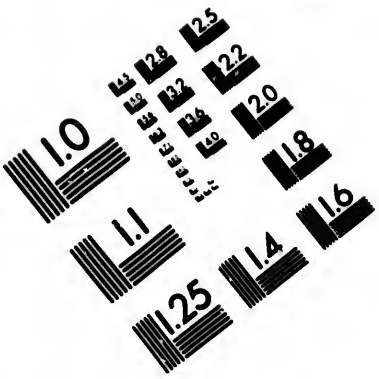

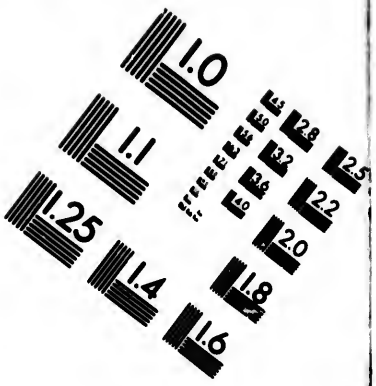

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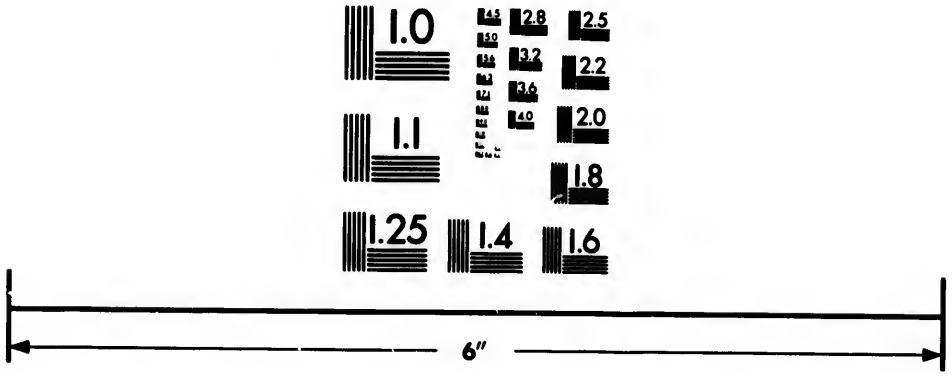

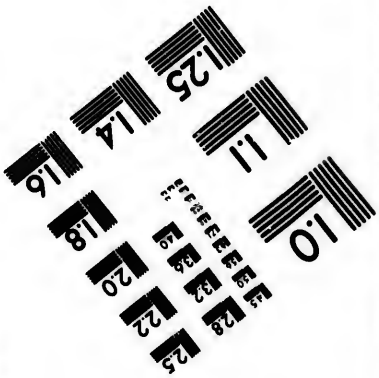

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THREE VOYAGES

FOR THE

DISCOVERY OF A NORTH-WEST PASSAGE

FROM THE

ATLANTIC TO THE PACIFIC,

AND

NARRATIVE OF AN ATTEMPT TO REACH THE NORTH POLE.

BY

SIR W. E. PARRY, CAPT. R.N., F.R.S.

FOUR VOLUMES. WITH PLATES.

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ACCOUNT

OF

THE ESQUIMAUX.

The length of one of the best of seven canoes belonging to the Esquimaux was twenty-five feet, including a narrow-pointed projection, three feet long at each end, which turns a little upward from the horizontal. The extreme breadth, which is just before the circular hole, was twenty-one inches, and the depth ten inches and a half. The plane of the upper surface of the canoe, except in the two extreme projections, bends downwards a little from the centre towards the head and stern, giving it the appearance of what in ships is called "broken-backed." The gunwales are of fir, in some instances of one piece, three or four inches broad in the centre, and tapering gradually away towards the ends. The timbers, as well as the fore-and-aft

connecting pieces, are of the same material, the former being an inch square, and sometimes so close together as to require between forty and fifty of them in one canoe; which when thus "in frame" is one of the prettiest things of the kind that can be imagined. The skin with which the canoe is covered is exclusively that of the *neitiek*, prepared by scraping off the hair and fat with an *ooloo*, and stretching it tight on a frame over the fire; after which and a good deal of chewing, it is sown on by the women with admirable neatness and strength. Their paddles have a blade at each end, the whole length being nine feet and a half; the blades are covered with a narrow plate of bone round the ends to secure them from splitting; they are always made of fir, and generally of several pieces scarfed and woolded together.

In summer they rest their canoes upon two small stones raised four feet from the ground; and in winter, on a similar structure of snow; in one case to allow them to dry freely, and in the other to prevent the snow-drift from covering, and the dogs from eating them. The difficulty of procuring a canoe may be concluded from the circumstance of there being at Winter Island twenty men able to manage one, and only seven canoes among them. Of these, indeed, only three or four were in good repair; the rest being wholly or in part stripped of

the skin, of which a good deal was occasionally cut off during the winter, to make boots, shoes, and mittens for our people. We found no *oomiak*, or women's boat, among them, and understood that they were not in the habit of using them, which may in part be accounted for by their passing so much of the summer in the interior; they knew very well, however, what they were, and made some clumsy models of them for our people.

In the weapons used for killing their game there is considerable variety, according to the animal of which they are in pursuit. The most simple of these is the *ōōnăk*, which they use only for killing the small seal. It consists of a light staff of wood, four feet in length, having at one end the point of a narwhal's horn, from ten to eighteen inches long, firmly secured by rivets and wooldings; at the other end, is a smaller and less effective point of the same kind. To prevent losing the ivory part, in case of the wood breaking, a stout thong runs along the whole length of the wood, each end passing through a hole in the ivory, and the bight secured in several places to the staff. In this weapon, as far as it has yet been described, there is little art or ingenuity displayed; but a considerable degree of both in an appendage called *siātkŏ*, consisting of a piece of bone three inches long, and having a point of iron at one end, and at the other

end a small hole or socket to receive the point of the oonak. Through the middle of this instrument is secured the *ăllek*, or line of thong, of which every man has, when sealing, a couple of coils, each from four to six fathoms long, hanging at his back. These are made of the skin of the *oguke* as in Greenland *, and are admirably adapted to the purpose, both on account of their strength, and the property which they possess of preserving their pliability even in the most intense frost.

When a seal is seen, the siatko is taken from a little leathern case, in which, when out of use, it is carefully enclosed, and attached by its socket to the point of the spear; in this situation it is retained by bringing the allek tight down, and fastening it round the middle of the staff by what seamen call a "slippery hitch," which may instantly be disengaged by pulling on the other end of the line. As soon as the spear has been thrown, and the animal struck, the siatko is thus purposely separated; and being slung by the middle, now performs very effectually the important office of a barb, by turning at right angles to the direction in which it has entered the orifice. This device is in its principle superior even to our barb; for the instant any strain is put upon the line it acts like a toggle,

* Crantz, i. 125.

opposing its length to a wound only as wide as its own breadth.

The *ăklĕak*, or *aklēēgă*, used for the large seal, has a blown bladder attached to the staff, for the purpose of impeding the animal in the water. The weapon with two long parallel prongs of bone or iron, obtained from the natives of the Savage Islands, these people also called *akleak*, and said it was for killing seals.

The third and largest weapon is that called *kat-teelik*, with which the walrus and whale are attacked. The staff of this is not longer, but much stouter than that of the others, especially towards the middle, where there is a small shoulder of ivory securely lashed to it for the thumb to rest against, and thus to give additional force in throwing or thrusting the spear. The ivory point of this weapon is made to fit into a socket at the end of the staff, where it is secured by double thongs, in such a manner as steadily to retain its position when a strain is put upon it in the direction of its length, but immediately disengaging itself with a sort of spring, when any lateral strain endangers its breaking. The siatko is always used with this spear; and to the end of the allek, when the animal pursued is in open water, they attach a whole seal-skin (*hŏw-wūt-tă*), inflated like a bladder, for the purpose of tiring it out in its progress through the water.

They have a spear called *īppoo*, for killing deer in the water. They describe it as having a light staff and a small head of iron; but they had none of these so fitted in the winter. The *nūgŭe*, or dart for birds, has, besides its two ivory prongs at the end of the staff, three divergent ones in the middle of it, with several small double barbs upon them turning inwards; they differ from the *nuguit* of Greenland*, and that of the Savage Islands, in having these prongs always of unequal lengths. To give additional velocity to the bird-dart, they use a throwing-stick (*noke-shak*), which is probably the same as the "hand-bord" figured by Crantz. It consists of a flat board about eighteen inches in length, having a groove to receive the staff, two others and a hole for the fingers and thumb, and a small spike fitted for a hole in the end of the staff. This instrument is used for the bird-dart only. The spear for salmon or other fish, called *kākčewĕi*, consists of a wooden staff with a spike of bone or ivory, three inches long, secured at one end. On each side of the spike is a curved prong, much like that of a pitch-fork, but made of flexible horn which gives them a spring, and having a barb on the inner part of the point turning downwards. Their fish-hooks (*kakliōkia*) consist only of a nail crooked and

* Crantz.

pointed at one end, the other being let into a piece of ivory to which the line is attached. A piece of deer's horn or curved bone, only a foot long, is used as a rod, and completes this very rude part of their fishing-gear.

Of their mode of killing seals in the winter, I have already spoken in the course of the foregoing narrative, as far as we were enabled to make ourselves acquainted with it. In their summer exploits on the water, the killing of the whale is the most arduous undertaking which they have to perform; and one cannot sufficiently admire the courage and activity which, with gear apparently so inadequate, it must require to accomplish this business. Okotook, who was at the killing of two whales in the course of a single summer, and who described the whole of it quite *con amore*, mentioned the names of thirteen men who, each in his canoe, had assisted on one of these occasions. When a fish is seen lying on the water, they cautiously paddle up astern of him, till a single canoe, preceding the rest, comes close to him on one quarter, so as to enable the man to drive the *katteelik* into the animal with all the force of both arms. This having the *siatko*, a long *allek*, and the inflated seal-skin attached to it, the whale immediately dives, taking the whole apparatus with him except the katteelik, which, being disengaged in the manner before described, floats to

the surface, and is picked up by its owner. The animal reappearing after some time, all the canoes again paddle towards him, some warning being given by the seal-skin buoy floating on the surface. Each man being furnished like the first, they repeat the blows as often as they find opportunity, till perhaps every line has been thus employed. After pursuing him in this manner, sometimes for half a day, he is at length so wearied by the resistance of the buoys, and exhausted by loss of blood, as to be obliged to rise more and more often to the surface, when, by frequent wounds with their spears, they succeed in killing him, and tow their prize in triumph to the shore. It is probable that with the whale, as with the smaller sea-animals, some privilege or perquisite is given to the first striker; and, like our own fishermen, they take a pride in having it known that their spear has been the first to inflict a wound. They meet with the most whales on the coast of *Eiwīllik*.

In attacking the walrus in the water, they use the same gear, but much more caution, than with the whale, always throwing the *katteelik* from some distance, lest the animal should attack the canoe, and demolish it with his tusks. The walrus is in fact the only animal with which they use any caution of this kind. They like the flesh better than that of the seal; but venison is preferred by

them to either of these, and indeed to any other kind of meat.

At Winter Island they carefully preserved the heads of all the animals killed during the winter, except two or three of the walrus, which we obtained with great difficulty. There is probably some superstition attached to this, but they told us that they were to be thrown into the sea in the summer, which a Greenlander* studiously avoids doing; and indeed, at Igloolik, they had no objection to part with them before the summer arrived. As the blood of the animals which they kill is all used as food of the most luxurious kind, they are careful to avoid losing any portion of it; for this purpose they carry with them on their excursions a little instrument of ivory called *tŏopōōtă*, in form and size exactly resembling a "twenty-penny" nail, with which they stop up the orifice made by the spear, by thrusting it through the skin by the sides of the wound, and securing it with a twist. I must here also mention a simple little instrument called *keipkūttuk*, being a slender rod of bone nicely rounded, and having a point at one end and a knob or else a laniard at the other. The use of this is to thrust through the ice where they have reason to believe a seal is at work underneath. This little

* Crantz, i. 216.

instrument is sometimes made as delicate as a fine wire, that the seal may not see it ; and a part still remaining above the surface informs the fishermen by its motion whether the animal is employed in making his hole ; if not, it remains undisturbed, and the attempt is given up in that place.

One of the best of their bows was made of a single piece of fir, four feet eight inches in length, flat on the inner side, and rounded on the outer, being five inches in girth about the middle, where, however, it is strengthened on the concave side, when strung, by a piece of bone ten inches long, firmly secured by tree-nails of the same material. At each end of the bow is a knob of bone, or sometimes of wood covered with leather, with a deep notch for the reception of the string. The only wood which they can procure, not possessing sufficient elasticity combined with strength, they ingeniously remedy the defect by securing to the back of the bow, and to the knobs at each end, a quantity of small lines, each composed of a plat or "sinnet" of three sinews. The number of lines thus reaching from end to end is generally about thirty ; but besides these, several others are fastened with hitches round the bow, in pairs, commencing eight inches from one end, and again united at the same distance from the other, making the whole number of strings in the middle of the bow sometimes amount to sixty.

These being put on with the bow somewhat bent the contrary way, produce a spring so strong as to require considerable force as well as knack in stringing it, and giving the requisite velocity to the arrow. The bow is completed by a woolding round the middle, and a wedge or two, here and there, driven in to tighten it. A bow in one piece is however very rare; they generally consist of from two to five pieces of bone of unequal lengths, secured together by rivets and tree-nails.

The arrows vary in length from twenty to thirty inches, according to the materials that can be commanded. About two-thirds of the whole length is of fir rounded, and the rest of bone let by a socket into the wood, and having a head of thin iron, or more commonly of slate, secured into a slit by two tree-nails. Towards the opposite end of the arrow are two feathers, generally of the spotted oval, not very neatly lashed on. The bow-string consists of from twelve to eighteen small lines of three-sinew sinnet, having a loose twist, and with a separate becket of the same size for going over the knobs at the end of the bow.

We tried their skill in archery by getting them to shoot at a mark for a prize, though with bows in extremely bad order on account of the frost, and their hands very cold. The mark was two of their spears stuck upright in the snow, their breadth being

three inches and a half. At twenty yards they struck this every time; at thirty, sent the arrows always within an inch or two of it; and at forty or fifty yards, I should think, would generally hit a fawn if the animal stood still. These weapons are perhaps sufficient to inflict a mortal wound at something more than that distance, for which, however, a strong arm would be required. The animals which they kill with the bow and arrow for their subsistence, are principally the musk-ox and deer, and less frequently the bear, wolf, fox, hare, and some of the smaller animals.

It is a curious fact, that the musk-ox is very rarely found to extend his migrations to the eastward of a line passing through Repulse Bay, or about the meridian of 86° West, while, in a northern direction, we know that he travels as far as the seventy-sixth degree of latitude. In Greenland this animal is known only by vague and exaggerated report; on the western coast of Baffin's Bay it has certainly been seen, though very rarely, by the present inhabitants; and the eldest person belonging to the Winter Island tribe had never seen one to the eastward of *Eiwīllik*, where, as well as at *Akkōōleĕ*, they are said to be numerous on the banks of freshwater lakes and streams. The few men who had been present at the killing of one of these creatures, seemed to pride themselves very much upon it.

Toolooak, who was about seventeen years of age, had never seen either the musk-ox or the *kāblĕč-ārioo*—a proof that the latter, also, is not common in this corner of America.

The rein-deer are killed by the Esquimaux in great abundance in the summer season, partly by driving them from islands or narrow necks of land into the sea, and then spearing them from their canoes; and partly by shooting them from behind heaps of stones raised for the purpose of watching them, and imitating their peculiar bellow or grunt. Among the various artifices which they employ for this purpose, one of the most ingenious consists in two men walking directly *from* the deer they wish to kill, when the animal almost always follows them. As soon as they arrive at a large stone, one of the men hides behind it with his bow, while the other continuing to walk on soon leads the deer within range of his companion's arrows. They are also very careful to keep to leeward of the deer, and will scarcely go out after them at all when the weather is calm. For several weeks in the course of the summer, some of these people almost entirely give up their fishery on the coast, retiring to the banks of lakes several miles in the interior, which they represent as large and deep, and abounding with salmon, while the pasture near them affords good feeding to numerous herds of deer.

The distance to which these people extend their inland migrations, and the extent of coast of which they possess a personal knowledge, are really very considerable. Of these we could at the time of our first intercourse form no correct judgment, from our uncertainty as to the length of what they call a *seenik* (sleep), or one day's journey, by which alone they could describe to us, with the help of their imperfect arithmetic, the distance from one place to another. But our subsequent knowledge of the coast has cleared up much of this difficulty, affording the means of applying to their hydrographical sketches a tolerably accurate scale for those parts which we have not hitherto visited. A great number of these people, who were born at Amitioke and Igloolik, had been to *Noowook*, or nearly as far south as Chesterfield Inlet, which is about the *ne plus ultra* of their united knowledge in a southerly direction. Not one of them had been by water round to Akkoolee, but several by land; in which mode of travelling they only consider that country from three to five days' journey from Repulse Bay. Okotook and a few others of the Winter Island tribe had extended their peregrinations a considerable distance to the northward, over the large insular piece of land to which we have applied the name of Cockburn Island; which they described as high land, and the resort of numerous rein-deer. Here

Okotook informed us that he had seen icebergs, which these people call by a name (*pīccălōōyāk*) having in its pronunciation some affinity to that used in Greenland *. By the information afterwards obtained when nearer the spot, we had reason to suppose this land must reach beyond the seventy-second degree of latitude in a northerly direction; so that these people possess a personal knowledge of the Continent of America and its adjacent islands, from that parallel to Chesterfield Inlet in $63\frac{3}{4}^{o}$, being a distance of more than five hundred miles reckoned in a direct line, besides the numerous turnings and windings of the coast along which they are accustomed to travel. Ewerat and some others had been a considerable distance up the Wager River; but no record had been preserved among them of Captain Middleton's visit to that inlet about the middle of the last century.

Of the continental shore to the westward of Akkoolee, the Esquimaux invariably disclaimed the slightest personal knowledge; for no land can be seen in that direction from the hills. They entertain however, a confused idea that neither Esquimaux nor Indians could there subsist for want of food. Of the Indians they know enough by tradition to hold them in considerable dread, on account of their

* *Illuliak.*

cruel and ferocious manners. When, on one occasion, we related the circumstances of the inhuman massacre described by Hearne, they crowded round us in the hut, listening with mute and almost breathless attention; and the mothers drew their children closer to them, as if to guard them from the dreadful catastrophe. It is worthy of notice, that they call the Indians by a name (*Eērt-kĕi-lĕe*) which appears evidently the same as that* applied by the Greenlanders to the man-eaters supposed to inhabit the eastern coast of their country, and to whom terror has assigned a face like that of a dog.

The Esquimaux take some animals in traps, and by a very ingenious contrivance of this kind they caught two wolves at Winter Island. It consists of a small house built of ice, at one end of which a door, made of the same plentiful material, is fitted to slide up and down in a groove; to the upper part of this a line is attached, and, passing over the roof, is let down into the trap at the inner end, and there held by slipping an eye in the end of it over a peg of ice left for the purpose. Over the peg, however, is previously placed a loose grummet, to which the bait is fastened, and a false roof placed over all to hide the line. The moment the animal drags at

* *Erkiglit.* Crantz, i. 208, 269.

the bait, the grummet slips off the peg, bringing with it the line that held up the door, and this falling down closes the trap and secures him.

A trap for birds is formed by building a house of snow just large enough to contain one person, who closes himself up in it. On the top is left a small aperture, through which the man thrusts one of his hands to secure the bird the moment he alights to take away a bait of meat laid beside it. It is principally gulls that are taken thus; and the boys sometimes amuse themselves in this manner. A trap in which they catch foxes has been mentioned in another place.

The sledges belonging to these Esquimaux were in general large and heavily constructed, being more adapted to the carriage of considerable burdens than to very quick travelling. They varied in size, being from six and a half to nine feet in length, and from eighteen inches to two feet in breadth. Some of those at Igloolik were of larger dimensions, one being eleven feet in length, and weighing two hundred and sixty-eight pounds, and two or three others above two hundred pounds. The runners are sometimes made of the right and left jaw-bones of a whale, but more commonly of several pieces of wood or bone scarfed and lashed together, the interstices being filled to make all smooth and firm with moss stuffed in tight, and then cemented by

throwing water to freeze upon it. The lower part of the runner is shod with a plate of harder bone, coated with fresh-water ice to make it run smoothly, and to avoid wear and tear, both which purposes are thus completely answered. This coating is performed with a mixture of snow and fresh-water about half an inch thick, rubbed over it till it is quite smooth and hard upon the surface, and this is usually done a few minutes before setting out on a journey. When the ice is only in part worn off, it is renewed by taking some water into the mouth and spirting it over the former coating. We noticed a sledge which was extremely curious, on account of one of the runners and a part of the other being constructed without the assistance of wood, iron, or bone of any kind. For this purpose, a number of seal-skins being rolled up and disposed into the requisite shape, an outer coat of the same kind was sewed tightly round them ; this formed the upper half of the runner, the lower part of which consisted entirely of moss moulded while wet into the proper form, and being left to freeze, adhering firmly together and to the skins. The usual shoeing of smooth ice beneath completed the runner, which for more than six months out of twelve, in this climate, was nearly as hard as any wood, and for winter use, no way inferior to those constructed of more durable materials. The cross-pieces which

form the bottom of the sledge are made of bone, wood, or anything they can muster. Over these is generally laid a seal-skin as a flooring, and in the summer time a pair of deer's horns are attached to the sledge as a back, which in the winter are removed, to enable them when stopping to turn the sledge up, so as to prevent the dogs running away with it. The whole is secured by lashings of thong, giving it a degree of strength combined with flexibility which perhaps no other mode of fastening could effect.

The dogs of the Esquimaux, of which these people possessed above a hundred, have been so often described that there may seem little left to add respecting their external appearance, habits, and use. Our visits to Igloolik having, however, made us acquainted with some not hitherto described, I shall here offer a further account of these invaluable animals. In the form of their bodies, their short pricked ears, thick furry coat, and bushy tail, they so nearly resemble the wolf of these regions, that, when of a light or brindled colour, they may easily at a little distance be mistaken for that animal. To an eye accustomed to both, however, a difference is perceptible in the wolf's always keeping his head down, and his tail between his legs in running, whereas the dogs almost always carry their tails handsomely curled over the back. A difference

less distinguishable, when the animals are apart, is the superior size and more muscular make of the wild animal, especially about the breast and legs. The wolf is also, in general, full two inches taller than any Esquimaux dog we have seen; but those met with in 1818, in the latitude of 76°, appear to come nearest to it in that respect. The tallest dog at Igloolik stood two feet one inch from the ground, measured at the withers; the average height was about two inches less than this.

The colour of the dogs varies from a white, thorough brindled, to black and white, or almost entirely black. Some are also of a reddish or ferruginous colour, and others have a brownish-red tinge on their legs, the rest of their bodies being of a darker colour, and these last were observed to be generally the best dogs. Their hair in the winter is from three to four inches long; but besides this, nature furnishes them, during this rigorous season, with a thick under-coating of close soft wool, which they begin to cast in the spring. While thus provided, they are able to withstand the most inclement weather without suffering from the cold, and at whatever temperature the atmosphere may be, they require nothing but a shelter from the wind to make them comfortable, and even this they do not always obtain. They are also wonderfully enabled to endure the cold even on those parts of

the body which are not thus protected, for we have seen a young puppy sleeping, with its bare paw laid on an ice-anchor, with the thermometer at —30°, which with one of our dogs would have produced immediate and intense pain, if not subsequent mortification. They never bark, but have a long melancholy howl like that of the wolf, and this they will sometimes perform in concert for a minute or two together. They are besides always snarling and fighting among one another, by which several of them are generally lame. When much caressed and well fed, they become quite familiar and domestic, but this mode of treatment does not improve their qualities as animals of draught. Being desirous of ascertaining whether these dogs are wolves in a state of domestication, a question which we understood to have been the subject of some speculation, Mr. Skeoch at my request made a skeleton of each, when the number of all the vertebræ was found to be the same in both*, and to correspond with the well-known anatomy of the wolf.

When drawing a sledge, the dogs have a simple harness (*annoo*) of deer or seal-skin, going round the neck by one bight, and another for each of the fore-legs, with a single thong leading over the back and attached to the sledge as a trace. Though they

* Cervical, 7; dorsal, 13; lumbar, 7; sacral, 3; caudal, 19.

appear at first sight to be huddled together without regard to regularity, there is, in fact, considerable attention paid to their arrangement, particularly in the selection of a dog of peculiar spirit and sagacity, who is allowed, by a longer trace, to precede the rest as leader, and to whom, in turning to the right or left, the driver usually addresses himself. This choice is made without regard to age or sex, and the rest of the dogs take precedency according to their training or sagacity, the least effective being put nearest the sledge. The leader is usually from eighteen to twenty feet from the fore part of the sledge, and the hindermost dog about half that distance, so that when ten or twelve are running together, several are nearly abreast of each other. The driver sits quite low on the fore part of the sledge, with his feet overhanging the snow on one side, and having in his hand a whip, of which the handle, made either of wood, bone, or whalebone, is eighteen inches, and the lash more than as many feet in length. The part of the thong next the handle is platted a little way down to stiffen it and give it a spring, on which much of its use depends; and that which composes the lash is chewed by the women to make it flexible in frosty weather. The men acquire from their youth considerable expertness in the use of this whip, the lash of which is left to trail along the ground by the side of the sledge,

and with which they can inflict a very severe blow on any dog at pleasure. Though the dogs are kept in training entirely by fear of the whip, and indeed without it would soon have their own way, its immediate effect is always detrimental to the draught of the sledge, for not only does the individual that is struck draw back and slacken his trace, but generally turns upon his next neighbour, and this passing on to the next occasions a general divergency, accompanied by the usual yelping and showing of teeth. The dogs then come together again by degrees, and the draught of the sledge is accelerated; but even at the best of times, by this rude mode of draught the traces of one-third of the dogs form an angle of thirty or forty degrees on each side of the direction in which the sledge is advancing. Another great inconvenience attending the Esquimaux method of putting the dogs to, besides that of not employing their strength to the best advantage, is the constant entanglement of the traces by the dogs repeatedly doubling under from side to side to avoid the whip, so that, after running a few miles, the traces always require to be taken off and cleared.

In directing the sledge the whip acts no very essential part, the driver for this purpose using certain words, as the carters do with us, to make the dogs turn more to the right or left. To these

a good leader attends with admirable precision, especially if his own name be repeated at the same time, looking behind over his shoulder with great earnestness, as if listening to the directions of the driver. On a beaten track, or even where a single foot or sledge-mark is occasionally discernible, there is not the slightest trouble in guiding the dogs; for even in the darkest night and in the heaviest snowdrift, there is little or no danger of their losing the road, the leader keeping his nose near the ground, and directing the rest with wonderful sagacity. Where, however, there is no beaten track, the best driver among them makes a terribly circuitous course, as all the Esquimaux roads plainly show; these generally occupying an extent of six miles, when with a horse and sledge the journey would scarcely have amounted to five. On rough ground, as among hummocks of ice, the sledge would be frequently overturned or altogether stopped if the driver did not repeatedly get off, and by lifting or drawing it to one side steer it clear of those accidents. At all times, indeed, except on a smooth and well-made road, he is pretty constantly employed thus with his feet, which, together with his never-ceasing vociferations and frequent use of the whip, renders the driving of one of these vehicles by no means a pleasant or easy task. When the driver wishes to stop the sledge,

he calls out "Wo, woa," exactly as our carters do, but the attention paid to his command depends altogether on his ability to enforce it. If the weight is small and the journey homeward, the dogs are not to be thus delayed; the driver is therefore obliged to dig his heels into the snow to obstruct their progress; and having thus succeeded in stopping them, he stands up with one leg before the foremost cross-piece of the sledge, till, by means of laying the whip gently over each dog's head, he has made them all lie down. He then takes care not to quit his position; so that should the dogs set off he is thrown upon the sledge, instead of being left behind by them.

