to find a lane of clear water leading to the westward. She returned on board in an hour, without success, having with difficulty found her way to the ship, by our muskets, and other signals. The latitude here, by observation, was  $73^{\circ} 02' 17''$ , long., by chronometers,  $60^{\circ} 11' 58''$ , by which the drift of the ice in



the last twenty-four hours appears to have been N. 1° E., five miles and three quarters, or in a direction nearly opposite to that of the wind. The soundings were two hundred and eight fathoms, on a muddy bottom. At half-past three, P.M., the weather cleared up, and a few narrow lanes of water being seen to the westward, every exertion was immediately made to get into them. On beginning to heave, however, we found that the "hole" of water in which the Hecla lay, was now so completely enclosed by ice, that no passage out of it could be found. We tried every corner, but to no purpose; all the power we could apply being insufficient to move the heavy masses of ice which had fixed themselves firmly between us and the lanes of water without. In the mean time, Lieutenant Liddon had succeeded in advancing about three hundred yards, and had placed the Griper's bow between two heavy floes, which it was necessary to separate before any further progress could be made. Both ships continued to heave at their hawsers occasionally, as the ice appeared to slacken

a little, by which means they were now and then drawn a-head a few inches at a time, but did not advance more than half-a-dozen yards in the course of the night. By our nearing several bergs to the northward, the ice appeared to be drifting in that direction, the wind being moderate from the southward.

About three A.M., Tuesday 27th, by a sudden motion of the ice, we succeeded in getting the Hecla out of her confined situation, and ran her up astern of the Griper. The clear water had made so much to the westward, that a narrow neck of ice was all that was now interposed between the ships and a large open space in that quarter. Both ships' companies were, therefore, ordered upon the ice to saw off the neck, when the floes suddenly opened, sufficiently to allow the Griper to push through under all sail. No time was lost in the attempt to get the Hecla through after her; but, by one of those accidents to which this navigation is liable, and which renders it so precarious and uncertain, a piece of loose ice, which

lay between the two ships, was drawn after the Griper by the eddy produced by her motion, and completely blocked the narrow passage through which we were about to follow. Before we could remove this obstruction by hauling it back out of the channel, the floes were again pressed together, wedging it firmly and immoveably betwixt them; the saws were immediately set to work, and used with great effect, but it was not till eleven o'clock that we succeeded, after seven hours' labour, in getting the Hecla into the lanes of clear water which opened more and more to the westward. Our latitude by account at noon, was  $73^{\circ} 05' 56''$ , the longitude  $60^{\circ} 22' 27''$ .

On the 29th, we had so much clear water, that the ships had a very perceptible pitching motion, which, from the closeness of the ice, does not very often occur in the Polar regions, and which is therefore hailed with pleasure, as an indication of an open sea. At five P.M. the swell increased considerably, and, as the wind freshened up from the north-east, the ice gradually disappeared; so that by six o'clock we were

sailing in an open sea, perfectly free from obstruction of any kind.

We now seemed all at once to have got into the head-quarters of the whales. They were so numerous that I directed the number to be counted during each watch, and no less than eighty-two are mentioned in this day's log. Mr. Allison, the Greenland master, considered them generally as large ones, and remarked, that a fleet of whalers might easily have obtained a cargo here in a few days. It is, I believe, a common idea among Greenland fishermen, that the presence of ice is necessary to ensure the finding of whales; but we had no ice in sight to-day, when they were most numerous. In the afternoon the wind broke us off from the N.N.W. which obliged us to cast off the Griper, and we carried all sail a-head to make the land. We saw it at half-past five P.M., being the high land about Possession Bay, and at the same time several streams of loose but heavy ice came in sight, which a fresh breeze was drifting fast to the south-eastward. Sir James

Lancaster's Sound was now open to the westward of us, and the experience of our former voyage had given us reason to believe that the two best months in the year for the navigation of these seas were yet to come. This consideration, together with the magnificent view of the lofty Byam Martin Mountains, which forcibly recalled to our minds the events of the preceding year, could not fail to animate us with expectation and hope. If any proof were wanting of the value of local knowledge in the navigation of the Polar Seas, it would be amply furnished by the fact of our having now reached the entrance of Sir James Lancaster's Sound just one month earlier than we had done in 1818, although we had then sailed above a fortnight sooner, with the same general object in view, namely, to penetrate to the western coast of Baffin's Bay, where alone the Northwest Passage was to be sought for. This difference is to be attributed entirely to the confidence which I felt, from the experience gained on the former voyage, that an open

sea would be found to the westward of the barrier of ice which occupies the middle of Baffin's Bay. Without that confidence, it would have been little better than madness to have attempted a passage through so compact a body of ice, when no indication of a clear sea appeared beyond it.

The Hecla's cables were bent, and the Griper's signal made to do the same. As we approached the land, the wind drew directly out of the sound, which is commonly found to be the case in inlets of this nature, in which the wind generally blows directly up or down. A flock of white ducks, believed to be male eider-ducks, were seen in the afternoon, flying to the eastward.

The wind increased to a fresh breeze on the morning of the 31st, which prevented our making much way to the westward. We stood in towards Cape Byam Martin, and sounded in eighty fathoms on a rocky bottom, at the distance of two miles in an east direction from it. We soon after discovered the flag-staff which had been erected on

Possession Mount on the former expedition; an object which, though insignificant in itself, called up every person immediately on deck to look at and to greet it as an old acquaintance. The Griper being considerably astern, I thought it a good opportunity to go on shore, in order to make some observations, while she was coming up. Captain Sabine and myself, therefore, left the ship, and landed on the same spot, near the mouth of the stream in Possession Bay, where observations had been made the preceding year. We found so much surf on the beach as to make it necessary to haul the boat up, to prevent her being stove. A number of loose pieces of ice had been thrown up above the ordinary high-water mark; some of these were so covered by the sand, which the sea had washed over them, that we were at a loss to know what they were, till a quantity of it had been removed. From the situation and appearance of these masses, it occurred to us that some similar masses, found under ground in those spots called *Kaltusæ*, in the islands near the

coast of Siberia, might thus have been originally deposited.

The land immediately at the back of Possession Bay rises in a gentle slope from the sea, presenting an open and extensive space of low ground, flanked by hills to the north and south. In this valley, and even on the hills, to the height of six or seven hundred feet above the sea, there was scarcely any snow, but the mountains at the back were completely covered with it. The bed of the stream, which winds along the valley, is in many places several hundred yards wide, and in some parts from thirty to forty feet deep; but the quantity of water which it contained at this season was extremely small in proportion to the width between the banks, not exceeding forty feet on an average, and from one to three feet only in depth near the mouth of the stream. This feature is common to every part of the Polar regions in which we have landed; the beds, or ravines, being probably formed by the annual dissolution of the snow during a long series of years.



Some pieces of birch-bark having been picked up in the bed of this stream, in 1818, which gave reason to suppose that wood might be found growing in the interior, I directed Mr. Fisher to walk up it, accompanied by a small party, and to occupy an hour or two, while the Griper was coming up, and Captain Sabine and myself were employed upon the beach, in examining the nature and productions of the country.

Mr. Fisher reported, on his return, that he had followed the stream between three and four miles, where it turned to the south-west, without discovering any indications of a wooded country; but a sufficient explanation respecting the birch-bark was, perhaps, furnished by his finding, at the distance of a quarter of a mile from the sea, a piece of whalebone two feet ten inches in length, and two inches in breadth, having a number of circular holes very neatly and regularly perforated along one of its edges, and which had undoubtedly formed part of an Esquimaux sledge. This circumstance

affording a proof of the Esquimaux having visited this part of the coast at no very distant period, it was concluded that the piece of bark above alluded to, had been brought hither by these people. From the appearance of the whalebone, it might have been lying there for four or five years. That none of the Esquimaux tribe had visited this part of the coast since we landed there in 1818, was evident from the flag-staff then erected still remaining untouched. Mr. Fisher found every part of the valley quite free from snow as high as he ascended it; and the following fact seems to render it probable that no great quantity either of snow or sleet had fallen here since our last visit. Mr. Fisher had not proceeded far, till, to his great surprise, he encountered the tracks of human feet upon the banks of the stream, which appeared so fresh, that he at first imagined them to have been recently made by some natives, but which, on examination, were distinctly ascertained to be the marks of our own shoes made eleven months before.

The only animals we met with were a fox, a raven, some ring-plovers, snow-buntings, and a wild bee. Several tracks of bears and of a cloven-footed animal, probably the rein-deer, were also observed upon the moist ground. Three black whales were seen in the bay, and the crown-bones of several others were lying near the beach. Considerable tufts of moss and of grass occur in this valley, principally in those parts which are calculated to retain the water produced by the melting of the snow. Indeed, moisture alone seems necessary to the growth of a variety of plants which are found in this dreary climate. Mr. Fisher, who had an opportunity of examining some of the fixed rocks, considered them to consist principally of basalt.

At half-past ten A.M., when we landed, the tide was falling by the shore, and continued to do so till about half an hour before noon; the surf on the beach, however, did not allow me to determine the time with very great precision. By the mean of our observations made now and in the foregoing

year, the time of high water on full and change days, would appear to be about a quarter past eleven. At two P.M., the water had risen two feet and a half, and the whole rise of tide, as nearly as we could judge from the marks on the beach, may be from six to eight feet. The stream certainly came from the northward and westward along the shore of the bay, during the time that the tide was rising; and Lieutenant Beechy observed, that, in running along shore in a south-easterly direction, the ship seemed to go much faster by the land than she sailed through the water. It is more than probable, therefore, that the flood comes from the north-westward on this particular part of the coast. Near the spot on which we made the observations, a bottle was buried containing an account of our visit, and a pile of stones and earth raised over it.

In approaching Possession Bay, the colour of the water was observed to change to a light green, at the distance of two or two and a half miles from the shore, but there

was no appearance of shoal water, and we could find no bottom with sixty and seventy fathoms of line, well within it; we had fourteen fathoms, on a sandy bottom, at a cable's length from the beach.

Having finished our observations, we returned on board, and made all sail for the Sound; but the wind blowing still from the westward, the progress of the ships was but slow in that direction. The sea was perfectly free from ice, except a single berg, and one or two narrow, though heavy, streams, which offered, however, little or no obstruction to the navigation.

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## CHAPTER II.

*Entrance into Sir James Lancaster's Sound of Baffin—Uninterrupted Passage to the Westward—Discovery and Examination of Prince Regent's Inlet—Progress to the Southward stopped by Ice—Return to the Northward—Pass Barrow's Strait, and enter the Polar Sea.*

WE were now about to enter and to explore that great sound or inlet which has obtained a degree of celebrity beyond what it might otherwise have been considered to possess, from the very opposite opinions which have been held with regard to it. To us it was peculiarly interesting, as being the point to which our Instructions more particularly directed our attention; and, I may add, what I believe we all felt, it was that point of the voyage which was to determine the success or failure of the expedition, according as one or other of the opposite opinions

alluded to should be corroborated. It will readily be conceived, then, how great our anxiety was for a change of the westerly wind and swell, which, on the 1st of August, set down Sir James Lancaster's Sound, and prevented our making much progress. We experienced also another source of anxiety. The relative sailing qualities of the two ships were found to have altered so much, that we were obliged to keep the Hecla under easy sail the whole day, to allow the Griper to keep up with us, although the latter had hitherto kept way with her consort, when sailing by the wind. The ships stretched to the northward across the entrance of the sound, meeting occasionally with some loose and heavy streams of ice, and were at noon in latitude, by observation,  $73^{\circ} 55' 18''$ , and in longitude, by the chronometers,  $77^{\circ} 40'$ . Several whales were seen in the course of the day, and Mr. Allison remarked, that this was the only part of Baffin's Bay in which he had ever seen young whales; for it is a matter of surprise to the whalers in general, that they seldom

or never met with young ones on this fishery, as they are accustomed to do in the seas of Spitzbergen.

The Griper continued to detain us so much that I determined on making the best of our way to the westward, and ordered the Hecla to be hove to in the evening, and sent Lieutenant Liddon an instruction, with some signals, which might facilitate our meeting in case of fog: and I appointed as a place of rendezvous the meridian of  $85^{\circ}$  west, and as near the middle of the Sound as circumstances would permit. As soon, therefore, as the boat returned from the Griper, we carried a press of sail, and, in the course of the evening, saw the northern shore of the Sound looming through the clouds which hung over it.

The weather being clear in the evening of the 2d, we had the first distinct view of both sides of the Sound, and the difference in the character of the two shores was very apparent, that on the south consisting of high and peaked mountains, completely snow-clad, except on the lower parts, while



the northern coast has generally a smoother outline, and had, comparatively with the other, little snow upon it; the difference in this last respect appearing to depend principally on the difference in their absolute height. The sea was open before us, free from ice or land; and the Hecla pitched so much from the westerly swell in the course of the day, as to throw the water once or twice into the stern windows, a circumstance which, together with other appearances, we were willing to attribute to an open sea in the desired direction. More than forty black whales were seen during the day.

We made little way on the 3d, but being favoured at length by the easterly breeze which was bringing up the Griper, and for which we had long been looking with much impatience, a crowd of sail was set to carry us with all rapidity to the westward. It is more easy to imagine than to describe the almost breathless anxiety which was now visible in every countenance, while, as the breeze increased to a fresh gale, we ran

quickly up the Sound. The mast-heads were crowded by the officers and men during the whole afternoon; and an unconcerned observer, if any could have been unconcerned on such an occasion, would have been amused by the eagerness with which the various reports from the crow's-nest were received, all, however, hitherto favourable to our most sanguine hopes.

Between four and six P.M., we passed several rippings on the water, as if occasioned by a weather-tide, but no bottom could be found with the hand-leads. Being now abreast of Cape Castlereagh, more distant land was seen to open out to the westward of it, and between the cape and this land was perceived an inlet, to which I have given the name of the NAVY BOARD'S INLET. We saw points of land apparently all round this inlet, but being at a very great distance from it, we were unable to determine whether it was continuous or not. But as the land on the western side appeared so much lower and smoother than that on the opposite side near Cape Castlereagh, and came

down so near the horizon, about the centre of the inlet, the general impression was, that it is not continuous in that part. As our business lay to the westward, however, and not to the south, the whole of this extensive inlet was in a few hours lost in distance.

In the mean time the land had opened out, on the opposite shore, to the northward and westward of Cape Warrender, consisting of high mountains, and, in some parts, of table land. Several head-lands were here distinctly made out, of which the northernmost and most conspicuous was named after CAPTAIN NICHOLAS LECHMERE PATESHALL, of the Royal Navy. The extensive bay into which Cape Pateshall extends, and which, at the distance we passed it, appeared to be broken or detached in many parts, was named CROKER'S BAY, in honour of MR. CROKER, Secretary of the Admiralty; I have called this large opening a bay, though the quickness with which we sailed past it did not allow us to determine the absolute continuity of land round the

bottom of it; it is, therefore, by no means improbable, that a passage may here be one day found from Sir James Lancaster's Sound into the Northern Sea. The Cape, which lies on the western side of Croker's Bay, was named after SIR EVERARD HOME.

Our course was nearly due west, and the wind still continuing to freshen, took us in a few hours nearly out of sight of the Griper. The only ice which we met with consisted of a few large bergs very much washed by the sea; and, the weather being remarkably clear, so as to enable us to run with perfect safety, we were, by midnight, in a great measure relieved from our anxiety respecting the supposed continuity of land at the bottom of this magnificent inlet, having reached the longitude of  $83^{\circ} 12'$ , where the two shores are still above thirteen leagues apart, without the slightest appearance of any land to the westward of us for four or five points of the compass. The colour of the water having become rather lighter, we hove-to at this time for the Griper, and obtained soundings in one hundred and fifty fathoms.

on a muddy bottom. The wind increased so much as to make it necessary to close-reef the sails, and to get the top-gallant yards down, and there was a breaking sea from the eastward. A great number of whales were seen in the course of this day's run.

Having made the ship snug, so as to be in readiness to round to, should the land be seen a-head, and the Griper having come up within a few miles of us, we again bore up at one A.M., the 4th. At half-past three, Lieutenant Beechey, who had relieved me on deck, discovered, from the crow's-nest, a reef of rocks, in-shore of us to the northward, on which the sea was breaking. These breakers appeared to lie directly off a cape, which we named after REAR-ADMIRAL JOSEPH BULLEN, and which lies immediately to the eastward of an inlet, that I named BROOKING CUMING INLET. As the sea had now become high, and the water appeared discoloured at some distance without the breakers, the Hecla was immediately rounded to, for the purpose of sounding; we could find no bottom with

fifty fathoms of line, but the Griper coming up shortly after, obtained soundings in seventy-five fathoms, on a bottom of sand and mud. We here met with innumerable loose masses of ice, upon which the sea was constantly breaking, in a manner so much resembling the breakers on shoals, as to make it a matter of some little uncertainty at the time, whether those of which I have spoken above, might not also have been caused by ice. It is possible, therefore, that shoal water may not be found to exist in this place; but I thought it right to mark the spot on the chart to warn future navigators when approaching this part of the coast. That there is something out of the common way in this neighbourhood, appears, however, more than probable, from the soundings obtained by the Griper, which are much less than we found them in any other part of the sound at the same distance from land.

At seven A.M., there being less sea, and no appearance of broken or discoloured water, we again bore away to the westward, the Griper having joined us about the me-

meridian of  $85^{\circ}$ , which had been appointed as our place of rendezvous. Since the preceding evening, a thick haze had been hanging over the horizon to the southward, which prevented our seeing the land in that direction, to the westward of  $87^{\circ}$ , while the whole of the northern shore, though, as it afterwards proved, at a greater distance from us, was distinctly visible. At noon, being in latitude  $74^{\circ} 15' 53''$  N., longitude, by chronometers,  $86^{\circ} 30' 30''$ , we were near two inlets, of which the easternmost was named BURNET INLET, and the other STRATTON INLET. The land between these two had very much the appearance of an island. We rounded to, for the purpose of sounding, as well as to wait for our consort, and found no bottom with one hundred and seventy fathoms of line, the water being of a dirty light-green colour. The cliffs on this part of the coast present a singular appearance, being stratified horizontally, and having a number of regular projecting masses of rock, broad at the bottom, and coming to a point at the top, resembling so

many buttresses, raised by art at equal intervals.

After lying-to for an hour, we again bore up to the westward, and soon after discovered a cape, afterwards named by Captain Sabine, CAPE FELLFOOT, which appeared to form the termination of this coast; and as the haze, which still prevailed to the south, prevented our seeing any land in that quarter, and the sea was literally as free from ice as any part of the Atlantic, we began to flatter ourselves that we had fairly entered the Polar Sea, and some of the most sanguine among us had even calculated the bearing and distance of Icy Cape, as a matter of no very difficult or improbable accomplishment. This pleasing prospect was rendered the more flattering by the sea having, as we thought, regained the usual oceanic colour, and by a long swell which was rolling in from the southward and eastward. At six P.M., however, land was reported to be seen a-head. The vexation and anxiety produced on every countenance by such a report, was but too visible, until,



on a nearer approach, it was found to be only an island, of no very large extent, and that, on each side of it, the horizon still appeared clear for several points of the compass. More land was also discovered beyond Cape Fellfoot, immediately to the westward of which lies a deep and broad bay, which I named after my friend, MR. MAXWELL. At eight P.M., we came to some ice of no great breadth or thickness, extending several miles in a direction nearly parallel to our course; and as we could see clear water over it to the southward, I was for some time in the hope, that it would prove a detached stream, from which no obstruction to our progress westerly was to be apprehended. At twenty minutes past ten, however, the weather having become hazy, and the wind light, we perceived that the ice, along which we had been sailing for the last two hours, was joined, at the distance of half a mile to the westward of us, to a compact and impenetrable body of floes, which lay across the whole breadth of the strait, formed by the island, and the western

point of Maxwell Bay. We hauled our wind to the northward, just in time to avoid being embayed in the ice, on the outer edge of which a considerable surf, the effect of the late gale, was then rolling. A second island was discovered to the southward of the former, to both of which I gave the name of PRINCE LEOPOLD'S ISLES, in honour of his Royal Highness PRINCE LEOPOLD OF SAXE COBURG. Immediately to the eastward of these islands, there was a strong water-sky, indicating a considerable extent of open sea, but a bright ice-blink to the westward afforded little hope, for the present, of finding a passage in the desired direction. We saw to-day, for the first time, a number of white whales; guillemots, fulmar petrels, and kittiwakes, were also numerous near the ice.

While the calm and thick weather lasted, a number of the officers and men amused themselves in the boats, in endeavouring to kill some of the white whales which were swimming about the ships in great numbers; but the animals were so wary, that they

would scarcely suffer the boats to approach them within thirty or forty yards without diving. Mr. Fisher described them to be generally from eighteen to twenty feet in length; and he stated, that he had several times heard them emit a shrill, ringing sound, not unlike that of musical glasses when badly played. This sound, he further observed, was most distinctly heard, when they happened to swim directly beneath the boat, even when they were several feet under water, and ceased altogether on their coming to the surface. We saw also, for the first time, one or two shoals of narwhals, called by the sailors, sea-unicorns.

A steady breeze springing up from the W.N.W. in the afternoon, the ships stood to the northward, till we had distinctly made out, that no passage to the westward could at present be found between the ice and the land. The weather having become clear about this time, we perceived that there was a large open space to the southward, where no land was visible; and for this opening, over which there was a

dark water-sky, our course was now directed. It fell calm again, however, in a few hours, so that at noon, on the 6th, we were still abreast of Prince Leopold's Islands, which were so surrounded by ice, that we could not approach them nearer than four or five miles.

The Griper having unfortunately sprung both her topmasts, Lieut. Liddon took advantage of the calm weather to shift them. The Hecla's boats were at the same time employed in bringing on board ice, to be used as water; a measure to which it is occasionally necessary to resort in these regions, when no pools or ponds are to be found upon the floes. In this case, berg-ice, when at hand, is generally preferred; but that of floes, which is in fact the ice of seawater, is also abundantly used for this purpose: the only precaution which it is necessary to observe, being that of allowing the salt-water to drain off before it is dissolved for use. One of our boats was upset by the fall of a mass of ice which the men were

breaking, but fortunately no injury was sustained.

A breeze sprung up from the N.N.W. in the evening, and the Griper being ready to make sail, we stood to the southward. The land, which now became visible to the south-east, discovered to us that we were entering a large inlet, not less than ten leagues wide at its mouth, and in the centre of which no land could be distinguished. The western shore of the inlet, which extended as far as we could see to the S.S.W., was so encumbered with ice, that there was no possibility of sailing near it. I, therefore, ran along the edge of the ice, between which and the eastern shore, there was a broad and open channel, with the intention of seeking, in a lower latitude, a clearer passage to the westward than that which we had just been obliged to abandon, lying between Prince Leopold's Isles and Maxwell's Bay. The headland, which forms the western point of the entrance into this inlet, was honoured by the name of **CAPE CLARENCE**, after His

Royal Highness the Duke of Clarence ; and another, to the south-eastward of this, was named after SIR ROBERT SEPPINGS, one of the Surveyors of his Majesty's navy.

Since the time we first entered Sir James Lancaster's Sound, the sluggishness of the compasses, as well as the amount of their irregularity produced by the attraction of the ship's iron, had been found very rapidly, though uniformly, to increase, as we proceeded to the westward ; so much, indeed, that, for the last two days, we had been under the necessity of giving up altogether the usual observations for determining the variation of the needle on board the ships. This irregularity became more and more obvious as we now advanced to the southward, which rendered it not improbable that we were now making a very near approach to the magnetic pole. For the purposes of navigation, therefore, the compasses were from this time no longer consulted ; and in a few days afterwards, the binnacles were removed, as useless lumber, from the deck

to the carpenter's store-room, where they remained during the rest of the season.

Being desirous of obtaining all the magnetic observations we were able, on a spot which appeared to be replete with interest in this department of science, and the outer margin of the ice consisting entirely of small loose pieces, which were not sufficiently steady for using the dipping-needle, we hauled up for the nearest part of the eastern shore, for the purpose of landing there with the instruments. We got in with it about noon, having very regularly decreased our soundings from forty to fifteen and a half fathoms; in which depth, having tacked, at the distance of two miles and a half from the shore, two boats were despatched from each ship, under the command of Lieutenants Beechey and Hoppner, who, together with Captain Sabine, were directed to make the necessary observations, and to collect whatever specimens of natural history the place might afford. They landed on a beach of sand and stones, having passed, at the

distance of one mile from it, several large masses of ice aground in six to eight fathoms' water, which shoaled from thence gradually in to the shore. The officers describe this spot as more barren and dreary than any on which they had yet landed in the arctic regions; there being scarcely any appearance of vegetation, except here and there a small tuft of stunted grass, and one or two species of saxifrage and poppy, although the ground was so swampy in many places that they could scarcely walk about. At a short distance from the sea, Lieutenant Hoppner discovered a large mass of iron-stone, which was found to attract the magnet very powerfully. There were no traces of inhabitants to be seen on this part of the coast. Part of the vertebræ of a whale was found at some distance from the beach; but this had probably been carried there by bears, the tracks of whom were visible on the moist soil. The only birds seen were a few ptarmigans and snow buntings.

As soon as the boats returned on board, we bore up to the southward, running close



along the edge of the ice, which led us nearer and nearer to the eastern shore, so that by midnight the channel in which we were sailing was narrowed to about five miles. The colour of the water had changed to a very light green at that distance from the shore; but we could find no bottom with fifty fathoms of line, and had thirty-five fathoms while rounding a point of ice at three miles' distance from the beach. The weather was beautifully serene and clear, and the sun, for the second time to us this season, just dipped below the northern horizon, and then re-appeared in a few minutes.