With heavy loads the dogs draw best with one of their own people, especially a woman, walking a little way a-head; and in this case they are sometimes enticed to mend their pace by holding a mitten to the mouth, and then making the motion of cutting it with a knife, and throwing it on the snow, when the dogs, mistaking it for meat, hasten forward to pick it up. The women also entice them from the huts in a similar manner. The rate at which they travel depends, of course, on the weight they have to draw and the road on which their journey is performed. When the latter is level and very hard and smooth, constituting what in other parts of North America is called "good sleighing,"

six or seven dogs will draw from eight to ten hundred weight, at the rate of seven or eight miles an hour for several hours together, and will easily under those circumstances perform a journey of fifty or sixty miles a day; on untrodden snow five-and-twenty or thirty miles would be a good day's journey. The same number of well-fed dogs, with a weight of only five or six hundred pounds (that of the sledge included), are almost unmanageable, and will on a smooth road run any way they please at the rate of ten miles an hour. The work performed by a greater number of dogs is, however, by no means in proportion to this; owing to the imperfect mode already described of employing the strength of these sturdy creatures, and to the more frequent snarling and fighting occasioned by an increase of numbers.

In the summer, when the absence of snow precludes the use of sledges, the dogs are still made useful on journeys and hunting excursions, by being employed to carry burdens in a kind of saddle-bags laid across their shoulders. A stout dog thus accoutred will accompany his master, laden with a weight of about twenty or twenty-five pounds. When leading the dogs, the Esquimaux take a half hitch with the trace round their necks to prevent their pulling, and the same plan is followed when a sledge is left without a keeper. They are also in the habit of

tethering them, when from home, by tying up one of the fore legs; but a still more effectual method is similar to that which we saw employed by the Greenlanders of Prince Regent's Bay, and consists in digging with their spears two holes in the ice in an oblique direction and meeting each other, so as to leave an eye-bolt to which the dogs are fastened.

The scent of the Esquimaux dogs is excellent; and this property is turned to account by their masters in finding the seal holes, which these invaluable animals will discover entirely by the smell at a very great distance. The track of a single deer upon the snow will in like manner set them off at a full gallop, when travelling, at least a quarter of a mile before they arrive at it, when they are with difficulty made to turn in any other direction; and the Esquimaux are accustomed to set them after those animals to hunt them down when already wounded with an arrow. In killing bears the dogs act a very essential part, and two or three of them when led on by a man will eagerly attack one of those ferocious creatures. An Esquimaux seldom uses any other weapon than his spear and *panna* in this encounter, for which the readiness of the dogs may be implied from the circumstance of the word "nennook" (bear) being often used to encourage them when running in a sledge. Indeed the only

animal which they are not eager to chase is the wolf, of which the greater part of them seem to have an instinctive dread, giving notice at night of their approach to the huts by a loud and continued howl. There is not one dog in twenty among them that will voluntarily, or indeed without a great deal of beating, take the water, if they think it is out of their depth, and the few that would do so were spoken of as extraordinary exceptions.

The Esquimaux in general treat their dogs much as an unfeeling master does his slaves; that is, they take just as much care of them as their own interest is supposed to require. The bitches with young are in the winter allowed to occupy a part of their own beds, where they are carefully attended and fed by the women, who will even supply the young ones with meat and water from their mouths as they do their own children, and not unfrequently also carry them in their hoods to take care of them. It is probably on this account that the dogs are always so much attached to the women, who can at any time catch them or entice them from the huts, when the men fail. Two females that were with young on board the Fury in the month of February brought forth six and seven at a litter, and the former number were all females. Their feeding, which, both in summer and winter, principally con-

sists of *kāŏw*, or the skin and part of the blubber of the walrus, is during the latter season very precarious, their masters having then but little to spare. They therefore become extremely thin at that time of the year, and would scarcely be recognised as the same animals as when regularly fed in the summer. No wonder, therefore, that they will eat almost anything, however tough or filthy, and that neither whipping nor shouting will prevent their turning out of the road, even when going at full speed, to pick up whatever they espy. When at the huts they are constantly creeping in to pilfer what they can, and half the time of the people sitting there is occupied in vociferating their names and driving them by most unmerciful blows out of the apartments. The dogs have no water to drink during the winter, but lick up some clean snow occasionally as a substitute; nor indeed if water be offered them, do they care about it unless it happens to be oily. They take great pleasure in rolling in clean snow, especially after or during a journey, or when they have been confined in a house during the night. Notwithstanding the rough treatment which they receive from their masters their attachment to them is very great, and this they display after a short absence by jumping up and licking their faces all over with extreme delight. The Esquimaux, however, never caress them, and indeed scarcely ever

take any notice of them but when they offend, and they are not then sparing in their blows. The dogs have all names, to which they attend with readiness, whether drawing in a sledge or otherwise. Their names are frequently the same as those of the people, and in some instances are given after the relations of their masters, which seems to be considered an act of kindness among them. Upon the whole, notwithstanding the services performed by these valuable creatures, I am of opinion that art cannot well have done less towards making them useful, and that the same means in almost any other hands would be employed to greater advantage.

In the disposition of these people, there was, of course, among so many individuals, considerable variety as to the minute points, but in the general features of their character, which with them are not subject to the changes produced by foreign intercourse, one description will nearly apply to all. The virtue which, as respected ourselves, we could most have wished them to possess, is honesty ; and the impression derived from the early part of our intercourse was certainly in this respect a favourable one. A great many instances occurred, some of which have been related, where they appeared even scrupulous in returning articles that did not belong to them ; and this, too, when detection of a theft, or at least of the offender, would have been next to

impossible. As they grew more familiar with us, and the temptations became stronger, they gradually relaxed in their honesty, and petty thefts were from time to time committed by several individuals, both male and female, among them.

The bustle which any search for stolen goods occasioned at the huts was a sufficient proof of their understanding the estimation in which the crime was held by us. Until the affair was cleared up, they would affect great readiness to show every article which they had got from the ships, repeating the name of the donor with great warmth, as if offended at our suspicions, yet with a half-smile on their countenance at our supposed credulity in believing them. There was, indeed, at all times, some degree of trick and cunning in this show of openness and candour; and they would at times bring back some very trifling article that had been given them, tendering it as a sort of expiation for the theft of another much more valuable. When a search was making they would invent all sorts of lies to screen themselves, not caring on whom besides the imputation fell; and more than once they directed our people to the apartments of others who were innocent of the offence in question. If they really knew the offender, they were generally ready enough to inform against him, and this with an air of affected secresy and mysterious importance;

and as if the dishonesty of another constituted a virtue in themselves, they would repeat this information frequently, perhaps for a month afterwards, setting up their neighbour's offence as a foil to their own pretended honesty.

In appreciating the character of these people for honesty, however, we must not fail to make due allowance for the degree of temptation to which they were daily exposed, amidst the boundless stores of wealth which our ships appeared to them to furnish. To draw a parallel case, we must suppose an European of the lower class suffered to roam about amidst hoards of gold and silver; for nothing less valuable can be justly compared with the wood and iron that everywhere presented themselves to their view on board the ships. The European and the Esquimaux, who, in cases so similar, both resist the temptation to stealing, must be considered pretty nearly on a par in the scale of honesty; and judging in this manner, the balance might possibly be found in favour of the latter, when compared with any similar number of Europeans taken at random from the lower class.

In what has been hitherto said, regard has been had only to their dealings with *us*. In their transactions among themselves there is no doubt that, except in one or two privileged cases, such as that of destitute widows, the strictest honesty prevails,

and that as regards the good of their own community they are generally honest people. We have in numberless instances sent presents by one to another, and invariably found that they had been faithfully delivered. The manner in which their various implements are frequently left outside their huts is a proof, indeed, that robbery is scarcely known among them. It is true that there is not an article in the possession of one of them, of which any of the rest will not readily name the owner, and the detection of a theft would, therefore, be certain and immediate. Certainty of detection, however, among a lawless and ferocious people, instead of preventing robbery, would more probably add violence and murder to the first crime, and the strongest would ultimately gain the upper hand. We cannot, therefore, but admire the undisturbed security in which these people hold their property, without having recourse to any restraint beyond that which is incurred be the tacitly-received law of mutual forbearance.

In the barter of their various commodities, their dealings with us were fair and upright, though latterly they were by no means backward or inexpert in driving a bargain. The absurd and childish exchanges which they at first made with our people*

* Crantz, i. 173.

induced them subsequently to complain that the Kabloonas had stolen their things, though the profit had eventually been a hundred-fold in their favour. Many such complaints were made, when the only fault in the purchaser had been excessive liberality, and frequently, also, as a retort, by way of warding off the imputation of some dishonesty of their own. A trick not uncommon with the women was, to endeavour to excite the commiseration, and to tax the bounty of one person by relating some cruel theft of this kind that had, as they said, been practised upon them by another. One day, after I had bought a knife of Togolat, she told Captain Lyon, in a most piteous tone, that *Parree* had stolen her last *ooloo*, that she did not know what to do without one, and at length coming to the point, begged him to give her one. Presently after this, her husband coming in and asking for something to eat, she handed him some meat, accompanied by a very fine ooloo. Her son, being thus reminded of eating, made the same request, upon which a second knife was produced, and, immediately after, a third of the same kind for herself. Captain Lyon, having amused himself in watching these proceedings, which so well confirmed the truth of the proverb, that certain people ought to have good memories, now took the knives, one by one, out of their hands, and holding them up to Togolat, asked her if Parree

had not stolen her last ooloo. A hearty laugh all round was the only notice taken by them of this direct detection of the deceit.

The confidence which they really placed in us was daily and hourly evinced by their leaving their fishing gear stuck in the snow all round the ships; and not a single instance occurred, to my knowledge, of any theft committed on their property. The licking of the articles received from us was not so common with them as with Esquimaux in general, and this practice was latterly almost entirely left off by them.

Among the unfavourable traits in their character must be reckoned an extreme disposition to envy, which displayed itself on various occasions during our intercourse with them. If we had made any presents in one hut, the inmates of the next would not fail to tell us of it, accompanying their remarks with some satirical observations, too unequivocally expressed to be mistaken, and generally by some stroke of irony * directed against the favoured person. If any individual with whom we had been intimate happened to be implicated in a theft, the circumstance became a subject of satisfaction too manifest to be repressed, and we were told of it

* Crantz, i. 170.

with expressions of the most triumphant exultation on every occasion. It was, indeed, curious, though ridiculous, to observe that, even amongst these simple people, and even in this obscure corner of the globe, that little gossip and scandal so commonly practised in small societies among us were very frequently displayed. This was especially the case with the women, of whom it was not uncommon to see a group sitting in a hut for hours together, each relating her *quota* of information, now and then mimicking the persons of whom they spoke, and interlarding their stories with jokes evidently at the expense of their absent neighbours, though to their own infinite amusement.

In extenuation, however, of these faults, it must be allowed that we were ourselves the exciting cause which called them into action, and without which they would be comparatively of rare occurrence among them. Like every other child of Adam, they undoubtedly possess their share of the seeds of these human frailties; but even in this respect they need not shrink from a comparison with ourselves, for who among us can venture to assure himself that, if exposed to similar temptations, he would not be found wanting?

To another failing, to which they are addicted, the same excuse will not so forcibly apply; as in this respect our acquaintance with them naturally

furnishes an opportunity for the practice of a virtue, rather than for the development of its opposite vice. I have already, in the course of the foregoing Narrative, hinted at the want of gratitude evinced by these people in their transactions with us. Among themselves, almost the only case in which this sentiment can have any field for exertion, is in the conduct of children towards their parents, and in this respect, as I shall presently have occasion to notice, their gratitude is by no means conspicuous. Anything like a free gift is very little if at all known among them. If A. gives B. a part of his seal to-day, the latter soon returns an equal quantity when he is the successful fisherman. Uncertain as their mode of living is, and dependent as they are upon each other's exertions, this custom is the evident and unquestionable interest of all. The regulation does credit to their wisdom, but has nothing to do with their generosity. This being the case, it might be supposed that our numerous presents, for which no return was asked, would have excited in them something like thankfulness combined with admiration; but this was so little the case, that the *coyenna* (thanks) which did now and then escape them, expressed much less than even the most common-place "thank ye" of civilised society. Some exceptions, for they were only exceptions and rare ones to this rule, have been men-

tioned as they occurred; but in general, however considerable the benefit conferred, it was forgotten in a day; and this forgetfulness was not unfrequently aggravated by their giving out that their benefactor had been so shabby as to make them no present at all. Even those individuals who, either from good behaviour or superior intelligence, had been most noticed by us, and particularly such as had slept on board the ships, and whether in health or sickness had received the most friendly treatment from everybody, were in general just as indifferent as the rest; and I do not believe that any one amongst them would have gone half a mile out of his road, or have sacrificed the most trivial self-gratification to have served us. Though the riches lay on our side, they possessed abundant means of making some nominal return, which, for the sake of the principle that prompted it, would of course have been gratifying to us. Okotook and Iligliuk, whom I had most loaded with presents, and who had never offered me a single free gift in return, put into my hand, at the time of their first removal from Winter Island, a dirty crooked model of a spear, so shabbily constructed that it had probably been already refused as an article of barter by many of the ship's company. On my accepting this, from an unwillingness to affront them, they were uneasy and dissatisfied till I had given them something in return, though their hands were full of the presents

which I had just made them. Selfishness is in fact almost without exception their universal characteristic, and the main-spring of all their actions, and that too of a kind the most direct and unamiable that can well be imagined.

In the few opportunities we had of putting their hospitality to the test, we had every reason to be pleased with them. Both as to food and accommodation the best they had was always at our service; and their attention, both in kind and degree, was every thing that hospitality and even good breeding could dictate. The kindly offices of drying and mending our clothes, cooking our provision and thawing snow for our drink, were performed by the women with an obliging cheerfulness which we shall not easily forget, and which commanded its due share of our admiration and esteem. While thus their guest, I have passed an evening not only with comfort, but with extreme gratification; for with the women working and singing, their husbands quietly mending their lines, the children playing before the door, and the pot boiling over the blaze of a cheerful lamp, one might well forget for the time that an Esquimaux hut was the scene of this domestic comfort and tranquillity; and I can safely affirm with Cartwright*, that, while thus

* Cartwright's *Labrador*, iii. 232.

lodged beneath their roof, I know no people whom I would more confidently trust as respects either my person or my property, than the Esquimaux. It is painful, and may perhaps be considered invidious after this, to inquire how far their hospitality would in all probability be extended if interest were wholly separated from its practice, and a stranger were destitute and unlikely soon to repay them. But truth obliges me to confess, that from the extreme selfishness of their general conduct, as well as from their behaviour in some instances to the destitute of their own tribe, I should be sorry to lie under the necessity of thus drawing very largely on their bounty.

The estimation in which women are held among these people is, I think, somewhat greater than is usual in savage life. In their general employments they are by no means the drudges that the wives of the Greenlanders* are said to be; being occupied only in those cares which may properly be called domestic, and as such are considered the peculiar business of the women among the lower classes in civilised society. The wife of one of these people, for instance, makes and attends the fire, cooks the victuals, looks after the children, and is sempstress to her whole family; while her husband is labouring

* Crantz, i. 164, 165.

abroad for their subsistence. In this respect it is not even necessary to except their task of cutting up the small seals, which is in truth one of the greatest luxuries and privileges they enjoy; and even if it were esteemed a labour, it could scarcely be considered equivalent to that of the women in many of our own fishing-towns, where the men's business is at an end the moment the boat touches the beach. The most laborious of their tasks occur perhaps in making their various journeys, when all their goods and chattels are to be removed at once, and when each individual must undoubtedly perform a full share of the general labour. The women are, however good walkers and not easily fatigued; for we have several times known a young woman of two-and twenty, with a child in her hood, walk twelve miles to the ships and back again the same day, for the sake of a little bread-dust and a tin canister. When stationary in the winter, they have really almost a sinecure of it, sitting quietly in their huts, and having little or no employment for the greater part of the day. In short, there are few, if any people, in this state of society among whom the women are so well off. They always sit upon the beds with their legs doubled under them*, and are uneasy in the posture usual with us. The men sometimes sit as we do,

* Crantz, i. 140.

but more generally with their legs crossed before them.

The women do not appear to be in general very prolific. Illumea indeed had borne seven children, but no second instance of an equal number in one family afterwards came to our knowledge; three or four is about the usual number. They are, according to their own account, in the habit of suckling their children to the age of three years; but we have seen a child of five occasionally at the breast, though they are dismissed from the mother's hood at about the former age. The time of weaning them must of course in some instances depend on the morher's again becoming pregnant, and if this succeeds quickly it must, as Crantz relates of the Greenlanders*, go hard with one of the infants. Nature, however, seems to be kind to them in this respect, for we did not witness one instance, nor hear of any, in which a woman was put to this inconvenience and distress. It is not uncommon to see one woman suckling the child of another, while the latter happens to be employed in her other domestic occupations. They are in the habit also of feeding their younger children from their own mouths, softening the food by mastication, and then turning their heads round so that the infant in the hood may put its lips to theirs. The chill is taken

* Crantz, i. 162.

from water for them in the same manner, and some fathers are very fond of taking their children on their knees and thus feeding them. The women are more desirous of having sons than daughters, as on the former must principally depend their support in old age.

Twelve of the men had each two wives, and some of the younger ones had also two betrothed; two instances occurred of the father and son being married to sisters. The custom of betrothing children in their infancy is commonly practised here, in which respect these people differ from the natives of Greenland, where it is comparatively rare *. A daughter of Arnaneelia, between two and three years old, had long been thus contracted to Okotook's son, a hero of six or seven, and the latter used to run about the hut calling his intended by the familiar appellation of *Nŏŏllē-ā* (wife), to the great amusement of the parents. When a man has two wives, there is generally a difference of five or six years in their ages. The senior takes her station next the principal fire, which comes entirely under her management; and she is certainly considered in some respects superior to the other, though they usually live together in the utmost harmony. The men sometimes repudiate their wives without ceremony, in case of real or supposed

* Crantz, i. 159.

bad behaviour, as in Greenland*, but this does not often occur. There was a considerable disparity of age between many of the men and their wives, the husband being sometimes the oldest by twenty years or more, and this also when he had never married any former wife. We knew no instance in which the number of a man's wives exceeded two, and indeed we had every reason to believe that the practice is never admitted among them. We met with a singular instance of two men having exchanged wives, in consequence merely of one of the latter being pregnant at the time when the husband was about to undertake a long journey.

The authority of the husband seems to be sufficiently absolute, depending nevertheless in a great measure on the dispositions of the respective parties. Iligliuk was one of those women who seemed formed to manage their husbands; and we one day saw her take Okotook to task in a very masterly style, for having bartered away a good jacket for an old useless pistol, without powder or shot. He attempted at first to bluster in his turn, and with most women would probably have gained his point. But with Iligliuk this would not do; she saw at once the absurdity of his bargain, and insisted on his imme-

* Crantz, i. 160.

diately cancelling it, which was accordingly done, and no more said about it. In general, indeed, the husband maintains his authority, and in several instances of supposed bad behaviour in a wife, we saw obedience enforced in a pretty summary manner. It is very rare, however, to see them proceed to this extremity; and the utmost extent of a husband's want of tenderness towards his wife consists in general in making her walk or lead the dogs, while he takes his own seat in the sledge, and rides in comfort. Widows, as might be expected, are not so well off as those whose husbands are living, and this difference is especially apparent in their clothes, which are usually very dirty, thin, and ragged; when, indeed, they happen to have no near relatives, their fate, as we have already seen, is still worse than this.

I fear we cannot give a very favourable account of the chastity of the women, nor of the delicacy of their husbands in this respect. As for the latter, it was not uncommon for them to offer their wives as freely for sale as a knife or a jacket. Some of the young men informed us, that when two of them were absent together on a sealing excursion, they often exchanged wives for the time, as a matter of friendly convenience; and, indeed, without mentioning any other instances of this nature, it may safely be affirmed, that in no country is prostitution carried to greater lengths than among these people. The

behaviour of most of the women when their husbands were absent from the huts, plainly evinced their indifference towards them, and their utter disregard of connubial fidelity. The departure of the men was usually the signal for throwing aside restraint, which was invariably resumed on their return. For this event they take care to be prepared by the report of the children, one of whom is usually posted on the outside for the purpose of giving due notice.

The affection of parents for their children was frequently displayed by these people, not only in the mere passive indulgence, and abstinence from corporal punishment, for which Esquimaux have before been remarked, but by a thousand playful endearments also, such as parents and nurses practise in our own country. Nothing, indeed, can well exceed the kindness with which they treat their children; and this trait in their character deserves to be the more insisted on, because it is, in reality, the only very amiable one which they possess. It must be confessed, indeed, that the gentleness and docility of the children are such as to occasion their parents little trouble, and to render severity towards them quite unnecessary. Even from their earliest infancy, they possess that quiet disposition, gentleness of demeanour, and uncommon evenness of temper, for which, in more mature age, they are for the most part distinguished. Disobedience is scarcely

ever known, a word or even a look from a parent is enough; and I never saw a single instance of that frowardness and disposition to mischief, which, with our youth, so often requires the whole attention of a parent to watch over and to correct. They never cry from trifling accidents, and sometimes not even from very severe hurts, at which an English child would sob for an hour. It is, indeed, astonishing to see the indifference with which, even as tender infants, they bear the numerous blows they accidentally receive, when carried at their mothers' backs.

They are just as fond of play as any other young people, and of the same kind; only that while an English child draws a cart of wood, an Esquimaux of the same age has a sledge of whalebone; and for the superb baby-house of the former, the latter builds a miniature hut of snow, and begs a lighted wick from her mother's lamp to illuminate the little dwelling. Their parents make for them, as dolls, little figures of men and women, habited in the true Esquimaux costume, as well as a variety of other toys, many of them having some reference to their future occupations in life, such as canoes, spears, and bows and arrows. The drum or tambourine, mentioned by Crantz*, is common among them, and

* Crantz, i. 176.

used not only by the children, but by the grown-up people at some of their games. They sometimes serrate the edges of two strips of whalebone, and whirl them round their heads, just as boys do in England to make the same peculiar humming sound. They will dispose one piece of wood on another, as an axis, in such a manner that the wind turns it round like the arms of a windmill ; and so of many other toys of the same simple kind. These are the distinct property of the children, who will sometimes sell them while their parents look on, without interfering or expecting to be consulted.

When not more than eight years old, the boys are taken by their fathers on their sealing excursions, where they begin to learn their future business ; and even at that early age, they are occasionally intrusted to bring home a sledge and dogs from a distance of several miles over the ice. At the age of eleven, we see a boy with his water-tight boots and mocassins, a spear in his hand, and a small coil of line at his back, accompanying the men to the fishery under every circumstance ; and from this time his services daily increase in value to the whole tribe. On our first intercourse with them, we supposed that they would not unwillingly have parted with their children, in consideration of some valuable present, but in this we afterwards found that we were much mistaken. Happening one day

to call myself Toolooak's *attata* (father), and pretend that he was to remain with me on board the ship, I received from the old man, his father, no other answer than what seemed to be very strongly, and even satirically implied, by his taking one of our gentlemen by the arm, and calling him *his* son; thus intimating that the adoption which he proposed was as feasible and as natural as my own.

The custom of adoption is carried to very great lengths among these people, and served to explain to us several apparent inconsistencies with respect to their relationships. The adoption of a child in civilised countries has usually for its motive either a tenderness for the object itself, or some affection or pity for its deceased, helpless, or unknown parents. Among the Esquimaux, however, with whom the two first of these causes would prove but little excitement, and the last can have no place, the custom owes its origin entirely to the obvious advantage of thus providing for a man's own subsistence in advanced life; and it is consequently confined almost without exception to the adoption of *sons*, who can alone contribute materially to the support of an aged and infirm parent. When a man adopts the son of another as his own, he is said to "*tego*," or take him; and at whatever age this is done (though it generally happens in infancy), the child then lives with his new parents, calls them

father and mother, is sometimes even ignorant of any such transfer having been made, especially if his real parents should be dead; and whether he knows it or not, is not always willing to acknowledge any but those with whom he lives. Without imputing much to the natural affection of these people for their offspring, which, like their other passions, is certainly not remarkable for its strength, there would seem, on the score of disinterestedness, a degree of consideration in a man's thus giving his son to another, which is scarcely compatible with the general selfishness of the Esquimaux character; but there is reason to suppose that the expediency of this measure is sometimes suggested by a deficiency of the mother's milk, and not unfrequently, perhaps by the premature death of the real parent. The agreement seems to be always made between the fathers, and to differ in no respect from the transfer of other property, except that none can equal in value the property thus disposed of. The good sense, good fortune, or extensive claims of some individuals were particularly apparent in this way, from the number of sons they had adopted. Toolemak, deriving, perhaps, some advantage from his qualifications as Angetkook, had taken care to negociate for the adoption of some of the finest male children of the tribe; a provision which now appeared the more necessary from his having lost four

children of his own, besides Noogloo, who was one of his *tego'd* sons. In one of the two instances that came to our knowledge of the adoption of a female child, both its own parents were still living, nor could we ascertain the motive for this deviation from the more general custom.

In their behaviour to old people, whose age or infirmities render them useless, and therefore burdensome to the community, the Esquimaux betray a degree of insensibility bordering on inhumanity, and ill repaying the kindness of an indulgent parent. The old man Hikkeiera, who was very ill during the winter, used to lie day after day little regarded by his wife, son, daughter, and other relatives, except that his wretched state constituted, as they well knew, a forcible claim upon our charity; and, with this view, it was sure to excite a whine of sympathy and commiseration whenever we visited or spoke of him. When, however, a journey of ten miles was to be performed over the ice, they left him to find his way with a stick in the best manner he could, while the young and robust ones were many of them drawn on sledges. There is, indeed, no doubt that, had their necessities or mode of life required a longer journey than he could thus have accomplished, they would have pushed on like the Indians, and left a fellow-creature to perish. It was certainly considered incumbent on his son to support him,

and he was fortunate in that son's being a very good man; but a few more such journeys to a man of seventy would not impose this incumbrance upon him much longer. Illumea, the mother of several grown-up children, lived also in the same apartment with her youngest son, and in the same hut with her other relations. She did not, however, interfere, as in Greenland*, with the management of her son's domestic concerns, though his wife was half an idiot. She was always badly clothed, and even in the midst of plenty not particularly well fed, receiving everything more as an act of charity than otherwise; and she will probably be less and less attended to, in proportion as she stands more in need of assistance.

The different families appear always to live on good terms with each other, though each preserves its own habitation and property as distinct and independent as any housekeeper in England. The persons living under one roof, who are generally closely related, maintain a degree of harmony among themselves which is scarcely ever disturbed. The more turbulent passions which, when unrestrained by religious principle, or unchecked by the dread of human punishment, usually create so much havoc in the world, seem to be very seldom excited in the

* Crantz, i. 164.

breasts of these people, which renders personal violence or immoderate anger extremely rare among them; and one may sit in a hut for a whole day, and never witness an angry word or look, except in driving out the dogs. If they take an offence, it is more common for them to show it by the more quiet method of sulkiness, and this they now and then tried as a matter of experiment with us. Okotook, who was often in this humour, once displayed it to some of our gentlemen in his own hut, by turning his back and frequently repeating the expression "good bye," as a broad hint to them to go away. Toolooak was also a little given to this mood, but never retained it long, and there was no malice mixed with his displeasure. One evening that he slept on board the Fury, he either offended Mr. Skeoeh, or thought he had done so, by this kind of humour; at all events they parted for the night without any formal reconciliation. The next morning, Mr. Skeoch was awakened at an unusually early hour, by Toolooak's entering his cabin and taking hold of his hand to shake it, by way of making up the supposed quarrel. On a disposition thus naturally charitable, what might not Christian education and Christian principles effect! Where a joke is evidently intended, I never knew people more ready to join in it than these are. If ridiculed for any particularity of manner, figure, or counte-

nance, they are sure not to be long behind-hand in returning it, and that very often with interest. If we were the aggressors in this way, some ironical observation respecting the *Kabloonas* was frequently the consequence; and no small portion of wit as well as irony was at times mixed with their raillery.

In point of intellect, as well as disposition, great variety was of course perceptible among the different individuals of this tribe; but few of them were wanting in that respect. Some indeed, possessed a degree of natural quickness and intelligence which, perhaps, could hardly be surpassed in the natives of any country. Iligliuk, though one of the least amiable, was particularly thus gifted. When she really wished to develop our meaning, she would desire her husband and all the rest to hold their tongues, and would generally make it out while they were puzzling their heads to no purpose. In returning her answers, the very expression of her countenance, though one of the plainest among them, was almost of itself sufficient to convey her meaning; and there was, in these cases, a peculiarly decisive energy in her manner of speaking which was extremely interesting. This woman would, indeed, have easily learned any thing to which she chose to direct her attention; and had her lot been cast in a civilised country, instead of this dreary region, which serves alike to "freeze the

genial current of the soul" and body, she would probably have been a very clever person. For want of a sufficient object, however, neither she nor any of her companions ever learned a dozen words of English, except our names, with which it was their interest to be familiar, and which, long before we left them, any child could repeat, though in their own style of pronunciation.

Besides the natural authority of parents and husbands, these people appear to admit no kind of superiority among one another, except a certain degree of superstitious reverence for their *angetkooks*, and their tacitly following the counsel or steps of the most active seal-catcher, on their hunting excursionsions. The word *nallegak*, used in Greenland to express "master," and "lord" in the Esquimaux translations of the Scriptures, they were not acquainted with. One of the young men at Winter Island appeared to be considered somewhat in the light of a servant to Okotook, living with the latter and quietly allowing him to take possesion of all the most valuable presents which he received from us. Being a sociable people, they unite in considerable numbers to form a settlement for the winter; but on the return of spring they again separate into several parties, each appearing to choose his own route, without regard to that of the rest, but all making their arrangements without the slightest disagree-

ment or difference of opinion that we could ever discover. In all their movements they seem to be actuated by one simultaneous feeling that is truly admirable.

Superior as our arts, contrivances, and materials must unquestionably have appeared to them, and eager as they were to profit by this superiority, yet, contradictory as it may seem, they certainly looked upon us in many respects with profound contempt; maintaining that idea of self-sufficiency which has induced them, in common with the rest of their nation, to call themselves, by way of distinction, *Innue*, or mankind. One day, for instance, in securing some of the gear of a sledge, Okotook broke a part of it, composed of a piece of our white line, and I shall never forget the contemptuous sneer with which he muttered in soliloquy the word "Kabloona!" in token of the inferiority of our materials to his own. It is happy, perhaps, when people, possessing so few of the good things of this life, can be thus contented with the little allotted them.

The men, though low in stature, are not wanting in muscular strength in proportion to their size, or in activity and hardiness. They are good and even quick walkers, and occasionally bear much bodily fatigue, wet, and cold, without appearing to suffer by it, much less to complain of it. Whatever

labour they have gone through, and with whatever success in procuring game, no individual ever seems to arrogate to himself the credit of having done more than his neighbour for the general good. Nor do I conceive there is reason to doubt their personal courage, though they are too good-natured often to excite others to put that quality to the test. It is true they will recoil with horror at the tale of an Indian massacre, and probably cannot conceive what should induce one set of men deliberately and without provocation to murder another. War is not their trade; ferocity forms no part of the disposition of the Esquimaux. Whatever manly qualities they possess are exercised in a different way, and put to a far more worthy purpose. They are fishermen, and not warriors; but I cannot call that man a coward, who, at the age of one-and-twenty, will attack a polar bear single-handed, or fearlessly commit himself to floating masses of ice which the next puff of wind may drift for ever from the shore.

If, in short, they are deficient in some of the higher virtues, as they are called, of savage life, they are certainly free also from some of its blackest vices; and their want of brilliant qualities is fully compensated by those which, while they dazzle less, do more service to society and more honour to human nature. If, for instance, they have not

the magnanimity which would enable them to endure without a murmur the most excruciating torture, neither have they the ferocious cruelty that incites a man to inflict that torture on a helpless fellow-creature. If their gratitude for favours be not lively nor lasting, neither is their resentment of injuries implacable, nor their hatred deadly. I do not say there are not exceptions to this rule, though we have never witnessed any, but it is assuredly not their general character.

When viewed more nearly in their domestic relations, the comparison will, I believe, be still more in their favour. It is here, as a social being, as a husband, and the father of a family, promoting within his own little sphere the benefit of that community in which Providence has cast his lot, that the moral character of a savage is truly to be sought; and who can turn without horror from the Esquimaux, peaceably seated, after a day of honest labour, with his wife and children, in their snow-built hut, to the self-willed and vindictive Indian, wantonly plunging his dagger into the bosom of the helpless woman whom nature bids him cherish and protect?

Of the few arts possessed by this simple people some account has already been given in the description of their various implements. As mechanics, they have little to boast, when compared with other

savages lying under equal disadvantages as to scantiness of tools and materials. As carpenters, they can scarf two pieces of wood together, secure them with pins of whalebone or ivory, fashion the timbers of a canoe, shoe a paddle, and rivet a scrap of iron into a spear or arrow-head. Their principal tool is the knife (panna), and considering the excellence of a great number which they possessed previous to our intercourse with them, the work they do is remarkably coarse and clumsy. Their very manner of holding and handling a knife is the most awkward that can be imagined. For the purpose of boring holes they have a drill and bow so exactly like our own, that they need no further description, except that the end of the drill-handle, which our artists place against their breasts, is rested by these people against a piece of wood or bone held in their mouths, and having a cavity fitted to receive it. With the use of the saw they were well acquainted, but had nothing of this kind in their possession better than a notched piece of iron. One or two small European axes were lashed to handles in a contrary direction to ours, that is, to be used like an adze, a form which, according to the observation of a traveller * well qualified to judge, savages in

* Ledyard. *Proceedings of the African Association*, vol. i. p. 30.

general prefer. It was said that these people steamed or boiled wood, in order to bend it for fashioning the timbers of their canoes. As fishermen or seamen they can put on a woolding or seizing with sufficient strength and security, and are acquainted with some of the most simple and serviceable knots in use among us. In all the arts, however, practised by the men, it is observable that the ingenuity lies in the principle, not in the execution. The experience of ages has led them to adopt the most efficacious methods, but their practice as handicrafts has gone no further than absolute necessity requires; they bestow little labour upon neatness or ornament.

In some of the few arts practised by the women there is much more dexterity displayed, particularly in that important branch of a housewife's business, sewing, which even with their own clumsy needles of bone they perform with extraordinary neatness. They had, however, several steel needles of a three-cornered shape, which they kept in a very convenient case, consisting of a strip of leather passed through a hollow bone and having its ends remaining out, so that the needles which are stuck into it may be drawn in and out at pleasure. These cases were sometimes ornamented by cutting; and several thimbles of leather, one of which in sewing is worn on the first finger, are usually attached to it, toge-

ther with a bunch of narrow spoons and other small articles liable to be lost. The thread they use is the sinew of the rein-deer (*tooktoo ĕwāllŏŏ*), or, when they cannot procure this, the swallow-pipe of the *neitiek*. This may be split into threads of different sizes, according to the nature of their work, and is certainly a most admirable material. This, together with any other articles of a similar kind, they keep in little bags, which are sometimes made of the skin of birds' feet, disposed with the claws downwards in a very neat and tasteful manner. In sewing, the point of the needle is entered and drawn through in a direction towards the body, and not from it or towards one side as with our sempstresses. They sew the deer-skins with a "round seam," and the water-tight boots and shoes are "stitched." The latter is performed in a very adroit and efficacious manner, by putting the needle only half through the substance of one part of the seal-skin, so as to leave no hole for admitting the water. In cutting out the clothes, the women do it after one regular and uniform pattern, which probably descends unaltered from generation to generation. The skin of the deer's head is always made to form the *apex* of the hood, while that of the neck and shoulders comes down the back of the jacket; and so of every other part of the animal which is appropriated to its particular portion of the dress. To soften the seal-

skins of which the boots, shoes, and mittens are made, the women chew them for an hour or two together, and the young girls are often seen employed in thus preparing the materials for their mothers. The covering of the canoes is a part of the women's business, in which good workmanship is especially necessary to render the whole smooth and water-tight. The skins, which are those of the *neitiek* only, are prepared by scraping off the hair and the fleshy parts with an *ooloo*, and stretching them out tight on a frame, in which state they are left over the lamps or in the sun for several days to dry; and after this they are well chewed by the women to make them fit for working. The dressing of leather and of skins in the hair, is an art which the women have brought to no inconsiderable degree of perfection. They perform this by first cleansing the skin from as much of the fat and fleshy matter as the *ooloo* will take off, and then rubbing it hard for several hours with a blunt scraper, called *siākŏŏt*, so as nearly to dry it. It is then put into a vessel containing urine, and left to steep a couple of days, after which a drying completes the process. Skins dressed in the hair are, however, not always thus steeped; the women, instead of this, chewing them for hours together till they are quite soft and clean. Some of the leather thus dressed looked nearly as well as ours, and the

hair was as firmly fixed to the pelt; but there was in this respect a very great difference, according to the art or attention of the housewife. Dyeing is an art wholly unknown to them. The women are very expert at platting, which is usually done with three threads of sinew; if greater strength is required, several of these are twisted slackly together as in the bow-strings. The quickness with which some of the women plat is really surprising; and it is well that they do so, for the quantity required for the bows alone would otherwise occupy half the year in completing it.

It may be supposed that among so cheerful a people as the Esquimaux there are many games or sports practised; indeed it was rarely that we visited their habitations without seeing some engaged in them. One of these our gentlemen saw at Winter Island, on an occasion when most of the men were absent from the huts on a sealing excursion, and in this Iligliuk was the chief performer. Being requested to amuse them in this way, she suddenly unbound her hair, platted it, tied both ends together to keep it out of her way, and then stepping out into the middle of the hut, began to make the most hideous faces that can be conceived, by drawing both lips into her mouth, poking forward her chin, squinting frightfully, occasionally shutting one eye, and moving her head from side to side as if her neck

had been dislocated. This exhibition, which they call *āyŏkĭt-tāk-poke* *, and which is evidently considered an accomplishment that few of them possess in perfection, distorts every feature in the most horrible manner imaginable, and would, I think, put our most skilful horse-collar grinners quite out of countenance.

The next performance consists in looking steadfastly and gravely forward, and repeating the words *tăbāk-tabak*, *kĕibō-keibo*, *kĕbāng-ĕ-nū-tŏ-ĕĕk*, *kebangenutocek*, *ămātămā-amatama*, in the order in which they are here placed, but each at least four times, and always by a peculiar modulation of the voice, speaking them in pairs as they are coupled above. The sound is made to proceed from the throat in a way much resembling ventriloquism, to which art it is indeed an approach. After the last *amatama* Iligliuk always pointed with her finger towards her body, and pronounced the word *angetkook*, steadily retaining her gravity for five or six seconds, and then bursting into a loud laugh, in which she was joined by all the rest. The women sometimes produce a much more guttural and unnatural sound, repeating principally the word *īkkĕrĕe-ikkeree*, cou-

* This name, as well as those of the other games I am now describing, is given in the third person singular of the verb used to express the performance.

pling them as before, and staring in such a manner as to make their eyes appear ready to burst out of their sockets with the exertion. Two or more of them will sometimes stand up face to face, and with great quickness and regularity respond to each other, keeping such exact time that the sound appears to come from one throat instead of several. Very few of the females are possessed of this accomplishment, which is called *pitkoo-she-rāk-poke*, and it is not uncommon to see several of the younger females practising it. A third part of the game, distinguished by the word *keitīk-poke*, consists only in falling on each knee alternately—a piece of agility which they perform with tolerable quickness, considering the bulky and awkward nature of their dress.

The last kind of individual exhibition was still performed by Iligliuk, to whom in this, as in almost everything else, the other women tacitly acknowledged their inferiority, by quietly giving place to her on every occasion. She now once more came forward, and letting her arms hang down loosely and bending her body very much forward, shook herself with extreme violence as if her whole frame had been strongly convulsed, uttering at the same time, in a wild tone of voice, some of the unnatural sounds before mentioned.

This being at an end, a new exhibition was com-

menced, in which ten or twelve women took a part, and which our gentlemen compared to blind-man's buff. A circle being formed, and a boy despatched to look out at the door of the hut, Iliglink, still the principal actress, placed herself in the centre, and after making a variety of guttural noises for about half a minute, shut her eyes, and ran about till she had taken hold of one of the others, whose business it then became to take her station in the centre, so that almost every woman in her turn occupied this post; and in her own peculiar way, either by distortion of countenance or other gestures, performed her part in the game. This continued three-quarters of an hour, and, from the precaution of placing a look-out who was withdrawn when it was over, as well as from some very expressive signs which need not here be mentioned, there is reason to believe that it is usually followed by certain indecencies, with which their husbands are not to be acquainted. Kaoongut was present indeed on this occasion, but his age seemed to render him a privileged person; besides which, his own wife did not join in the game.

The most common amusement, however, and to which their husbands make no objection, they performed at Winter Island expressly for our gratification. The females, being collected to the number of ten or twelve, stood in as large a circle

as the hut would admit, with Okotook in the centre. He began by a sort of half-howling, half-singing noise, which appeared as if designed to call the attention of the women, the latter soon commencing the *Amna Aya* song hereafter described. This they continued without variety, remaining quite still while Okotook walked round within the circle; his body was rather bent forward, his eyes sometimes closed, his arms constantly moving up and down, and now and then hoarsely vociferating a word or two as if to increase the animation of the singers, who, whenever he did this, quitted the chorus and rose into the words of the song. At the end of ten minutes they all left off at once, and after one minute's interval commenced a second act precisely similar and of equal duration; Okotook continuing to invoke their muse as before. A third act, which followed this, varied only in his frequently towards the close throwing his feet up before and clapping his hands together, by which exertion he was thrown into a violent perspiration. He then retired, desiring a young man (who, as we were informed, was the only individual of several then present thus qualified) to take his place in the centre as master of the ceremonies, when the same antics as before were again gone through. After this description it will scarcely be necessary to remark, that nothing can be poorer in its way than

this tedious singing recreation, which, as well as everything in which dancing is concerned, they express by the word *mŏmēk-poke.* They seem, however, to take great delight in it; and even a number of the men as well as all the children crept into the hut by degrees to peep at the performance.

The Esquimaux women and children often amuse themselves with a game not unlike our "skip-rope." This is performed by two women holding the ends of a line and whirling it regularly round and round, while a third jumps over it in the middle according to the following order. She commences by jumping twice on both feet, then alternately with the right and left, and next four times with the feet slipped one behind the other, the rope passing once round at each jump. After this she performs a circle on the ground, jumping about half-a-dozen times in the course of it, which bringing her to her original position, the same thing is repeated as often as it can be done without entangling the line. One or two of the women performed this with considerable agility and adroitness, considering the clumsiness of their boots and jackets, and seemed to pride themselves in some degree on the qualification. A second kind of this game consists in two women holding a long rope by its ends and whirling it round in such a manner, over the heads of two

others standing close together near the middle of the bight, that each of these shall jump over it alternately. The art, therefore, which is indeed considerable, depends more on those whirling the rope than on the jumpers, who are, however, obliged to keep exact time in order to be ready for the rope passing under their feet.

The whole of these people, but especially the women, are fond of music, both vocal and instrumental. Some of them might be said to be passionately so, removing their hair from off their ears, and bending their heads forward, as if to catch the sounds more distinctly, whenever we amused them in this manner. Their own music is entirely vocal, unless, indeed, the drum or tambourine before mentioned be considered an exception.

The voices of the women are soft and feminine, and when singing with the men are pitched an octave higher than theirs. They have most of them so far good ears, that, in whatever key a song is commenced by one of them, the rest will always join in perfect unison. After singing for ten minutes, the key had usually fallen a full semitone. Only two of them, of whom Iligliuk was one, could catch the tune as pitched by an instrument; which made it difficult with most of them to complete the writing of the notes, for if they once left off, they were sure to re-commence in some other key, though a flute or violin was playing at the time.

During the season passed at Winter Island, which appears to have been a healthy one to the Esquimaux, we had little opportunity of becoming acquainted with the diseases to which they are subject. Our subsequent intercourse with a greater number of these people at Igloolik, having unfortunately afforded more frequent and fatal instances of sickness among them, I here insert Mr. Edwards's remarks on this subject.

" Exempted as these people are from a host of diseases usually ascribed to the vitiated habits of more civilised life, as well as from those equally numerous and more destructive ones engendered by the pestilential effluvia that float in the atmosphere of more favoured climes, the diversity of their maladies is, as might *à priori* be inferred, very limited. But, unfortunately, that improvidence which is so remarkable in their kindred tribes is also with them proof against the repeated lessons of bitter experience they are doomed to endure. Alternate excesses and privations mark their progress through life; and consequent misery, in one or another shape, is an active agent in effecting as much mischief amongst them as the diseases above alluded to produce in other countries. The mortality arising from a few diseases and wretchedness combined seems sufficient to check anything like a progressive increase of their numbers. The great proportion of deaths to births that occurred during

the period of our intercourse with them has already been noticed.

" It is doubtful in what proportion the mortality is directly occasioned by disease. Few, perhaps, die, in the strict sense of the term, a natural death. A married person of either sex rarely dies without leaving destitute a parent, a widow, or a helpless female infant. To be deprived of near relations is to be deprived of everything; such unfortunates are usually abandoned to their fate, and too generally perish. A widow and two or three children, left under these circumstances, were known to have died of inanition, from the neglect and apathy of their neighbours, who jeered at the commanders of our ships on the failure of their humane endeavours to save what the Esquimaux considered as worthless.

" Our first communication with these people at Winter Island gave us a more favourable impression of their general health than subsequent experience confirmed. There, however, they were not free from sickness. A catarrhal affection, in the month of February, became generally prevalent, from which they readily recovered after the exciting causes, intemperance and exposure to wet, had ceased to operate. A solitary instance of pleurisy also occurred, which probably might have ended fatally but for timely assistance. Our intercourse with them in the summer

was more interrupted; but at our occasional meetings they were observed to be enjoying excellent health. It is probable that their certain supplies of food, and the nomade kind of life they lead in its pursuit during that season, are favourable to health. Nutrition goes on actively, and an astonishing increase of strength and fulness is acquired. Active diseases might now be looked for, but that the powers of nature are providentially exerted with effect.

"The unlimited use of stimulating animal food, on which they are from infancy fed, induces at an early age a highly plethoric state of the vascular system. The weaker over-distended vessels of the nose quickly yield to the increased impetus of the blood, and an active hemorrhage relieves the subject. As the same causes continue to be applied in excess at frequent intervals, and are followed by similar effects, a kind of vicarious hemorrhage at length becomes established by habit; superseding the intervention of art, and having no small share in maintaining a balance in the circulating system. The phenomenon is too constant to have escaped the observation of those who have visited the different Esquimaux people; a party of them has indeed rarely been seen, that did not exhibit two or three instances of the fact.

"About the month of September, the approach of winter induced the Esquimaux at Igloolik to

abandon their tents, and to retire into their more established village. The majority were here crowded into huts of a permanent construction, the materials composing the sides being stones and the bones of whales, and the roofs being formed of skins, turf, and snow; the rest of the people were lodged in snow huts. For a while they continued very healthy; in fact as long as the temperature of the interior did not exceed the freezing point, the vapours of the atmosphere congealed upon the walls, and the air remained dry and tolerably pure; besides, their hard-frozen winter stock of walrus did not at this time tempt them to indulge their appetites immoderately. In January, the temperature suffered an unseasonable rise; some successful captures of walrus also took place; and these circumstances, combined perhaps with some superstitious customs of which we were ignorant, seemed the signal for giving way to sensuality. The lamps were accumulated, and the kettles more frequently replenished; and gluttony, in its most disgusting form, became for a while the order of the day. The Esquimaux were now seen wallowing in filth, while some, surfeited, lay stretched upon their skins, enormously distended, and with their friends employed in rolling them about, to assist the operations of oppressed nature. The roofs of their huts were no longer congealed, but dripping with wet and threatening

speedy dissolution. The air was, in the bone huts, damp, hot, and beyond sufferance offensive with putrid exhalations from the decomposing relics of offals, or other animal matter permitted to remain from year to year undisturbed in these horrible sinks.

"What the consequences might have been, had this state of affairs long continued, it is not difficult to imagine; but fortunately for them, an early and gradual dispersion took place, so that by the end of January few individuals were left in the village. The rest, in divided bodies, established themselves in snow huts upon the sea-ice at some distance from the land. Before this change had been completed, disorders of an inflammatory character had appeared. A few went away sick, some were unable to remove, and others taken ill upon the ice, and we heard of the death of several about this period.

"The cold snow huts into which they had moved, though infinitely preferable to those abandoned, were ill suited to the reception of people already sick or predisposed, from the above-named causes, to sickness; many of them were also deficient in clothing to meet the rigorous weather that followed. Nevertheless, after this violent excitement had passed away, a comparatively good condition of health was enjoyed for the remainder of the winter and spring months.

"Their distance from the ships at once precluded any effectual assistance being rendered them at their huts, and their removal on board with safety; the complaints of those who died at the huts, therefore, did not come under observation. It appears, however, to have been acute inflammation of some of the abdominal viscera, very rapid in its career. In the generality, the disease assumed a more insidious and sub-acute form, under which the patient lingered for awhile, and was then either carried off by a diarrhœa, or slowly recovered by the powers of nature. Three or four individuals who, with some risk and trouble, were brought to the ships, we were providentially instrumental in recovering; but two others, almost helpless patients, were so far exhausted before their arrival, that the endeavours used were unsuccessful, and death was, probably, hastened by their removal.

"That affection of the eyes, known by the name of snow-blindness, is extremely frequent among these people. With them it scarcely ever goes beyond painful irritation, whilst among strangers inflammation is sometimes the consequence. I have not seen them use any other remedy besides the exclusion of light; but, as a preventive, a wooden eye-screen is worn, very simple in its construction, consisting of a curved piece of wood, six or seven inches long, and ten or twelve lines broad. It is

tied over the eyes like a pair of spectacles, being adapted to the forehead and nose, and hollowed out to favour the motion of the eye-lids. A few rays of light only are admitted through a narrow slit an inch long, cut opposite to each eye. This contrivance is more simple and quite as efficient as the more heavy one possessed by some who have been fortunate enough to acquire wood for the purpose. This is merely the former instrument, complicated by the addition of a horizontal plate projecting three or four inches from its upper rim, like the peak of a jockey's cap. In Hudson's Strait the latter is common, and the former in Greenland, where also we are told they wear with advantage the simple horizontal peak alone.

"There are upon the whole no people more destitute of curative means than these. With the exception of the hemorrhage already mentioned, which they duly appreciate, and have been observed to excite artificially to cure headach, they are ignorant of any rational method of procuring relief. It has not been ascertained that they use a single herb medicinally. As prophylactics, they wear amulets, which are usually the teeth, bones, or hair of some animal, the more rare apparently the more valuable. In absolute sickness, they depend entirely upon their Angekoks, who, they persuade themselves, have influence over some sub-marine deities

who govern their destiny. The mummeries of these impostors, consisting in pretended consultations with their oracles, are looked upon with confidence, and their mandates, however absurd, superstitiously submitted to. These are constituted of unmeaning ceremonies and prohibitions generally affecting the diet, both in kind and mode, but never in quantity. Seal's flesh is forbidden, for instance, in one disease, that of the walrus in the other; the heart is denied to some, and the liver to others. A poor woman, on discovering that the meat she had in her mouth was a piece of fried heart, instead of liver, appeared horror-struck; and a man was in equal tribulation at having eaten, by mistake, a piece of meat cooked in his wife's kettle.

"This charlatanerie, although we may ridicule the imposition, is not, however, with them, as it is with us, a positive evil. In the total absence of the medical art, it proves generally innoxious; while, in many instances, it must be a source of real benefit and comfort, by buoying up the sick spirit with confident hopes of recovery, and eventually enabling the vital powers to rise superior to the malady, when, without such support, the sufferer might have sunk under its weight. It was attempted to ascertain whether climate effected any difference in animal heat between them and ourselves, by frequently marking the temperature of the mouth;

but the experiments were necessarily made, as occasion offered, under such various states of vascular excitement, as to afford nothing conclusive. As it was, their temperature varied from 97° to 102°, coinciding pretty nearly with our own under similar circumstances. The pulse offered nothing singular.

"I may here remark, that there is in many individuals a peculiarity about the eye, amounting, in some instances, to deformity, which I have not noticed elsewhere. It consists in the inner corner of the eye being entirely covered by a duplication of the adjacent loose skin of the eye-lids and nose. This fold is lightly stretched over the edges of the eye-lids, and forms as it were a third palpebra of a crescentic shape. The aperture is, in consequence, rendered somewhat pyriform, the inner curvature being very obtuse, and in some individuals, distorted by an angle formed where the fold crosses the border of the lower palpebra. This singularity depends upon the variable form of the orbit during immature age, and is very remarkable in childhood, less so towards adult age, and then, it would seem, frequently disappearing altogether; for the proportion in which it exists among grown-up persons bears but a small comparison with that observed among the young.

"Personal deformity from mal-conformation is

uncommon: the only instance I remember being that of a young woman, whose utterance was unintelligibly nasal, in consequence of an imperfect development of the palatine bones leaving a gap in the roof of the mouth."

The imperfect arithmetic of these people, which resolves every number above ten into one comprehensive word, prevented our obtaining any very certain information respecting the population of this part of North America and its adjacent islands. The principal stations of these people, not visited by us, are *Akkoolee*, *Toonoonee-roochiuh*, *Peelig*, and *Toonoonek*, of whose situation I have already spoken. The first of these, which is the only one situated on the continent, lies in an indentation of considerable depth, on the shores of the Polar Sea, running in towards Repulse Bay on the opposite coast, and forming with it the large peninsula situated like a bastion at the north-east angle of America, which I have named MELVILLE PENINSULA, in honour of VISCOUNT MELVILLE, the First Lord Commissioner of the Admiralty. From what we know of the habits and disposition of the Esquimaux, which incline them always to associate in considerable numbers, we cannot well assign a smaller population than fifty souls to each of the four principal stations above-mentioned; and

including these, and the inhabitants of several minor ones that were occasionally named to us, there may perhaps be three or four hundred people belonging to this tribe, with whom we have never had communication. In all their charts of this neighbourhood they also delineate a tract of land to the eastward, and somewhat to the northward, of Igloolik, where they say the *Seadlērmeoo*, or strangers live, with whom, as with the Esquimaux of Southampton Island, and all others coming under the same denomination, they have seldom or never any intercourse, either of a friendly or a hostile nature. It is more than probable that the natives of the inlet called the River Clyde, on the western coast of Baffin's Bay, are a part of the people thus designated; and indeed the whole of the numerous bays and inlets on that extensive and productive line of coast may be the residence of great numbers of Esquimaux, of whom these people possess no accurate information.

Whatever may be the abundance sometimes enjoyed by these people, and whatever the maladies occasioned by their too frequent abuse of it, it is certain that they occasionally suffer very severely from the opposite extreme. A remarkably intelligent woman informed Captain Lyon, that two years ago some Esquimaux arrived at Igloolik from a place near *Akkoolee*, bringing information, that during a

very grievous famine, one party of men had fallen upon another and killed them ; and that they afterwards subsisted on their flesh, while in a frozen state, but never cooked nor even thawed it. This horrible account was soon after confirmed by Toolemak, on board the Fury ; and though he was evidently uneasy at our having heard the story, and conversed upon it with reluctance, yet by means of our questions he was brought to name, upon his fingers, five individuals who had been killed on this occasion. Of the fact, therefore, there can be no doubt ; but it is certain also that we ourselves scarcely regarded it with greater horror than those who related it; and the occurrence may be considered similar to those dreadful instances on record, even among civilised nations, of men devouring one another, in wrecks or boats, when rendered desperate by the sufferings of actual starvation.

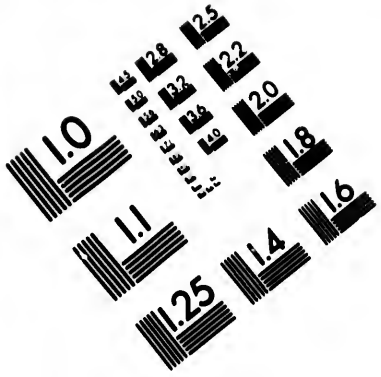
The ceremony of crying, which has before been mentioned as practised after a person's death, is not however altogether confined to those melancholy occasions, but is occasionally adopted in cases of illness, and that of no very dangerous kind. The father of a sick person enters the apartment, and after looking at him for a few seconds without speaking, announces by a kind of low sob his preparation for the coming ceremony. At this signal every other individual present composes his features for crying,

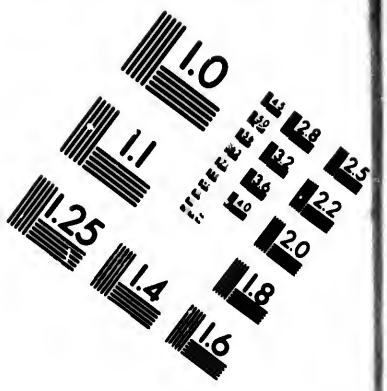
and the leader of the chorus then setting up a loud and piteous howl, which lasts about a minute, is joined by all the rest, who shed abundant tears during the process. So decidedly is this a matter of form, unaccompanied by any feeling of sorrow, that those who are not relatives shed just as many tears as those that are ; to which may be added, that in the instances which we witnessed there was no real occasion for crying at all. It must therefore be considered in the light of a ceremony of condolence, which it would be either indecorous or unlucky to omit.