A dark sky to the south-west had given us hopes of finding a westerly passage to the south of the ice along which we were now sailing; more especially as the inlet began to widen considerably as we advanced in that direction: but at three A.M., on the morning of the 8th, we perceived that the ice ran close in with a point of land bearing S.b.E. from us, and which appeared to form the southern extremity of the

eastern shore. To this extreme point I gave the name of CAPE KATER, in compliment to Captain Henry Kater, one of the commissioners of the Board of Longitude, to whom science is greatly indebted for his improvements of the pendulum, and the mariner's compass.

With the increasing width of the inlet, we had flattered ourselves with increasing hopes; but we soon experienced the mortification of disappointment. The prospect from the crow's nest began to assume a very unpromising appearance, the whole of the western horizon, from north round to S.b.E., being completely covered with ice, consisting of heavy and extensive floes, beyond which no indication of water was visible; instead of which there was a bright and dazzling ice-blink extending from shore to shore. The western coast of the inlet, however, trended much more to the westward than before, and no land was visible to the south-west, though the horizon was so clear in that quarter, that, if any had existed of moderate height, it might have

been easily seen at this time, at the distance of ten or twelve leagues. From these circumstances, the impression received at the time was, that the land, both on the eastern and western side of this inlet, would be one day found to consist of islands. As a fresh northerly breeze was drifting the ice rapidly towards Cape Kater, and there appeared to be no passage open between it and that cape, I did not consider it prudent, under present circumstances, to run the ships down to the point, or to attempt to force a passage through the ice, and therefore hauled to the wind, with the intention of examining a bay which was abreast of us, and to which I gave the name of FITZGERALD BAY.

A boat from each ship was prepared to conduct this examination, and we stood in to drop them in-shore, but found, as we approached, that the bay was so filled with ice, as to render it impracticable for any boat to land. I therefore determined, as the season was fast advancing to a close, to lose no time in returning to the north-

ward, in the hope of finding the channel between Prince Leopold's Isles and Maxwell Bay more clear of ice than when we left it, in which case there could be little doubt of our effecting a passage to the westward; whereas, in our present situation, there appeared no prospect of our doing so without risking the loss of more time than I deemed it prudent to spare.

The distance which we sailed to the southward in this inlet was about one hundred and twenty miles, Cape Kater being, by our observations, in lat.  $71^{\circ} 53' 30''$ , long.  $90^{\circ} 03' 45''$ . As we returned to the northward with a light but favourable breeze, we found that the ice had approached the eastern shore of the inlet, leaving a much narrower channel than that by which we had entered; and in some places it stretched completely across to the land on this side, while the opposite coast was still as inaccessible as before.

On the 10th, the weather was very thick with snow, which was afterwards succeeded by rain and fog. The compasses being use-

less, and the sun obscured, we had no means of knowing the direction in which we were going, except that we knew the wind had been to the southward before the fog came on, and had found by experience that it always blew directly up or down the inlet, which enabled us to form a tolerably correct judgment of our course. We continued to stand off-and-on near the ice, till the evening, when, the fog having cleared away, we bore up to the northward, keeping as near the western shore as the ice would permit; but at eleven P.M. we were stopped in our progress by the ice extending to the land on the eastern side of the inlet, which obliged us to haul our wind. This part of the coast is much higher than that farther to the southward, and the soundings near it are also considerably deeper.

A breeze sprung up from the northward on the morning of the 12th, but the weather was so foggy, for some hours, that we did not know in what direction it was blowing. As soon as the fog cleared away, so as to enable us to see a mile or two around us,

we found that the floe to which we had anchored was drifting fast down upon another body of ice to leeward, threatening to enclose the ships between them. We, therefore, cast off, and made sail, in order to beat to the northward, which we found great difficulty in doing, owing to the quantity of loose ice with which this part of the inlet was now covered. A remarkably thick fog obscured the eastern land from our view this evening at the distance of five or six miles, while the western coast was distinctly visible at four times that distance. We remarked, in standing off-and-on, near the main body of the ice, that the clear atmosphere commenced at a short distance from its margin; so that we were enabled to obtain a few lunar observations near the edge of the ice, while, at the distance of a mile to the eastward of it, the sun was altogether obscured by fog.

This being the anniversary of the birthday of His Royal Highness the Prince Regent, it naturally suggested to us the propriety of honouring the large inlet, which

we had been exploring, and in which we still were sailing, with the name of PRINCE REGENT'S INLET; and, speculating on its extent, I think it probable that a communication will one day be found between it and Hudson's Bay, either through Sir Thomas Rowe's Welcome, or perhaps through Repulse Bay, neither of which have yet been satisfactorily examined.

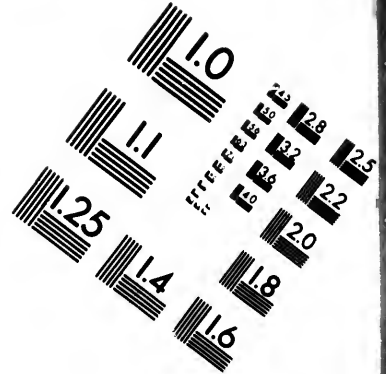
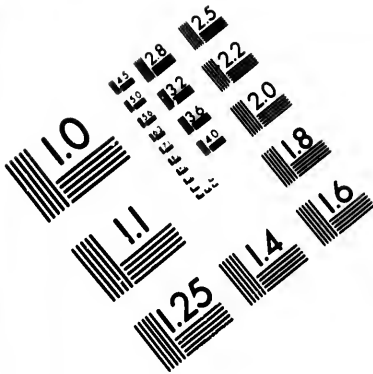
The weather was beautifully calm and clear on the 13th, when, being near an opening in the eastern shore, I took the opportunity of examining it in a boat. It proved to be a bay, a mile wide at its entrance, and three miles deep in an E.b.S. direction, having a small but snug cove on the north side, formed by an island, between which and the main land is a bar of rocks, which completely shelters the cove from sea or drift ice. We found the water so deep, that in rowing close along the shore we could seldom get bottom with seven fathoms of line. The cliffs on the south side of this bay, to which I gave the name of PORT BOWEN, resemble, in many places,

ruined towers and battlements; and fragments of the rocks were constantly falling from above. At the head of the bay is an extensive piece of low flat ground, intersected by numerous rivulets, which, uniting at a short distance from the beach, formed a deep and rapid stream, near the mouth of which we landed. This spot was, I think, the most barren ever saw, the ground being almost entirely covered with small pieces of slaty limestone, among which no vegetation appeared for more than a mile, to which distance Mr. Ross and myself walked inland, following the banks of the stream. Among the fragments, we picked up one piece of limestone, on which was the impression of a fossil-shell. We saw here a great number of young black guillemots, and a flock of ducks, which we supposed to be of the eider species.

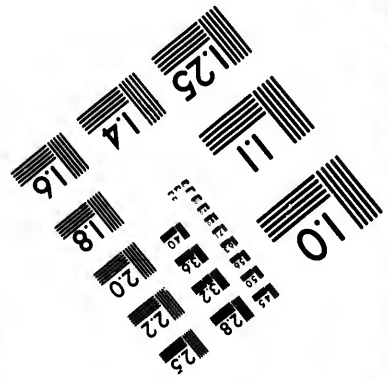
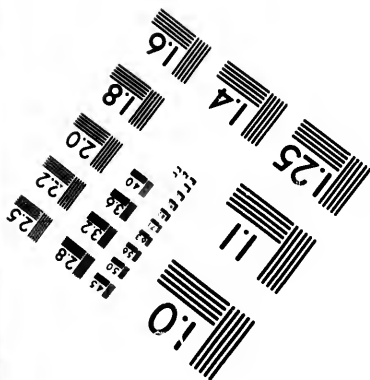
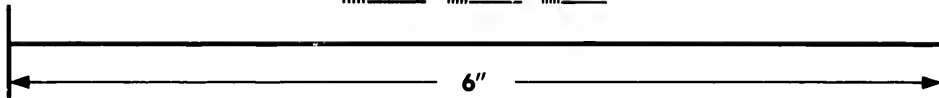
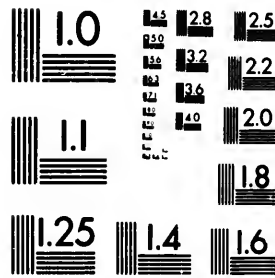
The latitude observed at the mouth of the stream was  $73^{\circ} 12' 11''$ , and the longitude, by chronometers,  $89^{\circ} 02' 08''$ . From twenty minutes past eleven till a quarter after twelve, the tide rose by the shore six.







**IMAGE EVALUATION  
TEST TARGET (MT-3)**



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inches, and the high-water mark was between two and three feet above this: but we were not long enough on shore to form a correct judgment of the time at which high water takes place. About three-quarters of a mile to the southward of Port Bowen is another small bay, which we had not time to examine.

Soon after I returned on board, a light breeze from the southward enabled us to steer towards Prince Leopold's Islands, which, however, we found to be more encumbered with ice than before, as we could not approach them so near as at first by three or four miles. The narwhals were here very numerous; these animals appear fond of remaining with their backs exposed above the surface of the water, in the same manner as the whale, but for a much longer time, and we frequently also observed their horns erect, and quite stationary for several minutes together. Three or four miles to the northward of Port Bowen, we discovered another opening, having every appearance of a harbour, with an island near the

entrance; I named it after CAPTAIN SAMUEL JACKSON, of the Royal Navy.

The whole of the 14th was occupied in an unsuccessful attempt to find an opening in the ice to the westward, which remained perfectly close and compact, with a bright ice-blink over it. Our latitude at noon was  $73^{\circ} 35' 30''$ , longitude  $89^{\circ} 01' 20''$ , being in two hundred and ten fathoms of water on a muddy bottom.

The ice continued in the same unfavourable state on the 15th; and being desirous of turning to some account this vexatious but unavoidable detention, I left the ship in the afternoon, accompanied by Captain Sabine and Mr. Hooper, in order to make some observations on shore, and directed Lieutenant Liddon to send a boat from the Griper for the same purpose. We landed in one of the numerous valleys, or ravines, which occur on this part of the coast, and which, at a few miles' distance, very much resemble bays, being bounded by high hills, which have the appearance of bluff headlands. We found the water very deep close to the

beach, which is composed of rounded limestones, and on which there was no surf; we then ascended, with some difficulty, the hill on the south side of the ravine, which is very steep, and covered with innumerable detached blocks of limestone, some of which are constantly rolling down from above, and which afford a very insecure footing. From the top of this hill, which is about six or seven hundred feet above the level of the sea, and which commands an extensive view to the westward, the prospect was by no means favourable to the immediate accomplishment of our object. No water could be seen over the ice to the north-west, and a bright and dazzling blink covered the whole space comprised between the islands and the north shore. It was a satisfaction, however, to find that no *land* appeared which was likely to impede our progress; and we had been too much accustomed to the obstruction occasioned by ice, and too well aware of the suddenness with which that obstruction is often removed, to be at all discouraged by present appearances.

On the top of this hill we deposited a bottle, containing a short notice of our visit, and raised over it a small mound of stones; of these we found no want, for the surface was covered with small pieces of schistose limestone, and nothing like soil or vegetation could be seen. We found a great quantity of madreporite among the lime; and at the foot of the hill I met with one large piece, of the basaltiform kind. Several pieces of flint were also picked up on the beach. The insignificance of the stream which here emptied itself into the sea, formed, as usual, a striking contrast with the size of the bed through which it flowed, the latter being several hundred feet deep, and two or three hundred yards wide.

The wind was light on the 16th, with cloudy weather and occasional fogs, and we scarcely altered our position, being hemmed in by ice or land in almost every direction. At five P.M., it being quite calm, we had a good opportunity of trying the set of the tide, which, by the preceding day's observations, we knew to be rising at this time

by the shore. A small boat was moored to the bottom, which consisted of soft mud, in one hundred and ninety-one fathoms, by a deep-sea lead weighing one hundred and fifty pounds, and a current was found to be setting to the N.N.W., at the rate of a quarter of a mile an hour. This served to confirm the remark I had made, the preceding day, respecting the drift of the ships in the offing; and, unless there be what seamen call a "tide and half tide," would appear to establish the fact of the flood-tide coming from the southward in this part of Prince Regent's Inlet.

On the 17th, we had a fresh breeze, from the S.S.W., with so thick a fog, that in spite of the most unremitting attention to the sails and the steerage, the ships were constantly receiving heavy shocks from the loose masses of ice with which the sea was covered, and which, in the present state of the weather, could not be distinguished at a sufficient distance to avoid them. On the weather clearing up in the afternoon, we saw, for the first time, a remarkable bluff



headland, which forms the north-eastern point of the entrance into Prince Regent's Inlet, and to which I gave the name of CAPE YORK, after HIS ROYAL HIGHNESS THE DUKE OF YORK. A little to the eastward of Cape Fellfoot, we observed six stripes of snow, near the top of the cliff, being very conspicuous at a great distance, when viewed from the southward. These stripes, which are formed by the drift of snow between the buttress-like projections before described, and which remained equally conspicuous on our return the following year, have probably at all times much the same appearance, at least about this season of the year, and may, on this account, perhaps, be deemed worthy of notice, as a landmark.

On the 18th, Mr. Crawford, the Greenland mate of the Hecla, being in quest of a narwhal in one of the boats, could not resist the temptation of striking a fine black whale, which rose close to him, and which soon ran out two lines of one hundred and forty fathoms each, when, after towing the boat

some distance, the harpoon fortunately drew, and thus saved our lines.

There being still no prospect of getting a single mile to the westward, in the neighbourhood of Prince Leopold's Islands, and a breeze having freshened up from the eastward in the afternoon, I determined to stand over once more towards the northern shore, in order to try what could there be done towards effecting our passage; and at nine P.M., after beating for several hours among floes and streams of ice, we got into clear water near that coast, where we found some swell from the eastward. There was just light enough at midnight to enable us to read and write in the cabin.

The wind and sea increased on the 19th. with a heavy fall of snow, which, together with the uselessness of the compasses, and the narrow space in which we were working between the ice and the land, combined to make our situation for several hours a very unpleasant one. At two P.M., the weather being still so thick, that we could at times scarcely see the ship's length a-head, we

suddenly found ourselves close under the land, and had not much room to spare in wearing round. We stood off-and-on during the rest of the day, measuring our distance by Massey's patent log, an invaluable machine on this and many other occasions; and in the course of the afternoon, found ourselves opposite to an inlet, which I named after my relation, Sir BENJAMIN HOBHOUSE. The snow was succeeded by rain at night; after which the wind fell, and the weather became clear, so that, on the morning of the 20th, when we found ourselves off Stratton Inlet, we were enabled to bear up along shore to the westward. The points of ice led us occasionally within two miles of the land, which allowed us to look into several small bays or inlets, with which this coast appears indented, but which it would require more time than we could afford, thoroughly to survey or examine. The remarkable structure of this land, which I have before attempted to describe, is peculiarly striking about Cape Fellfoot, where the horizontal strata very much resemble

two parallel tiers of batteries, placed at regular intervals from the top to the bottom of the cliff, affording a grand and imposing appearance. There is a low point running off some distance from Cape Fellfoot, which is not visible till approached within five or six miles. We passed along this point at the distance of four miles, finding no bottom with from fifty to sixty-five fathoms of line. Maxwell Bay is a very noble one, having several islands in it, and a number of openings on its northern shore, which we could not turn aside to explore. It was, however, quite free from ice, and might easily have been examined, had it been our object to do so, and time would have permitted. A remarkable headland, on the western side, I named after SIR WILLIAM HERSCHEL.

On the 21st we had nothing to impede our progress but the want of wind, the great opening, through which we had hitherto proceeded from Baffin's Bay, being now so perfectly clear of ice, that it was impossible to believe it to be the same

part of the sea, which, but a day or two before, had been completely covered with floes to the utmost extent of our view. In the forenoon, being off a headland, which was named after Captain THOMAS HURD, Hydrographer to the Admiralty, we picked up a small piece of wood, which appeared to have been the end of a boat's yard, and which caused sundry amusing speculations among our gentlemen; some of whom had just come to the very natural conclusion, that a ship had been here before us, and that, therefore, we were not entitled to the honour of the first discovery of that part of the sea on which we were now sailing; when a stop was suddenly put to this and other ingenious inductions by the information of one of the seamen, that he had dropped it out of his boat a fortnight before. I could not get him to recollect exactly the day on which it had been so dropped, but what he stated was sufficient to convince me, that we were not at that time more than ten or twelve leagues from our present

situation ; perhaps not half so much ; and that, therefore, here was no current setting constantly in any one direction. A bay, to the northward and westward of Cape Hurd, was called RIGBY BAY.

At nine P.M., the wind being light from the northward, with hazy weather, and some clouds, the electrometer chain was hoisted up to the mast-head ; but no sensible effect was produced, either upon the pith-balls, or the gold-leaf. A thick fog came on at night, which, together with the lightness of the wind, and the caution necessary in navigating an unknown sea under such circumstances, rendered our progress to the westward extremely slow, though we had fortunately no ice to obstruct us. The narwhals were blowing about us in all directions, and two walruses with a young one were seen upon a piece of ice.

The fog clearing up on the following day, we found ourselves abreast a bay, to which the name of RADSTOCK BAY was subsequently given by Lieut. Liddon's desire, in

compliment to the Earl of Radstock. This bay is formed by a point of land, on the eastern side, which I named CAPE EARDLEY WILMOT; and on the Western, by a bluff headland, which was called after Captain TRISTRAM ROBERT RICKETTS, of the Royal Navy. In the centre of Radstock Bay, lies an insular looking piece of land, which received the name of CASWALL'S TOWER. We now also caught a glimpse of more land to the southward; but, owing to a thick haze which hung over the horizon in that quarter, the continuity of land on a great part of that coast, to the westward of Cape Clarence, remained, for the present, undetermined. Immediately to the westward of us, we discovered more land, occupying several points of the horizon, which renewed in us considerable apprehension, lest we should still find no passage open into the Polar Sea. As we advanced slowly to the westward, the land on which Cape Ricketts stands, appeared to be nearly insular; and, immediately to the westward of it, we dis-

covered a considerable opening, which we called GASCOYNE'S INLET. In the afternoon, the weather became very clear and fine, the wind being light from the westward. As this latter circumstance rendered our progress very slow, the opportunity was taken to despatch the boats on shore, for the purpose of making observations; and at the same time, a boat from each ship, under the respective command of Lieutenants Beechey and Hoppner, was sent to examine a bay, at no great distance to the northward and westward of us. The first party landed at the foot of a bluff headland, which forms the eastern point of this bay, and which I named after my friend Mr. RICHARD RILEY, of the Admiralty. They had scarcely landed ten minutes, when a fresh breeze unexpectedly sprung up from the eastward, and their signal of recall was immediately made. The cliffs on this part of the coast were observed to consist almost entirely of secondary limestone, in which fossils were abundantly found. There was



little or no vegetation in those parts which our gentlemen had an opportunity of examining during their short excursion; but, as a quantity of the dung of rein-deer was brought on board, the interior of the country cannot be altogether unproductive. One or two specimens of the silvery gull, and of the *Larus Glaucus*, with the young of the latter alive, were obtained by Captain Sabine; and five black whales were seen near the beach.

Lieutenant Beechey found that the land, which at this time formed the western extreme, and which lies on the side of the bay, opposite to Cape Riley, was an island; to which I, therefore, gave the name of BEECHEY ISLAND. Immediately off Cape Riley runs a low point, which had some appearance of shoal-water near it, there being a strong ripple on the surface; but Lieutenant Hoppner reported, that he could find no bottom with thirty-nine fathoms, at the distance of two hundred yards from it.

As soon as the boats returned, all sail

was made to the westward, where the prospect began to wear a more and more interesting appearance. We soon perceived, as we proceeded, that the land, along which we were sailing, and which, with the exception of some small inlets, had appeared to be hitherto continuous from Baffin's Bay, began now to trend much to the northward, beyond Beechey Island, leaving a large open space between that coast and the distant land to the westward, which now appeared like an island, of which the extremes to the north and south were distinctly visible. The latter was a remarkable headland, having at its extremity two small table-hills, somewhat resembling boats turned bottom upwards, and was named **CAPE HOTHAM**. At sunset we had a clear and extensive view to the northward, between Cape Hotham and the eastern land. On the latter several headlands were discovered and named; between the northernmost of these, called **CAPE BOWDEN**, and the island to the westward, there was a channel of more than eight leagues in width, in which neither land

nor ice could be seen from the mast-head. To this noble channel I gave the name of WELLINGTON, after his Grace the Master-General of the Ordnance. The arrival off this grand opening was an event for which we had long been looking with much anxiety and impatience; for, the continuity of land to the northward had always been a source of uneasiness to us, principally from the possibility that it might take a turn to the southward and unite with the coast of America. The appearance of this broad opening, free from ice, and of the land on each side of it, more especially that on the west, leaving scarcely a doubt on our minds of the latter being an island, relieved us from all anxiety on that score; and every one felt that we were now finally disentangled from the land which forms the western side of Baffin's Bay; and that, in fact, we had actually entered the Polar Sea. Fully impressed with this idea, I ventured to distinguish the magnificent opening through which our passage had been effected from Baffin's Bay to Wellington

Channel, by the name of **BARROW'S STRAIT**, after my friend Mr. Barrow, Secretary of the Admiralty; both as a private testimony of my esteem for that gentleman, and as a public acknowledgment due to him for his zeal and exertions in the promotion of Northern Discovery. To the land on which Cape Hotham is situated, and which is the easternmost of the group of islands (as we found them to be by subsequent discovery) in the Polar Sea, I gave the name of **CORNWALLIS ISLAND**; and an inlet, seven miles to the northward of Cape Hotham, was called **BARLOW INLET**.

Though two-thirds of the month of August had now elapsed, I had every reason to be satisfied with the progress which we had hitherto made. I calculated upon the sea being still navigable for six weeks to come, and probably more, if the state of the ice would permit us to edge away to the southward in our progress westerly: our prospects, indeed, were truly exhilarating; the ships had suffered no injury; we had plenty of provisions; crews in high health and

spirits; a sea, if not open, at least navigable; and a zealous and unanimous determination in both officers and men to accomplish, by all possible means, the grand object on which we had the happiness to be employed.

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## CHAPTER III.

*Favourable Appearances of an open Westerly Passage—Land to the Northward, a Series of Islands—General Appearance of them—Meet with some Obstruction from low Islands surrounded with Ice—Remains of Esquimaux Huts, and natural Productions of Byam Martin Island—Tedious Navigation from Fogs and Ice—Difficulty of steering a proper Course—Arrival and landing on Melville Island—Proceed to the Westward and reach the Meridian of 110° W. long. the first Stage in the Scale of Rewards granted by Act of Parliament.*

A CALM which prevailed during the night kept us nearly stationary off Beechey Island till three A.M. on the 23d, when a fresh breeze sprung up from the northward, and all sail was made for Cape Hotham, to the southward of which it was now my intention to seek a direct passage towards

Behring's Strait. Wellington Channel, to the northward of us, was as open and navigable to the utmost extent of our view as any part of the Atlantic, but as it lay at right angles to our course, and there was still an opening at least ten leagues wide to the southward of Cornwallis Island, I could fortunately have no hesitation in deciding which of the two it was our business to pursue. If, however, the sea to the westward, which was our direct course, had been obstructed by ice, and the wind had been favourable, such was the tempting appearance of Wellington Channel, in which there was no visible impediment, that I should probably have been induced to run through it, as a degree more or less to the northward made little or no difference in the distance we had to run to Icy Cape. The open channel to the westward did not, however, reduce me to this dilemma. It is impossible to conceive any thing more animating than the quick and unobstructed run with which we were favoured, from Beechey Island across to Cape Hotham. Most men have, probably,

at one time or another, experienced that elevation of spirits which is usually produced by rapid motion of any kind ; and it will readily be conceived how much this feeling was heightened in us, in the few instances in which it occurred, by the slow and tedious manner in which the greater part of our navigation had been performed in these seas. Our disappointment may therefore be imagined, when, in the midst of these favourable appearances, and of the hope with which they had induced us to flatter ourselves, it was suddenly and unexpectedly reported from the crow's-nest, that a body of ice lay directly across the passage between Cornwallis Island and the land to the southward. As we approached this obstruction, which commenced about Cape Hotham, we found that there was, for the present, no opening in it through which a passage could be attempted. After lying-to for an hour, however, Lieutenant Beechey discovered from the crow's-nest, that one narrow neck appeared to consist of loose pieces of heavy ice detached from the



main floes which composed the barrier, and that, beyond this, there was a considerable extent of open water. The Hecla was immediately pushed into this part of the ice, and after a quarter of an hour's "boring," during which the breeze had, as usual, nearly deserted us, succeeded in forcing her way through the neck. The Griper followed in the opening which the Hecla had made, and we continued our course to the westward, having once more a navigable sea before us.

We now remarked, that a very decided change had taken place in the character of the land to the northward of us since leaving Beechey Island; the coast near the latter being bold and precipitous next the sea, with very deep water close to it, while the shores of Cornwallis Island rise with a gradual ascent from a beach which appeared to be composed of sand. During the forenoon we passed several rippings on the surface of the water, which were probably occasioned by the set of the tides round each end of Cornwallis Island, as we found a

depth of ninety-five fathoms. An opening was seen in the southern land, which I distinguished by the name of CUNNINGHAM INLET. A bluff and remarkable cape, which forms the eastern point of Cunningham Inlet obtained, by Lieutenant Hoppner's desire, the name of CAPE GIFFORD. To the eastward of Cape Gifford, a thick haze covered the horizon, and it prevented us from seeing more land in that direction; so that its continuity from hence to Cape Clarence still remained undetermined, while, to the westward, it seemed to be terminated rather abruptly by a headland, which I distinguished by the name of CAPE BUNNY.

At noon, we had reached the longitude of  $94^{\circ} 43' 15''$ , the latitude, by observation, being  $74^{\circ} 20' 52''$ , when we found that the land which then formed the western extreme on this side was a second island, which, after Rear-Admiral Edward Griffith, I called GRIFFITH ISLAND. Immediately opposite to this, upon Cornwallis Island, is a conspicuous headland, which, at some distance, has the appearance of being detached, but

which, on a nearer approach, was found to be joined by a piece of low land. To this I gave the name of CAPE MARTYR, after a much esteemed friend. At two P.M., having reached the longitude of  $95^{\circ} 07'$ , we came to some heavy and extensive floes of ice, which obliged us to tack, there being no passage between them. We beat to the northward during the whole of the afternoon, with a fresh breeze from that quarter, in the hope of finding a narrow channel under the lee of Griffith Island. In this expectation we were, however, disappointed, for at eight P.M. we were near enough to perceive not only that the ice was quite close to the shore, but that it appeared not to have been detached from it at all during this season. We, therefore, bore up, and ran again to the southward, where the sea by this time had become rather more clear along the lee margin of a large field of ice extending far to the westward. The ice in this neighbourhood was covered with innumerable "hummocks," such as I have before endeavoured to describe as occurring

in the southern part of Prince Regent's Inlet, and the floes were from seven to ten feet in thickness. It may here be remarked, as a fact not altogether unworthy of notice, that, from the time of our entering Sir James Lancaster's Sound, till we had passed the meridian of  $92^{\circ}$ , near which the northern shore of Barrow's Strait ceases to be continuous, the wind, as is commonly the case in inlets of this kind, had invariably blown in a direction nearly due east or due west, being that of the shores of the strait. When, therefore, we experienced to-day, for the first time, a fresh breeze blowing steadily from the northward, or directly off the land, we were willing, though perhaps without much reason, to construe this circumstance into an additional indication of the shores near which we were now sailing being altogether composed of islands, down the channels between which the wind blew, and that therefore no obstruction from continued land was any longer to be apprehended.

After various unsuccessful attempts to get

through the ice which now lay in our way, we were at length so fortunate as to accomplish this object by "boring" through several heavy "streams," which occasioned the ships to receive many severe shocks; and, at half an hour before midnight, we were enabled to pursue our course, through "sailing ice," to the westward.

In this manner we had sailed between fifteen or twenty miles in a tolerably clear sea, when, on the fog clearing away, at seven A.M., we found by the bearings of the sun, that the wind had not deceived us, and that we had made nearly all westing during the night's run. We also saw land to the northward of us, at the distance of nine or ten miles, appearing like an island, which it afterwards proved to be, and which I named after VISCOUNT LOWTHER, one of the lords of his Majesty's treasury. Shortly after, we also saw land to the south, so that we could not but consider ourselves fortunate in having steered so directly in the proper course for sailing in this channel during the continuance of the foggy wea-

ther. The land to the southward was high and bold, being terminated to the eastward by a bluff headland, which I named after MR. WALKER, of the Hydrographical Office, at the Admiralty. Immediately at the back of Cape Walker, or to the southward of it, the loom of land was distinctly visible, but, from the state of the weather, we could not ascertain its extent. We here obtained soundings in sixty-three fathoms, on a bottom of sand and small stones, with some pieces of coral.

To a low sandy-looking island, I gave the name of YOUNG'S ISLAND, and it now became evident that all the land around us consisted of islands, and the comparative shoalness of the water made great caution necessary in proceeding, surrounded as we were by both land and ice in almost every direction. In the course of the evening, more land came in sight to the northward; but the distance was at this time too great to enable us to distinguish its situation and extent.

Early on the following morning, Lieutenant Beechey discovered from the crow's-

nest, a second low island, resembling Young's Island in size and appearance, and lying between three and four leagues to the northward of it. I gave it the name of **DAVY ISLAND**, after Sir Humphry Davy, now President of the Royal Society. The nearest land which we had seen to the northward, on the preceding evening, proved to be another island, four or five miles long from east to west, which I distinguished by the name of **GARRETT ISLAND**. The land to the northward of Garrett Island was found to be another island of considerable extent, having, towards its eastern end, a remarkable peaked hillock, very conspicuous when seen from the southward. I named this **BATHURST ISLAND**, in honour of the Earl of Bathurst, one of His Majesty's principal secretaries of state; and a bay near its south eastern point, was called **BEDFORD BAY**.

We had seen no whales nor narwhals since leaving Cape Riley on the morning of the 23d; and it was now remarked, not without some degree of unpleasant feeling,

that not a single bird, nor any other living creature, had for the whole of this day made its appearance. It was, however, encouraging to find, while advancing to the westward, as fast as an unfavourable wind would permit, that, although the sea beyond us was for the most part covered with a compact and undivided body of ice, yet that a channel of sufficient breadth was still left open for us between it and the shore, under the lee of Bathurst Island. The ice here consisted almost entirely of fields, the limits of which were not visible from the mast-head, and which were covered with the same kind of hummocks as before described. The westernmost land now in sight was a cape, which I named after VICE ADMIRAL SIR GEORGE COCKBURN, one of the Lord's Commissioners of the Admiralty. This cape appeared, during the day, to be situated on a small island detached from Bathurst Island; but, on approaching it towards evening, we found them to be connected by a low sandy beach or isthmus, over which some high and distant hills were



seen to the north-westward. An opening in the land near this beach, and which had very much the appearance of a river, with some rocky islets at its mouth, was named ALLISON INLET, after the Greenland master of the Hecla. The water became very light coloured as we stood in towards this part of the coast, and we tacked in twenty-six fathoms, at six or seven miles' distance from it, continuing to beat to the westward.

We gained so little ground during the night, and in the early part of the following morning, notwithstanding the smoothness of the water, and a fine working breeze, that I am confident there must have been a tide setting against us off Cape Cockburn; but, as it was of material importance to get round this headland, before a change of wind should set the ice in upon the shore, I did not deem it proper to heave-to, for the purpose of trying the direction in which it was running. After three A.M., the ships began to make much better way, so that I considered it likely that the tide had slackened between three and four o'clock; and

if so, the time of slack water at this place would be, on full and change days, a few minutes after eleven : and as this time, with the proper correction applied, seems to correspond pretty accurately with that of high water at the other places, to the eastward and westward, where we had an opportunity of observing it, we could scarcely doubt that it was the flood-tide which had now been setting against us from the westward. From these circumstances, I have ventured to mark the time of high water, and the direction of the flood-tide, upon the chart, both being confessedly subject to correction by future navigators. Several seals were here seen upon the ice, and a single bird with a long bill, resembling a curlew.

While beating round Cape Cockburn, we observed that the land to the westward of it sweeps round into a large bay which I named after Vice-Admiral SIR GRAHAM MOORE.

The weather was at this time remarkably serene and clear, and, although we saw a

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line of ice to the southward of us, lying in a direction nearly east and west, or parallel to the course on which we were steering, and some more land appeared to the westward, yet the space of open water was still so broad, and the prospect from the mast-head, upon the whole, so flattering, that I thought the chances of our separation had now become greater than before; and I therefore considered it right to furnish Lieutenant Liddon with fresh instructions, and to appoint some new place of rendezvous, in case of unavoidable separation from the Hecla. A boat was, therefore, dropped on board the Griper for that purpose, without her heaving-to; and the same opportunity was taken to obtain a comparison between our chronometers. About seven P.M., we were sufficiently near to the western land, to ascertain that it was part of another island, which I named after Vice-Admiral SIR THOMAS BYAM MARTIN, Comptroller of His Majesty's Navy; and by eight o'clock we perceived that the body of ice to the southward, along which we had been sailing,

took a turn to the north, and stretched quite in to the shore, near a low point, off which a great quantity of heavy ice was aground. At ten o'clock, after having had a clear view of the ice and of the land about sunset, and finding that there was at present no passage to the westward, we hauled off to the south-east, in the hope of finding some opening in the ice to the southward, by which we might get round in the desired direction. We were encouraged in this hope by a dark "water-sky" to the southward; but after running along the ice till half-past eleven, without perceiving any opening, we again bore-up to return towards the island. There was, in this neighbourhood, a great deal of that particular kind of ice, called by the sailors "dirty ice," on the surface of which were strewed sand, stones, and, in some instances, moss; ice of this kind must, of course, at one time or other, have been in close contact with the land. On one of these pieces, towards which the Hecla was standing, a little sea was observed breaking; and, on a

nearer approach, it so exactly resembled a rock above water, that I thought it prudent to heave all the sails aback, till a boat had been sent to examine it. We saw several fulmar petrels, and one or two seals, in the course of this day's run.

As we approached the south point of the island, to which I gave the name of CAPE GILLMAN, we found the ice in the same position as before; and I therefore hauled to the north-east, with the intention of attempting a passage round the north side of the island. In standing in, towards Cape Gillman, our soundings gradually decreased from eighty to twenty-three fathoms, the latter depth occurring at the distance of two to four miles from the shore. At ten A.M., the wind being very light from the S.S.E., I despatched Captain Sabine and Mr. Ross, accompanied by Messrs. Edwards and Fisher, to the eastern point of the island, which we were about to round in the ships, in order to make the necessary observations, and to examine the natural productions of the shore. Our

latitude at noon was  $75^{\circ} 03' 12''$ , long.  $103^{\circ} 44' 37''$ , and the depth of water forty fathoms. A thick fog came on in the afternoon, soon after the boat had landed, which made me apprehensive that she would not easily find her way back to the ship. We continued to stand off-and-on by the lead, which seems a very safe guide on this coast, firing guns frequently, till five P.M., when we were not sorry to hear our signals answered by musquets from the boat. The gentlemen reported, on their return, that they had landed on a sandy beach, near the east point of the island, which they found to be more productive, and altogether more interesting than any other part of the shores of the Polar regions which we had yet visited. The remains of Esquimaux habitations were found in four different places. Six of these, which Captain Sabine had an opportunity of examining, and which are situated on a level sandy bank, at the side of a small ravine near the sea, are described by him as consisting of stones rudely placed in a circular, or rather an elliptical, form.

They were from seven to ten feet in diameter; the broad, flat sides of the stones standing vertically, and the whole structure, if such it may be called, being exactly similar to that of the summer huts of the Esquimaux, which we had seen at Hare Island, the preceding year. Attached to each of them was a smaller circle, generally four or five feet in diameter, which had probably been the fire-place. The small circles were placed indifferently, as to their direction from the huts to which they belonged; and from the moss and sand which covered some of the lower stones, particularly those which composed the flooring of the huts, the whole encampment appeared to have been deserted for several years. Very recent traces of the rein-deer and musk-ox were seen in many places; and a head of the latter, with several rein-deers' horns, was brought on board. A few patches of snow remained in sheltered situations; the ravines, however, which were numerous, bore the signs of recent and considerable floods, and their bottoms were swampy, and covered with very luxuriant

moss, and other vegetation, the character of which differed very little from that of the land at the bottom of Possession Bay.

The latitude of the place of observation was  $75^{\circ} 09' 23''$ , and the longitude, by chronometers,  $103^{\circ} 44' 37''$ . The dip of the magnetic needle was  $88^{\circ} 25' 58''$ , and the variation was now found to have changed from  $128^{\circ} 58'$  west, in the longitude of  $91^{\circ} 48'$ , where our last observations on shore had been made, to  $165^{\circ} 50' 09''$  east, at our present station; so that we had, in sailing over the space included between those two meridians, crossed immediately to the northward of the magnetic pole, and had undoubtedly passed over one of those spots upon the globe, where the needle would have been found to vary  $180^{\circ}$ , or in other words, where its north pole would have pointed due south. This spot would, in all probability, at this time be somewhere not far from the meridian of  $100^{\circ}$  west of Greenwich. It would undoubtedly have been extremely interesting to obtain such an observation, and in any other than the very precarious navigation in which we



were now engaged, I should have felt it my duty to devote a certain time to this particular purpose; but, under present circumstances, it was impossible for me to regret the cause which alone had prevented it, especially as the importance to science of this observation was not sufficient to compensate the delay which the search after such a spot would necessarily have occasioned, and which could hardly be justified at a moment when we were making, and for two or three days continued to make, a rapid and unobstructed progress towards the accomplishment of our principal object.

The wind became very light from the eastward, and the weather continued so foggy that nothing could be done during the night but to stand off-and-on, by the soundings, between the ice and the land; as we had no other means of knowing the direction in which we were sailing, than by the decrease in the depth of water on one tack, and by making the ice on the other. The fog froze hard upon the rigging, which always makes the working of the ship a

very laborious task, the size of the running rigging being sometimes thus increased to three times its proper diameter. At four A.M. on the 29th, the current was tried by mooring a boat to the bottom, but none could be detected. About this time the fog partially cleared away for a little while, when we observed that the ice was more open off Cape Gillman, than when we had before attempted to pass in that direction. At five o'clock, therefore, we made sail for the point, with a light easterly breeze; but at seven, when we had proceeded only two or three miles, the fog came on again as thick as before: fortunately, however, we had previously been enabled to take notice of several pieces of ice, by steering for each of which in succession we came to the edge of a floe, along which our course was to be pursued to the westward. As long as we had this guidance, we advanced with great confidence; but as soon as we came to the end of the floe, which then turned off to the southward, the circumstances under which we were sailing were, perhaps, such as have

never occurred since the early days of navigation. To the northward was the land; the ice, as we supposed, to the southward; the compasses useless; and the sun completely obscured by a fog, so thick that the Griper could only now and then be seen at a cable's length astern. We had literally, therefore, no mode of regulating our course but by once more trusting to the steadiness of the wind; and it was not a little amusing, as well as novel, to see the quarter-master conning the ship by looking at the dog-vane. Under all these circumstances, it was necessary to run under easy sail, the breeze having gradually freshened up from the eastward. Our soundings were at this time extremely regular, being from forty-one to forty-five fathoms, on a bottom of soft mud. At ten o'clock the weather became clear enough to allow us to see our way through a narrow part in a patch of ice which lay ahead, and beyond which there was some appearance of a "water-sky." There is, however, nothing more deceitful than this appearance during a fog,

which, by the same optical illusion whereby all other objects become magnified, causes every small "hole" of clear water to appear like a considerable extent of open and navigable sea. We continued running till eleven P.M., when the fog came on again, making the night so dark that it was no longer possible to proceed in any tolerable security; I therefore directed the ships to be made fast to a floe, having sailed, by our account, twelve miles, the depth of water being forty-four fathoms.

The fog continued till five A.M. on the 30th, when it cleared sufficiently to give us a sight of the land, and of the heavy ice aground off Cape Gillman, the latter being five or six miles to the northward of us, in which situation we had deepened our soundings to fifty fathoms during the night's drift. The state of the ice, and of the weather, not permitting us to move, Captain Sabine, being desirous of making some use of this unavoidable detention, and considering it at all times important to confirm magnetic observations obtained on shore in these high

latitudes, by others taken upon the ice, employed himself in repeating his series of observations on the dip of the needle, which he found to be  $88^{\circ} 29'.12$ , differing only three minutes and a half from that obtained on shore on the 28th, a few leagues to the northward and eastward of our present station. The floe to which the ships were now secured was not more than six or seven feet in thickness, and was covered with innumerable pools of water, most of which had communication with the sea, as we could with difficulty obtain any that was sufficiently fresh for drinking. In many parts indeed, there were large holes through which the sea was visible, and the under surface was much decayed and honey-combed, being nearly in that state which the Greenland sailors call "rotten." Some of the officers amused themselves in skating on the pools, all of which were hard frozen on the surface; and the men in sliding, foot-ball, and other games. By putting some drag-nets and oyster-dredges overboard, and suffering them to drag along

the ground as the ship drifted with the ice, we obtained a few specimens of marine insects.

In the evening a quantity of loose ice drifted down near the ships; and, to avoid being beset, we made sail towards the island, our soundings being from thirty-five to seventeen fathoms: we were soon under the necessity of again anchoring to a floe, till the weather should clear, being in twenty-one fathoms, at the distance of three miles from the land.

The weather cleared a little at intervals, but not enough to enable us to proceed till nine A.M. on the 31st, when we cast off from the ice, with a very light air from the northward. We occasionally caught a glimpse of the land through the heavy fog-banks, with which the horizon was covered, which was sufficient to give us an idea of the true direction in which we ought to steer. Soon after noon we were once more enveloped in a fog, which, however, was not so thick as to prevent our having recourse to a new expedient for steering the

ships, which circumstances at the time naturally suggested to our minds. Before the fog re-commenced, and while we were sailing on the course which by the bearings of the land we knew to be the right one, the Griper was exactly astern of the Hecla, at the distance of about a quarter of a mile. The weather being fortunately not so thick as to prevent our still seeing her at that distance, the quarter-master was directed to stand aft, near the taffrail, and to keep her constantly astern of us, by which means we contrived to steer a tolerable straight course to the westward. The Griper, on the other hand, naturally kept the Hecla right a-head; and thus, however ridiculous it may appear, it is, nevertheless, true, that we steered one ship entirely by the other for a distance of ten miles out of sixteen and a half, which we sailed between one and eleven P.M. It then became rather dark, and the water having shoaled from fifty to twenty-three fathoms somewhat more suddenly than usual, I did not consider it prudent to run any farther till it

should become light and clear enough to see around us, as it was probable that we were approaching land of which we had no knowledge. We therefore hauled our wind to the S.S.E., on the larboard tack, and at midnight had deepened the water to fifty-two fathoms, being among rather close "sailing ice."

The wind died away on the morning of the 1st of September, and the fog was succeeded by snow and sleet, which still rendered the atmosphere extremely thick. At a quarter before four A.M., I was informed by the officer of the watch that a breeze had sprung up, and that there was very little ice near the ships. Anxious to take advantage of these favourable circumstances, I directed all sail to be made to the westward; there was no difficulty in complying with the first part of this order, but to ascertain which way the wind was blowing, and to which quarter of the horizon the ship's head was to be directed, was a matter of no such easy accomplishment; nor could we devise any means of determining this



question till five o'clock, when we obtained a sight of the sun through the fog, and were thus enabled to shape our course, the wind being moderate from the northward.

In standing to the southward, we had gradually deepened the water to one hundred and five fathoms, and our soundings now as gradually decreased as we stood to the westward, giving us reason to believe, as on the preceding night, and from the experience we had acquired of the navigation among these islands, that we were approaching land in that direction. In this supposition we were not deceived, for, at half-past eight, the fog having suddenly cleared up, we found ourselves within four or five miles of a low point of land which was named after MR. GRIFFITHS, and which, being at the distance of six or seven leagues from Byam Martin Island, we considered to be part of another of the same group.

At one A.M. on the 2d, a star was seen, being the first that had been visible to us for more than two months. The fog came

on again this morning, which, together with the lightness of the wind preventing the ships getting sufficient way to keep them under command, occasioned them some of the heaviest blows which they had yet received during the voyage, although the ice was generally so loose and broken as to have allowed an easy passage with a moderate and leading wind. As none of the pieces near us were large enough for securing the ships in the usual manner, we could only heave-to, to windward of one of the heaviest masses, and allow the ship to drive with it till some favourable change should take place. After lying for an hour in this inactive and helpless situation, we again made sail, the weather being rather more clear, which discovered to us that the main body of the ice was about three miles distant from the land, the intermediate space being very thickly covered with loose pieces, through which our passage was to be sought. As we stood in for the land in the forenoon, we decreased our soundings uniformly from twenty-seven to eleven fathoms at one and

a half or two miles from the beach, and a boat, which I sent to sound in-shore, found the water to shoal very regularly to six fathoms at about half a mile. At this distance from the beach, there were many large masses of ice aground; and it was here that the method so often resorted to in the subsequent part of the voyage, of placing the ships between these masses and the land, in case of the ice closing suddenly upon us, first suggested itself to our minds.

As we were making no way to the westward, I directed two boats to be prepared from each ship, for the purpose of making the usual observations on shore, as well as to endeavour to kill deer; and, at one P.M., I left the ship, accompanied by a large party of officers and men, and was soon after joined by the Griper's boats. We landed on a very flat sandy beach, which did not allow the boats to come nearer than their own length, and we were immediately struck with the general resemblance in the character of this island to that of Byam Martin Island, which we had lately visited.

The basis of this land is sandstone, but we met with limestone also, occurring in loose pieces on the surface, and several lumps of coal were brought in by the parties who had traversed the island in different directions. Our sportsmen were by no means successful, having seen only two deer, which were too wild to allow them to get near them. The dung of these animals, however, as well as that of the musk-ox, was very abundant, especially in those places where the moss was most luxuriant; every here and there we came to a spot of this kind, consisting of one or two acres of ground, covered with a rich vegetation, and which was evidently the feeding-place of those animals, there being quantities of their hair and wool lying scattered about. Several heads of the musk-ox were picked up, and one of the Hecla's seamen brought to the boat a narwhal's horn, which he found on a hill more than a mile from the sea, and which must have been carried thither by Esquimaux or by bears: three or four brace of ptarmigan were killed, and these

were the only supply of this kind which we obtained. Serjeant Martin of the artillery, and Captain Sabine's servant, brought down to the beach several pieces of a large fir-tree, which they found nearly buried in the sand, at the distance of three or four hundred yards from the present high-water mark, and not less than thirty feet above the level of the sea. We found no indication of this part of the island having been inhabited, unless the narwhal's horn, above alluded to, be considered as such.

The latitude of the place of observation here, which was within a hundred yards of the beach, was  $74^{\circ} 58'$ , the longitude, by chronometers,  $107^{\circ} 03' 31''.7$ , and the variation of the magnetic needle  $151^{\circ} 30' 03''$  easterly. At the top of a hill, immediately above the place of observation, and about a mile from the sea, a bottle was buried, containing the usual information. A mound of sand and stones was raised over it, and a boarding-pike fixed in the middle. We returned on board at half-past eight, and found that Lieutenant Beechey had, in the

mean time, taken a number of useful soundings, and made other hydrographical remarks for carrying on the survey of the coast.

The wind continued light and variable till half-past eight A.M. on the 3d, when a breeze from the northward once more enabled us to make some progress. I was the more anxious to do so, from having perceived that the main ice had, for the last twenty-four hours, been gradually, though slowly, closing on the shore, thereby contracting the scarcely navigable channel in which we were sailing. The land which formed our western extreme was a low point, five miles to the westward of our place of observation the preceding day, and the ice had already approached this point so much, that there was considerable doubt whether any passage could be found between them. As we neared the point, we shoaled the water rather quickly, though regularly, from thirty to seven fathoms; but, by keeping a little farther out, which fortunately the ice just at that time allowed

us to do, we avoided getting into shoaler water, and immediately after rounding the point, we increased our soundings to sixteen and seventeen fathoms. We had scarcely cleared the point, however, when the wind failed us, and the boats were immediately sent a-head to tow, but a breeze springing up shortly after from the westward, obliged us to have recourse to another method of gaining ground, which we had not hitherto practised: this was by using small anchors and whale-lines as warps, by which means we made great progress, till, at forty minutes after noon, we were favoured by a fresh breeze, which soon took us into an open space of clear water to the northward and westward. While we thus employed on board, Mr. Ross, after whom I named this point, had been despatched in a boat to sound in-shore near it, where there were a great many large masses of ice aground, in order that we might be prepared to place the ships in the most advantageous position, should the ice unexpectedly close upon the shore.

Mr. Ross reported, that he had found good depth of water in-shore, the ice being aground in five to seven fathoms, after which the water shoaled gradually towards the land. A little to the westward of Point Ross, there was a barrier of this kind of ice, composed of heavy masses firmly fixed to the ground at nearly regular intervals for about a mile, in a direction parallel to the beach. At right angles to this, a second tier projected, of the same kind of ice, extending to the shore, so that the two together formed a most complete harbour, within which, I believe, a ship might have been placed in case of necessity, without much danger from the pressure of the external floes of ice. It was natural for us to keep in view the possibility of our being obliged to pass the ensuing winter in such a harbour; and, it must be confessed, that the apparent practicability of finding such tolerable security for the ships as this artificial harbour afforded, should we fail in discovering a more safe and regular anchorage, added not a little to the confidence,



with which our operations were carried on during the remainder of the present season.

The land immediately to the north-westward of Point Ross forms a considerable bay, named after MR. SKENE, off which there was a large space of clear water, where we had to beat to the northward during the afternoon, as the ice lay in that direction. In standing off-and-on, we shoaled the water in one place very suddenly from nineteen to eleven fathoms, at the distance of one mile from the beach. Having tacked, I sent Mr. Bushnan to sound in-shore, where a shoal was discovered three quarters of a mile from the land, having three and four fathoms upon it, and within it from eight to thirteen fathoms. The sun-set of this evening was extremely beautiful, the weather being clear and frosty, and the sky without a cloud. The moon rising soon after, afforded a spectacle no less pleasing, and far more sublime.