I have already given several instances of the little care these people take in the interment of their dead, especially in the winter season ; it is certain, however, that this arises from some superstitious notion, and particularly from the belief that any heavy weight upon the corpse would have an injurious effect upon the deceased in a future state of existence ; for even in the summer, when it would be an easy matter to secure a body from the depredations of wild animals, the mode of burial is not essentially different. The corpse of a child observed by Lieutenant Palmer, he describes " as being laid in a regular but shallow grave, with its head to the north-east. It was decently dressed in a good deer-skin jacket, and a seal-skin prepared without the hair was carefully placed as a cover to the whole

figure, and tucked in on all sides. The body was covered with flat pieces of limestone, which, however, were so light, that a fox might easily have removed them. Near the grave were four little separate piles of stones, not more than a foot in height, in one of which we noticed a piece of red cloth and a black silk handkerchief, in a second a pair of child's boots and mittens, and in each of the others a whalebone pot. The face of the child looked unusually clean and fresh, and a few days only could have elapsed since its decease."

These Esquimaux do not appear to have any idea of the existence of One Supreme Being, nor indeed can they be said to entertain any notions on this subject, which may dignified with the name of religion. Their superstitions, which are numerous, have all some reference to the preternatural agency of a number of *toōrngŏw*, or spirits, with whom, on certain occasions, the *Angetkooks* pretend to hold mysterious intercourse, and who in various and distinct ways are supposed to preside over the destinies of the Esquimaux. On particular occasions of sickness or want of food, the Angetkooks contrive, by means of a darkened hut, a peculiar modulation of the voice, and the uttering of a variety of unintelligible sounds, to persuade their countrymen that they are descending to the lower regions for this purpose, where they force the spirits to communicate the





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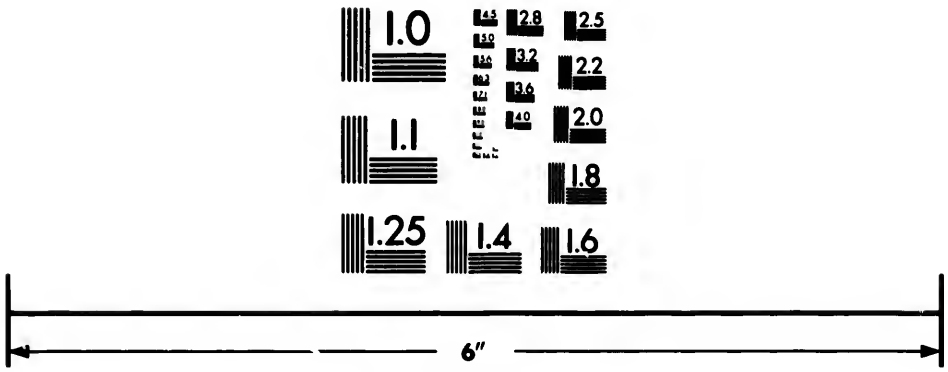

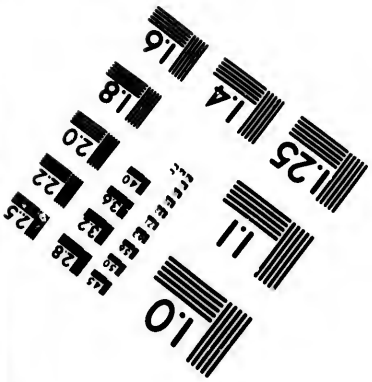

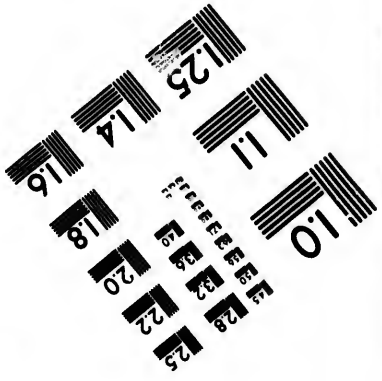

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desired information. The superstitious reverence in which these wizards are held, and a considerable degree of ingenuity in their mode of performing their mummery, prevent the detection of the imposture, and secure implicit confidence in these absurd oracles. My friend Captain Lyon having particularly directed his attention to this part of their history during the whole of our intercourse with these people, and intending to publish his Journal, which contains much interesting information of this nature, I shall not here enter more at large on the subject. Some account of their ideas respecting death, and of their belief in a future state of existence, have already been introduced in the course of the foregoing pages, in the order of those occurrences which furnished us with opportunities of observing them.

NARRATIVE

OF

AN ATTEMPT TO REACH THE

NORTH POLE,

IN BOATS FITTED FOR THE PURPOSE, AND ATTACHED TO HIS MAJESTY'S SHIP HECLA,

IN THE YEAR 1827.

INTRODUCTION.

In April, 1826, I proposed to the Right Honourable Viscount Melville, First Lord Commissioner of the Admiralty, to attempt to reach the North Pole, by means of travelling with sledge-boats over the ice, or through any spaces of open water that might occur. My proposal was soon afterwards referred to the President and Council of the Royal Society, who strongly recommended its adoption; and an Expedition being accordingly directed to be equipped for this purpose, I had the honour of being appointed to the command of it; and my commission for his Majesty's Ship the Hecla, which was intended to carry us to Spitzbergen, was dated the 11th of November, 1826.

The reports of several of our navigators who had visited Spitzbergen, and were well qualified to judge of the nature of the polar ice, concur in representing

it as by no means unfavourable for this project. From one of the Seven Islands, and almost on the very spot from which we subsequently took our departure in the boats, Captain Lutwidge, the associate of Captain Phipps in the Expedition towards the North Pole in 1773, describes the ice to the north-eastward, to the distance of ten or twelve leagues, to have the appearance of "one continued plain of smooth unbroken ice, bounded only by the horizon." In Captain Phipps's chart of that voyage, the ice to the northward of the Seven Islands is represented as "flat and unbroken;" and, in another situation, rather more to the west-ward, and about the same parallel, he describes the "main body of the ice to be lying in a line, nearly east and west, quite solid*."

The testimony of Mr. Scoresby, jun., a close and intelligent observer of nature in these regions, is entirely to the same effect. "I once saw," says he, "a field that was so free from either fissure or hummock, that I imagine, had it been free from snow, a coach might have been driven many leagues over it in a direct line, without obstruction or danger." Indeed, in a paper upon the subject of the Polar Ice, presented by Mr. Scoresby to the Wernerian Society of Edinburgh, and published in their me-

* Phipps's Voyage towards the North Pole, pp. 59, 60, 65.

moirs*, he enters at considerable length into the arguments in favour of the practicability of this enterprise, and in his subsequent work, above quoted, repeats his conviction to the same effect†. To the respectable authorities already mentioned, I may also add the testimony of several intelligent and experienced whalers, whon I consulted as to the nature of the ice, with reference to this project, and who, without exception, agreed in considering it as highly favourable for the purpose.

But the hopes I had formed of being able to attain this object, and the plan now suggested for putting it into execution, were principally founded on a similar proposition, formerly made by my friend and brother-officer, Captain Franklin, who, judging of this enterprise by his own experience, as well as by that of his associates, Captains Buchan and Beechey, though by no means thinking lightly of the labour and hazard attending it, had drawn up a plan for making the attempt, and himself volunteered to conduct it‡. Following up, in the most essential

* Vol. ii. p. 328.

† Scoresby's Account of the Arctic Regions, i. 54—61, 242.

‡ This plan, as originally proposed by Captain Franklin, was given to me by Mr. Barrow, soon after my return from the Expedition of 1824—5.

particulars, the plan of this distinguished traveller, the principal features of which will be best understood by reference to my Official Instructions, two boats were constructed at Woolwich, under my superintendence, after an excellent model suggested by Mr. Peake, and nearly resembling what are called "troop-boats," having great flatness of floor, with the extreme breadth carried well forward and aft, and possessing the utmost buoyancy, as well as capacity for stowage. Their length was twenty feet, and their extreme breadth seven feet. The timbers were made of tough ash and hickory, one inch by half an inch square, and a foot apart, with a "half-timber" of smaller size between each two. On the outside of the frame thus formed, was laid a covering of Mackintosh's water-proof canvas, the outer part being coated with tar. Over this was placed a plank of fir, only three-sixteenths of an inch thick; then a sheet of stout felt; and, over all, an oak plank of the same thickness as the fir; the whole of these being firmly and closely secured to the timbers by iron screws applied from without. This method of planking the boats was proposed and executed by Mr. Lang, master-shipwright of Woolwich dock-yard, and the following narrative will show how admirably the elasticity of this mode of construction was adapted to withstand the constant twisting and concussion to which the boats were

subject*." On each side of the keel, and projecting considerably below it, was attached a strong "runner," shod with smooth steel, in the manner of a sledge, upon which the boat entirely rested while upon the ice ; and to afford some additional chance of making progress on hard and level fields, we also applied to each boat two wheels, of five feet diameter, and a small one abaft, having a swivel for steering by, like that of a Bath chair ; but these, owing to the irregularities of the ice, did not prove of any service, and were subsequently relinquished. A "span" of hide-rope was attached to the fore part of the runners, and to this were affixed two strong ropes of horse-hair, for dragging the boat, each individual being furnished with a broad leathern shoulder-belt, which could readily be fastened to or detached from the drag-ropes. The interior arrangement consisted only of two thwarts ; a locker at each end for the nautical and other instruments, and for the smaller stores ; and a very slight frame-work along the

* The first travelling boat, which was built by way of experiment, was planked differently from these two; the planks, which were of half-inch oak, being ingeniously "tongued" together with copper, according to a method contrived by Mr. Peake, in order to save the necessity of caulking, in case of the wood shrinking. This was the boat subsequently landed on Red Beach.

sides, for containing the bags of biscuit, and our spare clothes. A bamboo mast nineteen feet long, a tanned duck sail, answering also the purpose of an awning, a spreat, one boat-hook, fourteen paddles, and a steer-oar, completed each boat's equipment.

Two officers and twelve men (ten of the latter being seamen, and two marines) were selected for each boat's crew. It was proposed to take with us resources for ninety days; to set out from Spitzbergen, if possible, about the beginning of June; and to occupy the months of June, July, and August, in attempting to reach the pole, and returning to the ship; making an average journey of thirteen miles and a half per day. Our provisions consisted of biscuit, made by Mr. Le Mann, of the best wheaten flour; beef *pemmican* *; sweetened

* For this article of our equipment, which contains a large proportion of nutriment in a small weight and compass, and is therefore invaluable on such occasions, we are much indebted to the kindness of Mr. J. P. Holmes, Surgeon, of Old Fish Street, who had resided several years in the Hudson Bay Establishments, and undertook to superintend the manufacture of it. The process, which requires great attention, consists in drying large thin slices of the lean of the meat over the smoke of wood-fires, then pounding it, and lastly mixing it with about an equal weight of its own fat. In this state it is quite ready for use, without further cooking.

cocoa-powder, manufactured by Messrs. Fortnum and Mason; and a small proportion of rum, the latter concentrated to fifty five per cent. above proof, in order to save weight and stowage. The proper instruments were provided, both by the Admiralty and the board of Longitude, for making such observations as might be interesting in the higher latitudes, and as the nature of the enterprise would permit. Six pocket chronometers, the property of the public, were furnished for this service; and Messrs. Parkinson and Frodsham, with their usual liberality, entrusted to our care several other excellent watches, on trial, at their own expense.

I have again to express my obligations to the Navy and Victualling Boards for their readiness in attending to my wishes, in the course of this equipment; as well as to Commissioner Hill, and to the Officers of Deptford and Woolwich Dock-yards, for the very obliging manner in which they executed the Instructions of their respective Boards in providing for our various wants.

Annexed is a list of the different articles composing the equipment of the boats, together with the actual weight of each.

	Enterprise.	Endeavour.
	lbs.	lbs.
Boat	1539	1542
Bamboo mast, 1 spreat, 1 boat-hook, 1 steer-oar	46½	46½

	Enterprise.	Endeavour.
	lbs.	lbs.
Fourteen paddles	41	41
Sail (or awning)	22	22
Spare rope and line	6	6
Small sounding-line (750 fathoms in all)	8	10
Carpenters' tools, screws, nails, &c.	10	10
Copper and felt for repairs	19	19
Four fowling-pieces, with 2 bayonets	15	15
Small articles for guns	—	4
Ammunition	17½	17½
Instruments	29	29
Books	7	5½
Spare Clothes. Fur suits for sleeping in (14 in each boat)	162	162
Thick-nailed boots (14 in each boat)	47	47
Esquimaux do., with spare soles (14 in each boat)	33	33
Flannel shirts (7 in each boat)	8¾	8¾
Guernsey frocks (do. do.)	11½	11½
Thick drawers (do. do.)	14	14
Mittens (28 in each boat)	5	5
Comforters, (14 in each boat)	1	1
Scotch caps (do. do.)	4	4
A bag of small articles for the officers, including soap, &c. &c.	4	4
Do. do. for the men do.	12	12
Biscuit	628	628
Pemmican	564	564

	Enterprise.	Endeavour.
	lbs.	lbs.
Rum	180	180
Cocoa-powder, sweetened	63	63
Salt	14	14
Spirits of Wine	72	72
Cooking apparatus	—	20
Tobacco	20	20
Medicine chest	19	—
Pannikins, knife, fork, and spoon (14 in each boat)	5	5
Weighing-dials and measures	2	2
Various small articles for repairs, &c. not mentioned above	14	—
Packages for provisions, clothes, &c.	110	116
	14)3753¼	3753¾

Weight per man . . 268 lbs.

Exclusive of four sledges, weighing 26 lbs. each.

In drawing up my Journal for publication, I have, as before, thrown into an Appendix * the details of such meteorological, magnetic, and other observations, as our situation and circumstances enabled as to make; and these, I trust, will not prove altogether unworthy the attention of men of science, who are engaged in similar pursuits. For

* See the 4to edition.

the description of the specimens of Natural History, brought home by this expedition, I am once more indebted to the kind offices of those gentlemen to whom I owe a similar obligation on former occasions; and whose labours, so highly appreciated by the scientific world, in the various branches of natural knowledge, have imparted to our imperfect collections a degree of value, which, without their assistance, they would never have been found to possess.

I have not thought it necessary, in the course of this volume, to enter into any examination of the question respecting the approaches to the North Pole which had already been effected, previously to our late attempt. This question has, of late years, been so fully discussed and brought into public notice, in consequence of the strong and general interest excited by the progress of Arctic Discovery, that I could not hope, by any remarks of mine, to throw fresh light upon the subject. I shall, therefore, only add that, after carefully weighing the various authorities, from which every individual interested in this matter is at liberty to form his own conclusions, my own impartial conviction at the time of our setting out on this enterprize coincided (with a single exception) with the opinion expressed by the Commissioners of Longitude, in their Memorial to the King, that "the progress of

discovery had not arrived northwards, according to any well-authenticated accounts, so far as eighty-one degrees of North Latitude *." The exception to which I allude, is in favour of Mr. Scoresby, who states his having, in the year 1806, reached the latitude of 81° 12′ 42″, by actual observation, and 81° 30′, by dead reckoning. I therefore consider the latter parallel as, in all probability, the highest which had ever been attained, prior to the attempt recorded in the following pages.

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* See His Majesty's Order in Council of the 23rd of February, 1821. Also p. 132 of this Narrative.

OFFICIAL INSTRUCTIONS.

By the Commissioners for executing the Office of Lord High Admiral of the United Kingdom of Great Britain and Ireland, &c.

WHEREAS the President and Council of the Royal Society have expressed an opinion that an Expedition, for the purpose of attempting to reach the North Pole, "cannot fail to afford many valuable results and settle important matters of philosophical inquiry;" and whereas, conformably therewith, We have thought fit, from your desire to be employed on this service, and your zeal and experience in prosecuting discoveries in the Arctic Regions, to entrust to your charge the conduct of the said Expedition, and to appoint you to the command of His Majesty's sloop Hecla; you are hereby required and directed, so soon as the said vessel shall in all respects be ready for sea, to make the best of your way to the northern part of Spitzbergen; calling, however, at Hammerfest in Lapland, on your way, if you should think it expedient

to take with you from thence a certain number of tame rein-deer to draw the boats over the ice.

On your arrival at the northern shores of Spitzbergen, you will fix upon some safe harbour or cove, in which the Hecla may be placed; and having properly secured her, you are then to proceed with the boats, whose equipments have, under your own directions, been furnished expressly for the service, directly to the Northward, and use your best endeavours to reach the North Pole; and having made such observations as are specified in the Instructions for your former Voyages in the Northern Regions, and such as will be pointed out to you by the Council of the Royal Society, added to those which your own experience will suggest, you will be careful to return to Spitzbergen before the winter sets in, and at such a period of the autumn as will ensure the vessel you command not being frozen up, and thus obliged to winter there.

If, in proceeding towards the Pole, any difficulties should arise from the intervention of high and extensive land, or from the rugged surface of continuous ice, or other difficulty, the surmounting of which would evidently require a greater length of time than it would be prudent to consume, in order to secure your safe return, you are, in such case, to be careful not to risk your own life, and the lives of

those who accompany you; even though, by perseverance, you should be satisfied that such difficulty might be overcome, but at the expense of so much time as might put to hazard the certainty of returning to the ship. You will, therefore, in such case, content yourself with the best examination of such land, should any be found, as time and other circumstances will allow.

Previous to your departure from the Hecla, you are to direct Lieutenant Foster to proceed, in a boat fitted for the purpose, as soon as the season shall be sufficiently advanced, to survey the northern and eastern coast of Spitzbergen, and to continue down the latter as far as may be practicable; with instructions to him to make observations on the dip, variation, and intensity of the Magnetic Needle; the temperature; the barometric pressure of the atmosphere; and such other meteorological phenomena, as he may be enabled to notice; the extent of open water; the quantity, the position and nature of the ice; the depth, temperature, and specific gravity of the sea; and you will also direct him to pay attention to the number of whales he may meet with, in order that an opinion may be formed as to the expediency and practicability of extending the Whale Fishery on that coast; and you will give him such directions as to the time he is to remain on this survey, as will ensure his return to the

vessel, so as not to endanger her being shut up in the ice for the winter.

While these two operations are carrying on by yourself and Lieutenant Foster, you are to instruct the officer left in the command of the Hecla to employ the officers and men remaining on board in embracing every opportunity of making all such observations as may best contribute to the benefit of general science, and collect and preserve all such specimens of subjects of Natural History, whether animals, plants, or minerals, as may be deemed new or curious.

When you have chosen the situation in which the ship is to remain, and have become acquainted with the local circumstances of the coast, you will be enabled to judge of the instructions which it may be necessary to give the officer who will remain in the command of the ship for ensuring your finding her on your return, and for facilitating her putting to sea as soon as the detached parties shall have rejoined; after which, you are to make the best of your way to England; and on your arrival, you are immediately to repair to this Office, in order to lay before us a full account of your proceedings, taking care, before you leave the ship, to demand from the several officers, petty officers, and all other persons on board, the Logs and Journals they may have kept, together with any

Drawings or Charts they may have made; which are all to be sealed up, and to be thereafter disposed of as We may think proper.

Given under our hands, the 24th March, 1827.

(Signed) MELVILLE,
WM. JOHNSTONE HOPE,
G. COCKBURN,
G. CLERK,
W. R. K. DOUGLAS.

To Captain WILLIAM EDWARD PARRY,
Commander of His Majesty's Sloop Hecla.

By Command of their Lordships,
(Signed) J. W. CROKER.

NARRATIVE.

THE Hecla being ready to proceed down the river, she was taken in tow, at ten A.M. on the 25th of March, 1827, by the Lightning steam-vessel; and having received and returned the cheers of the Greenwich pensioners, the children of the Naval Asylum, and of various ships in the river, she made fast to the moorings at Northfleet at three P.M. The following day was occupied in swinging the ship round on the various points of the compass, in order to obtain the amount of the deviation of the magnetic needle produced by the attraction of the ship's iron, and to fix Mr. Barlow's plate for correcting it *. On the 27th, the Hecla was visited by the Right Hon. Viscount Melville, First Lord Commis-

* The merits of this simple but valuable invention being now too well known to require any detailed account of the experiments, it is only necessary for me to remark, in this place, that the compass, having the plate attached to it gave, under all circumstances, the correct magnetic bearing.

sioner of the Admiralty, who was pleased to express his approbation of our equipment; and the two succeeding days were employed in receiving the powder and other gunner's stores, and in making various magnetical experiments with the instruments intended for the voyage. These being completed, we were taken in tow by the Comet steam-vessel at eight A.M. on the 30th, and anchored at the Little Nore at one P.M. Here we were indebted to the well-known kindness of Vice-Admiral Sir Robert Moorsom for the supply of our few remaining wants; and on the 2nd of April that officer did us the honour of a personal visit on board the Hecla. On the 3rd, the ship's company received three months' wages in advance, together with their river-pay, and on the following morning, at half-past four, we weighed and made sail from the Nore.

We had at this time remarkably fine weather for the season of the year, and such a continuance of southerly winds, that we arrived off the island of Soore, within which Hammerfest lies, on the 17th, without having had occasion to make a tack till we entered the fiord which forms the northern entrance. In the course of our passage hitherto we noticed, when to the northward of about the 58th parallel, a very decided north-easterly current, which has usually been understood to exist here, and is often the means of setting ships over towards the coast of

Norway. Its direction appeared to vary between E.N.E. and N.N.E., and its amount from five to thirteen miles per day. Another circumstance struck us as well worthy of remark, though it has doubtless been often remarked before, which is, that in proceeding from the Nore, a little to the eastward of the meridian of Greenwich, the whole way up to the latitude of 70°, the variation of the magnetic needle continues nearly the same, namely, from about 24° to 29° westerly; and, indeed, it undergoes very little alteration as far as 80°, where it is still 25°. But in the parallel of 70°, and, as we afterwards found, in much higher ones, immediately on sailing to the eastward, the variation begins rapidly, though very regularly, to decrease, till at Hammerfest, in the longitude of 23¾° east, we find it only between 10° and 11°. These facts appear among the simplest, and yet the strongest, in favour of the theory of *two* magnetic poles in the northern hemisphere of the earth.

I may further remark, that this change in the variation of the needle, coincident with a change of meridian only, would afford, to those who are not furnished with better means, a very tolerable method of finding a ship's longitude, in any part of the North Atlantic, to the northward of the parallel of about 55°. This would be especially the case in ships having Mr. Barlow's plate attached to the

compass; if not, observations with the ship's head north or south, and made in fine weather, will give very nearly the true variation; provided always that one fixed place has been selected for the azimúth compass, right amid-ships, and sufficiently high to be removed from the influence of *immediate* local attraction.

The wind becoming light from the southward, and very variable, we were occupied the whole of the 18th in beating up towards Hammerfest. In the evening a Lapland boat came on board, and one of the men undertook to pilot the ship to the anchorage, which, after beating all night against an ebb tide, we reached at three A.M. on the 19th. Soon after we had anchored, Mr. Crowe came on board accompanied by Mr. Akermand, the Russian Consul, and also the Collector of Customs, all of whom offered their services in any way we might require. Finding that our rein-deer had not arrived, I immediately despatched Lieutenant Crozier, in one of our own boats, to Alten, from whence they were expected; a distance of about sixty English miles. At the same time we landed our observatories and instruments at Fuglenoss, near the establishment of Messrs. Crowe and Woodfall, the British merchants residing here; and Lieutenant Foster and myself immediately commenced our magnetic and other observations, which were continued during the

whole of our stay here. We completed our supply of water, and obtained a small quantity of venison with abundance of good fish (principally torsk and cod), and some milk. We also purchased a set of snow-shoes for our travelling party, together with the Lapland shoes of leather (called Kamooga*), which are the most convenient and comfortable for wearing with them; and we practised our people in the manner of walking in them in deep snow, which afforded them fine exercise and amusement.

On the 23rd, being the day appointed to be kept as the anniversary of his Majesty's birth-day, we dressed the ship in colours, and fired a royal salute. In the afternoon, Lieutenant Crozier returned in the boat from Alten, and was followed the next day by Mr. Woodfall, who brought with him eight rein-deer for our use, together with a supply of moss for their provender (*cenomyce rangiferina*). As, however, the latter required a great deal of picking, so as to render it fit to carry with us over the ice, and as it was also necessary that we should be instructed in the manner of managing the deer, I determined on remaining a day or two longer for these purposes. Nothing can be more beautiful than the training of the Lapland rein-deer. With a simple collar of

* It is remarkable that the Esquimaux word for boot is very like this—Kameega.

skin round his neck, a single trace of the same material attached to the "pulk," or sledge, and passing between his legs, and one rein fastened like a halter about his neck, this intelligent and docile animal is perfectly under command of an experienced driver, and performs astonishing journeys over the softest snow. When the rein is thrown over on the off-side of the animal, he immediately sets off at full trot, and stops short the instant it is thrown back to the near side. Shaking the rein over his back is the only whip that is required. In a short time after setting off, they appear to be gasping for breath, as if quite exhausted; but, if not driven too fast at first, they soon recover this, and then go on without difficulty. The quantity of *clean* moss considered requisite for each deer per day is four pounds, but they will go five or six days without provender, and not suffer materially. As long as they can pick up snow as they go along, which they like to eat quite clean, they require no water; and ice is to them a comfortable bed. It may well be imagined, with such qualifications, how valuable these animals seemed likely to prove to us; and the more we became accustomed, and I may say attached to them, the more painful became the idea of the necessity which was likely to exist, of ultimately having recourse to them as provision for ourselves.

Our preparations were completed on the 27th,

but the wind continuing fresh from the north-western quarter in the offing, we had no prospect of making any progress till the morning of the 29th, when we weighed at six A.M.

On the 5th of May, being in latitude 73° 30′, and longitude 7° 28′ E., we met with the first straggling mass of ice, after which, in sailing about 110 miles in a N.N.W. direction, there was always a number of loose masses in sight; but it did not occur in continuous "streams" till the morning of the 7th, in latitude 74° 55′, a few miles to the eastward of the meridian of Greenwich. Early on the morning of the 9th, while running with all the studding sails set, through "sailing ice," we were taken aback with a sudden and violent squall of wind from the northward. Soon after, it fell calm, and a light air from the eastward having succeeded for a short time, we were a second time taken aback with a fresh gale from the northward. At half-past nine we saw two whale ships, which joined us in the course of the day. They proved to be the Alpheus, and the Active, of Peterhead. By the former I wrote to the Secretary of the Admiralty, acquainting him with the Hecla's arrival in the latitude of 77°. On the following day several other whalers were in sight, and Mr. Bennett, the master of the Venerable, of Hull, whom we had before met in Baffin's Bay, in 1818, came on board. From him I learned that

several of the ships had been in the ice since the middle of April, some of them having been so far to the westward as the island of Jan Mayen, and that they were now endeavouring to push to the northward. They considered the ice to offer more obstacles to the attainment of this object than it had done for many years past*. None of the ships had yet taken a single whale, which, indeed, they never expect to do to the southward of about 78°.

In the afternoon, after waiting for some time for the ice to open, we again entered it, in company with all the whalers, and by the following morning had succeeded in pushing about fifty miles farther to the northward, though not without some heavy blows in "boring" through the ice.