Having weathered all the ice round which

we had to sail, in order to proceed to the westward, we were under the necessity of lying-to, off Skene Bay, for some hours, the weather having become very squally and unsettled, with occasional fog, and the night not being sufficiently light to ascertain whether there was a passage between the ice and a point of land which forms the western extreme of the bay. On its eastern side an inlet, two miles wide at the entrance, was discovered, and named after MR. BEVERLY, and at the bottom of this we did not see the land all round. At half-past two A.M., we made sail to the westward, the Griper having been directed by signal to extend her distance; a precaution which was always adopted in cases where shoal water was to be apprehended, in order to avoid the risk of both ships grounding at the same time. As we approached the point, the soundings decreased gradually from thirty to seven fathoms, in which depth I tacked, and despatched Mr. Palmer in a boat to sound round the point, to which I gave the name of CAPE PALMER, after

the gentleman intrusted with this service. Having been informed by signal from the boat, that no less than six fathoms' water had been found, we again tacked, and soon after rounded the point in that depth, at the distance of three quarters of a mile from a low sandy beach. We then ran several miles along the shore without much obstruction, till the wind, backing to the north-west, obliged us to make several tacks between the ice and the land, the navigable channel being at this time between three and four miles wide. At noon we observed, in latitude  $74^{\circ} 54' 49''$ , the longitude, by chronometers, being  $108^{\circ} 31' 44''$ , at which time we were off a low sandy island, which was named after MR. DEALY, and which lies near the entrance into a large inlet, to which the name of BRIDPORT INLET was given, from regard to the memory of the late Lord Bridport. This inlet runs a considerable distance to the northward, and seemed to afford good shelter for ships; but, as we had no opportunity of examining it in our boats, I am unable

to state any further particulars respecting it. The land to the westward of it, of which the most conspicuous part is a remarkable bluff headland, is much higher than that about Skene Bay; and we ceased to obtain any soundings with the hand-leads after we had passed the entrance of Bridport Inlet. At a quarter past nine P.M., we had the satisfaction of crossing the meridian of  $110^{\circ}$  west from Greenwich, in the latitude of  $74^{\circ} 44' 20''$ ; by which His Majesty's ships under my orders became entitled to the sum of five thousand pounds, being the reward offered by the King's order in council, grounded on a late Act of Parliament, to such of His Majesty's subjects as might succeed in penetrating thus far to the westward within the Arctic Circle. In order to commemorate the success which had hitherto attended our exertions, the bluff head-land, which we had just passed, was subsequently called by the men BOUNTY CAPE; by which name I have, therefore, distinguished it on the chart.

As we stood to the westward, we found

the extreme of the land in that direction to be a low point, which was named after SAMUEL HEARNE, the well-known American traveller, and to the north-eastward of which is a bay of considerable extent, which was perfectly free from ice. We continued our course towards Cape Hearne till midnight, when the weather being too dark to run any longer with safety, the ships were hove-to with their heads to the eastward. One black whale was seen, in the course of this day's navigation, off Bridport Inlet; and some flocks of snow-buntings were flying about the ship at night.

At a quarter before three A. M., on the 5th, we tacked, and stood to the westward, with the hope of getting past Cape Hearne, the wind being moderate from the northward, and weather thick with snow; and shortly after we shoaled the water quickly from twenty-five to thirteen, and then to nine, fathoms. We tacked in the latter depth, believing that we were approaching a shoal, especially as we were near some heavy ice, which, having a tide-mark upon

it, appeared to be aground. We afterwards found, however, that we had at this time been actually within three or four hundred yards of Cape Hearne, which is so surrounded by heavy ice at a sufficient distance from the shore, that it would perhaps be difficult to run the ship aground upon it. The error into which we were here led, as to our distance from the beach, arose from the extreme difficulty of distinguishing, even in broad day-light, between the ice and the land, when the latter is low and shelving, and completely covered with snow; by the uniform whiteness of which, they are so completely blended, as to deceive the best eye. Indeed, I know no circumstance in the navigation of these seas which renders more necessary a vigilant look-out, and a careful attention to the hand-leads, than the deception to which I here allude.

Having stood again to the westward, to take a nearer view of the ice, we perceived that it lay quite close in with Cape Hearne, notwithstanding the fresh northerly wind which, for the last thirty-six hours, had

been blowing from the shore, and which had drifted the ice some distance to the southward, in every part of the coast along which we had lately been sailing. This circumstance struck us very forcibly at the time, as an extraordinary one; and it was a general remark among us, that the ice must either be aground in shoal-water, or that it butted against something to the southward, which prevented its moving in that direction. Appearances being thus discouraging, nothing remained to be done but to stand off-and-on near the point, and carefully to watch for any opening that might occur.

After divine service had been performed, I assembled the officers, seamen, and marines of the *Hecla*, and announced to them officially, that their exertions had so far been crowned with success, as to entitle them to the first prize in the scale of rewards, granted by His Majesty's Order in Council above mentioned. I took this opportunity of impressing upon the minds of the men the necessity of the most strenuous exertions during the short remainder of the

present season; assuring them that, if we could penetrate a few degrees farther to the westward, before the ships were laid up for the winter, I had little doubt of our accomplishing the object of our enterprise before the close of the next season. I also addressed a letter to Lieutenant Liddon, to the same effect, and directed a small addition to be made to the usual allowance of meat, and some beer to be served, as a Sunday's dinner, on this occasion.

The wind increasing to a fresh gale from the northward in the afternoon, and the ice still continuing to oppose an impenetrable barrier to our further progress, I determined to beat up to the northern shore of the bay, and, if a tolerable roadsted could be found, to drop our anchors till some change should take place. This was accordingly done at three P.M., in seven fathoms' water, the bottom being excellent holding-ground, composed of mud and sand, from which the lead could with difficulty be extricated. When we veered to half a cable, we had ten fathoms' water under the Hecla's stern,



our distance from the northern shore being about a mile and a half. This roadsted, which I called the BAY OF THE HECLA AND GRIPER, affords very secure shelter with the wind from E.N.E., round by north, to S.W., and found it more free from ice than any other part of the southern coast of the island.

I had great reason to be satisfied with our having anchored the ships, as the wind shortly after blew a hard gale from the northward. In the evening I sent Captain Sabine and Messrs. Edwards and Nias on shore to examine the country, and to collect specimens of its natural productions; they returned at ten P.M., having landed on a low point a little to the westward of the ships, which they found to be a very barren and unproductive spot; several flocks of ducks were seen, and some glaucous gulls and tern; the dung and foot-tracks of the deer and musk-ox were also observed in many places; and some addition was made by our gentlemen to our collection of marine insects. The rocks are composed en-

tirely of sandstone, but a few small pieces of granite, flint and coal, were also among the specimens brought on board. This island, on which our boats had now landed for the second time, and which is much the largest of the group we had lately discovered, I honoured with the name of MELVILLE ISLAND, after Viscount Melville, the First Lord of the Admiralty.

The Bay of the Hecla and Griper was the first spot where we had dropped anchor since leaving the coast of Norfolk; a circumstance which was rendered the more striking to us at the moment, as it appeared to mark, in a very decided manner, the completion of one stage of our voyage. The ensigns and pendants were hoisted as soon as we had anchored, and it created in us no ordinary feelings of pleasure to see the British flag waving, for the first time, in these regions, which had hitherto been considered beyond the limits of the habitable part of the world.

## CHAPTER IV.

*Further Examination of Melville Island—Continuation of our Progress to the Westward—Long detention by the Ice—Party sent on shore to hunt Deer and Musk-Oxen—return in three days, after losing their way—Anxiety on their Account—proceed to the Westward, till finally stopped by the Ice—in returning to the Eastward the Griper forced on the Beach by the Ice—Search for, and Discovery of, a winter Harbour on Melville Island—Operations for securing the Ships in their winter Quarters.*

As the wind still continued to blow strong from the northward on the morning of the 6th, without any appearance of opening a passage for us past Cape Hearne, I took the opportunity of sending all our boats from both ships at eight A.M., to bring on board a quantity of moss-peat which our

gentlemen reported having found near a small lake at no great distance from the sea, and which I directed to be substituted for part of our usual allowance of coals. Captain Sabine also went on shore to make the requisite observations, and several of the officers of both ships to sport, and to collect specimens of natural history. The boats rowed round the point on which they had landed the preceding evening, and which Captain Sabine now selected as the most convenient place of observation; and discovered just beyond it to the northward, a small harbour, having a bar at its entrance, upon which Mr. Fife, the Greenland master of the Griper, after whom the harbour was named, found ten feet water at nearly low tide.

The latitude of the point is  $74^{\circ} 46' 56''$ , and its longitude, by our chronometers,  $110^{\circ} 33' 59''$ . The dip of the magnetic needle was found to be  $88^{\circ} 29'.91$ , and the variation  $126^{\circ} 17' 18''$  easterly. Near the point where the observations were made, a bottle was buried, containing a paper as

usual, and a pile of stones raised over it. The weather was this day unusually cold to the feelings, to a greater degree even than might have been expected from the indication of the thermometer, which, for the first time, had been as low as  $25^{\circ}$ .

The wind beginning to moderate soon after noon, and there being at length some appearance of motion in the ice near Cape Hearne, the boats were immediately recalled from the shore, and returned at two P.M., bringing some peat, which was found to burn tolerably, but a smaller quantity than I had hoped to procure, owing to a misunderstanding as to the distance at which it was to be found from the sea. At half-past two, as soon as the ship's company had dined, we began to heave at the cable, but so excellent is the holding-ground, that it required all the purchase as well as strength we could apply, to start the anchor by half-past four. We then made sail for Cape Hearne, which we rounded at six o'clock, having no soundings with from seventeen to twenty fathoms of line, at the

distance of a mile and a quarter from the point.

I was beginning once more to indulge in those flattering hopes, of which often-repeated disappointments cannot altogether deprive us, when I perceived, from the crow's-nest, a compact body of ice, extending completely in to the shore near the point which formed the western extreme. We ran sufficiently close, to be assured that no passage to the westward could at present be effected, the floes being literally upon the beach, and not a drop of clear water being visible beyond them. I then ordered the ships to be made fast to a floe, being in eighty fathoms' water, at the distance of four or five miles from the beach. The season had now so far advanced, as to make it absolutely necessary to secure the ships every night from ten till two o'clock, the weather being too dark during that interval to allow of our keeping under-way in such a navigation as this, deprived as we were of the use of compasses. But, however anxious the hours of darkness must necessarily be

under such circumstances, the experience of the former voyage had given us every reason to believe, that the month of September would prove the most valuable period of the year for prosecuting our discoveries in these regions, on account of the sea being more clear from ice at this time than at any other. Feeling, therefore, as I did, a strong conviction, that the ultimate accomplishment of our object must depend, in a great measure, on the further progress we should make this season, I determined to extend our operations to the latest possible period.

On the morning of the 8th, there being no prospect of any immediate alteration in the ice, I directed the boats to be sent on shore from both ships, to endeavour to procure some game, as well as to examine the productions of this part of the island. On going to the mast-head, shortly after the boats had been despatched, I found that the bight of ice in which the ships were lying was not one floe, but formed by the close junction of two, so that our situation was by no means so secure as I had supposed; for

this bight was so far from being a protection to us, in case of ice driving on shore, that it would probably be the means of "nipping" us between the floes which formed it. I therefore determined on immediately removing the ships in-shore, and went in a boat to look out for a place for that purpose, there being no alternative between this and our returning some distance to the eastward, into the larger space of clear water which we had there left behind us. I found that a heavy piece of ice aground in twelve fathoms, at the distance of three hundred yards from the beach, would suit our purpose for the Hecla, and another, in ten fathoms, still nearer in-shore, was selected for the Griper. These masses were from twenty to thirty feet above the sea, and each about the length of the respective ships. The beach in this neighbourhood was so lined with ice of this kind, that it would not have been easy for a ship to have gone on shore in any part, there being generally from four to seven fathoms on the outside of it, while the inner part of each mass was lite-



rally upon the beach at low water. Some of the detached masses, at a little distance from the shore, must have accumulated very considerably since they grounded, or else must have been forced up into their present situations by an enormous pressure from without; as some of those now aground in four or five fathoms would have drawn at least ten, if set afloat again.

At four P.M., the weather being quite calm, the ships were towed in-shore by the boats, and made fast in the places selected for them. Our parties from the shore returned with a white hare, several fine ptarmigans, a few snow-buntings, some skulls of the musk-ox, and several rein-deers' horns; but they were not fortunate enough to meet with either of the two latter animals. The island is here, as in the other parts on which we had landed, principally composed of sandstone, of which some spherical nodules, one of them as large as a nine-pounder shot, were brought on board. Several lumps of coal, which was here more abundant than we had yet found it, were also

picked up, and were found to burn with a clear lively flame, like cannel coal, but without splitting and crackling in the same manner.

Impatient and anxious as we were to make the most of the short remainder of the present season, our mortification will easily be imagined at perceiving on the morning of the 9th, not only that the ice was as close as ever to the westward, but that the floes in our immediate neighbourhood were sensibly approaching the shore. As there was no chance, therefore, of our being enabled to move, I sent a party on shore at day-light to collect what coal they could find, and in the course of the day nearly two-thirds of a bushel, being about equal to the Hecla's daily expenditure, was brought on board. Our sportsmen, who were out for several hours, could only procure us a hare, and a few ducks.

It was nearly calm on the 10th, with thick snowy weather, which prevented our seeing to any great distance round us. At five A.M., a floe coming from the westward,

ran against the berg, within which the Hecla was still secured, turning it round as on a pivot. This occurrence is not an uncommon one in Davis' Strait, with bergs of very large size, when the centre part of them only happens to be upon the ground. We were by this time so surrounded by ice that no clear water was to be seen, except the small pool in which we lay; and all that could be done, under such circumstances, was to watch the motion of the ice, and to be ready to shift the ship quickly round the berg, according as the floes, by setting one way or the other, might endanger her being "nipped." In the afternoon the ice slackened a little near us, when an attempt was made to get the Hecla into a more secure birth in-shore; but, after heaving a heavy strain occasionally for several hours, we could only succeed before dark in getting her into a small nook near the beach, in which, if no very violent pressure occurred, she might be tolerably secure during the night. A party returned in the evening from a shooting-excursion to the western cape, bringing with them only three

hares, and reporting that the sea was entirely covered with ice as far as they could see to the westward from the hills.

On the 11th, there was no alteration in the ice near the ships, and Mr. Bushnan, whom I despatched at day-light to the western cape, reported, on his return, that appearances were equally unpromising in that quarter. Mr. Dealy was fortunate enough to kill the first musk-ox that our sportsmen had yet been able to get near; but, as it was at the distance of eight or ten miles from the ships, our present situation, with regard to the ice, would not allow of my sending a party of men to bring it on board. A piece of the meat which Mr. Dealy brought with him was considered to taste tolerably well, but its smell was by no means tempting.

I must now mention an occurrence which had caused considerable apprehension in our minds for the two last days, and the result of which had nearly proved of very serious importance to the future welfare of the expedition. Early on the morning of the 11th, I received a note from Lieutenant Liddon,

acquainting me that, at day-light the preceding day, Mr. Fife, with a party of six men, had been despatched from the Griper, with the hope of surprising some rein-deer and musk-oxen, whose tracks had been seen in a ravine to the westward of the ships. As they had not yet returned, in compliance with the instructions given to Mr. Fife, and had only been supplied with a small quantity of provisions, it was natural to apprehend that they had lost their way in pursuit of game, more especially as the night had been too inclement for them to have voluntarily exposed themselves to it. I therefore recommended to Lieutenant Liddon to send a party in search of his people, and Messrs. Reid, Beverly, and Wakeham, who immediately volunteered their services on the occasion, were accordingly despatched for this purpose. Soon after their departure, however, it began to snow, which rendered the atmosphere so extremely thick, especially on the hills along which they had to travel, that this party also lost their way in spite of every precaution, but fortunately

got sight of our rockets after dark, by which they were directed to the ships, and returned at ten o'clock, almost exhausted with cold and fatigue, without any intelligence of the absentees.

At day-light on the following morning I sent Lieutenant Hoppner, with the Hecla's fore-royal-mast rigged as a flag-staff, which he erected on a conspicuous hill four or five miles inland, hoisting upon it a large ensign, which might be seen at a considerable distance in every direction. This expedient occurred to us as a more certain mode of directing our absentees towards the ships than that of sending out a number of parties, which I could not, in common prudence as well as humanity, permit to go to any great distance from the ships; but the snow fell so thick, and the drift was so great, during the whole of the 12th, that no advantage could at that time be expected from it, and another night came without the absent party appearing.

Our apprehensions on their account had by this time increased to a most painful de-

gree, and I therefore ordered four parties, under the command of careful officers, to be prepared to set out in search of them the following morning. These parties carried with them a number of pikes, having small flags attached to them, which they were directed to plant at regular intervals, and which were intended to answer the double purpose of guiding themselves on their return and of directing the absent party, should they meet with them, to the ships. For the latter purpose a bottle was fixed to each pike, containing the necessary directions for their guidance, and acquainting them that provisions would be found at the large flag-staff on the hill. Our searching parties left the ships soon after day-light, the wind still blowing hard from the westward, with incessant snow, and the thermometer at  $28^{\circ}$ . This weather continued without intermission during the day, and our apprehensions for the safety of our people were excited to a most alarming degree, when the sun began to descend behind the western hills for the third time since they had left the ship; I will

not, therefore, attempt to describe the joyful feelings we suddenly experienced, on the Griper's hoisting the signal appointed, to inform us that her men, or a part of them, were seen on their return. Soon after we observed seven persons coming along the beach from the eastward, who proved to be Mr. Nias and his party, with four out of the seven men belonging to the Griper. From the latter, consisting of the corporal of marines and three seamen, we learned that they had lost their way within a few hours after leaving the ship, and had wandered about without any thing to guide them till about ten o'clock on the following day, when they descried the large flag-staff at a great distance. At this time the whole party were together; but now unfortunately separated, in consequence of a difference of opinion respecting the flag-staff, which Mr. Fife mistook for a smaller one that had been erected some days before at a considerable distance to the eastward of our present situation; and with that impression, walked away in a contrary direction, accompanied by two



of his men. The other four, who had now returned, (of whom two were already much debilitated,) determined to make for the flag-staff. When they had walked some distance and were enabled to ascertain what it was, one of them endeavoured to overtake Mr. Fife, but was too much fatigued, and returned to his comrades. They halted during a part of the night, made a sort of hut of stones and turf to shelter them from the weather, and kindled a little fire with gunpowder and moss to warm their feet; they had never been in actual want of food, having lived upon raw grouse, of which they were enabled to obtain a quantity sufficient for their subsistence. In the morning they once more set forward towards the flag-staff, which they reached within three or four hours after Lieutenant Beechey had left some provisions on the spot; having eaten some bread, and drank a little rum and water, a mixture which they described as appearing to them perfectly tasteless and clammy, they renewed their journey towards the ships, and had not proceeded far when, notwithstanding the

snow which was constantly falling, they met with footsteps which directed them to Mr. Nias and his party, by whom they were conducted to the ships.

The account they gave us of Mr. Fife and his two companions led us to believe that we should find them, if still living, at a considerable distance to the westward, and some parties were just about to set out in that direction, when the trouble and anxiety which this mistake would have occasioned us were prevented by the arrival of another of the searching parties, with the information that Mr. Fife and the two men were on their way to the ships, being about five miles to the eastward. Some fresh hands were immediately sent to bring them in, and they arrived on board at ten P.M., after an absence of ninety-one hours, and having been exposed, during three nights, to the inclemency of the first wintry weather we had experienced. Almost the whole of this party were much exhausted by cold and fatigue, and several of them were severely frost-bitten in their toes and fingers; but,

by the skill and unremitting attention of our medical gentlemen, they were in a few days enabled to return to their duty.

Before midnight we had still greater reason than ever to be thankful for the opportune recovery of our people; for the wind increased to a hard gale about half-past eleven, at which time the thermometer had fallen to  $15^{\circ}$ ; making altogether so inclement a night, as it would have been impossible for them, in their already debilitated state, to have survived. In humble gratitude to God for this signal act of mercy, we distinguished the headland to the westward of the ships by the name of **CAPE PROVIDENCE**.

At 3 A. M. of Tuesday the 14th, the thermometer fell to  $9^{\circ}$ ; and from this time the commencement of winter may fairly be dated. On the following day we were abreast of Cape Providence, and observed another headland, still more high and bold in its appearance, which was called **CAPE HAY**.

We remarked now, for the first time, that a strong current, was setting to the west-

ward, directly against a fresh gale from that quarter, and this observation we had frequent opportunities of repeating, immediately after the springing up of a breeze, in the Polar seas.

But on the 20th, the advanced period of the season, the unpromising appearance of the ice to the westward, and the risk to the ships with which the navigation had been attended for some days past, naturally led me to the conclusion that, under these circumstances, the time had arrived, when it became absolutely necessary to look out for winter-quarters. Among the circumstances which now rendered this navigation more than usually perilous, and the hope of success proportionally less, there was none which gave more reasonable ground for apprehension than the incredible rapidity with which the young ice formed upon the surface of the sea, during the greater part of the twenty four hours. It had become evident, indeed, that it could only be attributed to the strong winds which had lately prevailed, that the sea was not at this time permanently frozen over;

for, whenever the wind blew less than a gale, that formation took place immediately, and went on with such astonishing rapidity, that had the weather continued calm for more than four-and-twenty hours together, it seemed to me extremely probable, that we must have passed the winter in our present exposed and insecure situation.

From this and various other considerations, which the account of our late proceedings will naturally suggest, I considered it a duty incumbent upon me to call for the opinions of the senior officers of the expedition, as to the expediency of immediately seeking a harbour, in which the ships might securely lie during the ensuing winter. The opinions of the officers entirely concurring with my own, as to the propriety of immediately resorting to this measure, I determined, whenever the ice and the weather would allow, to run back to the Bay of the Hecla and Griper, in which neighbourhood alone we had any reason to believe that a suitable harbour might be found.

It blew a hard gale from the northward

during the night of the 21st, by which means the floes were kept at a distance from the land, and the bay-ice prevented from forming under the lee of it. The sea to the eastward was not, however, sufficiently clear, nor the wind moderate enough, during the 21st, to allow us to move the ships. The land was now almost entirely covered with snow, and, as we afterwards found, remained so during the winter. A few coveys of the ptarmigan were seen near the beach during the time that we remained at this station.

At half-past two, on the morning of the 22d, the night-signal was made to weigh, and we began to heave at our cables ; but such was the difficulty of raising our anchor, and of hauling in our hawsers, owing to the stiffness of the ropes from frost, and the quantity of ice which had accumulated about them, that it was five o'clock before the ships were under way. Our rudder also was so choked by the ice which had formed about it that it could not be moved till a boat had been hauled under the stern, and the ice beaten and cut away from it We

ran along to the eastward without any obstruction, in a channel about five miles wide, till we were within four or five miles of Cape Hearne, where the bay-ice, in unbroken sheets of about one-third of an inch in thickness, began to offer considerable impediment to our progress. We were abreast of the point at noon, and here our prospect was rather discouraging; the anchorage in the bay was quite free from any obstruction, but a space of three or four miles to the north-eastward of Cape Hearne, was completely covered with bay-ice, which made it more than probable that we should altogether be excluded from the roadstead. We entered this ice under a press of sail, the wind blowing strong from the northward, and found it to consist principally of that kind which, from its appearance, is technically called "pancake-ice," and which, though it considerably retarded our progress in beating to windward, did not offer so serious an impediment as we had expected. At half-past two P. M., in swinging

the main-topsail-yard in stays, it was unfortunately carried away in the slings, but this accident was quickly repaired by the zealous exertions of the officers and men. As I saw that the Griper, which had dropped several miles astern in the course of the day, could not possibly reach the anchorage before dark, and being apprehensive that, by a too anxious endeavour to effect that object, she might become frozen up at sea during the night, I made Lieutenant Liddon's signal to secure his ship to the grounded ice off Cape Hearne, which he accordingly did. Soon after the sun had set, I had reason to entertain the same apprehension for the Hecla; for the young ice began, as usual, to form upon the surface of the water, and in an hour's time offered so considerable a resistance to the ship's motion, though under a press of canvass, and with a fresh breeze, as to make it doubtful for some time whether we should reach the anchorage. We at length, however, struck soundings with twenty-nine fathoms of line, and at eight P.M. anchored in nine fathoms, on a muddy



bottom, a little to the eastward of our situation on the 5th.

The wind continued northerly, with a heavy fall of snow during the night. At half-past six A.M. on the 23d, there being fortunately so little bay-ice that a boat could easily pull through it, I left the ship, accompanied by Mr. Nias, to examine Fife's Harbour, which had been reported to me as affording good shelter, but having a bar across its entrance. I directed Lieutenant Beechey at the same time to get the Hecla under way, and to anchor wherever I should lay down a buoy for that purpose. My mortification may well be imagined at finding, on my arrival off Fife's Harbour, that it was covered with one solid sheet of ice from six to twelve inches in thickness, which had been entirely formed since our last visit to this place. I landed on the west side of the harbour, and being soon after joined by a boat from the Griper, which vessel was beating up from Cape Hearne, I was informed by Mr. Skene, that a second bay or harbour had been seen by the officers on

the former occasion, a short distance to the westward of this. We lost no time, therefore, in rowing there, having first laid down a buoy, near which the Hecla was to anchor, and made the necessary signal to Lieutenant Beechey.

In going to the westward, we passed a shoal and open bay, immediately adjacent to the harbour which we were now about to examine, and soon after came to a reef of rocks, in some parts nearly dry, extending about three-quarters of a mile to the southward of a low point on the south-eastern side of the harbour. On rounding the reef, on which a quantity of heavy ice was lying aground, we found that a continuous floe, four or five inches in thickness, was formed over the whole harbour, which, in every other respect, appeared to be fit for our purpose; and that it would be necessary to cut a canal of two miles in length through the ice, in order to get the ships into a secure situation for the winter. We sounded the channel into the harbour for about three-quarters of a mile, by making holes in the

ice and dropping the lead through, and found the depth from five to six fathoms.