On the 12th we had strong gales to the southward, with thick snowy weather; and the thermometer, which had generally been from 16° to 20° since our entering the ice, had now risen to 31°. We saw a

* I find it to be the universal opinion among the most experienced of our whalers, that there is much less ice met with, of late years, in getting to the northward, in these latitudes, than formerly was the case. Mr. Scoresby, to whose very valuable local information, contained in his "Account of the Arctic Regions," I have been greatly indebted on this occasion, mentions the circumstance as a generally received fact.

black whale, and one of the ships sent her boats in pursuit of it: this was only the third one we had seen. The dovekies (*Colymbus Grylle*) and eider-ducks were very numerous. In the afternoon there was a slight swell perceptible, which led us to believe we were not far from open water inshore; and on the weather clearing up on the following morning, this conjecture proved correct, nearly the whole space between us and Prince Charles's Foreland, not less than six or seven leagues in breadth, being quite clear, except of "young ice;" and this, though covering the greater part of the sea, was now so soft and broken up as scarcely to impede a ship's progress. Being still favoured by a southerly wind, we proceeded without impediment, the same, or even a greater, breadth of open water continuing along the land. At five A.M. on the 14th, we passed Magdalena Bay, and by ten o'clock had arrived off Hakluyt's Headland, round which we hauled to the south-eastward, to look for anchorage in Smerenburg Harbour. In this, however, we were disappointed, the whole place being occupied by one unbroken floe of ice, still firmly attached to the land on each side. Here we made fast, though not without considerable difficulty; the wind, which was now freshening from the southward, blowing in such violent and irregular gusts off the highland, that the ship was scarcely manageable. Walruses, dovekies, and

eider-ducks, were very numerous here, especially the former; and four rein-deer came down upon the ice near the ship.

We now prepared a quantity of provisions and other stores to land at Hakluyt's Headland, as a supply for my party on our return from the northward; so that, in case of the ship being obliged to go more to the southward, or of our not being able at once to reach her, we should here be furnished with a few days' resources of every kind. Our intentions were, however, frustrated for the present; for we had scarcely secured our hawsers, when a hard gale came on from the southward, threatening every moment to snap them in two, and drive us from our anchorage. We held on for several hours, till, at nine P.M., some swell having set in upon the margin of the ice, it began to break off and drift away. Every possible exertion was instantly made to shift our stream cable farther in upon the floe, but it broke away so quickly as to baffle every endeavour, and at ten the ship went adrift, the wind blowing still harder than before. Having hauled in the hawsers, and got the boats on board, we set the close-reefed topsails, to endeavour to hang to windward; but the wind blew in such tremendous gusts from the high land as almost to lay the ship on her beam ends; so that we were obliged to reduce our canvass to the main-topsail

and storm-sails, and let her drive to leeward*. After wearing several times between the island called Vogel Sang and a narrow stream of ice that lay to the westward and kept off a considerable sea which was rolling on the outside of it, we had driven as far as the northern extreme of the island; and at one A.M. the main body of packed ice was seen only a mile or two under our lee. The situation of the ship now appeared a very precarious one, the wind still blowing with unabated violence, and with every appearance of a continuance of stormy weather. Under these circumstances, it was the general opinion of the officers, as well as my own, that it was advisable to take advantage of the comparatively smooth water within the stream of ice before mentioned, and to run the ship into the pack, rather than incur the risk of having to do the same thing in a heavy sea. This plan succeeded remarkably well; a tolerably smooth and open part of the margin being selected, the ship was forced into it at three A.M.; when, after encountering a few severe blows from the heavy washed pieces which always occur near the sea-edge, she was gradually carried onwards under all sail, and at four A.M. we

* It was probably some such gale as this which has given to Hakluyt's Headland, in an old Dutch chart, the appellation of "Duyvel's Hoek."

got into a perfectly smooth and secure situation, half a mile within the margin of a "pack."

The wind subsided in the course of the day, and clear and cloudless weather succeeded. We were glad to take advantage of our quiet situation to give the officers and men the rest which they much needed. The wind continuing from the southward, the ice soon drifted as far north as it could go, and we then drove rapidly with it to the eastward, past Cloven Cliff, and along the northern coast of Spitzbergen.

It was impossible not to consider ourselves highly fortunate in having thus early, and with no great difficulty, succeeded in reaching the highest latitude to which it was our object to take the ship. But, from what we had already seen at Smerenberg, it was also impossible not to feel much anxiety as to the prospect of getting her into any secure harbour, before the proper time of my departure to the northward should arrive. However, we could only wait patiently for the result of a few more days, and, in the meantime, everybody was busily employed in completing the arrangements for our departure, so that, if an opportunity did offer of securing the ship, we might have nothing else to attend to. Our deer were in good order, having been thriving well ever since they came on board; they make excellent sailors, and do not seem to

mind bad weather, always lying down quite comfortable whenever there is any sea.

On the 18th, being only six or seven miles from the Red Beach, and the ice appearing close between us and the shore, I sent Lieutenant Ross with a party to endeavour to land, being desirous to know what this remarkable-looking place was composed of. Lieutenant Ross was not, however, enabled to land, there being a considerable lane of water inshore too broad for the party to ferry over on pieces of ice. In order to try what our chances were, at the present low temperature, of procuring water upon the ice without expense of fuel, we laid a black-painted canvass cloth, and also a piece of black felt, upon the surface of the snow; the temperature of the atmosphere being from 18° to 23°. These substances had, in a couple of hours, sunk half an inch into the snow, but no water could be collected. I was desirous also of ascertaining whether any part of the real sea ice was so entirely fresh when melted, as to be drank without injury or inconvenience. For this purpose we cut a block of ice from a large hummock, about ten feet high above the sea; and having broken, pounded, and melted it, without any previous washing, we found it, both by the hydrometer and by the chemical test (nitrate of silver), *more* free from salt than any which we had in our tanks, and which was procured

from Hammerfest. I considered this satisfactory, because, in the autumn, the pools of water met with upon the ice generally become very brackish, in consequence of the sea-water being drawn up into them by capillary action as the ice becomes more "rotten" and porous; and we might, therefore, have to depend chiefly on melted ice for our daily supply.

On the 19th the wind freshened up strong from the W.N.W., which is here rather upon the land, and the ice settled together and inshore, occasioning the ship such violent pressure as few others could have withstood, and much endangering the rudder, which we had not been able to unship. In about half an hour, however, it remained quiet, leaving the ship so closely pressed in every part, that the lead for sounding could not anywhere be dropped until we had dug a hole for the purpose. The thermometer fell to 12°, with thick snowy weather. No change took place till the 21st, when, on the weather clearing up, we found that the open water we had left to the westward was now wholly closed up, and that there was none whatever in sight. It was now also so close inshore, that on the 22nd, Lieutenant Ross, with a party of officers and men, succeeded in landing without difficulty. They found a small floe of level ice close to the beach, which appeared very lately formed. Walking up

to a little conspicuous eminence near the eastern end of the beach, they found it to be composed of clay-slate, tinged of a brownish red colour. The few uncovered parts of the beach were strewed with smooth schistose fragments of the same mineral, and in some parts a quantity of thin slates of it lay closely disposed together in a vertical position. On the little hillock were two graves, bearing the dates of 1741 and 1762 on some of the stones which marked them, and a considerable quantity of fir drift wood lay upon the beach.

In the evening of the 22nd, a light air at length sprung up from the eastward, and on the following morning had in a slight degree increased, opening a few holes of water here and there, and giving us great hopes of our being released from our present confinement. To help the ice a little in opening, we set all the sails, which certainly produced some effect in the course of the day; but the wind was so very light that, though it still continued on the 24th, nothing like an opening was afforded for us to get out. Indeed the ship was still closely squeezed up by the ice all round her, though she moved a little to the westward now and then *with* it.

The air of wind again dying away, and some of the holes again closing, I now clearly saw that there was for the present no reasonable prospect of our getting towards any harbour; and I could not but

feel confident that, even if we did get to the entrance of any, some time must be occupied in securing the ship. It may be well imagined how anxious I had now become to delay no longer in setting out upon the main object of the Expedition. I felt that a few days at the commencement of the season, short as it is in these regions, might be of great importance as to the result of our enterprise, while the ship seemed to be so far secure from any immediate danger as to justify my leaving her, with a reduced crew, in her present situation. It appeared to me that the present case was one which their Lordships could not foresee, nor provide against in my Instructions, and that I was, therefore, called upon to use my own judgment and discretion now that it had arisen, and to pursue such a plan as might best contribute to the success of our enterprise in its principal object. The nature of the ice was, beyond all comparison, the most unfavourable for our purpose that I ever remember to have seen. It consisted only of loose pieces, scarcely any of them fifteen or twenty yards square; and when any so large did occur, their margins were surrounded by the smaller ones, thrown up by the recent pressure into ten thousand various shapes, and presenting high and sharp angular masses at every other step. The men compared it to a stonemason's yard, which, except that the stones were of ten times the

usual dimensions, it indeed very much resembled. The only inducement to set out over such a road was the certainty that floes and fields lay beyond it, and the hope that they were not *far* beyond it. In this respect, indeed, I considered our present easterly position as a probable advantage, since the ice was much less likely to have been disturbed to any great extent northwards in this meridian than to the westward, clear of the land, where every southerly breeze was sure to be making havoc among it. Another very important advantage in setting off on this meridian appeared to me to be, that, the land of Spitzbergen lying immediately over against the ice, the latter could never drift so much or so fast to the southward, as it might further to the westward.

Upon these grounds it was that I was anxious to make an attempt, at least, as soon as our arrangements could be completed; and the officers being of the same opinion with myself, we hoisted out the boats early in the morning of the 27th, and having put the things into one of them, endeavoured, by way of experiment, to get her to a little distance from the ship. Such, however, were the irregularities of the ice, that even with the assistance of an additional party of men, it was obvious that we could not have gained a single mile in a day, and, what was still more important, not without almost

certain and serious injury to the boats by their striking against the angular masses. Under these circumstances, it was but too evident to every one that it would have been highly imprudent to persist in setting out, since, if the ice after all should clear away, even in a week, so as to allow us to get a few miles nearer the main body, time would be ultimately saved by our delay, to say nothing of the wear and tear, and expense of our provisions. I was therefore very reluctantly compelled to yield to this necessity, and to order the things to be got on board again. In the mean time I despatched Lieutenant Ross, with a couple of men, to make a rapid journey over the ice to the northward, in order to gain some information respecting the nature and state of it in that direction. Lieutenant Ross returned at night, having travelled about ten miles, in the course of which he passed over one good floe, from two to three miles wide, and the rest was of the same kind as near the ship. Upon the whole, his report did not offer us much encouragement to set off from our present station.

On the following morning I sent Lieutenant Crozier with a small party to the E.N.E., with the same object; but he had not travelled above four miles, and therefore not beyond the limit of our view from the ship, when the ice beginning to open, I was obliged to recal him. The ice, however, soon set-

tled back again into its former place, as it had done several times before, moving about two hundred yards one way or other, according to the winds, and perhaps the tide.

Immediately that we had, on the 27th, proved experimentally the extreme difficulty of transporting our boats and stores over the ice which now surrounded us, I made up my mind to the very great probability there seemed to be of the necessity of adopting such alterations in our original plans as would accommodate them to these untoward circumstances at the outset. The boats forming the main impediment, not so much on account of their absolute weight, as from the difficulty of managing so large a body upon a road of this nature, I made preparations for the possible contingency of our having to take only one, continuing the same number of men in our whole party. All that I saw reason to apprehend from having only a single boat on our outward journey, was some occasional delay in ferrying over spaces of water in two trips instead of one ; but we considered that this would be much more than compensated by the increased rate at which we should go whenever we were upon ice, as we expected to be nine days out of ten. The principal disadvantage, therefore, consisted in our not all being able to sleep in the boat, and this we proposed to obviate in the following manner.

We constructed, out of the Lapland snow-shoes, fourteen sledges, each sledge consisting of two pair, well fastened together. Upon these we proposed dragging almost all the weight, so as to keep the boat nearly without any cargo in her, as we found by experiment that a man could drag about three hundred pounds on one of the sledges, with more facility than he could drag the boat when his proportion did not exceed one hundred pounds. Upon these sledges we proposed lodging half our party alternately each night, placing them under the lee of the boat, and then stretching over them, as a sloped roof, a second awning, which we fitted for the purpose. Upon this plan we likewise could afford to make our boat considerably stronger, adding some stout iron knees to the supports of her runners, and increasing our store of materials for repairing her. The weight reduced by this arrangement would have been above two thousand pounds, without taking away any article conducive to our comfort, except the boat and her gear. I proposed to the officers and men who had been selected to accompany me, this change in our equipment; and I need scarcely say that they all clearly saw the probable necessity of it, and cheerfully acquiesced in its adoption, if requisite.

On the 29th I sent Lieutenants Foster and Crozier, with the greater part of the ship's company,

and with a third or spare travelling-boat, to endeavour to land her on Red Beach, together with a quantity of stores, including provisions, as a deposit for us on our return from the northward, should it so happen, as was not improbable, that we should return to the eastward. It is impossible to describe the labour attending this attempt. Suffice it to say, that after working for fourteen hours, they returned on board at midnight, having accomplished about four miles out of the six. The next day they returned to the boat, and after several hours' exertion landed her on the beach, with the stores. What added to the fatigue of this service, was the necessity of taking a small boat to cross pools of water on their return, so that they had to drag this boat both ways, besides that which they went to convey. Having, however, had an opportunity of trying what could be done upon a regular and level floe which lay close to the beach, every body was of opinion, as I had always been, that we could easily travel twenty miles a day on ice of that kind.

Every one was now occupied in completing our arrangements on the new plan of taking only one boat, stowing all our provisions on the sledges, and adopting every possible expedient to save weight and labour. Another week was fast passing without any improvement in the prospect of our getting the ship free, so as either to carry us farther north, or to put

her into harbour. It may here be remarked, that our only chance of this latter seemed at the time to depend on our getting to the westward, since there were no known places of shelter on the northern side of Spitzbergen; beside which, it would be much more difficult to get hence in the autumn. Now it so happened, whether from any local cause or not I cannot say, that during the sixteen days we had already been beset, there had not been wind enough from the eastward to fill a skysail; added to which, we found a decided easterly set, which carried the ship a little now and then in that direction.

It will not then be wondered at, if this apparent hopelessness of getting the ship free for the present again suggested the necessity of my own setting out; and I had once more, on the 1st of June, after an anxious consultation with my officers, resolved on making a second attempt, when the ice near us, which had opened at regular hours with the tide for three or four days past, began to set us much more rapidly than usual to the eastward, and towards a low point which runs off from Red Beach, near its eastern end, causing us to shoal the water, in a few hours, from fifty-two to twenty fathoms, and on the following morning to fourteen and a half. By sending a lead-line over the ice a few hundred yards beyond us, we found ten fathoms water. However unfavourable the aspect of our affairs seemed before,

this new change could not fail to alter it for the worse. The situation of the ship now, indeed, required my whole attention; for though the ice occasionally opened and shut within twenty or twenty-five yards of us on the inshore side, the ship herself was still very firmly imbedded by the turned-up masses which had pressed upon her on the 19th, and which, on the other side, as well as ahead and astern, were of considerable extent. Thus she formed as it were part of a floe, which went drifting about in the manner above described. This was of little importance while she was in sixty fathoms of water, as she was for the first fourteen days of our besetment, and a distance of five or six miles from the land; but now that she had shoaled the water so considerably, and approached the low point within two or three miles, it became a matter of importance to try whether any labour we could bestow upon it would liberate the ship from her present imbedded state, so as to be at least ready to take advantage of slack water, should any occur, to keep her off the shore. All hands were, therefore, set to work with handspikes, capstan-bars, and axes, it being necessary to detach every separate mass, however small, before the larger ones could be moved. The harassing and laborious nature of this operation is such as nothing but experience can possibly give an idea of, especially when, as in this case, we had only

a small pool of clear water near the margin in which the detached pieces could be floated out. However, we continued at work, with only the necessary intermissions for rest and meals, during this and the two following days, and on the evening of the 3rd had accomplished all that the closeness of the ice would permit; but the ship was still by no means free, numberless masses of ice being doubled under her even below her keel, and which could not be moved without more space for working.

While thus employed we had once more deepened the water, the ice continuing to set more or less rapidly to the eastward, except for a few hours on the 2nd, when a fresh breeze springing up from the S.E. carried us, *with* the ice, and by the help of all our sails, about one mile to the N.W.; but the moment the wind fell (which it did just as it had opened a few holes of water to the westward) we began again to move over the ground in the opposite direction. At midnight on the 3rd, the ice slackened about us very quickly, and the ship was immediately found to be setting more rapidly than ever to the eastward. In three-quarters of an hour the water shoaled from fifty-two to twenty-five fathoms, and in ten minutes after we had nine and three-quarters, the ship driving at the rate of two miles an hour past a low point which runs off from under the high land of Grey Hook. There being

now a little open water at the margin of the floe in which we had been imbedded, we succeeded in freeing the ship, and then laid out hawsers in each direction, in readiness for moving her, should she drive into still shoaler water. Happily, however, this was not the case, the ice soon after closing us in towards the entrance of Weyde Bay, and the water gradually deepening to thirty-seven, and then to sixty-seven fathoms.

Painful as was this protracted delay in setting out upon the principal object of the expedition, the absolute necessity of it will scarcely, I think, be doubted by any person conversant in such matters. So long as the ship continued undisturbed by the ice, nearly stationary, and in deep water, for several days together, I had, in my anxiety to lose not a moment's time, ventured to flatter myself with the hope that, in a case of such unlooked-for emergency, when every moment of our short and uncertain season was of importance, I might be justified in quitting my ship at sea; and in this opinion the zeal of my officers, both those who were to accompany me, and those who were to remain on board, induced them unanimously to concur. But the case was now materially altered; for it had become plain to every seamen in the ship,—first, that the safety of the Hecla, if thus left with less than half her working hands, could not be reckoned upon for an

hour; and, secondly, that no human foresight could enable us to conjecture, should we set out while she was thus situated, when or where we should find her on our return. In fact, it appeared to us at this time, as indeed it was, a very providential circumstance, that the impracticable nature of the ice for travelling had offered no encouragement to persevere in my original intention of setting out a week before this time. While, therefore, it occasioned me inexpressible regret to be thus detained, I could not entertain a doubt that I was performing an imperative duty in remaining on board; for to have done otherwise under such circumstances, would have been to abandon the ship to her fate, on the one hand; and, on the other, to expose my own party to almost certain destruction. So that all I could do was to wait for some favourable turn which would enable me to get the ship into security, and then to proceed to the northward, in full confidence of finding her on my return.

I have before stated, that our hopes of finding a harbour had hitherto rested on our getting the ship to the westward. Such, however, was the decided tendency of the ice to drift in the contrary direction, that it now appeared next to impossible that we could effect that object in any reasonable time. Indeed, we had for a week past wholly lost sight of the open water about Cloven Cliff; but as we

continued to drive to the eastward, we observed a constant darkness, and very frequently a dense fog-bank in the horizon, from about a N.E.b.E. to a N.N.E. bearing, which we considered an indication of open water in that direction. To this quarter, therefore, we now more particularly turned our attention; and on the 4th we were almost certain that we could, from the mast-head, discover the water, extending two or three points to the northward from Verlegen Hook. This circumstance excited new hopes; for could we only have had room to move about in, we did not doubt our being soon able to discover some place of shelter for the ship.

For the two following days we continued closely beset, but still driving to the eastward across the mouth of Weyde Bay, which is here six or seven miles in breadth, and appeared to be very deep, the land in the centre receding to a distance of full eight leagues. In the afternoon of the 6th, we had driven within five miles of a point of land, beyond which, to the eastward, it seemed to recede considerably; and this appearing to answer tolerably to the situation of Muscle or Mussel Bay, as laid down in most of the charts, I was very anxious to discover whether we could here find shelter for the ship. A lane of water leading towards the land at no great distance from us, I hauled a boat over the ice, and then rowed on shore, accompanied by

Lieutenant Foster and some of the other officers, taking with me another small store of provisions, to be deposited here, as a future resource for my party, should we approach this part of the coast.

Landing at half-past six P.M., and leaving Mr. Bird to bury the provisions, Lieutenant Foster and myself walked without delay to the eastward, and on ascending the point found that there was, as we had supposed, an indentation in the coast on the other side. We now began to conceive the most flattering hopes of discovering something like a harbour for the ship, and pushed on with all possible haste to examine the place further; but, after three hours' walking, were much mortified, on arriving at its head, to find that it was nothing but an open bay, entirely exposed to the inroads of all the northern ice, and therefore quite unfit for the ship. We returned to the boat greatly disappointed, and reached the Hecla at 1.30, A.M. on the 7th.

This bay, which is very small, but appears the only one which answers to Muscle or Mussel Bay, lies ten miles to the S.W. of Verlegen Hook, and is about two miles in depth, having a beach composed of small rounded stones, and covered with great quantities of drift-wood, which, indeed, is the case with every part of this coast on which we landed. Some of the trees, with their roots attached to them, were not less than eighteen inches in

diameter; and the smaller ones were very abundant, the whole being of the pine tribe. The rocks are composed of mica-slate, which Mr. Beverly remarked to dip to the eastward, generally at an angle of about 70°, and sometimes to lie still nearer a perpendicular direction. The land to the eastward of this part of the coast, as Phipps has justly remarked, assumes a very different aspect from that to the westward; the latter being the most rugged and acuminated that I ever saw, and this becoming of a more smooth and rounded outline. We were a good deal surprised, on landing, to find that large streams of water were rushing down the sides of all the hills, and that there were large ponds of it in every direction, a circumstance the less expected by us, since we had certainly never seen it half so abundant in any of our winter stations at this season, not even at Winter Island, which lies in latitude 66¼°, or nearly 14° to the southward of this. The water was running copiously, even at a height of three or four hundred feet above the sea, almost at midnight; and the *Saxifraga Oppositifolia* was quite out in flower at a similar height. We saw several rein-deer, and killed a small one. It was high water at 10.40, P.M., the tide having risen two feet ten inches in about four hours. There was here an extensive floe of land-ice, filling the upper part of the bay, as shown by the broken line in the chart;

but it was so thin and watery that we could have cut through it, at least half a mile, in two days, had the place been such as to require it. This operation I had always anticipated as likely to be requisite, wherever the ship should be placed. The variation of the magnetic needle, as observed upon the ice near this spot, was 18° 10′ 30″ westerly.

From the hills we could plainly distinguish a considerable space of open water to the eastward of Verlegen Hook, as we had supposed to be the case when on board; and I could not help feeling great confidence that, could we now have been enabled to place the Hecla in security, we might have got the boats into this water, which appeared to lead directly to the northward, and thus have reached the main ice without much difficulty. As it was, we were obliged to submit to the necessity of still awaiting some favourable change; and those only who have been in similar situations can conceive how painful such a necessity was.

I never remember to have experienced in these regions such a continuance of beautiful weather as we now had, during more than three weeks that we had been on the northern coast of Spitzbergen. Day after day we had a clear and cloudless sky, scarcely any wind, and, with the exception of a few days previously to the 23rd of May, a warm temperature in the shade, and quite a scorching sun.

On the 3rd of June we had a shower of rain, and on the 6th it rained pretty hard for two or three hours. After the 1st of June we could procure abundance of excellent water upon the ice, and by the end of the first week the floe pieces were looking blue with it in some parts, and the snow had everywhere become too soft to bear a man's weight.

On the 7th the ship, still closely beset, had drifted much more to the eastward, being within a mile of the spot where the provisions had been deposited the preceding evening. There was now no other ice between us and the land, except the floe to which we had been so long attached, and round this we were occasionally obliged to warp, whenever a little slackening of the ice permitted, in order to prevent our getting too near the rocks. In this situation of suspense and anxiety we still remained until the evening of the 8th, when a breeze at length springing up from the southward began to open out the ice from the point near which we lay. As soon as the channel was three or four hundred yards wide, we warped into the clear water, and, making sail, rounded the point in safety, having no soundings with twenty fathoms, at one-third of a mile from a small rocky islet lying off it. In the mean time the wind had been driving the ice so fast off the land as to form for us a clear communication with the open water before seen to the eastward;

and thus were we at length liberated from our confinement, after a close and tedious "besetment" of twenty-four days.

This escape appeared to give us all fresh animation, and we now entertained the most confident hopes of being able shortly to effect the object we had so long had at heart, that of securing the Hecla in some harbour previously to our departure in the boats, an object which the events of the last few days had shown to be indispensably necessary before I could venture to set out. With this view we stretched along the low point of Verlegen Hook, round which we found some swell coming in from Waygatz Strait, the wind blowing strong from the southward, with heavy rain during the night. We therefore lay-to under this land till the wind had moderated and the weather cleared, and early in the morning of the 9th made sail to the N.N.E., towards the Seven Islands, finding a clear sea in that direction.

On the low shore, near Verlegen Hook, we saw a house, which appeared in a ruinous state, and which we supposed to have belonged to some Russian settlers. Near this Hook too we found, for the first time on the north coast of Spitzbergen, heavy grounded ice, such as we had formerly been accustomed to find upon all shelving shores. This circumstance appeared to us worthy of remark, as

seeming to afford a proof that the heavy or field ice seldom, if ever, comes actually home upon these shores, for otherwise it would leave many traces of that kind. We were pleased to see that, except these grounded masses, there was, along this shore, no other ice attached to the land.

At noon, being in latitude 80° 16′ 40″ by observation, and the high land of Verlegen Hook bearing south (true) distant from four to five leagues, we had no bottom with ninety fathoms of line. A haze clearing off about this time, we saw the land to the eastward, and hauled up for it towards Brandywine Bay, with the intention of examining that part of the coast for a harbour. The "packed" ice was at this time four or five miles to the westward of us, and the blink was very strongly marked, and of a yellowish colour, over the whole of the northern and western horizons. At two P.M., after standing about six miles to the eastward, we struck soundings in seventeen, and immediately afterwards in fifteen fathoms. As no land could be seen within many leagues of us, we tacked till a boat could be got a-head to sound, and then kept to the E.N.E., having from fourteen to ten fathoms for several miles in that direction. The weather had now become hazy and the wind light, but we could perceive, to the south-eastward, a quantity of heavy ice, apparently aground, at four or five miles' distance:

this we supposed to be lying around the "Low Island" of Phipps, which conjecture subsequently proved correct. The weather becoming more thick, with rain, sleet, and snow, we were obliged to put the ship's head to the N.W., and lie-to; and in drifting to the northward soon dropped off into deep water, the hand-leads not reaching the bottom.

The weather continued so thick that, impatient as we were to stand in towards the eastern land, we could not venture to do so till eleven A.M. on the 10th, when we made sail towards Brandywine Bay, the wind being now from the W.S.W., or nearly dead upon that shore. The weather clearing up at 1.15, P.M., we saw the eastern land, and soon after discovered the grounded ice off Low Island; Walden's Island was also plainly in sight to the N.E. The Bay seemed deeply indented, and very likely to afford nooks such as we wanted; and where so large a space of open water, and consequently some sea, had been exerting its influence for a considerable time, we flattered ourselves with the most sanguine hopes of now having access to the shores, sufficiently near, at least, for sawing into some place of shelter. How then shall I express our surprise and mortification in finding that the whole of the coast, from the islands northwards to Black Point, and apparently also as far as Walden's Island, was rendered inaccessible by one continuous

and heavy floe, everywhere attached to the shores, and to the numberless grounded masses about the island, this immense barrier being in some places six or seven miles in width, and not less than twelve feet in thickness near the margin.

In standing in towards this floe, from the north-westward, we had no bottom with thirty-five fathoms of line; but, after sailing *out* on the opposite tack about a mile, we suddenly struck soundings in ten, and before the ship's head came round, had decreased to seven fathoms. Lowering a boat, I immediately went away to sound, and found that some heavy masses of ice near us, and lying close off the margin of the floe, were aground in six fathoms, our distance from the north-eastern part of the island being about four or five miles. Nearer to the island the water deepened again to thirteen and fifteen fathoms, so that this appears to be a bank lying by itself at that distance, and upon which there is, perhaps, less water than I found, as the floe prevented my sounding more to the eastward about the shoalest part.

The prospect from our masthead at this time was certainly enough to cast a damp over every sanguine expectation I had formed of being *soon* enabled to place the Hecla in security; and more willingly than ever would I, at this period, have persuaded myself, if possible, that I should be justified in quitting her at sea. Such, however, was the nature

of this navigation, as regarded the combined difficulties arising from ice and a large extent of shoal and unsurveyed ground, that even with our full complement of officers and men on board, all our strength and exertions might scarcely have sufficed, in a single gale of wind, to keep the ship tolerably secure, and much less could I have ensured placing her ultimately in any proper situation for picking up an absent party; for if once again beset, she must, of course, be at the mercy of the ice. The conclusion was, therefore, irresistibly forced upon my mind, that thus to have left the ship would have been to expose her to imminent and certain peril, rendering it impossible to conjecture where we should find her on our return, and, therefore, rashly to have placed all parties in a situation from which nothing but disaster could reasonably be expected to ensue.

The wind having now freshened up from the S.W.b.W., which might be expected to bring the drift-ice from the "pack" in upon the land, we stood to the N.W. to gain an offing, and after sailing eighteen miles, came to a quantity of ice which was streaming off from the margin. When we tacked, at eleven P.M., our estimated latitude, by our run from Low Island, was 80° 36′; and there was at this time so much clear water to the northward and N.N.E. of us, that we might probably have run,

without any obstruction, to $80\frac{3}{4}^{\circ}$, had there been any object in our doing so. I now determined to take advantage of the westerly wind, and of the lee afforded by the ice, to stand back to the southward towards Waygatz Strait, where a dark purple sky seemed to indicate clear water, and where, on th account, as well as from the clearness of the shores about Verlegen Hook, we hoped there might be access to the land near some harbour. In keeping in that direction, in the course of the night, we found that the ice was drifting very fast to the eastward; and on the morning of the 11th, it was not without some difficulty that we got to windward of the shoal ground off the west end of Low Island; so near had the ice now approached it, though, forty-eight hours before, none was to be seen from the ship's deck, in a much more westerly position than this. When we had proceeded a little farther to the southward, we found that the same effect had been produced in a much more surprising degree under all the lands about the entrance of Waygatz Strait and towards Verlegen Hook, where it was now not possible to approach the shores in any one place in sight from our masthead.

My intentions being thus again baffled, and there being every probability that, if the westerly wind lasted, it would soon leave us no space in which to keep under way, we now pushed back again to the

northward, preferring to be beset in a high latitude, if we were to be beset at all. However, in the course of the 12th, the wind shifted to the northward; of which circumstance I gladly took advantage to endeavour to get a sight of the main ice, and at the same time to examine about Walden Island, though with little hopes of finding a harbour on so small a spot of land. This island was regarded by us at this time with no common interest, since it now appeared probable that it would form one of the stations to which provisions and information would be carried, as an assistance to our party on their return from the northward.

After beating through much ice, which was all of the drift or broken kind, and had all found its way hither in the last two days, we got into an open space of water inshore, and about six miles to the northward of Low Island; and on the morning of the 13th stretched in towards Walden Island, around which we found, as we had feared, a considerable quantity of fixed ice. It was certainly much less here than elsewhere; but the inner, or eastern side of the island, was entirely enveloped by it. In fact, the very circumstance which tended to clear the northern and western sides of any land hereabouts, and to retain the ice on the northern and eastern, (namely, the exposure of the former and the sheltered situation of the latter, relatively

to the open water,) tended also to delay the accomplishment of our wishes; for it was against the sea and the pressure of ice from the south and west alone that it was very important at present to secure the ship, and from any such shelter we were still unavoidably shut out.

Having from twenty-six to twenty-four fathoms at the distance of four miles from Walden Island, I was preparing two boats, with the intention of going to sound about its northern point, which was the most clear of ice, and not without a faint hope of finding something like shelter there; but I was prevented by a thick fog coming on. Indeed, ever since we had got into open water we had scarcely once seen the blue sky, and for ten hours out of every twelve we had experienced fog, sleet, or snow. Continuing, therefore, to beat to the northward, we passed occasionally a good deal of loose drift-ice, but with every appearance of much clear water in that direction; and the weather clearing about midnight, we observed in latitude 80° 43′ 32″. The Seven Islands were in sight to the eastward, and the "Little Table Island" of Phipps's bore E.N.E. (true) distant about nine or ten miles. It is a mere craggy rock, rising, perhaps, from four to five hundred feet above the level of the sea, and with a small low islet lying off its northern end. This island, being the northernmost known land in the

world, naturally excited much of our curiosity; and bleak, and barren, and rugged as it is, one could not help gazing at it with intense interest.

The wind freshened from the northward on the 14th, and, as this was likely to clear the margin of the main ice, we still continued to beat up towards it under all sail, in the confident hope of soon meeting it, or at least of forming some idea from appearances where we might expect to do so in the boats. As we advanced to the northward, we fell in with more and more drift-ice; but at noon, when in latitude, by observation, 80° 49′ 6″, or one mile to the northward of Phipps's Furthest, nothing like the heavy or main ice could be seen. In the evening the drift-ice still increased, and we passed one or two floes, but not of a heavy kind. At midnight we had reached the latitude of 81° 5′ 32″. Our longitude by chronometers at this time was 19° 34′ E., Little Table Island bearing S. 26° E. (true), distant six or seven leagues, and Walden Island S. 4° E*. The depth of water was ninety-

* I have been thus particular in noticing the Hecla's position, because our observations would appear to be, with one exception, the most northern on record at that time. The Commissioners of Longitude, in their memorial to the King in Council, in the year 1821, consider that the "progress of discovery has not arrived northwards, according

seven fathoms, on a bottom of greenish mud; and the temperature at ninety-five fathoms, by Six's thermometer, was 29°8, that at the surface being 31°, and of the air 28°. All that could here be seen to the northward was loose drift-ice. To the north-east it was particularly open, and I have no doubt that we might have gone many miles further in that direction, had it not been a much more important object to keep the ship free than to push her to the northward. We were, however, much disappointed in seeing no indication of the main ice from this station, unless, indeed, the yellow blink which overspread the northern horizon, but which we had seen quite as bright when forty miles further south, could so be considered. There was, in fact, scarcely a loose mass to be seen that could have ever belonged to a very heavy floe, such as the main ice is considered to be; so that, although we were now twenty-five miles to the northward of the station in which Phipps remarked that "the ice appeared flat and unbroken," as seen from a considerable height on shore, all that we could discover was quite of a contrary description. Thus we were still at a loss to know the position of the main ice at this time; while the nature and quantity of that

to any well-authenticated accounts, so far as eighty-one degrees of north latitude." Mr. Scoresby states his having observed in lat. 81° 12′ 42″.

through which we had been sailing for so many miles were extremely unfavourable to the progress of boats over it whenever it should become "packed."

We now stood back again to the southward, in order again to examine the coast wherever we could approach it; but found, on the 15th, that none of the land was at all accessible, the wind having got round to the W.N.W., and loaded all the shores with drift-ice. Our attention was, indeed, pretty well occupied in keeping the ship at liberty; which, however, she probably would not have been for twenty-four hours longer, had the westerly breeze continued; for the ice came driving back very quickly from that quarter, and would have very soon beset us. Fortunately, however, on the evening of the 15th, it shifted to the eastward, and a fresh breeze blowing from that quarter sent it away once more to the westward in a few hours, leaving us a clear space of water inshore. I now determined to examine, if possible, every part of the coast, while this easterly wind kept it clear of drift-ice; and wherever the shore could be approached, either by water, or by walking over the ice, to search for a sheltered place for the ship, that we might at least know of such a place, and then take the first opportunity of getting into it.

Walden Island being the first part clear of the loose ice, we stretched in for it on the 16th, and,

when within two miles, observed that about half that space was occupied by land ice, even on its north-western side, which was the only accessible one, the rest being wholly enclosed by it. However, being desirous of obtaining a better view than our crow's-nest commanded, and also of depositing here a small supply of provisions, I left the ship at one P.M., accompanied by Lieutenant Foster in a second boat, and landing upon the ice, walked over about three-quarters of a mile of high and rugged hummocks to the shore. Ascending two or three hundred feet, we had a clear and extensive view of the Seven Islands, and of some land far beyond them to the eastward ; and here the whole sea was covered with one unbroken land-floe attached to all the shores, extending from the island where we stood, and which formed an abutment for it each way along the land as far as the eye could reach. After this discouraging prospect, which wholly destroyed every hope of finding a harbour among the Seven Islands, we returned to the place where the men had deposited the provisions, and after making the necessary observations for the survey, returned immediately on board.

This island, which in some parts is about five hundred feet above the sea, and precipitous towards the middle, consists of coarse-grained granite, most of which is black and white : in the rest the feldspar

is of a bright flesh-colour, giving the rock a red hue, and the mica is very abundant and shining in both kinds. In one place it seemed to dip to the north-east, at an angle of 30° ; but it was not very distinctly marked. A few plants, mosses, and lichens were found. Of the last-mentioned, the tripe de roche (*gyrophora proboscidea*), the rein-deer moss (*cenomyce rangiferina*), and the black woolly-looking *cornicularia divergens*, were most abundant. A few eider ducks and dovekies were the only animals seen ; but there were traces of rein-deer having been upon the island. The latitude of the north-west end is 80° 35′ 38″ ; the longitude, by chronometer, 19° 51′ 16″ E. ; and the variation of the magnetic needle 17° 42′ westerly ; the latter phenomenon still exhibiting a regular decrease as we advanced to the eastward. The soundings appeared deep around the island ; we had thirty-three fathoms at the margin of the land ice.

Observing from the island that the sea was perfectly clear to the northward, we now stood for Little Table Island, with some slight hope that the rock off its northern end might afford shelter for the ship ; at all events, being the most exposed, on account of its situation, it was the most likely to be free from ice. A thick fog prevented our getting near it till the morning of the 17th, when, having approached it within a mile and a half, I sent

Lieutenant Ross on shore to a little islet, which was quite clear of ice, and where he deposited another small store of provisions, but found nothing like shelter for the ship. The islet consists of gneiss, having garnets imbedded in some specimens; Mr. Beverly could not discover in what direction it dipped. This small rock, with specimens of which (as being the northermost known land in the world) the boat returned loaded, is about one hundred feet above the sea, and the Table Island about four or five hundred, both occupying an extent of perhaps one-third of a square mile. Lieutenant Ross described the rocks as covered with abundance of very large *tripe de roche*, some rein-deer moss, and other lichens; and there was abundance of good water in pools. A few brent-geese, eider-ducks, and a *Lestris Parasiticus*, were all the animals seen. We placed this island, by a meridian altitude observed on board this day, in latitude 80° 48′; but the observation was an indifferent one, and with the sea horizon, which is never to be trusted. We had no bottom with thirty-five fathoms, at one mile distant, on the north and west sides, and Lieutenant Ross found twelve fathoms alongside the rocks. This was the only island round which a ship might, at this time, have sailed; all the others in sight being entirely enclosed by a barrier of fixed ice.

Having no further business here, and the easterly

wind still continuing, I thought the best thing we could do, would be to run again to the southward of Low Island, and try once more to approach the shores about the entrance of the Waygatz Strait. We, therefore, bore up under all sail to the south-west.

It would be vain to deny that I had lately begun to entertain the most serious apprehensions, as related to the accomplishment of our principal object. The 17th of June had now arrived, and all that we saw afforded us the most discouraging prospect as to our getting the Hecla into harbour; while every day's experience showed how utterly rash a measure it would be to think of quitting her in her present situation, which, even with all her officers and men, was one of extreme precariousness and uncertainty. Although I was in the habit of daily and almost hourly communication with my officers, yet I thought it my duty once more to require from them officially their opinions upon this subject, which I found to agree entirely with my own. Indeed, there could not, under present circumstances, be two opinions upon the subject.

Standing to the S.W. after passing Walden Island, we came, as usual, pretty suddenly into sixteen fathoms, when at the distance of six or seven miles from the north side of Low Island. In running for the grounded hummocks off the west extremity,

which is itself so low as to be scarcely discernible when any ice lies near it, we soon had from twelve to ten ; but in keeping *out*, in order to deepen the water, we suddenly fell into seven, and, for more than an hour's quick run, did not get a cast above ten. There being at this time a considerable swell, and too much ice still adhering to the island to enable us to seek a shelter there, I did not choose to risk getting the ship upon the ground, and therefore hauled to the southward, towards Verlegen Hook, to prosecute our search for a harbour once more in that quarter. On the evening of the 18th, while standing in for the high land to the eastward of Verlegen Hook, which, with due attention to the lead, may be approached with safety, we perceived from the crow's-nest what appeared a low point, possibly affording some shelter for the ship, and which seemed to answer to an indentation of the coast laid down in an old Dutch chart*, and there called *Treurenburg Bay.*

On the following morning I proceeded to examine the place, accompanied by Lieutenant Ross in a second boat, and to our great joy, found it a con-

* Nieuwe afteekening van Het Eyland Spits-Bergen, opgegeven door de Commandeurs Giles en Outger Rep, en in't Light gebragt en uytgegeven door Gerard Van Keulen, &c. &c.

siderable bay, with one part affording excellent land-locked anchorage, and, what was equally fortunate, sufficiently clear of ice to allow the ship to enter. Having sounded the entrance, and determined on the anchorage, we returned to the ship to bring her in ; and I cannot describe the satisfaction which the information of our success communicated to every individual on board. The main object of our enterprise now appeared almost within our grasp, and every body seemed anxious to make up, by renewed exertions, for the time we had unavoidably lost. The ship was towed and warped in with the greatest alacrity, and at 1.40 A.M. on June 20th, we dropped the anchor in Hecla Cove, in thirteen fathoms, on a bottom of very tenacious blue clay, and made some hawsers fast to the land-ice, which still filled all the upper part of the bay. After resting a few hours, we sawed a canal, a quarter of a mile in length, through which the ship was removed into a better situation, a bower-cable taken on shore and secured to the rocks, and an anchor with the chain-cable laid out the other way. On the morning of the 21st, we hauled the launch up on the beach, it being my intention to direct such resources of every kind to be landed, as would render our party wholly independent of the ship, either for returning to England or for wintering, in case of the ship being driven to sea by the ice ; a

contingency against which, in these regions, no precaution can altogether provide. I directed Lieutenant Foster, upon whom the charge of the Hecla was now to devolve, to land without delay the necessary stores, keeping the ship sea-worthy by taking in an equal weight of ballast; and, as soon as he should be satisfied of her security from ice, to proceed on the survey of the eastern coast; but should he see reason to doubt her safety, with a still further diminution of her crew, to relinquish the survey, and attend exclusively to the ship. I also gave directions that notices should be sent, in the course of the summer, to the various stations where our depots of provisions were established, acquainting me with the situation and state of the ship, and giving me any other information which might be necessary for my guidance on our return from the northward. These and other arrangements being completed, I left the ship at five P.M. with our two boats, which we named the Enterprise and Endeavour, Mr. Beverly being attached to my own, and Lieutenant Ross, accompanied by Mr. Bird, in the other. Besides these, I took Lieutenant Crozier in one of the ship's cutters, for the purpose of carrying some of our weight as far as Walden Island, and also a third store of provisions to be deposited on Low Island, as an intermediate station between Walden Island and the ship. As it was

still necessary not to delay our return beyond the end of August, the time originally intended, I took with me only seventy-one days' provisions; which, including the boats and every other article, made up a weight of 268lbs. per man; and as it appeared highly improbable, from what we had seen of the very rugged nature of the ice we should first have to encounter, that either the rein-deer, the snow-shoes, or the wheels would prove of any service for some time to come, I gave up the idea of taking them. We, however, constructed out of the snow-shoes four excellent sledges, for dragging a part of our baggage over the ice; and these proved of invaluable service to us, while the rest of the things just mentioned would only have been an incumbrance.

Having received the usual salutation of three cheers from those we left behind, we paddled through a quantity of loose ice at the entrance of the bay, and then steered, in a perfectly open sea, and with calm and beautiful weather, for the western part of Low Island, which we reached at half-past two on the morning of the 22nd. The low beach on which we landed was principally composed of rounded fragments of lime-stone, intermixed with some of clay-slate; and several small rounded pieces of pumice-stone were also found. The drift-wood lined the beach in great quantities, the whole

being of the pine tribe, as usual, and a Greenland whaler's harpoon was found lying among it.

Having deposited the provisions, we set off at four A.M., paddling watch and watch, to give the people a little rest. It was still quite calm; but there being much ice about the island, and a thick fog coming on, we were several hours groping our way clear of it. The walruses were here very numerous, lying in herds upon the ice, and plunging into the water to follow us as we passed. The sound they utter is something between bellowing and very loud snorting, which, together with their grim bearded countenances and long tusks, makes them appear, as indeed they are, rather formidable enemies to contend with. Under our present circumstances, we were very well satisfied not to molest them, for they would soon have destroyed our boats, if one had been wounded; but I believe they are never the first to make the attack. We landed upon the ice still attached to Walden Island, at 3.30 A.M. on the 23rd. Our flat-bottomed boats rowed heavily with their loads, but proved perfectly safe, and very comfortable. The men being much fatigued, we rested here some hours, and, after making our final arrangements with Lieutenant Crozier, parted with him at three in the afternoon, and set off for Little Table Island. Finding there was likely to be so much open water

in this neighbourhood in the autumn, I sent directions to Lieutenant Foster to have a spare boat deposited at Walden Island, in time for our return, in case of any accident happening to ours.

The land-ice, which still adhered to the Seven Islands, was very little more broken off than when the Hecla had been here a week before; and we rowed along its margin a part of the way to Little Table Island, where we arrived at ten P.M. We here examined and re-secured the provisions left on shore, having found our depot at Walden Island disturbed by the bears. The prospect to the northward at this time was very favourable, there being only a small quantity of loose ice in sight; and the weather still continuing calm and clear, with the sea as smooth as a mirror, we set off, without delay, at half-past ten, taking our final leave of the Spitzbergen shores, as we hoped, for at least two months. Steering due north, we made good progress, our latitude by the sun's meridian altitude at midnight being 80° 51′ 13″. A beautifully-coloured rainbow appeared for some time, without any appearance of rain falling. We observed that a considerable current was setting us to the eastward just after leaving the land, so that we had made a N.N.E. course, distance about ten miles, when we met with some ice, which soon becoming too close for further progress, we landed upon a high hummock to

obtain a better view. We here perceived that the ice was close to the northward, but to the westward we discovered some open water, which we reached after two or three hours paddling, and found it a wide expanse, in which we sailed to the northward without obstruction, a fresh breeze having sprung up from the S.W. The weather soon after became very thick, with continued snow, requiring great care in looking out for the ice, which made its appearance after two hours' run, and gradually became closer, till at length we were stopped by it at noon, and obliged to haul the boats upon a small floe-piece, our latitude by observation being 81° 12 51″.

Our plan of travelling being nearly the same throughout this excursion, after we first entered upon the ice, I may at once give some account of our usual mode of proceeding. It was my intention to travel wholly at night, and to rest by day, there being, of course, constant daylight in these regions during the summer season. The advantages of this plan, which was occasionally deranged by circumstances, consisted first, in our avoiding the intense and oppressive glare from the snow during the time of the sun's greatest altitude, so as to prevent, in some degree, the painful inflammation in the eyes called "snow blindness," which is common in all snowy countries. We also thus enjoyed

greater warmth during the hours of rest, and had a better chance of drying our clothes; besides which, no small advantage was derived from the snow being harder at night for travelling. The only disadvantage of this plan was, that the fogs were somewhat more frequent and more thick by night than by day, though even in this respect there was less difference than might have been supposed, the temperature during the twenty-four hours undergoing but little variation. This travelling by night and sleeping by day so completely inverted the natural order of things that it was difficult to persuade ourselves of the reality. Even the officers and myself, who were all furnished with pocket chronometers, could not always bear in mind at what part of the twenty-four hours we had arrived; and there were several of the men who declared, and I believe truly, that they never knew night from day during the whole excursion*.

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* Had we succeeded in reaching the higher latitudes, where the change of the sun's altitude during the twenty-four hours is still less perceptible, it would have been essentially necessary to possess the certain means of knowing this; since an error of twel[illegible]ours of time would have carried us, when we intended to return, on a meridian opposite to, or 180° from, the right one. To obviate the possibility of this, we had some chronometers constructed by

When we rose in the evening, we commenced our day by prayers, after which we took off our fur sleeping-dresses, and put on those for travelling; the former being made of camblet, lined with racoon-skin, and the latter of strong blue box-cloth. We made a point of always putting on the same stockings and boots for travelling in, whether they dried during the day or not; and I believe it was only in five or six instances, at the most, that they were not either still wet or hard-frozen. This, indeed, was of no consequence, beyond the discomforture of first putting them on in this state, as they were sure to be thoroughly wet in a quarter of an hour after commencing our journey; while on the other hand it was of vital importance to keep dry things for sleeping in. Being "rigged" for travelling, we breakfasted upon warm cocoa and biscuit, and after stowing the things in the boats and on the sledges, so as to secure them as much as possible, from wet, we set off on our day's journey, and usually travelled from five to five and a half hours, then stopped an hour to dine, and again travelled four, five, or even six hours, according to circumstances. After this we halted for the night, as we

Messrs. Parkinson and Frodsham, of which the hour-hand made only one revolution in the day, the twenty-four hours being marked round the dial-plate.

called it, though it was usually early in the morning, selecting the largest surface of ice we happened to be near, for hauling the boats on, in order to avoid the danger of its breaking up by coming in contact with other masses, and also to prevent drift as much as possible. The boats were placed close alongside each other, with their sterns to the wind, the snow or wet cleared out of them, and the sails supported by the bamboo masts and three paddles, placed over them as awnings, an entrance being left at the bow. Every man then immediately put on dry stockings and fur boots, after which we set about the necessary repairs of boats, sledges, or clothes; and, after serving the provisions for the succeeding day, we went to supper. Most of the officers and men then smoked their pipes, which served to dry the boats and awnings very much, and usually raised the temperature of our lodgings 10° or 15°. This part of the twenty-four hours was often a time, and the only one, of real enjoyment to us; the men told their stories and "fought all their battles o'er again," and the labours of the day, unsuccessful as they too often were, were forgotten. A regular watch was set during our resting-time, to look out for bears or for the ice breaking up round us, as well as to attend to the drying of the clothes, each man alternately taking this duty for one hour. We then concluded our day with prayers, and having put on

our fur dresses, lay down to sleep with a degree of comfort, which perhaps few persons would imagine possible under such circumstances; our chief inconvenience being, that we were somewhat pinched for room, and therefore obliged to stow rather closer than was quite agreeable. The temperature, while we slept, was usually from 36° to 45°, according to the state of the external atmosphere; but on one or two occasions in calm and warm weather, it rose as high as 60° to 66°, obliging us to throw off a part of our fur-dress. After we had slept seven hours, the man appointed to boil the cocoa roused us, when it was ready, by the sound of a bugle, when we commenced our day in the manner before described.

Our allowance of provisions for each man per day was as follows :—

Biscuit	10 ounces.
Pemmican	9
Sweetened Cocoa Powder .	1 ounce, to make one pint.
Rum	1 gill.
Tobacco	3 ounces per week.

Our fuel consisted entirely of spirits of wine, of which two pints formed our daily allowance, the cocoa being cooked in an iron boiler over a shallow iron lamp, with seven wicks; a simple apparatus, which answered our purpose remarkably well. We usually found one pint of the spirits of wine sufficient for preparing our breakfast, that is, for heating

twenty-eight pints of water, though it always commenced from the temperature of 32°. If the weather was calm and fair, this quantity of fuel brought it to the boiling point in about an hour and a quarter; but more generally the wicks began to go out before it had reached 200°. This, however, made a very comfortable meal to persons situated as we were. Such, with very little variation, was our regular routine during the whole of this excursion.

We set off on first journey over the ice at ten P.M. on the 24th, Table Island bearing S.S.W., and a fresh breeze blowing from W.S.W., with thick fog, which afterwards changed to rain. The bags of pemmican were placed upon the sledges, and the bread in the boats, with the intention of securing the latter from wet; but this plan we were very soon obliged to relinquish. We now commenced upon very slow and laborious travelling, the pieces of ice being of small extent and very rugged, obliging us to make three journeys, and sometimes four, with the boats and baggage, and to launch several times across narrow pools of water. This, however, was nothing more than we had expected to encounter at the margin of the ice, and for some distance within it; and every individual exerted himself to the very utmost, with the hope of the sooner reaching the main or field ice. We stopped to dine at five A.M. on the 25th, having made, by our log, (which we

kept very carefully, marking the courses by compass, and estimating the distances,) about two miles and a half of northing; and again setting forward, proceeded till eleven A.M., when we halted to rest, our latitude by observation at noon being 81° 15′ 13″.

Setting out again at half-past nine in the evening, we found our way to lie over nothing but small loose rugged masses of ice, separated by little pools of water, obliging us constantly to launch and haul up the boats, each of which operations required them to be unloaded, and occupied nearly a quarter of an hour. It came on to rain very hard on the morning of the 26th; and finding we were making very little progress (having advanced not more than half a mile in four hours), and that our clothes would be soon wet through, we halted at half-past one, and took shelter under the awnings. The weather improving at six o'clock, we again moved forward, and travelled till a quarter past eleven, when we hauled the boats upon the only tolerably large floe-piece in sight. The rain had very much increased the quantity of water lying upon the ice, of which nearly half the surface was now covered with numberless little ponds of various shapes and extent. It is a remarkable fact that we had already experienced, in the course of this summer, more rain than during the whole of seven previous summers *taken together*, though passed in latitudes from

7° to 15° lower than this. A great deal of the ice over which we passed to-day presented a very curious appearance and structure, being composed, on its upper surface, of numberless irregular needle-like crystals, placed vertically, and nearly close together, their length varying, in different pieces of ice, from five to ten inches, and their breadth in the middle about half an inch, but pointed at both ends. The upper surface of ice having this structure sometimes looks like greenish velvet; a vertical section of it, which frequently occurs at the margin of floes, resembles, while it remains compact, the most beautiful satin-spar, and asbestos, when falling to pieces. At this early part of the season this kind of ice afforded pretty firm footing, but as the summer advanced, the needles became more loose and moveable, rendering it extremely fatiguing to walk over them, besides cutting our boots and feet, on which account the men called them "penknives." It appeared probable to us that this peculiarity might be produced by the heavy drops of rain piercing their way downwards through the ice, and thus separating the latter into needles of the form above described, rather than to any regular crystallisation when in the act of freezing, which supposition seemed the more reasonable, as the needles are always placed in a vertical position, and never occur except from the upper surface downwards.

We pursued our journey at half-past nine P.M., with the wind at N.E., and thick weather, the ice being so much in motion as to make it very dangerous to cross with loaded boats, the masses being all very small. Indeed, when we came to the margin of the floe-piece on which we had slept, we saw no road by which we could safely proceed, and therefore preferred remaining where we were, to the risk of driving back to the southward on one of the smaller masses. On this account we halted at midnight, having waded three quarters of a mile through water from two to five inches deep upon the ice. The thermometer was at 33°. In the course of this short journey we saw several rotges and dovekies, and a few kittiwakes, ivory gulls, and mallemuckes.

The weather continued so thick that we could only see a few yards around us; but the wind backing to the southward, and beginning to open out the loose ice at the edge of the floe, we proceeded at half-past ten P.M., and after crossing several small pieces, came to the first tolerably heavy ice we had yet seen, but all broken up into masses of small extent. At seven A.M. on the 28th, we came to a floe covered with high and rugged hummocks, which opposed a formidable obstacle to our progress, occurring in two or three successive tiers, so that we had no sooner crossed one than another presented

itself. Over one of these we hauled the boats with extreme difficulty by a "standing pull," and the weather being then so thick that we could see no pass across the next tier, we were obliged to stop at nine A.M. While performing this laborious work, which required the boats to be got up and down places almost perpendicular, James Parker, my coxswain, received a severe contusion in his back by the boat falling upon him from a hummock, and the boats were constantly subject to very heavy blows, but sustained no damage*. The weather continued very foggy during the day, but a small lane of water opening out at no great distance from the margin of the floe, we launched the boats at eight in the evening among loose drift-ice, and after some time landed on a small floe to the eastward, the only one in sight, with the hope of its leading to the northward.

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* I may here mention that, notwithstanding the heavy blows which the boats were constantly receiving, all our nautical and astronomical instruments were taken back to the ship without injury. This circumstance makes it, perhaps, worth while to explain, that they were lashed upon a wooden platform in the after locker of each boat, sufficiently small to be clear of the boat's sides, and playing on strong springs of whalebone, which entirely obviated the effects of the severe concussions to which they would otherwise have been subject.