Having ascertained thus far, it remained for me to sound the bar of Fife's Harbour, and then to choose between the two places. I returned on board, therefore, for the boats' crews to dine, and then proceeded in execution of this object. The entrance into Fife's Harbour is extremely narrow, which enabled us the sooner to determine the utter impracticability of getting the ships into it, as we found the depth on the bar to be barely twelve feet at high water and a spring tide. I returned on board, therefore, and determined on taking the ships round the reef to the entrance of the westernmost harbour, on the following morning. A good deal of snow fell this evening, and the young ice formed on the surface after sun-set.

The ships weighed at six A.M. on the 24th, the wind being still at north, and the weather moderate and fine. As soon as the Hecla was under sail, I went ahead in a boat to sound, and to select an anchorage

for the ships. In running to the westward towards the point of the reef, we had no less than three fathoms and three quarters; and, by keeping farther off shore, we might have had much deeper water, but the wind being scant, it was necessary to keep well to the northward. Near the south-western point of this harbour there is a remarkable block of sandstone, somewhat resembling the roof of a house, on which the ships' names were subsequently engraved by Mr. Fisher. This stone is very conspicuous in coming from the eastward, and when kept open to the southward of the grounded ice at the end of the reef, forms a good leading mark for the channel into the harbour. Off the end of the reef the water deepened to six fathoms, and the *Hecia's* anchor was dropped in eight fathoms, half a mile within the reef, and close to the edge of the ice through which the canal was to be cut. The *Griper* arrived soon after, and by half-past eight A.M. both ships were secured in the proper position for commencing the intended operations.

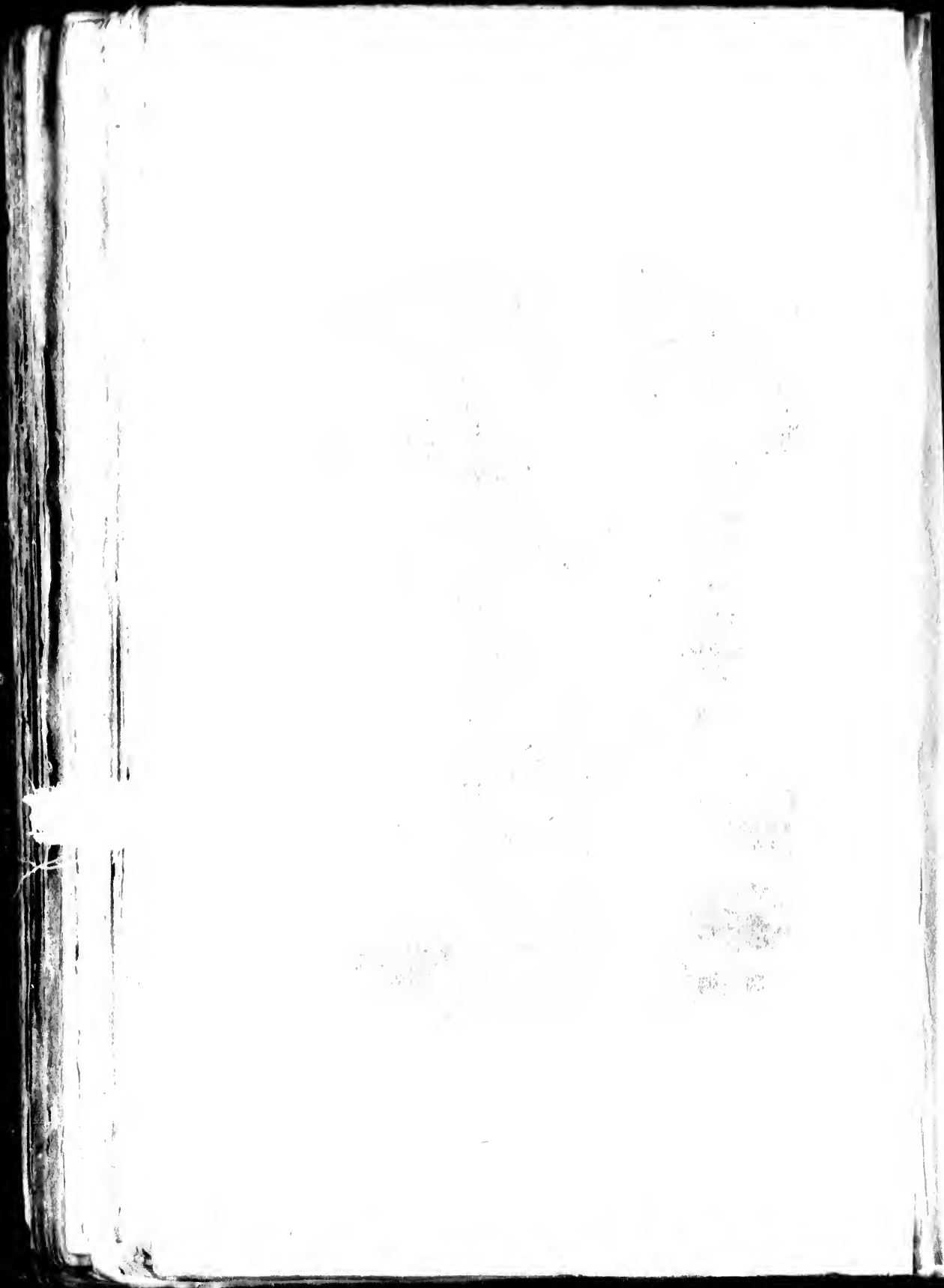




BEACH AT BOMBAY, INDIA. THE TENT BELONGS TO THE BRITISH CONSUL. THE BOAT IS A FISHING BOAT.



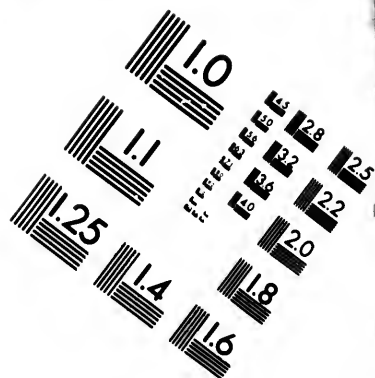
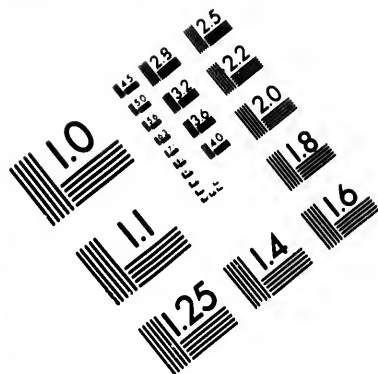
View from the beach, N.Y.  
July 10, 1907. The snow is 10 inches deep. The trees are  
covered with snow. The ground is covered with snow.  
The snow is 10 inches deep.



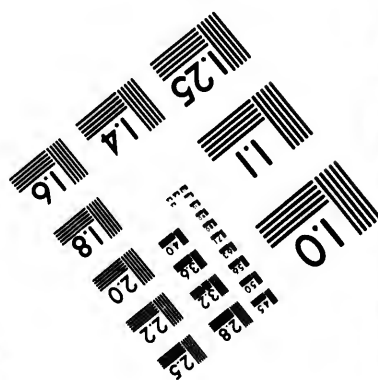
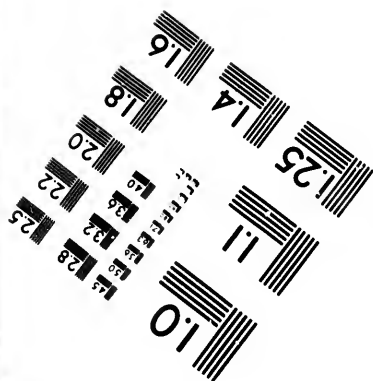
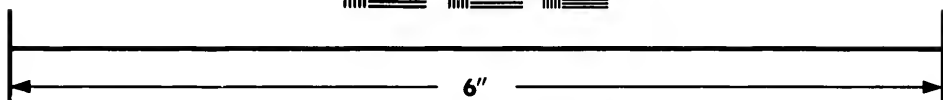
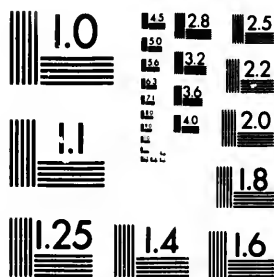


As soon as our people had breakfasted I proceeded, with a small party of men, to sound, and to mark with boarding-pikes upon the ice, the most direct channel we could find to the anchorage; having left directions for every other officer and man in both ships to be employed in cutting the canal. This operation was performed by first marking out two parallel lines, distant from each other a little more than the breadth of the larger ship. Along each of these lines a cut was then made with an ice-saw, and others again at right angles to them, at intervals of from ten to twenty feet; thus dividing the ice into a number of rectangular pieces, which it was again necessary to subdivide diagonally, in order to give room for their being floated out of the canal. On returning from the upper part of the harbour, where I had marked out what appeared to be the best situation for our winter-quarters, I found that considerable progress had been made in cutting the canal, and in floating the pieces out of it. To facilitate the latter part of the process, the seamen, who are always fond of





**IMAGE EVALUATION  
TEST TARGET (MT-3)**



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doing things in their own way, took advantage of a fresh northerly breeze, by setting some boats' sails upon the pieces of ice, a contrivance which saved both time and labour. This part of the operation, however, was by far the most troublesome, principally on account of the quantity of young ice which formed in the canal, and especially about the entrance, where, before sun-set, it had become so thick that a passage could no longer be found for the detached pieces, without considerable trouble in breaking it. At half past seven P.M. we weighed our anchors, and began to warp up the canal, but the northerly wind blew so fresh, and the people were so much fatigued, having been almost constantly at work for nineteen hours, that it was midnight before we reached the termination of our first day's labour. While we were thus employed, about nine o'clock a vivid flash of light was observed, exactly like lightning. There was at the same time, and during the greater part of the night, a permanent brightness in the northern quarter of the heavens, which

was probably occasioned by the Aurora Borealis. I directed half a pound of fresh meat per man to be issued, as an extra allowance; and this was continued daily till the completion of our present undertaking.

All hands were again set to work on the morning of the 25th, when it was proposed to sink the pieces of ice, as they were cut, under the floe, instead of floating them out, the latter mode having now become impracticable on account of the lower part of the canal, through which the ships had passed, being hard frozen during the night. To effect this, it was necessary for a certain number of men to stand upon one end of the piece of ice which it was intended to sink, while other parties, hauling at the same time upon ropes attached to the opposite end, dragged the block under that part of the floe on which the people stood. The officers of both ships took the lead in this employ, several of them standing up to their knees in water frequently during the day, with the thermometer generally at  $12^{\circ}$ , and never higher than  $16^{\circ}$ . At six P.M. we

began to move the ships. The Griper was made fast astern of the Hecla, and the two ships' companies being divided on each bank of the canal, with ropes from the Hecla's gangways, soon drew the ships along to the end of our second day's work.

Sunday 26th.—I should, on every account, have been glad to have made this a day of rest to the officers and men; but the rapidity with which the ice increased in thickness, in proportion as the general temperature of the atmosphere diminished, would have rendered a day's delay of serious importance. I ordered the work, therefore, to be continued at the usual time in the morning; and such was the spirited and cheerful manner in which this order was complied with, as well as the skill which had now been acquired in the art of sawing and sinking the ice, that although the thermometer was at  $6^{\circ}$  in the morning, and rose no higher than  $9^{\circ}$  during the day, we had completed the canal at noon, having effected more in four hours than on either of the two preceding days. The whole length of this canal was four thousand and

eighty-two yards, or nearly two miles and one third, and the average thickness of the ice was seven inches.

At half past one P.M. we began to track the ships along in the same manner as before, and at a quarter past three we reached our winter-quarters and hailed the event with three loud and hearty cheers from both ships' companies. The ships were in five fathoms water, a cable's length from the beach on the north-western side of the harbour, to which I gave the name of WINTER HARBOUR; and I called the group of islands which we had discovered in the Polar Sea NEW GEORGIA; but having afterwards recollected that this name is already occupied in another part of the world, I deemed it expedient to change it to that of the NORTH GEORGIAN ISLANDS, in honour of our gracious Sovereign, GEORGE THE THIRD, whose whole reign had been so eminently distinguished by the extension and improvement of geographical and nautical knowledge, and for the prosecution of new and important discoveries in both.



## CHAPTER V.

*Precautions for securing the Ships and Stores—  
for promoting Good Order, Cleanliness, Health,  
and Good-Humour among the Ships' Compa-  
nies—Establishment of a Theatre and of the  
North Georgia Gazette—Erection of an Ob-  
servatory on Shore—commence our Winter's  
Amusements—State of the Temperature and  
various Meteorological Phenomena—Miscella-  
neous Occurrences to the close of the Year 1819.*

HAVING, on the 19th October, reached the station, where, in all probability, we were destined to remain for at least eight or nine months, during three of which we were not to see the face of the sun, my attention was immediately, and imperiously, called to various important duties; many of them of a singular nature, such as had, for the first time, devolved on any officer

in His Majesty's navy, and might indeed be considered of rare occurrence in the whole history of navigation. The security of the ships, and the preservation of the various stores, were objects of immediate concern. A regular system to be adopted for the maintenance of good order and cleanliness, as most conducive to the health of the crews during the long, dark, and dreary winter, equally demanded my attention.

Not a moment was lost, therefore, in the commencement of our operations. The whole of the masts were dismantled except the lower ones and the Hecla's main topmast; the lower yards were lashed fore and aft amidships, to support the planks of the housing intended to be erected over the ships; and the whole of this frame work was afterwards roofed over with a cloth. The boats, spars, running rigging and sails were removed on shore; and as soon as the ships were secured and housed over, my whole attention was directed to the health and comfort of the officers and men. The surgeon reported that not the slightest dis-

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position to scurvy had shewn itself in either ship.

In order to prolong this healthy state of the crews, and to promote the comfort of all, such arrangements were made for the warmth and dryness of the births and bed-places, as circumstances appeared to require; and in this respect some difficulties were to be overcome, which could not, perhaps, have been anticipated. Soon after our arrival in Winter Harbour, when the temperature of the atmosphere had fallen considerably below zero of Fahrenheit, we found that the steam from the coppers, as well as the breath and other vapour generated in the inhabited parts of the ship, began to condense into drops upon the beams and the sides to such a degree as to keep them constantly wet. In order to remove this serious evil, it was necessary to adopt such means for producing a sufficient warmth, combined with due ventilation, as might carry off the vapour, and thus prevent its settling on any part of the ship. For this purpose a large stone oven, cased with

cast-iron, in which all our bread was baked during the winter, was placed on the main-hatchway, and the stove-pipe led fore and aft on one side of the lower deck, the smoke being thus carried up the fore hatchway. On the opposite side of the deck, an apparatus had been attached to the galley-range for conveying a current of heated air between decks. This apparatus simply consisted of an iron box, or air vessel, about fifteen inches square, through which passed three pipes, of two inches diameter, communicating from below with the external air, and uniting above in a metal box, fixed to the side of the galley-range; to this box a copper stove-pipe was attached, and conveyed to the middle part of the lower deck. When a fire was made under the air-vessel, the air became heated in its passage through the three pipes, from which it was conveyed through the stove-pipe to the men's births. While this apparatus was in good order, a moderate fire produced a current of air of the temperature of  $87^{\circ}$ , at the distance of seventeen feet from the fire-place; and,

with a pipe of wood, or any other imperfect conductor of heat, which would not allow of its escaping by the way, it might undoubtedly be carried to a much greater distance. By these means we were enabled to get rid of the moisture about the births where the people messed; but when the weather became more severely cold, it still accumulated in the bed-places occasionally to a serious and very alarming degree. Among the means employed to prevent the injurious effects arising from this annoyance, one of the most efficacious perhaps was a screen made of fear-nought, fixed to the beams round the galley, and dropping within eighteen inches of the deck, which served to intercept the steam from the coppers, and prevent it as before from curling along the beams, and condensing upon them into drops. This screen was especially useful at the time of drawing off the beer, which we had lately been in the habit of brewing from essence of malt and hops, and which continued to be served for several weeks as a substitute for part of the usual allowance

of spirits. We found the steam arising from this process so annoying during the cold weather, that, valuable as the beer must be considered as an antiscorbutic beverage, it was deemed advisable to discontinue our brewery on that account. While on this subject, I may also add that, when the weather became severely cold, we could not get the beer to ferment, so as to make it palatable.

For the preservation of health, and as a necessary measure of economy, a few alterations were made in the quantity and quality of the provisions issued. I directed the allowance of bread to be permanently reduced to two-thirds, a precaution which, perhaps, it would have been as well to have adopted from the commencement of the voyage. A pound of Donkin's preserved meat, together with one pint of vegetable or concentrated soup, per man, was substituted for one pound of salt beef weekly; a proportion of beer and wine was served in lieu of spirits; and a small quantity of sourkroust and pickles, with as much vinegar

as could be used, was issued at regular intervals. The daily proportion of lime-juice and sugar was mixed together, and, with a proper quantity of water, was drank by each man in presence of an officer appointed to attend to this duty. This latter precaution may appear to have been unnecessary, to those who are not aware how much sailors resemble children in all those points in which their own health and comfort are concerned. Whenever any game was procured, it was directed to be invariably served in lieu of, and not in addition to, the established allowance of other meat, except in a few extraordinary cases, when such an indulgence was allowed; and in no one instance, either in quantity or quality, was the slightest preference given to the officers.

In the article of fuel, which is of such vital importance in so severe a climate, a system of the most rigid economy was adopted; such a quantity of coal only being expended, as was barely sufficient for the preservation of health on board the ships. A search was made for turf or moss imme-

diately after our arrival, and a small quantity of the latter was made use of as fuel ; but, without a previous drying, which, from the advanced period of the season, we had no means of giving it, it was found to be too wet to produce any saving of coals. We also looked out most anxiously for a vein of coal on shore, but only a few lumps were picked up during our stay in Winter Harbour.

Great attention was paid to the clothing of the men, and one day in the week was appointed for the examination of the men's shins and gums by the medical gentlemen, in order that any slight appearance of the scurvy might at once be detected, and checked by timely and adequate means.

It was my intention to have caused the bedding of the ships' companies to be brought on deck, for the purpose of airing, at least once a week during the winter ; but here, also, a difficulty occurred, which, without previous experience, could not perhaps have been easily anticipated. Whenever a blanket was brought on deck, and suffered to remain



there for a short time, it of course acquired the temperature of the atmosphere. When this happened to be rather low, under zero of Fahrenheit for instance, the immediate consequence, on taking the blanket again into the inhabited parts of the ship was, that the vapour settled and condensed upon it, rendering it almost instantly so wet, as to be unfit to sleep on, and requiring therefore, after all, that it should be dried by artificial heat before it could be returned into the bed-place. We were, therefore, under the necessity of hanging the bedding upon lines between decks, as the only mode of airing it; and what was likely to prove still more prejudicial, we were obliged to have recourse to the same unhealthy measure in drying the washed clothes.

Under circumstances of leisure and inactivity, such as we were now placed in, and with every prospect of its continuance for a very large portion of the year, I was desirous of finding some amusement for the men during this long and tedious interval. I proposed, therefore, to the officers to get up a Play occasionally on board the Hecla, as the rea-

diest means of preserving among our crews that cheerfulness and good-humour which had hitherto subsisted. In this proposal I was readily seconded by the officers of both ships; and Lieutenant Beechey having been duly elected as stage-manager, our first performance was fixed for the 5th of November, to the great delight of the ships' companies. In these amusements I gladly undertook a part myself, considering that an example of cheerfulness, by giving a direct countenance to every thing that could contribute to it, was not the least essential part of my duty, under the peculiar circumstances in which we were placed.

In order still further to promote good-humour among ourselves, as well as to furnish amusing occupation, during the hours of constant darkness, we set on foot a weekly newspaper, which was to be called the *North Georgia Gazette and Winter Chronicle*, and of which Captain Sabine undertook to be the editor, under the promise that it was to be supported by original contributions from the officers of the two ships: and, though some

objection may, perhaps, be raised against a paper of this kind being generally resorted to in ships of war, I was too well acquainted with the discretion, as well as the excellent dispositions of my officers, to apprehend any unpleasant consequences from a measure of this kind: instead of which I can safely say, that the weekly contributions had the happy effect of employing the leisure hours of those who furnished them, and of diverting the mind from the gloomy prospect which would sometimes obtrude itself on the stoutest heart.

Immediately on our arrival in harbour, Captain Sabine had employed himself in selecting a place for the observatory, which was erected in a convenient spot, about seven hundred yards to the westward of the ships. It was also considered advisable immediately to set about building a house near the beach, for the reception of the clocks and instruments. For this purpose we made use of a quantity of fir-plank, which was intended for the construction of spare boats, and which was so cut as not to injure

it for that purpose. The ground was so hard frozen that it required great labour to dig holes for the upright posts which formed the support of the sides. The walls of this house being double, with moss placed between the two, a high temperature could, even in the severest weather which we might be doomed to experience, be kept up in it without difficulty by a single stove.

Among the many fortunate circumstances which had attended us during this first season of our navigation, there was none more striking than the opportune time at which the ships were securely placed in harbour; for on the very night of our arrival, the 26th of September, the thermometer fell to  $-1^{\circ}$ ; and, on the following day, the sea was observed from the hills to be quite frozen over, as far as the eye could reach; nor was any open water seen after this period. During the first three weeks in October, however, we remarked that the young ice, near the mouth of the harbour, was occasionally squeezed up very much by the larger floes, so that the latter must still have had some

space left, in which to acquire motion: but after that time the sea was entirely covered with one uniform surface of solid and motionless ice.

After our arrival in port, we saw several rein-deer, and a few coveys of grouse; but the country is so destitute of every thing like cover of any kind, that our sportsmen were not successful in their hunting excursions, and we procured only three rein-deer, previously to the migration of these and the other animals from the island, which took place before the close of the month of October, leaving only the wolves and foxes to bear us company during the winter. The full-grown deer, which we killed in the autumn, gave us from one hundred and twenty to one hundred and seventy pounds of meat each, and a fawn weighed eighty-four pounds.

On the 1st of October, Captain Sabine's servant having been at some distance from the ships, to examine a fox-trap, was pursued by a large white bear, which followed his footsteps the whole way to the ships,

where he was wounded by several balls, but made his escape after all. This bear, which was the only one we saw during our stay in Winter Harbour, was observed to be more purely white than any we had before seen, the colour of these animals being generally that of a dirtyish yellow, when contrasted with the whiteness of the ice and snow.

On the night of the 4th, we had a strong gale from the southward, which gave us a satisfactory proof of the security of the harbour we had chosen, for the main ice was found in the morning to have pressed in very forcibly upon that which was newly formed near the entrance, while within the two points of the harbour it remained perfectly solid and undisturbed. Some deer being seen near the ships on the 10th, a party was despatched after them, some of whom having wounded a stag, and being led on by the ardour of pursuit, forgot my order that every person should be on board before sun-set, and did not return till late, after we had suffered much apprehension on their account. I therefore directed that the ex-

pense of all rockets and other signals made in such cases, should, in future, be charged against the wages of the offending party. John Pearson, a marine belonging to the Griper, who was the last that returned on board, had his hands severely frost-bitten, having imprudently gone away without mittens, and with a musket in his hand. A party of our people most providentially found him, although the night was very dark, just as he had fallen down a steep bank of snow, and was beginning to feel that degree of torpor and drowsiness which, if indulged, inevitably proves fatal. When he was brought on board, his fingers were quite stiff, and bent into the shape of that part of the musket which he had been carrying: and the frost had so far destroyed the animation in his fingers on one hand, that it was necessary to amputate three of them a short time after, notwithstanding all the care and attention paid to him by the medical gentlemen. The effect which exposure to severe frost has, in benumbing the mental as well as the corporeal faculties, was very

striking in this man, as well as in two of the young gentlemen who returned after dark, and of whom we were anxious to make inquiries respecting Pearson. When I sent for them into my cabin, they looked wild, spoke thick and indistinctly, and it was impossible to draw from them a rational answer to any of our questions. After being on board for a short time, the mental faculties appeared gradually to return with the returning circulation, and it was not till then that a looker-on could easily persuade himself that they had not been drinking too freely. To those who have been much accustomed to cold countries this will be no new remark; but I cannot help thinking (and it is with this view that I speak of it) that many a man may have been punished for intoxication, who was only suffering from the numbing effects of frost; for I have more than once seen our people in a state so exactly resembling that of the most stupid intoxication, that I should certainly have charged them with that offence, had I not been quite sure that no possible means were



afforded them on Melville Island to procure any thing stronger than snow-water. In order to guard in some measure against the danger of persons losing their way, which was more and more to be apprehended as the days became shorter, and the ground more covered with snow, which gives such a dreary sameness to the country, we erected on all the hills within two or three miles of the harbour, finger-posts pointing towards the ships.

I have before remarked that all the water which we made use of while within the polar circle was procured from snow, either naturally or artificially dissolved. Soon after the ships were laid up for the winter, it was necessary to have recourse entirely to the latter process, which added materially to the expenditure of fuel during the winter months. The snow for this purpose was dug out of the drifts, which had formed upon the ice round the ships, and dissolved in the coppers. We found it necessary always to strain the water thus procured, on account of the sand which the heavy

snow-drifts brought from the island, after which it was quite pure and wholesome.

On the 16th, it blew a strong gale from the northward, accompanied by such a constant snow-drift, that although the weather was quite clear over-head, the boat-house, at the distance of three or four hundred yards, could scarcely be seen from the ships. On such occasions, no person was permitted on any account to leave the ships. Indeed, when this snow-drift occurred, as it frequently did during the winter, with a hard gale, and the thermometer very low, I believe that no human being could have remained alive after an hour's exposure to it. In order, therefore, to secure a communication between the ships, a distance not exceeding half a cable's length, as well as from the ships to the house on shore, a line was kept extended, as a guide from one to the other. About the middle of October the snow began to fall in smaller flakes than during the summer; and soon after this, whenever it fell, it consisted entirely of very minute *spiculæ*, assuming various forms of

crystallization. The meridian altitude of the sun was observed this day by an artificial horizon, which I notice from the circumstance of its being the last time we had an opportunity of observing it for about four months.

On the 17th and 18th, our hunting parties reported that the deer were more numerous than they had been before, which made us conclude that they were assembling their forces for an immediate departure over the ice to the continent of America, as we only saw one or two on the island after this time. They had been met with, since taking up our quarters, in herds of from eight to twenty, and from forty to fifty were seen in the course of one day. A thermometer placed in the sun at noon, on the 18th, rose only to  $-9^{\circ}$ , the temperature in the shade being  $-16^{\circ}$ .

It had for some time past been a matter of serious consideration with me, whether it would be necessary to cut the ice round the ships, which had by this time become so firmly attached to the bends, that they were

completely imbedded in it. There happened to be only two or three persons in the expedition, who had ever been frozen up during a whole winter in any of the cold countries, and I consulted these as to the expediency of doing so. To put the matter out of all doubt, however, I deemed it prudent to order the ice to be cut round both ships, an operation which occupied the two crews almost the whole of two days, the ice being now twenty-three inches in thickness; and I determined to continue this operation daily, as long as the weather would permit.

The 20th of October was one of the finest days which, as experience has since taught us, ever occur in this climate, the weather being clear, with little or no wind; and, though the thermometer remained steadily between  $-15^{\circ}$  and  $-16^{\circ}$  during the day, it was rather pleasant to our feelings than otherwise. Our sportsmen were out from both ships the whole day, and returned, for the first time, without having seen any living animal, though they had walked over a very considerable extent of ground; so that the

hope we had indulged of obtaining, occasionally, a fresh meal, was now nearly at an end for the rest of the winter. It was observed from the hills, that the ice in the offing had been thrown into higher hummocks than before; and in the morning we saw a number of little vertical streams of vapour rising from the sea, near the mouth of the harbour, which was probably that phenomenon vulgarly called the "barber" in North America, and which is occasioned, I believe, by the vapour arising from the water being condensed into a visible form by the coldness of the atmosphere. It is probable, therefore, from the two circumstances now mentioned, that a motion had taken place among the floes in the offing, producing first the pressure by which the hummocks were thrown up, and then a partial separation leaving, for a time, a small space of unfrozen surface.

On the 26th, the sun afforded us sufficient light for writing and reading in my cabin, the stern-windows exactly facing the south, from half-past nine till half-past two;

for the rest of the four-and-twenty hours we lived, of course, by candle-light. Nothing could exceed the beauty of the sky to the south-east and south-west at sun-rise and sun-set about this period: near the horizon there was generally a rich bluish purple, and a bright arch of deep red above, the one mingling imperceptibly with the other. The weather about this time was remarkably mild, the mercury in the thermometer having stood at or above zero for more than forty-eight hours. By a register of the temperature of the atmosphere, which was kept by Captain Sabine at the observatory, it was found that the thermometer, invariably, stood at least from  $2^{\circ}$  to  $5^{\circ}$ , and even on one or two occasions as much as  $7^{\circ}$  higher on the outside of the ships, than it did on shore, owing probably to a warm atmosphere created round the former by the constant fires kept up on board.

It now became rather a painful experiment to touch any metallic substance in the open air with the naked hand; the feeling produced by it exactly resembling that

occasioned by the opposite extreme of intense heat, and taking off the skin from the part affected. We found it necessary, therefore, to use great caution in handling our sextants and other instruments, particularly the eye-pieces of telescopes, which, if suffered to touch the face, occasioned an intense burning pain; but this was easily remedied by covering them over with soft leather. Another effect, with regard to the use of instruments, began to appear about this time. Whenever any instrument, which had been some time exposed to the atmosphere, so as to be cooled down to the same temperature, was suddenly brought below into the cabins, the vapour was instantly condensed all around it, so as to give the instrument the appearance of smoking; and the glasses were covered almost instantaneously with a thin coating of ice, the removal of which required great caution to prevent the risk of injuring them, until it had gradually thawed, as they acquired the temperature of the cabin. When a candle was placed in a certain direction from the

instrument, with respect to the observer, a number of very minute *spiculæ* of snow were also seen sparkling around the instrument, at the distance of two or three inches from it, occasioned, as we supposed, by the cold atmosphere produced by the low temperature of the instrument almost instantaneously congealing into that form the vapour which floated in its immediate neighbourhood.

The month of November commenced with mild weather, which continued for the first ten days. It is generally supposed, by those who have not experienced the effects produced upon the feelings by the various alterations in the temperature of the atmosphere, when the thermometer is low, that a change of  $10^{\circ}$  or  $15^{\circ}$  makes no sensible difference in the sensation of cold; but this is by no means the case, for it was a remark continually made among us, that our bodies appeared to adapt themselves so readily to the climate, that the scale of our feelings, if I may so express it, was soon reduced to a lower standard than ordinary; so that, after



living for some days in a temperature of  $-15^{\circ}$  or  $-20^{\circ}$ , it felt quite mild and comfortable when the thermometer rose to zero, and *vice versa*.

The 4th of November being the last day that the sun would, independently of the effects of refraction, be seen above our horizon till the eighth of February, an interval of ninety-six days, it was a matter of considerable regret to us that the weather about this time was not sufficiently clear to allow us to see and make observations on the disappearance of that luminary, in order that something might be attempted towards determining the amount of the atmospherical refraction at a low temperature. But though we were not permitted to take a last farewell, for at least three months, of that cheering orb, "of this great world, both eye and soul," we nevertheless felt that this day constituted an important and memorable epoch in our voyage. We had some time before set about the preparations for our winter's amusements; and the theatre being ready, we opened on the 5th of November with the

representation of *Miss in her Teens*, which afforded to the men such a fund of amusement as fully to justify the expectations we had formed of the utility of theatrical entertainments under our present circumstances, and to determine me to follow them up at stated periods. I found, indeed, that even the occupation of fitting up the theatre, and taking it to pieces again, which employed a number of the men for a day or two before and after each performance, was a matter of no little importance, when the immediate duties of ship appeared by no means sufficient for that purpose; for I dreaded the want of employment as one of the worst evils that was likely to befall us.

On the forenoon of the 11th, the thermometer having again fallen to  $-26\frac{1}{2}^{\circ}$ , the smoke, as it escaped from the funnels, scarcely rose at all above the housing. Mr. Ross, having gone to the mast-head at noon, reported that he saw the sun.

About the time of the sun's leaving us, the wolves began to approach the ships more boldly, howling most piteously on the beach

near us, sometimes for hours together, and, on one or two occasions, coming alongside the ships, when every thing was quiet at night; but we seldom saw more than one or two together, and, therefore, could form no idea of their number. These animals were always very shy of coming near our people, and, though evidently suffering much from hunger, never attempted to attack any of them. The white foxes used also to visit the ships at night, and one of these was caught in a trap set under the Griper's bows. The uneasiness displayed by this beautiful little animal during the time of his confinement, whenever he heard the howling of a wolf near the ships, impressed us with an opinion, that the latter is in the habit of hunting the fox as his prey.

The rapidity with which the ice formed round the ships had now become so great, as to employ our people for several hours each day in cutting it; and for the last three days our utmost labour during the time of twilight could scarcely keep it clear. As it was evident, therefore, that, as the frost in-

creased, we could not possibly effect this, and as the men almost always got their feet wet in sawing the ice, from which the most injurious effects upon their health were likely to result, I gave orders to leave off cutting it any more during the severity of the winter. The average formation of ice round the ships, during the time we continued to remove it, was usually from three to five inches in twenty-four hours; and once it froze eight inches in twenty-six hours, the mean temperature of the atmosphere being  $-12^{\circ}$ . At noon to-day we saw, for the first time at this hour, a star of the first magnitude (*Capella*), and at half an hour past noon those of the second magnitude in Ursa Major were visible; which circumstance will, perhaps, give the best idea of the weakness of the sun's light at this period.

The temperature of the atmosphere having, about this time, become considerably lower than before, the cracking of the timbers was very frequent and loud for a time; but generally ceased altogether in an hour or two after this fall had taken place in the

thermometer, and did not occur again at the same temperature during the winter. The wind blowing fresh from the northward, with a heavy snow-drift, made the ship very cold below; so that the breath and other vapour accumulated during the night in the bed-places and upon the beams, and then immediately froze; hence it often occupied all hands for two or three hours during the day to scrape the ice away, in order to prevent the bedding from becoming wet by the increase of temperature occasioned by the fires. It was therefore found necessary to keep some of the fires in between decks at night, when the thermometer was below  $-15^{\circ}$  or  $-20^{\circ}$  in the open air, especially when the wind was high. To assist in keeping the lower decks warm, as well as to retard, in some slight degree, the formation of ice immediately in contact with the ships' bends, we banked the snow up against their sides, as high as the main-chains; and canvass screens were nailed round all the hatchways on the lower deck.

The stars of the second magnitude in

Ursa Major were just perceptible to the naked eye a little after noon this day, and the Aurora Borealis appeared faintly in the south-west at night. About this time our medical gentlemen began to remark the extreme difficulty with which sores of every kind healed; a circumstance that rendered it the more necessary to be cautious in exposing the men to frost-bites, lest the long inactivity and want of exercise during the cure of sores, in other respects trifling, should produce serious effects upon the general health of the patients.

From midnight on the 20th, till two o'clock on the following morning, the thermometer rose from  $-46^{\circ}$  to  $-40\frac{1}{2}^{\circ}$ , and at half-past three a gale came on from the northward, which continued to blow, and the thermometer gradually to rise, till the latter had reached  $-21^{\circ}$  at midnight. This was one of a great many instances which occurred during the winter, of an increase of wind, from whatever quarter, being accompanied by a simultaneous rise in the thermometer. The gale continued strong for the greater part of the

two following days, with a tremendous snow-drift, which kept us all on board till the afternoon of the 23d. In the mean time another play had been prepared, and our second performance, to which the crews had been anxiously looking forward, took place on the evening of the 24th.

During the following fortnight, we were chiefly occupied in observing various phenomena in the heavens, the vivid coruscations of the Aurora Borealis, the falling of meteors, and in taking lunar distances; but the difficulty of making observations in this climate is inconceivably great; on one occasion the mercury of the artificial horizon froze into a solid mass.

The water in the Hecla's pump-well had, by this time, Dec. 17, become completely frozen, so that it was no longer possible to work the pumps. In what manner the pumps could be kept free under such circumstances, if it were found necessary, I do not know, as there would have been a risk of damaging the lower part of them, in detaching the ice from it to make the experiment. The Hecla,

however, was so tight as not to require it; as a proof of which it need only be mentioned, that the same twenty inches of ice which was formed about this period, remained without any addition for more than six months, during which time she was never once pumped out; and the only inconvenience that resulted from this, was the accumulation of a small quantity of ice among the coals in the lower part of the fore and main holds.

About this part of the winter, we began to experience a more serious inconvenience from the bursting of the lemon-juice bottles by frost, the whole contents being frequently frozen into a solid mass, except a small portion of highly-concentrated acid in the centre, which, in most instances, was found to have leaked out, so that when the ice was thawed, it was little better than water. This evil increased to a very alarming degree in the course of the winter: some cases being opened in which more than two-thirds of the lemon-juice was thus destroyed, and the remainder rendered nearly inefficient.



It was at first supposed that this accident might have been prevented by not quite filling the bottles, but it was afterwards found, that the corks flying out did not save them from breaking. We observed that the greatest damage was done in those cases which were stowed nearest to the ship's side, and we therefore removed all the rest amidships, a precaution which, had it been sooner known and adopted, would probably have prevented, at least, a part of the mischief. The vinegar also became frozen in the casks in the same manner, and lost a great deal of its acidity when thawed. This circumstance conferred an additional value on a few gallons of very highly-concentrated vinegar, which had been sent out on trial upon this and the preceding voyage, and which, when mixed with six or seven times its own quantity of water, was sufficiently acid for every purpose. This vinegar, when exposed to the temperature of  $25^{\circ}$  below zero, congealed only into a consistence like that of the thickest honey, but was never sufficiently hard to break any vessel which contained it.

There can be no doubt, therefore, that on this account, as well as to save stowage, this kind of vinegar should exclusively be used in these regions; and for similar reasons, of still greater importance, the lemon-juice should be concentrated.

On the 19th, the weather being fine and clear, the Aurora Borealis appeared frequently at different times of the day, generally from the south to the W.N.W. quarters, and not very vivid. From eight P.M. till midnight, however, it became more brilliant, and broke out in every part of the heavens, being generally most bright from S.S.W. to S.W., where it had the appearance of emerging from behind a dark cloud, about five degrees above the horizon. We could not, however, help feeling some disappointment in not having yet witnessed this beautiful phenomenon in any degree of perfection which could be compared to that which occurs at Shetland, or in the Atlantic, about the same latitude as these islands. On the morning of the 20th, the Aurora Borealis again made its appearance in the

N.W., which was more to the northward than usual; it here resembled two small bright clouds, the one nearly touching the other, and being about seven degrees above the horizon. These remained quite stationary for half an hour, and then broke up into streams shooting rapidly towards the zenith.

We had now reached the shortest day, Wed. 22d, and such was the occupation which we had hitherto contrived to find during the first half of our long and gloomy winter, that the quickness with which it had come upon us was a subject of general remark. So far, indeed, were we from wanting that occupation of which I had been apprehensive, especially among the men, that it accidentally came to my knowledge about this period that they complained of not having time to mend their clothes. This complaint I was as glad to hear, as desirous to rectify; and I therefore ordered that, in future, one afternoon in each week should be set aside for that particular purpose.

The circumstances of our situation being

such as have never before occurred to the crews of any of His Majesty's ships, it may not, perhaps, be considered wholly uninteresting, to know in what manner our time was thus so fully occupied throughout the long and severe winter, which it was our lot to experience, and particularly during a three months' interval of nearly total darkness.

The officers and quarter-masters were divided into four watches, which were regularly kept, as at sea, while the remainder of the ship's company were allowed to enjoy their night's rest undisturbed. The hands were turned up at a quarter before six, and both decks were well rubbed with stones and warm sand before eight o'clock, at which time, as usual at sea, both officers and men went to breakfast. Three quarters of an hour being allowed after breakfast for the men to prepare themselves for muster, we then beat to divisions punctually at a quarter-past nine, when every person on board attended on the quarter-deck, and a strict inspection of the men took place, as to their

personal cleanliness, and the good condition, as well as sufficient warmth, of their clothing. The reports of the officers having been made to me, the people were then allowed to walk about, or, more usually, to run round the upper deck, while I went down to examine the state of that below, accompanied, as I before mentioned, by Lieutenant Beechey and Mr. Edwards. The state of this deck may be said, indeed, to have constituted the chief source of our anxiety, and to have occupied by far the greatest share of our attention at this period. Whenever any dampness appeared, or, what more frequently happened, any accumulation of ice had taken place during the preceding night, the necessary means were immediately adopted for removing it; in the former case usually by rubbing the wood with cloths, and then directing the warm air-pipe towards the place; and in the latter by scraping off the ice, so as to prevent its wetting the deck by any accidental increase of temperature. In this respect the bed-places were particularly trouble-

some; the inner partition, or that next the ship's side, being almost invariably covered with more or less dampness or ice, according to the temperature of the deck during the preceding night. This inconvenience might to a great degree have been avoided, by a sufficient quantity of fuel to keep up two good fires on the lower deck, throughout the twenty-four hours; but our stock of coals would by no means permit this, bearing in mind the possibility of our spending a second winter within the Arctic circle; and this comfort could only, therefore, be allowed on a few occasions, during the most severe part of the winter.

In the course of my examination of the lower deck, I had always an opportunity of seeing those few men who were on the sick list, and of receiving from Mr. Edwards a report of their respective cases; as also of consulting that gentleman as to the means of improving the warmth, ventilation, and general comfort of the inhabited parts of the ship. Having performed this duty, we returned to the upper deck, where I per-

sonally inspected the men; after which they were sent out to walk on shore, when the weather would permit, till noon, when they returned on board to their dinner. When the day was too inclement for them to take this exercise, they were ordered to run round and round the deck, keeping step to the tune of an organ, or, not unfrequently, to a song of their own singing. Among the men were a few who did not at first quite like this systematic mode of taking exercise; but when they found that no plea, except that of illness, was admitted as an excuse, they not only willingly and cheerfully complied, but made it the occasion of much humour and frolic among themselves.

The officers, who dined at two o'clock, were also in the habit of occupying one or two hours in the middle of the day in rambling on shore, even in our darkest period, except when a fresh wind and a heavy snow-drift confined them within the housing of the ships. It may well be imagined that at this period, there was but little to be met with in our walks on shore, which could

either amuse or interest us. The necessity of not exceeding the limited distance of one or two miles, lest a snow-drift, which often rises very suddenly, should prevent our return, added considerably to the dull and tedious monotony which, day after day, presented itself. To the southward was the sea, covered with one unbroken surface of ice, uniform in its dazzling whiteness, except that, in some parts, a few hummocks were seen thrown up somewhat above the general level. Nor did the land offer much greater variety, being almost entirely covered with snow, except here and there a brown patch of bare ground in some exposed situations, where the wind had not allowed the snow to remain. When viewed from the summit of the neighbouring hills, on one of those calm and clear days, which not unfrequently occurred during the winter, the scene was such as to induce contemplations which had, perhaps, more of melancholy than of any other feeling. Not an object was to be seen on which the eye could long rest with pleasure, unless when directed to



the spot where the ships lay, and where our little colony was planted. The smoke which there issued from the several fires, affording a certain indication of the presence of man, gave a partial cheerfulness to this part of the prospect; and the sound of voices, which, during the cold weather, could be heard at a much greater distance than usual, served now and then to break the silence which reigned around us, a silence far different from that peaceable composure which characterizes the landscape of a cultivated country; it was the death-like stillness of the most dreary desolation, and the total absence of animated existence. Such, indeed, was the want of objects to afford relief to the eye or amusement to the mind, that a stone of more than usual size appearing above the snow, in the direction in which we were going, immediately became a mark, on which our eyes were unconsciously fixed, and towards which we mechanically advanced.

Dreary as such a scene must necessarily be, it could not, however, be said to be

wholly wanting in interest, especially when associated in the mind with the peculiarity of our situation, the object which had brought us hither, and the hopes which the least sanguine among us sometimes entertained, of spending a part of our next winter in the more genial climate of the South-Sea Islands. Perhaps, too, though none of us then ventured to confess it, our thoughts would sometimes involuntarily wander homewards, and institute a comparison between the rugged face of nature in this desolate region, and the livelier aspect of the happy land which we had left behind us.

We had frequent occasion, in our walks on shore, to remark the deception which takes place in estimating the distance and magnitude of objects, when viewed over an unvaried surface of snow. It was not uncommon for us to direct our steps towards what we took to be a large mass of stone, at the distance of half a mile from us, but which we were able to take up in our hands after one minute's walk. This was more particularly the case, when ascending the

brow of a hill, nor did we find that the deception became less, on account of the frequency with which we experienced its effects.

In the afternoon, the men were usually occupied in drawing and knotting yarns; and in making points and gaskets; a never-failing resource, where mere occupation is required, and which it was necessary to perform entirely on the lower deck, the yarns becoming so hard and brittle, when exposed on deck to the temperature of the atmosphere, as to be too stiff for working, and very easily broken. I may in this place remark that our lower rigging became extremely slack during the severity of the winter, and gradually tightened again as the spring returned: effects the very reverse of those which we had anticipated, and which I can only account for by the extreme dryness of the atmosphere in the middle of winter, and the subsequent increase of moisture.

At half-past five in the evening, the decks were cleared up, and at six we again beat

to divisions, when the same examination of the men and of their births and bed-places took place as in the morning; the people then went to their supper, and the officers to tea. After this time the men were permitted to amuse themselves as they pleased, and games of various kinds, as well as dancing and singing occasionally, went on upon the lower deck till nine o'clock, when they went to bed, and their lights were extinguished. In order to guard against accidents by fire, where so many fires and lights were necessarily in use, the quarter-masters visited the lower deck every half-hour during the night, and made their report to the officers of the watches that all was, in this respect, safe below, and to secure a ready supply of water in case of fire, a hole was cut twice a day in the ice, close alongside each ship. It is scarcely necessary to add, that the evening occupations of the officers were of a more rational kind than those which engaged the attention of the men. Of these, reading and writing were the principal employments, to which were occasionally added a game

of chess, or a tune on the flute or violin, till half-past ten, about which time we all retired to rest.

Such were the employments which usually occupied us for six days in the week, with such exceptions only as circumstances at the time suggested. On Sundays, divine service was invariably performed, and a sermon read on board both ships; the prayer appointed to be daily used at sea being altered, so as to adapt it to the service in which we were engaged, the success which had hitherto attended our efforts, and the peculiar circumstances under which we were at present placed. The attention paid by the men to the observance of their religious duties, was such as to reflect upon them the highest credit, and tended in no small degree to the preservation of that regularity and good conduct, for which, with very few exceptions, they were invariably distinguished.

Our theatrical entertainments took place regularly once a fortnight, and continued to prove a source of infinite amusement to the

men. Our stock of plays was so scanty, consisting only of one or two volumes, which happened accidentally to be on board, that it was with difficulty we could find the means of varying the performances sufficiently; our authors, therefore, set to work, and produced as a Christmas piece, a musical entertainment, expressly adapted to our audience, and having such a reference to the service on which we were engaged, and the success we had so far experienced, as at once to afford a high degree of present recreation, and to stimulate, if possible, the sanguine hopes which were entertained by all on board, of the complete accomplishment of our enterprise. We were at one time apprehensive, that the severity of the weather would have prevented the continuance of this amusement, but the perseverance of the officers overcame every difficulty; and, perhaps for the first time since theatrical entertainments were invented, more than one or two plays were performed, on board the Hecla, with the thermometer below zero on the stage.

The *North Georgia Gazette*, which I have already mentioned, was a source of great amusement, not only to the contributors, but to those who, from diffidence of their own talents, or other reasons, could not be prevailed on to add their mite to the little stock of literary composition, which was weekly demanded; for those who declined to write were not unwilling to read, and more ready to criticise than those who wielded the pen; but it was that good-humoured sort of criticism that could not give offence. The subjects handled in this paper were, of course, various, but generally applicable to our own situation. Of its merits or defects it will not be necessary for me to say any thing here, as I find that the officers, who were chiefly concerned in carrying it on, have agreed to print it for the entertainment of their friends; the publisher being at liberty, after supplying each with a certain number of copies, to dispose of the rest.

The return of each successive day had been always very decidedly marked by a

considerable twilight for some time about noon, that on the shortest day being sufficient to enable us to walk out very comfortably for nearly two hours.\* There was, usually, in clear weather, a beautiful arch of bright red light, overspreading the southern horizon for an hour or two before and after noon, the light increasing, of course, in strength, as the sun approached the meridian. Short as the day now was, if indeed any part of the twenty-four hours could properly be called by that name, the reflection of light from the snow, aided occasionally by a bright moon, was at all times sufficient to prevent our experiencing, even under the most unfavourable circumstances, any thing like the gloomy night which occurs in more temperate climates. Especial care was taken, during the time the sun was below the horizon to preserve the strictest regularity in the time of our meals, and in the various occu-

\* It will, perhaps, give the best idea of the power of the sun's light afforded us on this day, to state, that we could, at noon, read with tolerable ease, the same sized type as that in which this note is printed; but this could only be done by turning the book directly towards the south.



pations which engaged our attention during the day; and this, together with the gradual and imperceptible manner in which the days had shortened, prevented this kind of life, so novel to us in reality, from appearing very inconvenient, or indeed like any thing out of the common way. It must be confessed, however, that we were not sorry to have arrived without any serious suffering, at the shortest day; and we watched with no ordinary degree of pleasure, the slow approach of the returning sun.

On Christmas-day the weather was raw and cold, with a considerable snow-drift, though the wind was only moderate from the N.W.; but the snow which falls during the severe winter of this climate is composed of spiculæ so extremely minute, that it requires very little wind to raise and carry it along. To mark the day in the best manner which circumstances would permit, divine service was performed on board the ships; and I directed a small increase in the men's usual proportion of fresh meat as a Christmas-dinner, as well as an additional allowance of

grog, to drink the health of their friends in England. The officers also met at a social and freindly dinner, and the day passed with much of the same kind of festivity by which it is usually distinguished at home; and, to the credit of the men be it spoken, without any of that disorder by which it is too often observed by seamen. A piece of English roast-beef, which formed part of the officers' dinner, had been on board since the preceding May, and preserved without salt during that period, merely by the antiseptic properties of a cold atmosphere.

A great many frost-bites occurred about this time, 30th, principally in the men's feet, even when they had been walking quickly on shore for exercise. On examining their boots, Mr. Edwards remarked, that the stiffness of the thick leather, of which they were made, was such as to cramp the feet, and prevent the circulation from going on freely, and that this alone was sufficient to account for their feet having been frost-bitten. Being very desirous of avoiding these accidents, which, from the increased sluggish-

ness with which the sores healed, were more and more likely to affect the general health of the patients by long confinement, I directed a pair of canvass boots, lined with blanketting, or some other woollen stuff, to be made for each man, using raw hide as soles; this completely answered the desired purpose, as scarcely any frost-bites in the feet afterwards occurred, except under circumstances of very severe exposure.