It proved so rugged that we were obliged to make three, and sometimes four journeys with the boats and provisions, and this by a very circuitous route; so that the road, by which we made a mile of northing, was full a mile and a half in length, and over this we had to travel at least five, and sometimes seven times. Thus, when we halted to dine at two A.M., after six hours' severe toil, and much risk to the men and boats, we had only accomplished about a mile and a quarter in a N.N.E. direction. After dining, we proceeded again till half-past six, and then halted, very much fatigued with our day's work, and having made two miles and a half of northing. One of the carpenter's mates was a good deal hurt by a loaded sledge running against him, which laid him up for a day or two. We were here in latitude, by account, 81° 23′, and in longitude, by the chronometers, 21° 32′ 34″ E., in which situation the variation of the magnetic needle was observed to be 15° 31′ westerly. We now enjoyed the first sunshine since our entering the ice, and a great enjoyment it was, after so much thick and wet weather. We rose at half-past four P.M., in the hopes of pursuing our journey, but after hauling the boats to the edge of the floe, found such a quantity of loose rugged ice to the northward of us, that there was no possibility, for the present, of getting across or through it. Soon afterwards the whole of it became

in motion, and driving down upon the floe, obliged us to retreat from the margin, and wait for some favourable change. We here tried for soundings, but found no bottom with two hundred fathoms of line. The weather was beautifully clear, and the wind moderate from the S.W. From this situation we saw the easternmost of the Seven Islands, bearing S.b.W., but Little Table Island, though more to the northward, yet being less high, was not in sight. Observing a small opening at 10.30 P.M., we launched the boats, and hauled them across several pieces of ice, some of them being very light and much decayed. Our latitude, by the sun's meridian altitude at midnight, was 81° 23′, so that we had made only eight miles of northing since our last observation at noon on the 25th.

The 30th commenced with snowy and inclement weather, which soon rendered the atmosphere so thick, that we could no longer see our way, obliging us to halt till two P.M., when we crossed several small pools with great labour and loss of time. We had generally very light ice this day, with some heavy rugged pieces intermixed; and when hauling across these we had sometimes to cut with axes a passage for the boats among the hummocks. We also dragged them through a great many pools of fresh water, to avoid the necessity of going round them. The wind freshening up from the S.S.W.,

we afterwards found the ice gradually more and more open, so that, in the course of the day, we made by rowing, though by a very winding channel, five miles of northing; but were again stopped by the ice soon after midnight, and obliged to haul up on the first mass that we could gain, the ice having so much motion that we narrowly escaped being "nipped." We had passed, during this day's journey, a great deal of light ice, and, for the first time, one heavy floe, from two to three miles in length, under the lee of which we found the most open water. A number of rotges and ivory-gulls were seen about the "holes" of water, and now and then a very small seal. We set out at 11.30 A.M. on the first of July, the wind still fresh from the S.W., and some snow falling: but it was more than an hour before we could get away from the small pieces of ice on which we slept, the masses beyond being so broken up, and so much in motion, that we could not at first venture to launch the boats. Our latitude, observed at noon, was 81° 30′ 41″. After crossing several pieces, we at length got into a good "lead" of water, four or five miles in length; two or three of which, as on the preceding day, occurred under the lee of a floe, being the second we had yet seen that deserved that name. We then passed over four or five small floes, and across the pools of water that lay betwixt them. The ice

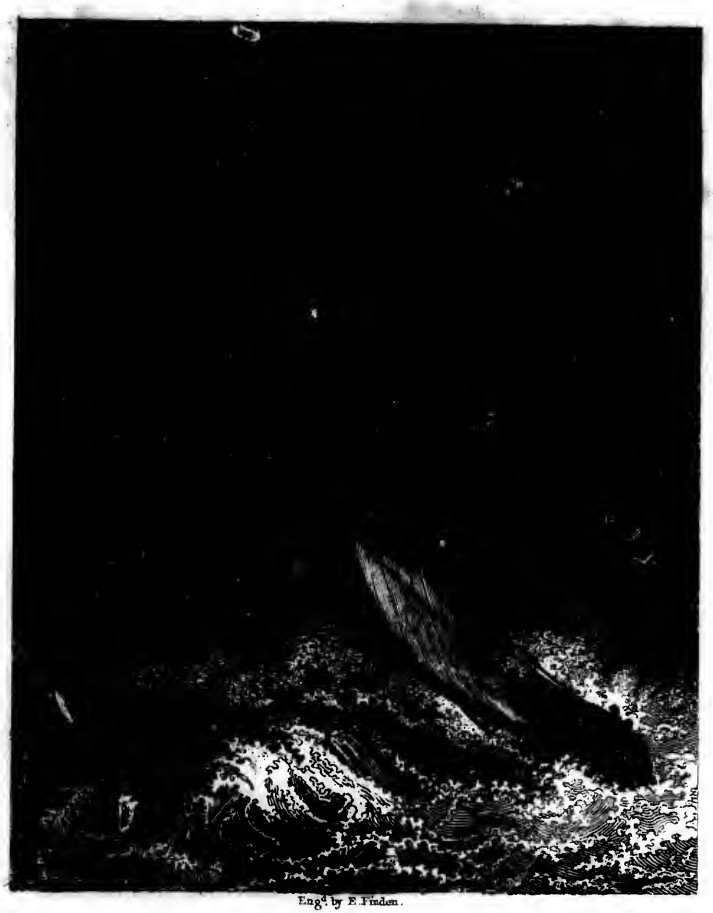
was now less broken up, and sometimes tolerably level; but from six to eighteen inches of soft snow lay upon it in every part, making the travelling very fatiguing, and obliging us to make at least two, and sometimes three, journeys with our loads. We now found it absolutely necessary to lighten the boats as much as possible, by putting the bread-bags on the sledges, on account of the "runners" of the boats sinking so much deeper into the snow; but our bread ran a great risk of being wetted by this plan.

As soon as we landed on a floe-piece, Lieutenant Ross and myself generally went on a-head, while the boats were unloading and hauling up, in order to select the easiest road for them. The sledges then followed in our track, Messrs. Beverly and Bird, accompanying them; by which the snow was much trodden down, and the road thus improved for the boats. As soon as we arrived at the other end of the floe, or came to any difficult place, we mounted one of the highest hummocks of ice near at hand (many of which were from fifteen to five-and-twenty feet above the sea), in order to obtain a better view around us; and nothing could well exceed the dreariness which such a view presented. The eye wearied itself in vain to find an object but ice and sky to rest upon; and even the latter was often hidden from our view by the dense and dis-

mal fogs which so generally prevailed. For want of variety, the most trifling circumstance engaged a more than ordinary share of our attention; a passing gull, or a mass of ice of unusual form, became objects which our situation and circumstances magnified into ridiculous importance; and we have since often smiled to remember the eager interest with which we regarded many insignificant occurrences. It may well be imagined, then, how cheering it was to turn from this scene of inanimate desolation, to our two little boats in the distance, to see the moving figures of our men winding with their sledges among the hummocks, and to hear once more the sound of human voices breaking the stillness of this icy wilderness. In some cases Lieutenant Ross and myself took separate routes to try the ground, which kept us almost continually floundering among deep snow and water. The sledges having then been brought up as far as we had explored, we all went back for the boats; each boat's crew, when the road was tolerable, dragging their own, and the officers labouring equally hard with the men. It was thus we proceeded for nine miles out of every ten that we travelled over ice; for it was very rarely indeed that we met with a surface sufficiently level and hard to drag all our loads at one journey, and in a great many instances during the first fortnight, we had to make three

journeys with the boats and baggage; that is, to traverse the same road five times over.

We halted at eleven P.M. on the 1st, having traversed from ten to eleven miles, and made good, by our account, seven and a half in a N.b.W. direction. We again set forward at ten A.M. on the 2nd, the weather being calm, and the sun oppressively warm, though with a thick fog. The temperature in the shade was 35° at noon, and only 47° in the sun; but this, together with the glare from the snow, produced so painful a sensation in most of our eyes, as to make it necessary to halt at one P.M., to avoid being blinded. We therefore took advantage of this warm weather to let the men wash themselves, and mend and dry their clothes, and then set out again at half-past three. The snow was, however, so soft as to take us up to our knees at almost every other step, and frequently still deeper; so that we were sometimes five minutes together in moving a single empty boat, with all our united strength. It being impossible to proceed under these circumstances, I determined by degrees to fall into our night-travelling again, from which we had of late insensibly deviated. We therefore halted at half-past five, the weather being now very clear and warm, and many of the people's eyes beginning to fail. We did not set out again till after midnight, with the intention of giving the



Engd. by E. Finden.

THE BOATS OFF WALDEN ISLAND.

In a snow storm Aug. 12, 1827.

Published 1828, by John Murray, London

snow time to harden after so warm a day ; but we found it still so soft as to make the travelling very fatiguing. Our way lay at first across a number of small loose pieces, most of which were from five to twenty yards apart, or just sufficiently separated to give us all the labour of launching and hauling up the boats, without the advantage of making any progress by water ; while we crossed, in other instances, from mass to mass, by laying the boats over, as bridges, by which the men and the baggage passed. By these means, we at length reached a floe about a mile in length, in a northern direction ; but it would be difficult to convey an adequate idea of the labour required to traverse it. The average depth of snow upon the level parts was about five inches, under which lay water four or five inches deep ; but the moment we approached a hummock, the depth to which we sank increased to three feet or more, rendering it difficult at times to obtain sufficient footing for one leg, to enable us to extricate the other. The pools of fresh water had now also become very large, some of them being a quarter of a mile in length, and their depth above our knees. Through these we were prevented taking the sledges, for fear of wetting all our provisions ; but we preferred transporting the boats across them, notwithstanding the severe cold of the snow-water, the bottom being harder for the "runners" to

slide upon. On this kind of road we were, in one instance, above two hours in proceeding a distance of one hundred yards.

We halted at half-past six A.M. to dine, and to empty our boots and wring our stockings, which, to *our* feelings, was almost like putting on dry ones; and again set out in an hour, getting at length into a "lane" of water one mile and a quarter long, in a N.N.E. direction. We halted for the night at half an hour before midnight, the people being almost exhausted with a laborious day's work, and our distance made good to the northward not exceeding two miles and a quarter. We allowed ourselves this night a hot supper, consisting of a pint of soup per man, made of an ounce of pemmican each, and eight or ten birds, which we had killed in the course of the last week; and this was a luxury which persons thus situated could perhaps alone duly appreciate. We had seen, in the course of the day, a few rotges, a dovekie, a loom, a mallemucke, and two or three very small seals.

We rose and breakfasted at nine P.M.; but the weather had gradually become so inclement and thick, with snow, sleet, and a fresh breeze from the eastward, that we could neither have seen our way nor have avoided getting wet through, had we moved. We, therefore, remained under cover; and it was as well that we did so, for the snow soon

after changed to heavy rain, and the wind increased to a fresh gale, which unavoidably detained us till 7.30 P.M. on the 4th, when we found, on setting out, that there was nothing but loose drift-ice for us to haul over; nor from the highest hummock could we discover a single floe, much less a field, towards which to direct our course. On two or three small floe-pieces which we did cross, none of which were a quarter of a mile in extent, we found the hummocks occurring, ridge after ridge, with only fifty or sixty yards of level ice between them. The rain had produced even a greater effect than the sun, in softening the snow. Lieutenant Ross and myself, in performing our pioneering duty, were frequently so beset in it, that sometimes, after trying in vain to extricate our legs, we were obliged to sit quietly down for a short time to rest ourselves, and then make another attempt; and the men, in dragging the sledges, were often under the necessity of crawling upon all-fours, to make any progress at all. Nor would any kind of snow-shoes have been of the least service, but rather an incumbrance to us, for the surface was so irregular, that they would have thrown us down at every other step. We had hitherto made use of the Lapland shoes, or *kamoogas*, for walking in, which are excellent for dry snow; but there being now so much water upon the ice, we substituted the Esqui-

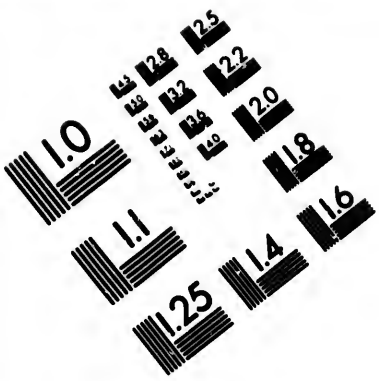
maux boots, which had been made in Greenland expressly for our use *, and which are far superior to any others for this kind of travelling. Just before halting, at six A.M. on the 5th, the ice at the margin of the floe broke, while the men were handing the provisions out of the boats; and we narrowly escaped the loss of a bag of cocoa, which fell overboard, but fortunately rested on a "tongue." The bag being made of Mackintosh's waterproof canvass, the cocoa did not suffer the slightest injury †. We had seen, in the course of our last journey, a few rotges, a loom, an ivory-gull, a mallemucke, and a tern (*Sterna Arctica*). We here observed the dip of the magnetic needle to be 82° 4′.7, and the variation 13° 16′ westerly; the latitude being 81° 45′ 15″, and the longitude, by chronometers, 24° 23′ E., by which we found that we had been drifted considerably to the eastward. In this situation we tried for soundings with four

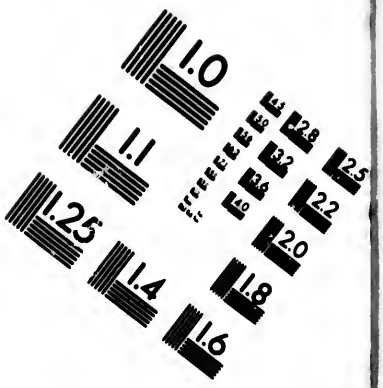
* For these we are greatly indebted to the kindness of Lieutenant Holboll, of the Danish Navy, through whose means we obtained them from Greenland.

† Of this invaluable manufacture, which consists, I believe, in applying a solution of elastic gum, or caoutchouc, between two parts of canvass, it is impossible to speak too highly. I know of no material which, with an equal weight, is equally durable and water-tight. In the latter quality, indeed, it is altogether perfect, so long as the material lasts.

hundred fathoms of line, without reaching the bottom; the temperature at that depth, by Six's thermometer, was 30°, that at the surface, at the time, being 32½°, and of the air 34°.

We rose at five P.M., the weather being clear and fine, with a moderate breeze from the south; no land was in sight from the highest hummocks, nor could we perceive any thing but broken loose ice in any direction. We hauled across several pieces which were scarcely fit to bear the weight of the boats, and in such cases used the precaution of dividing our baggage, so that, in case of the ice breaking or turning over, we should not lose all at once. The farther we proceeded, the more the ice was broken; indeed, it was much more so here than we had found it since first entering the "pack." The labour required to drag the boats over the hummocks, and from one mass to another, was so great, that we were obliged to have recourse to what seamen call a "bow-line-haul" for many minutes together; which so exhausted the men, that it was necessary for them every now and then to sit down and take breath. After stopping at midnight to dine, and to obtain the meridian altitude, we passed over a floe full of hummocks, a mile and a half in length; but any kind of floe was relief to us after the constant difficulty we had experienced in passing over loose ice. Many of the hummocks were





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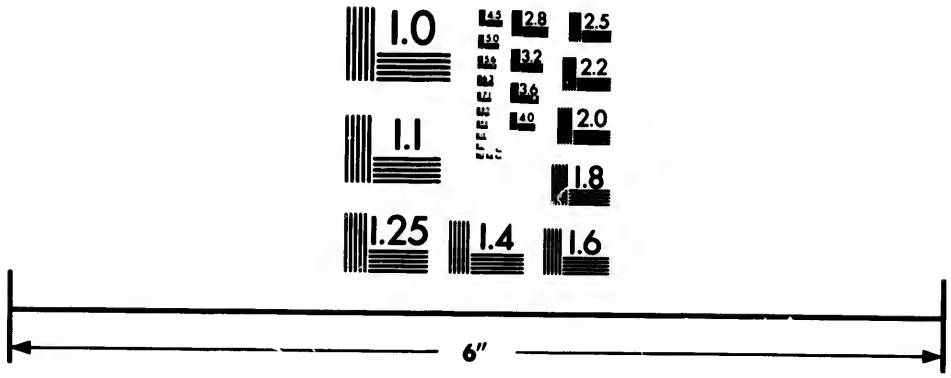

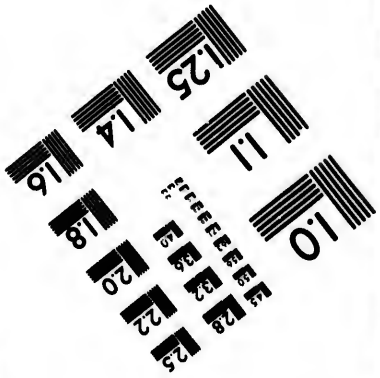

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smooth regular cones, much resembling in shape the aromatic pastiles sold by chemists: this roundness and regularity of form indicate age, all the more recent ones being sharp and angular. We had now for several days ceased to observe any ice covered with mud or soil, called by the sailors "dirty ice," which was frequently met with during the first week after our leaving the open water. We often, however, noticed parts of the ice, which, at a distance, appeared of an iron-rust colour; but on coming near it, and taking up some in the hand, we could detect nothing with a magnifying glass.

After several hours of very beautiful weather, a thick fog came on early on the morning of the 6th of July, and at five A.M. we halted, having got to the end of the floe, and only made good two miles and a half to the northward. The men were greatly fatigued by this day's exertions, and we served an extra ounce of bread and one of pemmican for their supper; an addition to the original allowance which we were frequently obliged to make, after this time, to prevent our going to bed hungry. The fog continued very thick all day; but being unwilling to stop on this account, we set out again at half-past six in the evening, and passed over several small flat pieces with no great difficulty, but with much loss of time in launching and hauling up the boats. The fog still continued very thick, and the

ice of the same broken kind as before ; till, towards the end of our day's journey, we landed on the only really level floe we had yet met with. It was, however, only three quarters of a mile in length, but being almost clear of snow, afforded such good travelling, that, although much fatigued at the time, we hauled the boats, and all the baggage, across it at one journey, at the rate of about two miles an hour, and halted at the northern margin at five A.M., on the 7th. The prospect beyond was still very unfavourable, and at eight in the evening, when we again launched the boats, there was not a piece of large or level ice to be seen in a northern direction. After an hour, we arrived at a very difficult pass, which required all our strength, as well as care, to accomplish. We had first to launch the boats into the water over a high and rugged margin, and then to haul them across a number of irregular and ill-connected masses, sometimes making bridges of them for the conveyance of ourselves and our provisions, and once having to cut a passage through a ridge of hummocks which lay across our path. We were thus more than two hours in proceeding a distance not exceeding one hundred and fifty yards. Notwithstanding these discouraging difficulties, the men laboured with great cheerfulness and good-will, being animated with the hope of soon reaching the more continuous body which had been

considered as composing the "main ice" to the northward of Spitzbergen, and which Captain Lutwidge, about the same meridian, and more than a degree to the southward of this, describes as "one continued plain of smooth, unbroken ice, bounded only by the horizon*."

We halted at six A.M., on the 8th, in time to avoid a great deal of rain which fell during the day, and again proceeded on our journey at eight in the evening, the wind being fresh from the E.S.E., with thick wet weather. We now met with detached ice of a still lighter kind than before, the only floe in sight being much to the eastward of our course. This we reached, after considerable labour, in the hope of its leading to the northward, which it did for about one mile, and we then came to the same kind of loose ice as before. We observed in one place a little mud in some small holes in the ice, being the first we had seen for a week. On the morning of the 9th July, we enjoyed the indescribable comfort of two or three hours' clear dry weather, but had scarcely hung up our wet clothes, after halting at five A.M., when it again came on to rain; but as everything was as wet as it could be, we left them out to take their chance. We again allowed ourselves the luxury of a hot supper, having

* Phipps's Voyage towards the North Pole, p. 60.

shot eight or nine birds since our last. The rain continued most of the day, but we set out at half-past seven P.M., crossing loose ice, as usual, and much of the surface consisting of the detached vertical needles before described. After an hour, the rain became so heavy, that we halted to save our shirts, which were the only dry clothes belonging to us. Soon after midnight, the rain being succeeded by one of the thickest fogs I ever saw, we again proceeded groping our way almost yard by yard from one small piece of ice to another, and were very fortunate in hitting upon some with level surfaces, and also a few tolerable-sized holes of water. At half-past two we reached a floe, which appeared at first a level and large one; but on landing we were much mortified to find it so covered with immense ponds, or rather small lakes of fresh water, that to accomplish two miles in a north direction, we were under the necessity of walking from three to four, the water being too deep for wading, and from two hundred yards to one-third of a mile in length. Towards the northern margin we came among large hummocks, having very deep snow about them, so that this floe, which had appeared so promising, proved very laborious travelling, obliging us, in some parts, to make three journeys with our loads; that is, to traverse the same road five times over. We halted at six A.M.,

having made only one mile and three-quarters in a N.N.W. direction, the wind still blowing fresh from the eastward, with a thick fog. We were in latitude 82° 3′ 19″, and longitude, by chronometers, 23° 17′ E., and we found the variation of the magnetic needle to be 13° 41′, westerly. We moved again at seven P.M., with the weather nearly as foggy as before, our road lying across a very hummocky floe, on which we had considerable difficulty in getting the boats, the ice being extremely unfavourable both for launching and hauling them up. We afterwards passed over two or three other small floes, and crossed a lane of water a mile long in an east and west direction, but not more than two hundred yards wide from north to south. After stopping an hour at midnight to dine, we were again annoyed by a heavy fall of rain, a phenomenon almost as new to us in these regions, until this summer, as it was harassing and unhealthy. Being anxious, however, to take advantage of a lane of water that seemed to lead northerly, we launched the boats, and by the time that we had crossed it, which gave us only half a mile of northing, the rain had become much harder, and our outer clothes, bread-bags, and boats, were thoroughly wet. To keep our shirts dry (which was the more necessary as we had only one spare one between every two individuals) we got under the shelter of

our awnings, and the rain abating in half an hour, again proceeded, giving the men a small quantity of rum and a mouthful of biscuit, by way of refreshing them a little in this uncomfortable condition. After this we had better travelling on the ice, and also crossed one or two larger holes of water than we had met with for a long time, and halted, for our night's rest, at half-past seven A.M., after nearly twelve hours' hard, but not altogether unsuccessful labour, having traversed about twelve miles, and made good, by our account, seven and a half, in a N.W.b.N. direction. We had gradually met with fewer birds as we advanced to the northward; to-day we saw only one kittiwake, and a boatswain (*lestris parasiticus*). The floes now around us were heavier than any that we had before passed; perhaps about the same as those usually met with in Baffin's Bay.—The rain ceased soon after we had halted, but was succeeded by a thick wet fog, which obliged us, when we continued our journey, to put on our travelling clothes in the same dripping state as when we took them off. The wind continued fresh from the south-eastward, and at nine P.M. the weather suddenly cleared up, and gave us once more the inconceivably cheering, I had almost said the blessed sight of a blue sky, with hard well-defined white clouds floating across it. There was not, however, much dryness in the atmosphere, the

dew point, by Daniell's hygrometer, being 35° at nine P.M., when the temperature of the atmosphere was the same. We considered ourselves fortunate in having any floes to cross, though only one or two exceeded a quarter of a mile in length, and all very rugged and much covered with ponds of water; but this was better than the more frequent and hazardous launching among small pieces. Halting at midnight to dine, we obtained the sun's altitude, which placed us in latitude 82° 11′ 51″. On continuing our journey, after dinner, we still had small floe-pieces to pass over, several of which gave us much labour, and occupied considerable time, being just too widely separated to make bridges of the boats, so that launching them was unavoidable. We halted at six A.M., after making, by our day's exertions, only three miles and a half of northing, and then obtained the dip of the magnetic needle 82° 16′.3, and the variation 15° 6′ westerly, our latitude at this time being 82° 14′ 28″, and our longitude, by chronometers, 22° 4′ E. Some observations for the magnetic intensity were also obtained at this place. This proved a remarkably clear and fine day, with a moderate breeze from the S.E. The thermometer was from 35° to 36° in the shade during most of the day, and this, with a clear sky overhead, was now absolute luxury to us. Setting out again at seven P.M., we crossed

a small lane of water to another floe, but this was so intersected by ponds, and by streams running into the sea, that we had to make a very circuitous route, some of the ponds being half a mile in length. If anything could have compensated for the delay these occasioned us, it would have been the beautiful blue colour peculiar to these superglacial lakes, which is certainly one of the most pleasing tints in nature. Notwithstanding the immense quantity of water still upon the ice, and which always afforded us a pure and abundant supply of this indispensable article, we now observed a mark round the banks of all the ponds, showing that the water was less deep in them, by several inches, than it had been somewhat earlier in the summer; and, indeed, from about this time, some small diminution in its quantity began to be perceptible to ourselves. We also encountered to-day a more than usual proportion of the "pen-knife" ice, the needles of which were fourteen inches long, and so loose as to occasion great labour in walking and dragging the boats over it. A parhelion, slightly tinged with the prismatic colours, appeared on the western side of the sun, and remained for two or three hours. At ten P.M. we exchanged a troublesome floe for still more troublesome loose ice, which kept us constantly launching and hauling up the boats, with extreme risk to them as well as

to the provisions, and most harassing labour to the officers and men. Still our work went on cheerfully, our hope resting on at length meeting with something like continuous and level ice. We halted for our resting-time at six A.M. on the 13th, having gained only two miles and a half of northing, over a road of about four, and this accomplished by ten hours of fatiguing exertion. We saw, in the course of this journey, besides an ivory-gull and a mallemucke, one of the very beautiful gulls first discovered by Lieutenant Ross at Arlagnuk, in our voyage of 1823, and named, in compliment to him, *Larus Rossii* *. We were here in latitude, by the noon observation, 82° 17′ 10″, and could find no bottom with four hundred fathoms of line. The temperature of some water brought up from that depth in a copper bottle contrived for the purpose, was 31° on coming to the surface, and its specific gravity, when weighed at the temperature of 41°, 1.0283. The temperature of the surface-water at the time was 32½°, and its specific gravity only 1.004, owing to the intermixture of fresh water from the ice. A thermometer, having its bulb placed upon the surface of the ice, stood at 33°, the air being 36°; and the temperature of the

* Narrative of the Second Voyage, p. 449; and Dr. Richardson's Zoological Appendix, p. 359.—4to.

streams and pools of fresh water was 32½°. We launched the boats at seven in the evening, the wind being moderate from the E.S.E., with fine clear weather, and were still mortified in finding that no improvement took place in the road over which we had to travel; for the ice now before us was, if possible, more broken up and more difficult to pass over than ever. Much of it was also so thin as to be extremely dangerous for the provisions, and it was often a nervous thing to see our whole means of existence lying on a decayed sheet, having holes quite through it in many parts, and which the smallest motion among the surrounding masses might have instantly broken into pieces. There was, however, no choice, except between this road and the more rugged though safer hummucks, which cost ten times the labour to pass over. Mounting one of the highest of these at nine P.M., we could discover nothing to the northward but the same broken and irregular surface; and we now began to doubt whether we should at all meet with the solid fields of unbroken ice which every account had led us to expect in a much lower latitude than this. The weather was to-night remarkably clear, with the most regular and beautiful mackarel sky I ever saw; and no land, nor any indication of it, was visible from a height of thirty to forty feet above the level of the sea, to which

elevation many of the hummocks rose. A very strong yellow ice-blink overspread the whole northern horizon.