On the 31st of December, another striking instance occurred of the simultaneous rise in the wind and the thermometer. At two A.M. the latter stood at  $-28^{\circ}$ , but the wind freshening up to a strong breeze from the northward and eastward, and afterwards from the S.S.E. in the course of the day, the thermometer gradually rose at the same time, and stood at  $+5^{\circ}$  at midnight; thus closing the year with milder weather than we had enjoyed for eight preceding weeks.

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## CHAPTER VI.

*First appearance of Scurvy—The Aurora Borealis and other Meteorological Phenomena—Visits of the Wolves—Re-appearance of the Sun—Extreme low Temperature—Destruction of the House on Shore by Fire—Severe Frost-bites occasioned by this Accident.*

THE mild weather with which the new year commenced was not of long duration; for, as the wind gradually moderated, the thermometer slowly fell once more to the average temperature of the atmosphere at this season. The quantity of snow which had fallen at this time was so small, that its general depth on shore did not exceed one or two inches, except where it had drifted into the ravines and hollows.

I received this morning the first unpleasant report of the scurvy having made its

appearance among us : Mr. Scallon, the gunner of the Hecla, had for some days past been complaining of pains in his legs, which Mr. Edwards at first took to be rheumatic, but which, together with the appearance of his gums, now left no doubt of the symptoms being scorbutic. It is so uncommon a thing for this disease to make its first appearance among the officers, that Mr. Edwards was naturally curious to inquire into the cause of it; and at length discovered that Mr. Scallon's bedding was in so damp a state, in consequence of the deposit of moisture in his bed-place, which I have before mentioned, as to leave no doubt that to this circumstance, as the immediate exciting cause, his illness might justly be attributed. The difficulty of preventing this deposit of moisture, and the consequent accumulation of ice, was much greater in the officers' bed-places than in those of the men, in consequence of the former being necessarily placed in close contact with the ship's sides, and forming an immediate communication, as it were,

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with the external atmosphere ; whereas, in the latter, there was a vacant interval of eighteen inches in width interposed between them. To prevent as much as possible, therefore, the injurious effects of this evil upon the health of the officers, I appointed certain days for the airing of their bedding by the fires, as well as for that of the ships' companies. Every attention was paid to Mr. Scallon's case by the medical gentlemen, and all our anti-scorbutics were put in requisition for his recovery : these consisted principally of preserved vegetable soups, lemon-juice, and sugar, pickles, preserved currants and gooseberries, and spruce-beer. I began also about this time to raise a small quantity of mustard and cress in my cabin, in small shallow boxes filled with mould, and placed along the stove-pipe ; by these means, even in the severity of the winter, we could generally ensure a crop at the end of the sixth or seventh day after sowing the seed, which, by keeping several boxes at work, would give to two or three scorbutic patients nearly an ounce of salad each daily,

even though the necessary economy in our coals did not allow of the fire being kept in at night. Had this been allowable, and a proper apparatus at hand for the purpose, there is no doubt that it might have been raised much more rapidly: and those who are aware how perfect a specific a very small quantity of *fresh* vegetable substance is for the scurvy, will, perhaps, agree with me in thinking that such an apparatus would form a very valuable appendage to be applied occasionally to the cabin-stove. The mustard and cress thus raised were necessarily colourless, from the privation of light, but, as far as we could judge, they possessed the same pungent aromatic taste as if grown under ordinary circumstances. So effectual were these remedies in Mr. Scallon's case, that, on the ninth evening from the attack, he was able to walk about on the lower deck for some time, and he assured me that he could then "run a race."

The 7th of January was one of the most severe days to the feelings which we experienced during the winter, the wind being

strong from the northward with a heavy drift, and the thermometer continuing from  $-38^{\circ}$  to  $-40^{\circ}$ . It is impossible to conceive any thing more inclement than such a day, when we could with difficulty pass and re-pass between the two ships, and were glad to keep every person closely confined on board.

At noon to-day, the temperature of the atmosphere had got down to  $49^{\circ}$  below zero, being the greatest degree of cold which we had yet experienced; but the weather being quite calm, we walked on shore for an hour without inconvenience, the sensation of cold depending much more on the degree of wind at the time, than on the absolute temperature of the atmosphere, as indicated by the thermometer. In several of the accounts given of those countries in which an intense degree of natural cold is experienced, some effects are attributed to it which certainly did not come under our observation in the course of this winter. The first of these is the dreadful sensation said to be produced on the lungs, causing



them to feel as if torn asunder, when the air is inhaled at a very low temperature. No such sensation was ever experienced by us, though in going from the cabins into the open air, and *vice versá*, we were constantly in the habit for some months of undergoing a change of from 80° to 100°, and, in several instances, 120° of temperature in less than one minute; and what is still more extraordinary, not a single inflammatory complaint, beyond a slight cold, which was cured by common care in a day or two, occurred during this particular period. The second is, the vapour with which the air of an inhabited room is charged, condensing into a shower of snow, immediately on the opening of a door or window, communicating with the external atmosphere. This goes much beyond any thing that we had an opportunity of observing. What happened with us was simply this: on the opening of the doors at the top and bottom of our hatchway ladders, the vapour was immediately condensed, by the sudden admission of the cold air, into a visible form, exactly

resembling a very thick smoke, which settled on all the pannels of the doors and bulk-heads, and immediately froze, by which means the latter were covered with a thick coating of ice, which it was necessary frequently to scrape off: but we never, to my knowledge, witnessed the conversion of the vapour into snow, during its fall.

On the evening of the 15th, the atmosphere being clear and serene, we were gratified by a sight of the only very brilliant and diversified display of Aurora Borealis, which occurred during the whole winter; I believe it to be almost impossible for words to give an idea of the beauty and variety which this magnificent phenomenon displayed.

About this time it had been remarked, that a white setter dog belonging to Mr. Beverly had left the Griper for several nights past at the same time, and had regularly returned after some hours' absence. As the daylight increased, we had frequent opportunities of seeing him in company with a she-wolf, with whom he kept up an almost

daily intercourse for several weeks, till at length he returned no more to the ships; having either lost his way by rambling to too great a distance, or, what is more likely, perhaps, been destroyed by the male wolves. Some time after, a large dog of mine, which was also getting into the habit of occasionally remaining absent for some time, returned on board a good deal lacerated and covered with blood, having, no doubt, maintained a severe encounter with a male wolf, whom we traced to a considerable distance by the tracks on the snow. An old dog, of the Newfoundland breed, that we had on board the Hecla, was also in the habit of remaining out with the wolves for a day or two together; and we frequently watched them keeping company on the most friendly terms.

A wolf, which crossed the harbour close to the ships on the 25th, was observed to be almost entirely white, his body long and extremely lean, standing higher on his legs than any of the Esquimaux dogs, but otherwise much resembling them; his tail was

long and bushy, and always hanging between his legs, and he kept his head very low in running. It is extraordinary that we could never succeed in killing or catching one of these animals, though we were, for months, almost constantly endeavouring to do so.

As the time was now near at hand when the sun was to re-appear above our horizon, we began this day to look out for it from the mast head, in order that some observations might be made, as to the amount of the atmospherical refraction, which might render it visible to us sooner than under ordinary circumstances. For this purpose, and at the same time to avoid the frost-bites which might have occurred from keeping any individual at the mast-head for too long a space, every man in the ship was sent up in succession, so as to occupy the time for ten minutes before and after noon; and this practice was continued till the sun appeared above the horizon from the deck, which it did not do till nine days after the commencement of it.

The loss of lemon-juice, of which I have

before had occasion to speak, in consequence of the breaking of the bottles by frost, continued still to take place to so great a degree, that it now became absolutely necessary to adopt some measures for providing against similar contingencies in future, and to preserve the remainder; I, therefore, consulted Mr. Edwards as to the propriety of reducing the daily allowance of that essential article to three-quarters of the usual proportion, being three-quarters of an ounce per man: this, he was of opinion, under all circumstances, it was expedient to do, in order to ensure a supply in those cases of a scorbutic nature which might hereafter occur; and this reduction was accordingly ordered in both ships.

At half-past ten P.M. a complete halo of pale light was observed round the moon, its radius being  $22^{\circ}.40$ , and a similar phenomenon occurred on the following night, about the same time. These phenomena almost always began to make their appearance about the time of full moon.

The weather was remarkably clear and

fine on the 28th, and the sky beautifully red to the southward ; but we looked for the sun from the mast-head without success. Captain Sabine remarked at noon, that none of the fixed stars, even of the first magnitude, could be seen by the naked eye ; Mars, however, was plainly visible, by which some judgment may be formed of the power of the sun's light at this period. Towards the end of January we began to open some of our ports, in order to admit sufficient light for the carpenters and armourers to work by, and these were employed in repairing the main-top-sail-yard, that we might at least make some shew of commencing our re-equipment for sea.

On the 1st and 2nd of February the weather was rather hazy, so that the sun could not have been seen had it been above the horizon, but the 3rd was a beautifully clear and calm day. At eight A. M., a cross, consisting of the usual vertical and horizontal rays, was seen about the moon. At twenty minutes before apparent noon, the sun was seen from the Hecla's main-top,

at the height of fifty-one feet above the sea, being the first time that this luminary had been visible to us since the 11th of November, a period of eighty-four days, being twelve days less than the time of its remaining actually beneath the horizon, independently of the effects of atmospherical refraction. On ascending the main-top, I found the sun to be plainly visible over the land to the south; but at noon there was a dusky sort of cloud hanging about the horizon, which prevented our seeing any thing like a defined limb, so as to measure or estimate its altitude correctly.

On several occasions, in the course of the winter, there was an appearance in the southern horizon very much resembling land at a great distance. This appearance was to-day unusually well defined, and seemed to terminate in a very abrupt and decided manner, on a S. b. E. bearing from Winter Harbour.

At noon on the 7th, we had the first clear view of the sun which we had yet enjoyed since its re-appearance above our horizon,

and an indistinct parhelion, or mock sun, slightly prismatic, was seen on the eastern side of it, at the distance of  $22^{\circ}$ .

There was now sufficient day-light, from eight o'clock till four, to enable us to perform, with great facility, any work outside the ships. I was not sorry, therefore, to commence upon some of the occupations more immediately connected with the equipment of the ships for sea, than those to which we had hitherto been obliged to have recourse as mere employment. We, therefore, began this day to collect stones for ballast, of which it was calculated that the Hecla would require, in the spring, nearly seventy tons, besides twenty tons of additional water, to make up for the loss of weight by the expenditure of provisions and stores. These stones were brought down on sledges about half a mile to the beach, where they were broken into a convenient size for stowage, and then weighed in scales, erected on the beach for the purpose; thus affording to the men a considerable quantity of bodily exercise, whenever the weather would permit them to be so employed.



As we were now, however, approaching the coldest part of the season, it became more essential than ever to use the utmost caution in allowing the men to remain for any length of time in the open air, on account of the injury to their general health, which was likely to result from the inactivity requisite to the cure of some of the most trifling frost-bites.

It was a source of much satisfaction to find, at noon to-day, that the sun, even with one degree of meridian altitude, had some power to affect the mercury in the thermometer, which rose from  $-40^{\circ}$  to  $-35^{\circ}$  when exposed to its rays; and, as the sun gradually declined, it fell again to  $-40^{\circ}$  in an hour or two.

The distance at which sounds were heard in the open air, during the continuance of intense cold, was so great as constantly to afford matter of surprise to us, notwithstanding the frequency with which we had occasion to remark it. We have, for instance, often heard people distinctly conversing, in a common tone of voice, at the distance of a mile; and to-day I heard a

man singing to himself as he walked along the beach, at even a greater distance than this. Another circumstance also occurred to-day, which may perhaps be considered as worthy of notice. Lieutenant Beechey, and Messrs. Beverly and Fisher, in the course of a walk which led them to a part of the harbour, about two miles directly to leeward of the ships, were surprised by suddenly perceiving a smell of smoke, so strong as even to impede their breathing, till, by walking on a little farther, they got rid of it. This circumstance shews to what a distance the smoke from the ships was carried horizontally, owing to the difficulty with which it rises at a very low temperature of the atmosphere. The appearance which had often been taken for the loom of distant and much refracted land in the south and S.b.E., was again seen to-day, having the same abrupt termination at the latter bearing as before.

It may perhaps be attributed to the long absence of the sun which we had lately experienced, and which may have disqualified

us from forming a correct judgment, that we considered the orange and lake tints with which the sky was painted about this period, for two hours before and after noon, to be more rich and beautiful than any thing of the kind we had ever before seen.

Monday the 14th.—Two of the Hecla's marines having been guilty of drunkenness the preceding night, an offence which, under any circumstances, it was my duty to prevent, but which, if permitted to pass unnoticed, might, in our present situation, have been attended with the most serious consequences to our health as well as our discipline, I was under the necessity of punishing them this morning with thirty-six lashes each; being the first occasion on which I had considered it necessary to inflict corporal punishment during thirteen months that the Hecla had been in commission, a fact which I have much satisfaction in recording, as extremely creditable to her crew.

From four P.M. on the 14th, till half-past seven on the following morning, being

an interval of fifteen hours and a half, during which time the weather was clear and nearly calm, a thermometer fixed on a pole, between the ships and the shore, never rose above  $-54^{\circ}$ , and was once during that interval, namely, at six in the morning, as low as  $-55^{\circ}$ . This low temperature might, perhaps, have continued much longer, but for a light breeze which sprung up from the northward, immediately on which the thermometer rose to  $-49^{\circ}$ , and continued still to rise during the day, till at midnight it had reached  $-34^{\circ}$ . During the lowest temperature above mentioned, which was the most intense degree of cold, marked by the spirit thermometer, during our stay in Winter Harbour, not the slightest inconvenience was suffered from exposure to the open air, by a person well clothed, as long as the weather was perfectly calm; but, in walking against a very light air of wind, a smarting sensation was experienced all over the face, accompanied by a pain in the middle of the forehead, which soon became rather severe. We amused ourselves in

freezing some mercury during the continuance of this cold weather, and by beating it out on an anvil previously reduced to the temperature of the atmosphere; it did not appear to be very malleable when in this state, usually breaking after two or three blows from the hammer.

The increased length of the day, and the cheering presence of the sun for several hours above the horizon, induced me, notwithstanding the severity of the weather, to open the dead-lights of my stern-windows, in order to admit the day-light, of which, in our occupations below, we had entirely been deprived for more than four months. I had soon, however, occasion to find that this change was rather premature, and that I had not rightly calculated on the length of the winter in Melville Island. The *Hecla* was fitted with double windows in her stern, the interval between the two sashes being about two feet; and within these some curtains of baize had been nailed close, in the early part of the winter. On endeavouring now to remove the curtains,

they were found to be so strongly cemented to the windows by the frozen vapour collected between them, that it was necessary to cut them off, in order to open the windows; and from the space between the double sashes we removed more than twelve large buckets full of ice, or frozen vapour, which had accumulated in the same manner.

About noon on the 16th, a parhelion, faintly prismatic, appeared on each side of the sun, continuing only for half an hour. Notwithstanding the low temperature of the external atmosphere, the officers contrived to act, as usual, the play announced for this evening; but it must be confessed that it was almost too cold for either the actors or the audience to enjoy it, especially for those of the former who undertook to appear in female dresses. We were fortunate, however, in having the weather moderate as to wind, during our performance; for, on its freshening up soon after to a strong gale from the N.W., which, together with a heavy snow-drift, continued the whole of the following day, the thermometer did not

rise higher than  $-36^{\circ}$ ; a change that made the Hecla colder in every part below than she had ever been before. The temperature of the lower deck now fell to  $+34^{\circ}$  for the greater part of the day, that of the coal-hole to  $+15^{\circ}$ , of the spirit-room to  $+23^{\circ}$ , and of my cabin, as low as  $+7^{\circ}$  during the night, by which the chronometers, Nos. 25 and 369, of Arnold were stopped. Much as I regretted this circumstance, it was impossible to prevent it without such an increase in the quantity of fuel, as our resources, when calculating upon the chances of spending another winter in these regions, would by no means admit. Captain Sabine and myself, therefore, agreed, that it was better to let these watches remain down, during the continuance of the severe cold, which was accordingly done.

The intense cold now experienced on board the Hecla seems to have arisen principally from my having prematurely uncovered the stern windows, which I had been induced to do, not less from the impatience

which I felt to enjoy the cheering rays of the sun for eight hours of the day, than on account of the saving of candles, the expenditure of which had hitherto been much greater than we could well afford. In the constant hope that each succeeding day would produce some amendment in the weather, we endeavoured contentedly to put up with the cold, which, however, continued to be so intense in the cabin for several weeks after this, that it was impossible to sit there without being warmly wrapped up; and it was not uncommon for us, at this period, to reverse the usual order of things, by throwing off our great coats when we went on deck to warm ourselves by exercise (the only mode we had of doing so), and immediately resuming them on coming below. On many of these occasions I have seen a thermometer, placed at our feet, standing the whole day at  $+19^{\circ}$ , and sometimes lower, while another, suspended in the upper part of the cabin, would, at the same time, indicate  $32^{\circ}$  or  $34^{\circ}$ , but seldom higher than this. We had, about



this time, two cases of lumbago and one of diarrhoea added to the sick list, which Mr. Edwards considered to have been brought on by the coldness of the decks below ; in one of these cases, some scorbutic symptoms subsequently appeared, which yielded without much difficulty to the usual remedies. Mr. Scallon had, before this time, completely recovered. The bed-places continuing very troublesome, from the accumulation of ice in them, several of the men were ordered to sleep in hammocks, which are much more warm and comfortable ; but they had been so long accustomed to the bed-places, that there was, in this respect, a good deal of prejudice to overcome among them.

With our present temperature, the breath of a person, at a little distance, looked exactly like the smoke of a musket just fired, and that of a party of men employed upon the ice to-day resembled a thick white cloud.

At a quarter past ten, on Thursday the 24th, while the men were running round the decks for exercise, and were on that

account fortunately well-clothed, the house on shore was discovered to be on fire. All the officers, and men of both ships, instantly ran up to extinguish it; and having, by great exertion, pulled off the roof with ropes, and knocked down a part of the sides, so as to allow snow to be thrown upon the flames, we succeeded in getting it under, after three-quarters of an hour, and fortunately before the fire had reached that end of the house where the two clocks, together with the transit, and other valuable instruments, were standing in their cases. Having removed these, and covered the ruins with snow, to prevent any remains of fire from breaking out again, we returned on board till more temperate weather should enable us to dig out the rest of the things, among which nothing of any material consequence was subsequently found to have suffered injury; and, having mustered the ships' companies to see that they had put on dry clothes before going to dinner, they were employed during the rest of the day in drying those which had been wet. The

appearance which our faces presented at the fire was a curious one, almost every nose and cheek having become quite white with frost-bites in five minutes after being exposed to the weather ; so that it was deemed necessary for the medical gentlemen, together with some others appointed to assist them, to go constantly round, while the men were working at the fire, and to rub with snow the parts affected, in order to restore animation. Notwithstanding this precaution, which, however, saved many frost-bites, we had an addition of no less than sixteen men to the sick-lists of both ships in consequence of this accident. Among these there were four or five cases which kept the patients confined for several weeks ; but John Smith of the artillery, who was Captain Sabine's servant, and who, together with Serjeant Martin, happened to be in the house at the time the fire broke out, was unfortunate enough to suffer much more severely. In their anxiety to save the dipping-needle, which was standing close to the stove, and of which they knew

the value, they immediately ran out with it; and Smith, not having time to put on his gloves, had his fingers in half an hour so benumbed, and the animation so completely suspended, that on his being taken on board by Mr. Edwards, and having his hands plunged into a basin of cold water, the surface of the water was immediately frozen by the intense cold thus suddenly communicated to it; and, notwithstanding the most humane and unremitting attention paid to them by the medical gentlemen, it was found necessary, some time after, to resort to the amputation of a part of four fingers on one hand and three on the other.

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## CHAPTER VII.

*More temperate Weather—House rebuilt—Quantity of Ice collected on the Hecla's lower Deck—Meteorological Phenomena—Conclusion of Theatrical Entertainments—Increased Sickness on board the Griper—Clothes first dried in the open Air—Remarkable Halos and Parhelia—Snow Blindness—Cutting the Ice round the Ships, and other Occurrences to the close of May.*

BEFORE sun-rise on the morning of the 1st of March, Lieutenant Beechey remarked so much bright red light near the southeastern horizon, that he constantly thought the sun was rising, nearly half an hour before it actually appeared; there was a column of light above the sun similar to those which we had before seen. The day being clear and moderate, a party of men was

employed in digging out the things which were buried in the ruins; the clocks were removed on board for examination, and preparations were made to rebuild the house for their reception. Some of our gentlemen who walked to the south-west during the day, observed the snow, in certain parts which were exposed to the sun, to be glazed, so as to be very slippery, as if a partial thaw had taken place. It is, perhaps, requisite to have experienced the anxiety with which we were now beginning to look for some favourable change in the temperature of the atmosphere, to conceive the eagerness with which this information was received, and the importance attached to it in our minds, as the first faint indication of the dissolution of the winter's snow. In the evening the wind freshened from the southward, and before midnight had increased to a strong gale, which is very unusual from that quarter.

The 5th of March was the most mild and pleasant day we had experienced for several weeks, and, after divine service had been

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performed, almost all the officers and men in both ships were glad to take advantage of it, by enjoying a long walk upon the neighbouring hills. The weather had been hazy, with light snow and some clouds in the morning; but the latter gradually dispersed after noon, affording us the first day to which we could attach the idea of spring.

On the 6th, at eight A.M., the thermometer had got up to zero, being the first time we had registered so high a temperature since the 17th of the preceding December. The wind veered gradually from S.S.E., round by west, to north, and at night was remarkably variable and squally, frequently changing, almost instantly, from north to west, and *vice versa*; sometimes being so light as not to extinguish a naked candle at the gangway, and at others blowing a strong breeze. Squalls of this kind we had not observed before, nor did they occur on any other occasion; we could not perceive any alteration in the thermometer while they lasted.

We continued to enjoy the same temperature and enlivening weather on the 7th, and now began to flatter ourselves in earnest, that the season had taken that favourable change for which we had so long been looking with extreme anxiety and impatience. This hope was much strengthened by a circumstance which occurred to-day, and which, trifling as it would have appeared in any other situation than ours, was to us a matter of no small interest and satisfaction. This was no other than the thawing of a small quantity of snow in a favourable situation upon the black paint work of the ship's stern, which exactly faced the south, being the first time that such an event had occurred for more than five months.

Advantage was taken of the present mild and pleasant weather, to rebuild the house on shore, which was completed in a few days, when the clocks were replaced in it, in readiness for Captain Sabine to begin his experiments on the pendulum, whenever the season would permit.



The severe weather, which, until the last two or three days, we had experienced for a length of time, had been the means of keeping in a solid state all the vapour which had accumulated and frozen upon the ships' sides on the lower deck. As long as it continued in this state, it did not prove a source of annoyance, especially as it had no communication with the bed-places. On the contrary, indeed, I had imagined, whether justly or otherwise I know not, that a lining of this kind rather did good than harm, by preventing the escape of a certain portion of the warmth through the ships' sides. The late mildness of the weather, however, having caused a thaw to take place below, it now became necessary immediately to scrape off the coating of ice; and it will, perhaps, be scarcely credited, that we this day removed above one hundred buckets full, each containing from five to six gallons, being the accumulation which had taken place in an interval of less than four weeks. It may be observed, that this vapour must principally have been pro-

duced from the men's breath, and from the steam of their victuals during meals, that from the coppers being effectually carried on deck by the screen which I have before mentioned.

James Richardson, a seaman of the *Hecla*, one of the men who had been attacked by lumbago a short time before, now evinced some symptoms of scurvy, and was, therefore, immediately put on the anti-scorbutic diet. About this time, also, John Ludlow, boatswain's-mate of the *Griper*, and William Wright, seaman of the *Hecla*, were attacked in a similar manner; and these two cases subsequently proved the worst of this nature on board the ships. Immediately on the appearance of any complaint among the men, and especially when the symptoms were in the slightest degree scorbutic, the patients were removed to the sick-bay, where the bed-places were larger and more convenient, and where a separate stove was fixed, when necessary, so as to make it a warm and comfortable place, apart from the rest of the ship's company.

On the 9th, it blew a hard gale from the northward and westward, raising a snow-drift which made the day almost as inclement as in the midst of winter. The wind very suddenly ceased in the evening, and while the atmosphere near the ships was so serene and undisturbed that the smoke rose quite perpendicularly, we saw the snow-drift on the hills, at one or two miles distance, whirled up into the air, in columns several hundred feet high, and carried along by the wind, sometimes to the north, and at others in the opposite direction. The snow thus raised, at times resembled water-spouts, but more frequently appeared like smoke issuing from the tops of the hills, and as such, was at first represented to me.

On the 12th, Lieutenant Liddon reported another of his seamen to be affected with scurvy, making two in each ship labouring, more or less, under this disease; Mr. Scallon also complained again a little, of feeling, according to his own account, "as if tired with walking;" by attention, however, to the warmth and dryness of his clothing, he gra-

dually recovered his former strength as the season advanced.

It blew a strong breeze from the N.b.W., with a heavy snow-drift, on the 12th, which continued, with little intermission, till near noon on the 14th; affording us a convincing proof that the hopes with which we had flattered ourselves of the speedy return of spring were not yet to be accomplished. During this time the thermometer had once more fallen as low as  $-28^{\circ}$ , a change which, after the late mild weather, we felt much in the same manner as we should have done any of those alterations which occur in a more temperate climate, at a higher part of the scale. I have before had occasion to observe that this remark is equally applicable to all the changes we experienced in the course of the winter, either from cold to warm, or the contrary.

On the 16th, there being little wind, the weather was again pleasant and comfortable, though the thermometer remained very low.

This evening the officers performed the

farces of the *Citizen* and the *Mayor of Garratt*, being the last of our theatrical amusements for this winter, the season having now arrived when there would no longer be a want of occupation for the men, and when it became necessary also to remove a part of the roofing to admit light to the officers' cabins. Our poets were again set to work on this occasion, and an appropriate address was this evening spoken on the closing of the North Georgia Theatre, than which we may, without vanity, be permitted to say, none had ever done more real service to the community for whose benefit it was intended.

Two of the Hecla's seamen, who were employed on shore in digging stones for ballast, reported on the 20th, that they had seen a glaucous gull, or one of that species known to sailors by the name of "burgomaster." On being questioned respecting this bird, they strongly insisted on the impossibility of their having mistaken its kind, having been within twenty yards of it. As, however, these gulls cannot well subsist

without open water, of which there was certainly none in the neighbourhood at that period, we conjectured that it might have been an owl; a bird that may, perhaps, remain on the island even during the whole winter, as the abundance of mice, of which we constantly saw the tracks upon the snow, would furnish them with an ample supply of food. It was a novelty to us, however, to see any living animal in this desolate spot; for even the wolves and foxes, our occasional visitors during the winter, had almost entirely deserted us for several weeks past.

On the 23d, we found, by digging a hole in the ice, in the middle of the harbour, where the depth of water was four fathoms and a quarter, that its thickness was six feet and a half, and the snow on the surface on it eight inches deep. This may be considered a fair specimen of the average formation of ice in this neighbourhood since the middle of the preceding September: and as the freezing process did not stop for more than six weeks after this, the produce

of the whole winter may, perhaps, be reasonably taken at seven, or seven and a half feet. In chopping this ice with an axe the men found it very hard and brittle, till they arrived within a foot of the lower surface, where it became soft and spongy.

The length of the day had now so much increased, that at midnight on the 26th, there was a very sensible twilight in the northern quarter of the heavens; and such was the rapidity with which this part of the season appeared to us to have come round, that we could with difficulty picture to ourselves the total darkness from which we had so lately emerged.

On one of the fine days in the early part of March, in taking a longer walk than usual on the north side of the harbour, we accidentally met with a small flat stone, on which the letter P was plainly engraved. As there seemed little doubt that this had been artificially done, and as, since our arrival in Winter Harbour, the weather had been too cold to induce any of our people to sit down on the ground for the purpose of

exercising their talent in this way, we were entirely at a loss to conjecture how it came there, and various amusing speculations were resorted to, in order to account for it. Since that time, the weather had not permitted our sending for it till this day, when it was brought on board; and on enquiry among the men, we found that Peter Fisher, a seaman belonging to the Griper, who was one of the party under Mr. Fife, respecting whom we had felt so much anxiety in the preceding September, had, on that occasion, amused himself by beginning to scratch upon the stone in question the initials of his name.\* This circumstance is

\* When Mr. Fife and his party returned from that excursion, it was a matter of surprise to us, to see how fresh Fisher was, and how little he seemed to regard what had happened, as any thing out of the common way, of which, indeed, the circumstance just related is also a proof. When asked, on his first arrival on board on that occasion, what they had lived upon, "Lived upon," said Fisher, dryly—"the Duke of Wellington never lived so well. We had grouse for breakfast, grouse for dinner, and grouse for supper, to be sure!"



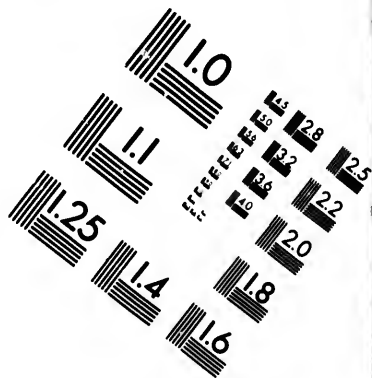
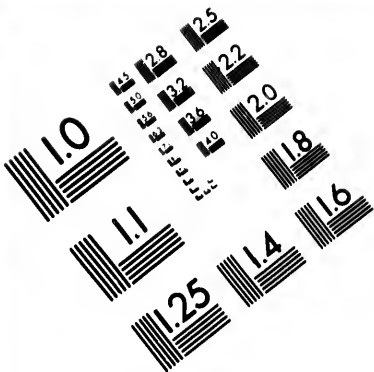
only worthy of notice, from its proving to how considerable a distance this party had rambled, and how completely they were in error as to the direction in which they had been travelling; the distance between the two places being twenty-five miles. I was in hopes, also, of finding out, by this means, the situation of a large lake, which Mr. Fife reported having seen, and from which he brought a small fish of the trout kind; but the more I questioned him and his party, the more I was convinced of the little dependence to be placed on the account of persons circumstanced as they were, and of their utter ignorance as to the part of the island in which the lake was to be found.

Being extremely anxious to get rid, as early as possible, of the drying of our washed clothes upon the lower deck, I had today a silk handkerchief washed, and hung up under the stern, in order to try the effect of the sun's rays upon it. In four hours it became thoroughly dry, the thermometer in the shade being from  $-18^{\circ}$  to  $-6^{\circ}$ , at

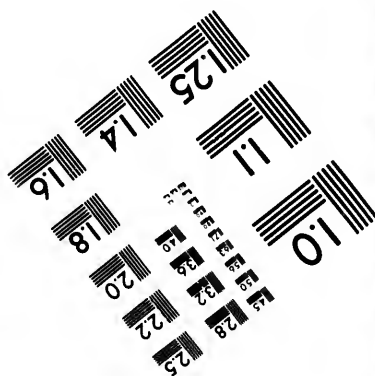
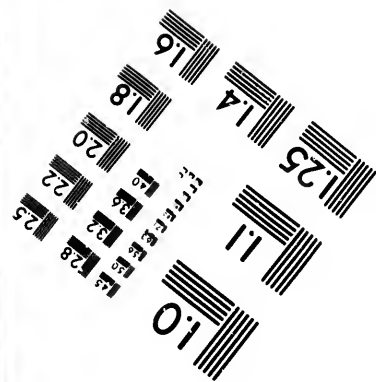
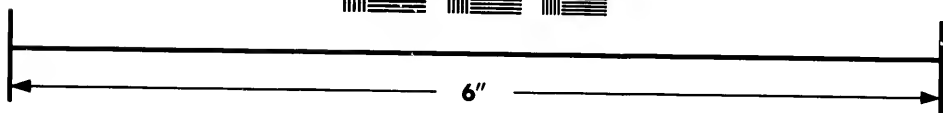
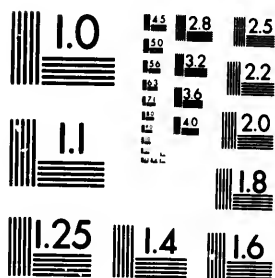
the time. This was the first article that had been dried without artificial heat for six months, and it was yet another month before flannel could be dried in the open air. When this is considered, as well as that, during the same period, the airing of the bedding, the drying of the bed-places, and the ventilation of the inhabited parts of the ship, were wholly dependent on the same means, and this with a very limited supply of fuel, it may, perhaps, be conceived, in some degree, what unremitting attention was necessary to the preservation of health, under circumstances so unfavourable and even prejudicial.

The protracted length of the winter began now to make us more than usually impatient, and to create in us reasonable apprehensions lest our escape from Winter Harbour should unavoidably be postponed to a period too late for the accomplishment of those sanguine hopes, with which the last year's success had induced us to flatter ourselves. The extraordinary degree of cold which continued day after day was such as





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we had certainly not anticipated; and when, at this period, with the sun above the horizon for seventeen hours out of the four-and-twenty, the thermometer was still occasionally fallen as low as  $-31^{\circ}$ , which it did at four this morning, it must be confessed that our future prospects of advancement began to wear a very unpromising aspect. It may be imagined also with what anxiety we watched for the first appearance of a thaw, both on shore and upon the ice round the ships, in neither of which had any such appearances yet become perceptible, except that here and there, where the snow happened to lie very thin upon the ground, allowing the sun's rays to penetrate to the earth, a sufficient degree of heat had been radiated partially to thaw the snow, forming it into a thin transparent cake, like a plate of glass. Indeed, the cloudless sky, and the uniformly white surface of the sea and land which characterize the climate of Melville Island at this period, are ill calculated to impart warmth to the atmosphere; and it was not till the clouds became gradually

more dense and frequent, and the earth had, by slow degrees, become uncovered in parts, so as to admit the absorption and radiation of heat, that the dissolution of the snow could go on to any considerable extent.

It was a source of extreme satisfaction to me to find that the health of both ships' companies were daily improving as the season advanced; so that by the middle of April the Griper's sick list was reduced to four, all of whom were convalescent; and on board the Hecla, Mr. Edwards had but a single patient, William Scott, boatswain's-mate, who first complained of pneumonia about this time, and whose case subsequently assumed a more dangerous character.

The morning of the 27th being very fine, and the thermometer at  $+6^{\circ}$ , the ship's company's bedding was hung up to air, between the fore and main rigging, being the first time we had ventured to bring it from the lower deck for nearly eight months. While it was out, the births and bed-places were fumigated with a composition of powder

mixed with vinegar, and known familiarly by the name of *devils*; an operation which had been regularly gone through once a week during the winter.

I have before mentioned the circumstance of our lower rigging having been very slack during the severity of the winter, and again become tight as the warmer weather came on. Even now this had taken place so effectually, that the rigging was full as tight as when we left the river Thames twelve months before. I have been the more particular in mentioning this fact, because the circumstance of its becoming slack by the cold is at variance with the accounts of other navigators.\*

For the last three or four days of April, the snow on the black cloth of our housing had begun to thaw a little during a few

\* "On the morning of the 5th, (November,) it was discovered that almost all the shrouds on the star-board side of the ship were broken, which happened from contraction and tenseness, caused by frost."—*Account of Bering's Voyage, A. D. 1741, BURNEY'S North-Eastern Voyages of Discovery.*



hours in the middle of the day, and on the 30th so rapid a change took place in the temperature of the atmosphere, that the thermometer stood at the freezing, or, as it may more properly be termed in this climate, the thawing point, being the first time that such an event had occurred for nearly eight months, or since the 9th of the preceding September. This temperature was, to our feelings, so much like that of summer, that I was under the necessity of using my authority to prevent the men from making such an alteration in their clothing as might have been attended with very dangerous consequences. The thermometer had ranged from  $-32^{\circ}$  to  $+32^{\circ}$  in the course of twenty days. There was, at this period, more snow upon the ground than at any other time of the year, the average depth on the lower parts of the land being four or five inches, but much less upon the hills; while in the ravines a very large quantity had been collected. The snow at this time became so soft, from the influence of the

sun upon it, as to make walking very laborious and unpleasant.

This rapid change in the temperature of the atmosphere again revived our hopes of a speedy departure from Melville Island; and such were the sanguine expectations which animated us at this period, that I believe there was not an officer or man on board either of the ships, who had not made up his mind to the probability of our leaving Winter Harbour by the middle or latter part of June.

The fine and temperate weather with which the month of April had concluded, induced Captain Sabine to set the clocks going, in order to commence his observations for the pendulum, and he now took up his quarters entirely on shore for that purpose. On the first of May, however, it blew a strong gale from the northward, which made it impossible to keep up the desired temperature in the house; and so heavy was the snow-drift, that in a few hours the house was nearly covered, and we were obliged to communicate with Cap-

tain Sabine and his attendants through a small window, from which the snow was, with much labour, cleared away, the door being quite inaccessible. We saw the sun at midnight for the first time this season.

The gale and snow-drift continued on the following day, when we had literally to dig out the sentries, who attended the fire at the house, in order to have them relieved. I feel it right to mention these circumstances, that the difficulties with which Captain Sabine had to contend, may be duly appreciated in the making of observations that require, even under every favourable circumstance of weather and climate, no ordinary share of skill and attention.

On the 5th Mr. Edwards reported that Mr. Crawford, the Greenland mate, who had, for several days past, been complaining of pains which appeared to be rheumatic, shewed some symptoms of the scurvy, which made it necessary to resort to the antiscorbutic diet. It is worthy of notice, that Mr. Crawford was one of the most clean,

temperate, and cheerful men in the expedition, and, as such, was one of the least likely to be thus affected. The washed clothes of the ship's company were this day dried entirely in the open air.

On the 6th, the thermometer rose no higher than  $+8\frac{1}{2}^{\circ}$  during the day; but, as the wind was moderate, and it was high time to endeavour to get the ships once more fairly afloat, we commenced the operation of cutting the ice about them. In order to prevent the men suffering from wet and cold feet, a pair of strong boots and boot-stockings were on this occasion served to each, being part of a complete suit of warm clothing, with which I had been supplied for the purpose of issuing them to the ships' companies gratis, whenever I should see occasion. As the sun became low towards midnight, the usual parhelia appeared about this luminary.

The expedition having, at its departure from England, been victualled for no more than two years, of which one had now expired, I considered it expedient, as a matter

of precaution, to reduce the daily allowance of all the kinds of provision to two-thirds of the established proportion, which regulation accordingly took place from this day. The cheerfulness with which this reduction was received by both officers and men was to me an additional and highly gratifying proof of that firm and zealous principle of duty by which their conduct was at all times regulated.

On the 12th, one of the men, employed in digging turf on shore, reported that he had seen a ptarmigan, an event which, trifling as it was, created no small degree of interest among us, who had now been deprived of fresh meat for nearly six months: it was also hailed as a sure omen of returning summer. This was further confirmed by Mr. Beverly having on the 13th killed a male ptarmigan, and by another being seen on the following day, as well as the first tracks of rein-deer and musk-oxen, which indicated their route to be directly to the northward. The time of the return of these animals to Melville Island, from

the continent, is thus satisfactorily ascertained; and it was suggested by Captain Sabine, as a circumstance worthy of remark, that the period of their migration had occurred with the first fine weather which took place after the commencement of constant day-light. In examining the seeds and small buds contained in the maw of the bird killed by Mr. Beverly, they were found to consist entirely of the native plants of the island, and principally those of the dwarf-willow, so that the bird had perhaps arrived a day or two before that time. On the 15th, two or three coveys of ptarmigan were seen, after which they became more and more numerous, and a brace or two were almost daily procured for the sick, for whose use they were exclusively reserved. As it was of the utmost importance, under our present circumstances, that every ounce of game which we might thus procure, should be served in lieu of the other meat, I now renewed the orders formerly given, and which afterwards obtained among us the name of "game-

laws," that every animal killed was to be considered as public property; and, as such, to be regularly issued like any other kind of provision, without the slightest distinction between the messes of the officers and those of the ships' companies.

Some of our men, having, in the course of their shooting excursions, been exposed for several hours to the glare of the sun and snow, returned at night, much affected with that painful inflammation in the eyes, occasioned by the reflection of intense light from the snow, aided by the warmth of the sun, and called in America "snow-blindness." This complaint, of which the sensation exactly resembles that produced by large particles of sand or dust in the eyes, is cured by some tribes of American Indians, by holding them over the steam of warm water; but we found a cooling wash, made by a small quantity of acetate of lead mixed with cold water, more efficacious in relieving the irritation, which was always done in three or four days, even in the most severe cases, provided the eyes were care-

fully guarded from the light. As a preventive of this complaint, a piece of black crape was given to each man, to be worn as a kind of short veil attached to the hat, which we found to be very serviceable; a still more convenient mode, adopted by some of the officers, was found equally efficacious; this consisted in taking the glasses out of a pair of spectacles, and substituting black or green crape, the glass having been found to heat the eyes, and increase the irritation.

The exhalations arising from the earth were about this time observed to be very abundant, producing, during the day-time, much of that appearance of waving tremulous motion in distant objects, which the French called *mirage*, and which was usually succeeded by a fog at night, as soon as the atmosphere had become cool.

On the 17th, we completed the operation of cutting the ice round the Hecla, which was performed in the following manner: the ice alongside the ships was found to be six feet thick, being about eighteen



inches less than the average thickness of it in Winter Harbour, owing principally to our having continued to cut it round the ships for some time after the commencement of the winter, and in part, perhaps, to the snow with which it had there been thickly covered. We began by digging a large hole under the stern, being the same as that in which the tide-pole was placed, in order to enter the saw, which occupied us nearly two days, only a small number of men being able to work at it. In the mean time, all the snow and rubbish was cleared away from the ship's side, leaving only the solid ice to work upon; and a trench, two feet wide, was cut the whole length of the star-board side, from the stem to the rudder, keeping within an inch or two of the bends, and taking care here and there to leave a dike, to prevent the water which might ooze into one part from filling up the others in which\* the men were working. In this manner was the trench cut with axes, to the depth of about four feet and a half, leaving only eighteen inches for the saws to cut,

except in those places where the dikes remained. The saw, being then entered in the hole under the stern, was worked in the usual manner, being suspended by a triangle made of three spars; one cut being made on the outer part of the trench, and a second within an inch or two of the bends, in order to avoid injuring the planks. A small portion of ice being broken off now and then by bars, handspikes, and ice-chisels, floated to the surface, and was hooked out by piecemeal. This operation was a cold and tedious one, and required nine days to complete it. When the workmen had this morning completed the trench within ten or twelve feet of the stern, the ship suddenly disengaged herself from the ice, to which she had before been firmly adhering on the larboard side, and rose in the water about ten inches abaft, and nearly eighteen inches forward, with a considerable surge. This disengagement, to which the sailors naturally applied the term "launching," confirmed my supposition, that the ship was held so fast by the ice, as

to make it dangerous to alter materially the stowage of the holds, but in a manner the very reverse of what I had apprehended. This circumstance, however, on consideration, it was not difficult to explain. In the course of the winter, the strong eddy winds about the ships had formed round them a drift of snow, seven or eight feet deep in some parts, and, perhaps, weighing a hundred tons; by which the ice, and the ships with it, were carried down much below the natural level at which they would otherwise have floated. In the mean time the ships had become considerably lighter, from the expenditure of several months' provisions; so that, on both these accounts, they had naturally a tendency to rise in the water as soon as they were set at liberty.

The ships being now once more fairly afloat, I directed a strict and careful survey to be commenced of all the provisions and stores of every kind remaining on board each ship, and at the same time the Griper to be supplied with the quantity which the Hecla had stowed for her, amounting nearly

to the proportion of every kind for twelve months. In the mean time, a party of hands were occupied in breaking and weighing the stones for ballast, while others were getting out the sails and boats, and our carpenters, armourers, coopers and sail-makers, having each their respective employments, our little colony now presented the most busy and bustling scene that can be imagined. It was found necessary to caulk every part of the upper works, as well as all the decks, the seams having been so much opened by the frost, as to require at least one, and in many parts two threads of oakum, though the ship had scarcely ever laboured at all since she was last caulked. I also at this time laid out a small garden, planting it with radishes, onions, mustard, and cress; and a similar attempt was made by Lieutenant Liddon; but, notwithstanding every care and attention which could be paid to it, this experiment may be said to have wholly failed, the radishes not exceeding an inch in length by the latter end of July, and the other

seeds being altogether thrown away. Not even a single crop of mustard and cress could be thus raised in the open air; and our horticulture was, therefore, once more confined to my cabin, where, at the present mild temperature of the atmosphere, those two vegetables could be raised without any difficulty, and in considerable abundance. I may remark, however, that some common ships' peas, which were sown by our people for their amusement, were found to thrive so well, that, had I been sooner aware of it, a great quantity of the leaves at least of this vegetable might have been grown, which, when boiled, and eaten as greens, would have been no small treat to persons deprived of fresh vegetable substance for more than ten months. It is not improbable also, that, by the assistance of glass, the want of which deprived us of the opportunity of making the experiment, a great deal more might have been done in this way, notwithstanding the miserable climate with which we had to contend.

About the 21st we began to perceive a

daily diminution of the snow upon the land, the brown soil appearing in patches, where hitherto the snow had completely covered it; and on the 22d, in the course of a walk which we took to the Table-hill, to the westward of the ships, we had the satisfaction of being able to fill a pint bottle with water from a small pool of melted snow, having a quantity of sand mixed with it, a circumstance which we always found to favour the thawing process. There cannot, perhaps, be a more striking proof of the extreme severity of the climate of Melville Island than the fact, that this was the first instance we had known of water, naturally in a fluid state when exposed to the atmosphere, and unassisted by artificial means, such as those which I have already described as having occurred in one or two instances under the ship's stern, since the middle of the preceding September, being an interval of more than eight months. During this excursion, too, we discovered, with pleasure, that the sorrel was extremely abundant in the neighbourhood of the ships, a root or

two of this valuable antiscorbutic plant occurring in almost every tuft of moss which we met with. No appearance of its beginning to vegetate could yet, however, be perceived; and we began to look with impatience for the sprouting of its leaves, from which we hoped to obtain a supply of fresh vegetable matter, of which, perhaps, in reality, we all began to stand in need. About two hundred yards to the westward of this hill is another rather smaller, but very similar in appearance, and composed of the same mineral substances as that just described; in coming from the eastward, the second hill is not seen, being hid behind the other.

Having considered that an examination of the extent and productions of the island might be conducive to the improvement of the geography and natural history of these regions; and the good state of health enjoyed by the crews, permitting a certain number of men to be spared from each ship during their equipment for sea, I now determined to undertake a journey

into the interior, for this purpose, accompanied by a certain number of officers and men who volunteered their services on the occasion; and the 1st of June was fixed for our departure. The Griper's sick list had now been reduced to one person, whose only complaint was debility from a late attack of scurvy; and William Scott, whom I have before had occasion to mention, was the only patient on board the Hecla. The case of this man had been such as, for some time past, to baffle Mr. Edwards's endeavours to produce a favourable change, his complaint appearing to be more mental than corporeal, and, therefore, one which no medicine could be expected to cure.

Early on the morning of the 24th, Mr. Allison reported that he had felt a few drops of rain fall upon his face, an event which we had scarcely dared to anticipate so soon, but which was hailed with much satisfaction, as nothing appears to be so effectual as rain in producing the dissolution of the ice. The clouds had a watery appearance throughout the day, and at half-



past eight in the evening, we were agreeably surprised by a smart shower of rain, which was shortly after succeeded by several others. We had been so unaccustomed to see water naturally in a fluid state at all, and much less to see it fall from the heavens, that such an occurrence became a matter of considerable curiosity, and I believe every person on board hastened on deck to witness so interesting as well as novel a phenomenon. The rain which fell in the course of the evening, made several little pools upon the ice, which now remained unfrozen for twelve or fourteen hours in the day, as did also the sea-water around the ships. Two ivory gulls were reported to have been seen in the course of this day by a party employed in cutting turf on shore.

I am now to mention an occurrence which took place at this period, and on which I should gladly be silent, but that it is intimately connected with the important subject of the health of seamen in this and in every other climate. It was reported to me,

through one or two of the Hecla's petty-officers, that one of our seamen, whose name I am unwilling to record, and who had lately been cured, by the greatest care and attention, of a rather severe attack of the scurvy, had been in the frequent habit of eating with his bread a quantity of the skimmings of the water in which salt meat is boiled, called by the sailors "slush." This kind of fat or grease, which is always understood to be a perquisite of the cooks in His Majesty's navy, and the use of which is well-known to be in the highest degree productive of scurvy, had always been a source of considerable anxiety and apprehension to me during the voyage. Soon after our leaving England, when the issuing of salt-meat commenced, I sent for the cook of the Hecla, and, in presence of the officers, warned him on no account ever to permit a particle of this slush to be used by the ship's company; and, on condition of his faithfully complying with this injunction, I permitted him, under certain restrictions, to preserve it in casks, for his own

future benefit. With these directions the cook had, I believe, punctually complied till the middle of the winter; when he had been gradually led into a practice of furnishing the people occasionally with a small quantity of fat to burn in their lamps; of this, the man alluded to, had, it seems, taken advantage, and used it as an article of diet in the manner described. Being determined immediately to check so pernicious a practice, I charged him with his offence in presence of the officers and ship's company, pointing out to them, at the same time, the ingratitude with which he had repaid the care taken of him during his late illness. It gave me great satisfaction to find that the men were disposed to view this act with a degree of indignation little short of that which I felt it my duty to express on this occasion, some of them, as I found, having repeatedly spoken to him before upon the subject. Having, therefore, directed that the offender should be punished by wearing upon his back a badge, which would expose him for a time to the

contempt and derision of his shipmates, I felt satisfied that no future instance would occur of an offence which might prove so fatal to the cause in which we were engaged.

Early on the morning of the 29th, the wind increased to a fresh gale from the northward and westward, which continued during the day, with a heavy fall of snow and a tremendous drift, that prevented our seeing to the distance of more than twenty yards around the ships. The following day being fine, I took my travelling party to the top of the north-east hill, in order to try the cart, which had been constructed for carrying the tents and baggage, and which appeared to answer very well. The view from this hill was not such as to offer much encouragement to our hopes of future advancement to the westward. The sea still presented the same unbroken and continuous surface of solid and impenetrable ice, and this ice could not be less than from six to seven feet in thickness, as we knew it to be about the ships. When to this circumstance was added the consideration, that

scarcely the slightest symptoms of thawing had yet appeared, and that in three weeks from this period the sun would again begin to decline to the southward, it must be confessed, that the most sanguine and enthusiastic among us had some reason to be staggered in the expectations they had formed of the complete accomplishment of our enterprise.

END OF THE FIRST VOLUME.

LONDON:  
PRINTED BY C. ROWORTH, BELL YARD,  
TEMPLE BAR.