We stopped to dine at half an hour past midnight, after more than five hours' unceasing labour, in the course of which time we had only accomplished a mile and a half due north, though we had traversed from three to four, and walked at least ten, having made three journeys a great part of the way. We had launched and hauled up the boats four times, and dragged them over twenty-five separate pieces of ice. After dinner, we continued the same kind of travelling, which was, beyond all description, harassing to the officers and men. In crossing from mass to mass, several of which were separated about half the length of our sledges, the officers were stationed at the most difficult places to see that no precaution was omitted which could ensure the safety of the provisions. Only one individual was allowed to jump over at a time, or to stand near either margin, for fear of the weight being too great for it; and when three or four men had separately crossed, the sledge was cautiously drawn up to the edge, and the word being given, the men suddenly ran away with the ropes, so as to allow no time for its falling in, if the ice should break. In one or two instances this day we were obliged to have recourse to the still more hazardous

expedient of ferrying all our provisions across a narrow pool of water upon a small piece of ice, the situation being such that our boats could not be thus made use of. Wherever the boats could possibly be hauled across with the provisions in them, we preferred this as a safer mode of proceeding; but this very precaution had nearly cost us dear to-day, for while we were thus dragging one of them along, the ice on which she rested began to sink, and then turned over on one side, almost upsetting the boat with the provisions in her. However, a number of the men jumped upon the ice with great activity, in order to restore its balance by their weight, and having cautiously unloaded and hauled her back, we got her over in another place. Having at length succeeded in reaching a small floe, we halted at half past six A.M., much wearied by nearly eleven hours' exertion, by which we had only advanced three miles and a half in a N.N.W. direction. The wind again freshened up strong from the S.E.b.E., with a thick fog, which shortly after changed to rain. We saw only a single mallemucke and a bear in our last journey; the latter was wounded, but easily escaped our pursuit, and this to our no small disappointment, for we began to find our allowance of provisions too little to satisfy us, and would gladly have added to it by a supply of this kind. We rose at six P.M., and prepared to set out, but it rained so hard and

so incessantly that it would have been impossible to move without a complete drenching. I had never before seen any rain in the Polar regions to be compared to this, which continued, without intermission, for twenty-one hours, sometimes falling with great violence and in large drops, especially about two A.M., on the 15th of July. It held up a little at five, and at six we set out; but the rain soon recommenced, though less heavily than before. In proceeding over the floe on which we had slept, we found it alternately level and "hummocky," the former affording sufficiently good travelling to allow us to carry all our baggage at one journey with great ease, one boat's crew occasionally assisting the other for a few yards together; but the hummocks cost us immense labour, nothing but a "bowline haul" being sufficient, with all our hands, to get the boats across or between them. At eight the rain again became heavier, and we got under shelter of our awnings for a quarter of an hour, to keep our shirts and other flannel clothes dry; these being the only things we now had on which were not thoroughly wet. At nine we did the same, but before ten were obliged to halt altogether, the rain coming down in torrents, and the men being much exhausted by continued wet and cold, though the thermometer was at 36°, which was somewhat above our usual temperature. The wind shifted to the W.S.W. in

the afternoon, and the rain was succeeded by a thick fog, after it had been falling for thirty hours out of the last thirty-one. At half past seven P.M. we again pursued our journey, and, after much laborious travelling, were fortunate, considering the fog, in hitting upon a floe which proved the longest we had yet crossed, being three miles from south to north, though alternately rugged and flat. From this we launched into a lane of water half a mile long from east to west, but which only gave us a hundred and fifty yards of northing. We had then several other smaller pools to cross, and on one occasion were obliged to cut a place for hauling up the boats, the margin consisting of a tier of high and continuous hummocks. In hauling one of the boats over a "tongue" of ice, where she only floated in part, her bottom-boards were raised by the pressure against the ice below, but so strong and elastic was their construction that she did not suffer the slightest external injury. We frequently, during fogs, saw a broad white fog-bow opposite the sun; but one which appeared to-night was strongly tinged with the prismatic colours.

The floe on which we stopped to dine, at one A.M. on the 16th, was not more than four feet thick, and its extent half a mile square; and on this we had the rare advantage of carrying all our loads at one journey. At half past six the fog cleared away, and

gave us beautiful weather for drying our clothes, and once more the cheerful sight of the blue sky. We halted at half past seven, after being twelve hours on the road, having made a N.b.W. course, distance only six miles and a quarter, though we had traversed nine miles. The thermometer was unusually high in the shade, having risen to $37\frac{3}{4}^{\circ}$; in the sun it stood at 47°; a blackened bulb raised it to $51\frac{1}{2}^{\circ}$; and the same thermometer held against the black painted side of the boat, rose to $58\frac{1}{2}^{\circ}$. This was during a calm; but almost the smallest breath of wind immediately reduced them all below 40°. We saw, during this last journey, a mallemucke and a second Ross gull: and a couple of small flies (to us an event of ridiculous importance) were found upon the ice. We here observed the variation of the magnetic needle to be 17° 28′ westerly, being in latitude, by observation, 82° 26′ 44″ (or two miles to the southward of our reckoning), and in longitude, by chronometers, 20° 32′ 13″ east.

We again pursued our way at seven in the evening, having the unusual comfort of putting on dry stockings, and the no less rare luxury of delightfully pleasant weather, the wind being moderate from the S.S.E. It was so warm in the sun, though the temperature in the shade was only 35°, that the tar was running out of the seams of the boats; and a blackened bulb held against the paint-work raised

the thermometer to 72°. We were to-day also unusually fortunate in meeting with some open water, one lane of which gave us, though by a very crooked course, a mile and a half of northing, besides other smaller ones. The sea-water, in one of the largest of these lanes, was at the temperature of 34°, being almost the only instance I remember of such an occurrence in a sea thus loaded with ice, and at so short a distance from it. We now no longer saw any birds in the "holes" of water, as we had done farther south. From a hummock forty feet above the level of the sea, and with a very clear and transparent atmosphere, nothing but ice, with a few small patches of water, could be discerned in any direction. The floes were larger to-day, and the ice, upon the whole, of heavier dimensions than any we had yet met with. The general thickness of the floes, however, did not exceed nine or ten feet, which is not more than the usual thickness of those in Baffin's Bay and Hudson's Strait; while it is a great deal less than the ordinary dimensions of the ice about Melville Peninsula, and not half the thickness of that towards the western extremity of Melville Island, though these places lie from eight to twenty degrees south of our present latitude. We found the snow this night very soft, in consequence of the warmth of the weather and the late heavy rains; making the travelling extremely labo-

rious. In fact, the upper surface of the heavier floes is *all* snow; so that every warm day, even to the very close of the summer, softens it to the depth of several inches. We also met to-night with a great deal more of the "penknife" ice, the margins of some of the floes exhibiting a section of it having the needles above eighteen inches in length, and all quite loose and easily detached by the hand. I may also here mention another peculiar kind of ice consisting of oblong slabs, which appear to have been imbedded by heavy pressure in the surface of the floe, and have at length, by alternate thawing and freezing, become a part of it. These slabs, still retaining their angular shape, and assuming a smoothly polished and handsome surface, appear not unlike the lumps of feldspar in porphyry, on which account we called it "porphyritic" ice. For one or two nights past we had observed the clouds near and opposite to the sun to be tinged with a little red towards midnight; the sun having probably been too high before this period.

The 17th of July being one of the days on which the Royal Society of Edinburgh have proposed to institute a series of simultaneous meteorological observations, we commenced an hourly register of every phenomenon which came under our notice, and which our instruments and other circumstances would permit, and continued most of them through-

out the day. We this morning crossed a floe three miles in length, which was equal in extent to any we had seen : the thickness of this, as measured in a large hole near the middle of it, was only from five to six feet. We halted at seven A.M., after a long and fatiguing journey, our distance made good in a north direction being six miles and a half. Being more fatigued than usual, and the last week having produced us no birds for supper, we allowed ourselves a mess of hot cocoa, which seemed quite a cordial to us. Our latitude, observed at noon, was 82° 32′ 10″, being more than a mile to the southward of the reckoning, though the wind had been constantly from that quarter during the twenty-four hours. We had seen, in our last journey, only one ivory-gull, one mallemucke, and another Ross gull. The 17th proved one of the warmest and most pleasant days to the feelings that we had during the whole time we were upon the ice ; the thermometer in the shade being from 36° to 40° for several hours, and in the sun from 42° to 51°. It produced, however, as usual, the serious disadvantage of rendering the snow very soft, and increasing the fatigue of travelling. Besides this, on setting out at eight P.M., we found our road to lie over some of the most broken ice we had ever yet encountered, obliging us to make bridge after bridge with the boats almost every thirty or forty

yards, for three hours together, in which time we scarcely made half a mile of northing. The small floe-piece which we at length reached was a very rugged one, and the sun was so bright as to render the glare of the snow painfully oppressive to the eyes. The latitude, observed at midnight, was 82° 32′ 15″, or nearly the same as at noon, though we had certainly walked one mile to the northward.

After midnight the road became, if possible, worse, and the prospect to the northward more discouraging than before; nothing but loose and very small pieces of ice being in sight over which the boats were dragged almost entirely by a "standing-pull." When we halted to dine, at two A.M. on the 18th, we were not sorry to see a fog coming on, our eyes having begun to fail for some time. Setting out again in an hour, we found no improvement in the travelling; but being the more anxious to get past this harassing kind of road, we continued our work till half-past eight, when we reached a small floe-piece, the only one in sight, and there halted for the night. Thus, after more than eleven hours' actual labour, requiring, for the most part, our whole strength to be exerted, we had travelled over a space not exceeding four miles, of which only two were made good in a N.N.W. direction. The men were so exhausted with their day's work, that it was absolutely necessary to give them something hot for

supper, and we again served a little cocoa for that purpose. They were also put into good spirits by our having killed a small seal, which, the following night, gave us an excellent supper. The meat of these young animals is tender, and free from oiliness; but it certainly has a smell and a look which would not have been agreeable to any but very hungry people like ourselves. We also considered it a great prize, on account of its blubber, which gave us fuel sufficient for cooking six hot messes for our whole party, though the animal only weighed thirty pounds in the whole. These animals, of which we usually saw two or three in almost every day's journey, are, when very small, best procured by shooting them in the head with small shot; but, if quite killed at once, they are apt to sink immediately and be lost. The temperature of this seal was 98°, immediately after death.

The fog dispersing before noon, we had another clear and fine day, but, as usual, paid dear for this comfort by the increased softness of the snow and the oppressive glare reflected from it. Setting out at half past seven in the evening, we found the sun more distressing to the eyes than we had ever yet had it, bidding defiance to our crape veils and wire-gauze eye-shades*; but a more effectual screen

* We found the best preservative against this glare to

was afforded by the sun becoming clouded about nine P. M. Our way still lay over small loose masses, to which we were now so accustomed as scarcely to expect any other; for it was evident enough that we were not improving in this respect as we advanced northwards. At half-past nine we came to a very difficult crossing among the loose ice, which, however, we were encouraged to attempt by seeing a floe of some magnitude beyond it. We had to convey the sledges and provisions one way, and to haul the boats over by another. One of the masses over which the boats came, began to roll about while one of them was upon it, giving us reason to apprehend its upsetting, which must have been attended with some very serious consequence: fortunately, however, it retained its equilibrium long enough to allow us to get the boat past it in safety, not without several of the men falling overboard, in consequence of the long jumps we had to make, and the edges breaking with their weight. Towards midnight we had some smart showers of rain, with dry clear intervals between them, just as on an April day in England. This kind of weather, which continued for several hours, harassed the men very much, as it was too warm for working with

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be a pair of spectacles, having the glass of a bluish-green colour, and with side-screens to them.

their jackets on, and they wetted their shirt-sleeves when they took them off. I think the blue sky between the clouds this night was as transparent, and almost of as deep a blue as I ever saw it. We had nearly incurred a second disaster in launching one of the boats from an awkward-shaped mass, which brought her gunwale close to the water, and there kept her for a quarter of an hour in a very dangerous situation, without our being able to move her one way or the other, while the loose ice was in motion about us at the time. At length, however, we contrived to reach the floe, after consuming the best part of the day's journey in effecting it; and when we halted to rest at half past seven A.M., twelve hours' labour had not been repaid by more than three miles and a half gained, on a N.N.E. course.

It is remarkable that we had hitherto been so much favoured by the wind, that only a single northerly one, and that very moderate, and of short duration, appears upon our journals up to this day, when a breeze sprung up from that quarter, accompanied by a thick fog. Though this wind appeared to be the means of opening several lanes of water, of which we gladly took advantage when we set out at eight P.M., yet we were aware that any such effect could only be produced by the ice drifting to the southward, and would, therefore, have willingly dispensed with this apparent facility in proceeding.

We found the temperature of the sea-water, in a large lane, to be 34°, and once as high as 34½°, which, as before remarked, is very unusual in the middle of a large body of ice. We hauled over one very heavy floe, about half a mile in length, of which the thickness was from fifteen to twenty feet; with huge hummocks at the margin, indicating a tremendous pressure at some time or other. On the morning of the 20th we came to a good deal of ice, which formed a striking contrast with the other, being composed of flat bay-floes, not three feet thick, which would have afforded us good travelling, had they not recently been broken into small pieces, obliging us to launch frequently from one to another. These floes had been the product of the last winter only, having probably been formed in some of the interstices left between the larger bodies; and, from what we saw of them, there could be little doubt of their being all dissolved before the next autumnal frost. We halted at seven A.M., having, by our reckoning, accomplished six miles and a half in a N.N.W. direction, the distance traversed being ten miles and a half. It may, therefore, be imagined how great was our mortification in finding that our latitude, by observation at noon, was only 82° 36′ 52″, being less than *five* miles to the northward of our place at noon on the 17th, since which time we had certainly travelled *twelve* in that direction.

Under these discouraging circumstances, which

we carefully avoided making known to the men, we pursued our journey at eight P.M., the wind blowing from the N.W. b. N. with overcast but clear weather. A little small snow fell during the night, composed of very minute irregular needles. We were, as usual, much annoyed by the numerous loose pieces over which we had to pass, but a large proportion of these being composed of flat bay-ice, we made tolerable progress. At eleven P.M. we could see nothing before us but this thin ice, much of which was not fit to bear the weight of our boats and provisions, and more caution than ever was requisite in selecting the route by which we were to pass. At five A.M. on the 21st, having gone a-head, as usual, upon a bay-floe, to search for the best road, I heard a more than ordinary noise and bustle among the people who were bringing up the boats behind. On returning to them, I found that we had narrowly, and most providentially, escaped a serious calamity; the floe having broken under the weight of the boats and sledges, and the latter having nearly been lost through the ice. Some of the men went completely through, and one of them was only held up by his drag-belt being attached to a sledge which happened to be on firmer ice. Fortunately the bread had, by way of security, been kept in the boats, or this additional weight would undoubtedly have sunk the sledges, and probably some of

the men with them. As it was, we happily escaped, though we hardly knew how, with a good deal of wetting; and, cautiously approaching the boats, drew them to a stronger part of the ice, after which we continued our journey till half past six A.M., when we halted to rest, having travelled about seven miles N.N.W. We here found the dip of the magnetic needle to be 82° 21′.8, and the variation 19° 5′ westerly, our longitude by chronometers being 19° 52′ east, and the latitude 82° 39′ 10″, being only two miles and a quarter to the northward of the preceding day's observation, or four miles and a half to the southward of our reckoning.

Our sportsmen had the good fortune to kill another seal to-day, rather larger than the first, which again proved a most welcome addition to our provisions and fuel. Indeed, after this supply of the latter, we were enabled to allow ourselves every night a pint of warm water for supper, each man making his own soup from such a portion of his bread and pemmican as he could save from dinner. Setting out again at seven in the evening, we were not sorry to find the weather quite calm, which sailors account "half a fair wind," for it was now evident that nothing but a southerly breeze could enable us to make any tolerable progress, or to regain what we had lately lost. The weather was

warm and pleasant, though the thermometer was only 35°. At half-past eight we observed a fog-bank rising to the southward, and another equally fast to the north. While we were anxiously watching to see which would prevail, that from the south first came over us, with a light air from that quarter; this, however, was of short duration, the weather again becoming calm and perfectly clear in an hour afterwards. We observed this night, and only on three or four other occasions, the most brilliant prismatic colours imaginable, reflected from the snow crystals on the ice, the tints being principally the red, orange, green, and violet. This phenomenon, which occurred when the sun was low (and, I suppose, only with crystals of a peculiar form), is always seen, of course, between the sun and the observer, and the reflecting surfaces cover a space which assumes a kind of semi-elliptical form. It becomes more distant and less distinct as the sun rises, and is then altogether lost. This beautiful natural appearance may possibly be familiar to many persons, but, as it was new to us, I have described it just as it occurred.

Our travelling to-night was the very best we had during this excursion; for though we had to launch and haul up the boats frequently, an operation which, under the most favourable circumstances, necessarily occupies much time, yet the floes being large and

tolerably level, and some good lanes of water occurring, we made, according to the most moderate calculation, between ten and eleven miles in a N.N.E. direction, and traversed a distance of about seventeen. We halted at a quarter past eight A.M., after more than twelve hours' actual travelling, by which the people were extremely fatigued; but while our work seemed to be repaid by anything like progress, the men laboured with great cheerfulness to the utmost of their strength. A solitary rotge, two small seals, and a fish twelve inches long (of which we had before noticed one or two), were the only living creatures seen to-day, notwithstanding the unusual extent of the open water. The ice over which we had travelled was by far the largest and heaviest we met with during our whole journey; this, indeed, was the only occasion on which we saw anything answering, in the slightest degree, to the descriptions given of the main ice. The largest floe was from two and a half to three miles square, and in some places the thickness of the ice was from fifteen to twenty feet. Still these were not "fields," for in no instance had we any difficulty in seeing the margin of them in more directions than one, by mounting a tolerable high hummock; and, from a much less elevation than that of a ship's mast-head, the whole extent and form of such floes would have been very easily

discernible. However, it was a satisfaction to observe that the ice had certainly improved, and we now ventured to hope that, for the short time that we could still pursue our outward journey, our progress would be more commensurate with our exertions than it had hitherto proved. In proportion, then, to the hopes we had begun to entertain, was our disappointment in finding, at noon, that we were in latitude 82° 43′ 5″, or not quite four miles to the northward of yesterday's observation, instead of the ten or eleven which we had travelled! However, we determined to continue to the last our utmost exertions, though we could never once encourage the men by assuring them of our making good progress, and, setting out at seven in the evening, soon found that our hope of having permanently reached better ice was not to be realised, for the floe on which we slept was so full of hummocks, that it occupied us just six hours to cross it, the distance in a straight line not exceeding two miles and a half. At midnight, on the 22d of July, we had a good observation in latitude 82° 43′ 32″, being, as usual, the mean of two observers. After this, our road once more consisted of small rugged masses and little pools of water, requiring many launches. In addition to these impediments, the wind, which had been from the W.N.W. at our setting out, again shifted to north,

and freshened up considerably. We halted at seven A.M. on the 23rd, after a laborious day's work, and, I must confess, a disheartening one to those who knew to how little effect we were struggling, which, however, the men did not, though they often laughing remarked that "we were a long time getting to this 83°." Being anxious to make up, in some measure, for the drift which the present northerly wind was, in all probability, occasioning, we rose earlier than usual, and set off at half-past four in the evening. At half-past five P.M. we witnessed a very beautiful natural phenomenon. A broad white fog-bow first appeared opposite the sun, as was very commonly the case; presently it became strongly tinged with the prismatic colours, and soon afterwards no less than five other complete arches were formed within the main bow, the interior ones being gradually narrower than those without, but the whole of them beautifully coloured. The larger bow, and the one next within it, had the red on the outer or upper part of the circle, the others on the inner side. Lieutenant Ross measured the altitude of the outer arch, which was 20° 45′ in the centre, its extent at the horizon 72½°, the altitude of the sun, which was bright at the time, being 20° 40′. The fog was quite wet, while the smaller bows were visible, which was only for about twenty minutes, though the large one remained, as usual, for hours

together. We were now once more annoyed by a quantity of broken ice, so thin as to require increased caution in trusting our loads upon it; indeed, we passed, during this night, some of the lightest ice we had yet seen. Several of us began to feel, in our eyes, the bad effects of having set out somewhat earlier in the day than usual. My own were so painful with having strained them in looking out for the road, that I was unable any longer to see my way, and was therefore obliged, for a time, to give up the pioneering duty to Lieutenant Ross.

We halted at a quarter past three on the morning of the 24th, having made four miles and a half N.N.E., over a road of about seven and a half, most of which we traversed, as usual, three times. The only notice of animal life occurring in our journals in the course of this day's travelling, consists in our having "*heard* a rotge!" The wind continued fresh from the northward, with small snow, of which about two inches fell in twenty-four hours. We moved again at four P.M. over a difficult road composed of small and rugged ice. Lieutenant Ross, in exerting himself to drag his boat along, received a severe squeeze between her gunwale and a hummock of ice, which gave Mr. Beverly reason to apprehend at first, from the numbness and sickness which ensued, that his spine might be affected; but happily no such bad consequences followed this accident. So

small was the ice now around us, that we were obliged to halt for the night at two A.M. on the 25th, being upon the only piece in sight, in any direction, on which we could venture to trust the boats while we rested. Such was the ice in the latitude of $82\frac{3}{4}°$. We had travelled, during this journey, two miles and three quarters N.$\frac{1}{2}$E., and saw but one mallemucke and one Ross gull in the course of it.

The wind had now got round to the W.N.W., with raw foggy weather, and continued to blow fresh all day. Snow came on soon after our halting, and about two inches had fallen when we moved again at half-past four P.M. We continued our journey in this inclement weather for three hours, hauling from piece to piece, and not making more than three-quarters of a mile progress, till our clothes and bread-bags had become very wet, and the snow fell so thick that we could no longer see our way. It was, therefore, necessary to halt, which we did at half-past seven, putting the awnings over the boats, changing our wet clothes, and giving the men employment for the mere sake of occupying their minds. We were housed just in good time; for the wind soon after freshened to a gale at W.N.W., with sleet and rain, and a most inclement night succeeded. The weather improving towards noon on the 26th, we obtained the meridian altitude of the sun,

by which we found ourselves in latitude 82° 40′ 23″; so that, since our last observation (at midnight on the 22d), we had lost by drift no less than thirteen miles and a half; for we were now more than three miles to the *southward* of that observation, though we had certainly travelled between ten and eleven due north in this interval! Again, we were but one mile to the north of our place at noon on the 21st, though we had estimated our distance made good at twenty-three miles. Thus it appeared that for the last five days we had been struggling against a southerly drift exceeding four miles per day.

It had, for some time past, been too evident that the nature of the ice with which we had to contend was such, and its drift to the southward, especially with a northerly wind, so great, as to put beyond our reach anything but a very moderate share of success in travelling to the northward. Still, however, we had been anxious to reach the highest latitude which our means would allow, and, with this view, although our whole object had long become unattainable, had pushed on to the northward for thirty-five days, or until half our resources were expended, and the middle of our season arrived. For the last few days the eighty-third parallel was the limit to which we had ventured to extend our hopes; but even this expectation had become considerably weakened since the setting in of the last

northerly wind, which continued to drive us to the southward, during the necessary hours of rest, nearly as much as we could gain by eleven or twelve hours of daily labour. Had our success been at all proportionate to our exertions, it was my full intention to have proceeded a few days beyond the middle of the period for which we were provided, trusting to the resources we expected to find at Table Island. But this was so far from being the case, that I could not but consider it as incurring useless fatigue to the officers and men, and unnecessary wear and tear for the boats, to persevere any longer in the attempt. I determined, therefore, on giving the people one entire day's rest, which they very much needed, and time to wash and mend their clothes, while the officers were occupied in making all the observations which might be interesting in this latitude; and then to set out on our return on the following day. Having communicated my intentions to the people, who were all much disappointed in finding how little their labours had effected, we set about our respective occupations, and were much favoured by a remarkably fine day.

The dip of the magnetic needle was here 82° 21′.6, and the variation 18° 10′ westerly, our latitude being 82° 40′ 23″, and our longitude 19° 25′ east of Greenwich. The highest latitude we reached was probably at seven A.M. on the 23rd,

when, after the midnight observation, we travelled, by our account, something more than a mile and a half which would carry us a little beyond 82° 45′. Some observations for the magnetic intensity were obtained at this station. We here found no bottom with five hundred fathoms of line; the specific gravity of some water brought up from that depth was 1.0340, being at the temperature of 37° when weighed. A Six's thermometer attached to the lead failed to indicate the temperature below, owing to the mercury rising past the index. The sea-water from the surface was, as usual, near the ice in the summer time, so nearly fresh as to require only three grains to be added to the hydrometer, and at six fathoms below the surface it was 1.0225, at temperature 37°. At the extreme point of our journey, our distance from the Hecla was only 172 miles in a S. 8° W. direction. To accomplish this distance we had traversed, by our reckoning, 292 miles, of which about 100 were performed by water, previously to our entering the ice. As we travelled by far the greater part of our distance on the ice three, and not unfrequently five times over, we may safely multiply the length of the road by two and a half; so that our whole distance, on a very moderate calculation, amounted to five hundred and eighty geographical, or six hundred and sixty-eight statute miles, being nearly sufficient to have reached the

Pole in a direct line. Up to this period we had been particularly fortunate in the preservation of our health; neither sickness nor casualties having occurred among us, with the exception of the trifling accidents already mentioned, a few bowel complaints, which were soon removed by care, and some rather troublesome cases of chilblains arising from our constant exposure to wet and cold.

Our day of rest (27th July) proved one of the warmest and most pleasant to the feelings we had yet had upon the ice, though the thermometer was only from 31° to 36° in the shade, and 37° in the sun, with occasional fog; but to persons living constantly in the open air, calm and tolerably dry weather affords absolute enjoyment, especially by contrast with what we had lately experienced. Our ensigns and pendants were displayed during the day; and sincerely as we regretted not having been able to hoist the British flag in the highest latitude to which we had aspired, we shall perhaps be excused in having felt some little pride in being the bearers of it to a parallel considerably beyond that mentioned in any other well authenticated record.

During some intervals of very clear weather, we could perceive nothing like land in any direction from our present situation, and a strong yellow ice-blink always overspread the northern horizon. At three A.M., on the 27th, we observed a phenomenon

resembling that mentioned on the 23rd, but much less perfect and distinct, three smaller fog-bows at times appearing within a large one, the legs of the arches being distinctly coloured as before. The sun's altitude at this time was $12\frac{1}{2}°$, that of the centre of the outer arch 28°, and its extent at the horizon $77\frac{1}{2}°$. At 4.30 P.M., we set out on our return to the southward, and I can safely say that, dreary and cheerless as were the scenes we were about to leave, we never turned homewards with so little satisfaction as on this occasion. To afford a chance of determining the general set of the current from this latitude, we left upon a hummock of ice a paper, sewn up in a water-proof canvass bag, and then inclosed in a water-tight tin canister, giving an account of the place where it was deposited, and requesting any person, who should find it, to send it to the Secretary of the Admiralty. The wind sprung up from the S.E., and, as usual with any *change* of wind, opened a few holes among the ice, which assisted us a little; but, notwithstanding this, so unfavourable was the ice for travelling, that, when we halted at three A.M., on the 28th, we had only made three miles and a quarter of southing. The wind then gradually shifted to the N.E. and freshened up, with heavy snow, which continued to fall during the whole day. Nothing worthy of particular notice occurred on

this and the following day, on each of which we travelled eleven hours, finding the water somewhat more open and the floes less rugged than usual. Two of these were from two to three miles in length, and, in one instance, the surface was sufficiently level to allow us to drag the boats for three-quarters of a mile, with the sledges *in tow*. Towards the end of our journey on the morning of the 30th, we came to an extensive collection of light bay-ice, such as we had passed on our outward journey, only that it was now broken into much smaller pieces. It was probably, indeed, the same ice, as we saw our old tracks on some of the larger floes. Our latitude, observed at noon, was 82° 20′ 37″, or twelve miles and a half to the southward of the preceding day's observation, though we had travelled only seven by our account; so that the drift of the ice had assisted us in gaining five miles and a half in that interval.

Setting out to continue our journey at five P.M., we could discover nothing from a high hummock but the kind of bay-ice before noticed, except the floe on which we had slept. We were, therefore, obliged to go along the margin of this floe a long way out of our road to the south-eastward, to avoid the danger as well as labour of crossing it, and at length discovered some more secure ice beyond it, though still in small detached pieces. We saw to-day a great many

small seals, and wounded several, but could not get them, though we tried as hard as hungry people could do. The wind had now backed to the north, and still blew fresh; towards midnight it veered to the N.W., with small snow. The travelling was very laborious, but we were obliged to go on, till we could get to a secure floe for resting upon, which we could not effect till half-past four on the 31st, when, in eleven hours and a half, we had not made more than two miles and a quarter of southing. However, we had the satisfaction, which was denied us on our outward journey, of feeling confident that we should keep all that we gained, and probably make a good deal more; which, indeed, proved to be the case, for at noon we found our latitude, by observation, to be 82° 14′ 25″, or four miles to the southward of the reckoning. The variation of the magnetic needle observed here was 22° 23′ 16″ westerly, the longitude being 17° 18′ 19″ E., showing an increase in that phenomenon in going westward, in this as well as in lower latitudes.

Our next day's journey, which we commenced at 6.30 P.M., was one of the most laborious we had yet experienced, the ice being composed of loose rugged pieces, very dangerous as well as difficult to pass over with the provisions, and requiring a "bowline-haul" with the boats during a great part of the journey. We halted at five A. M., on the 1st of

August, the officers and men being quite knocked up, and having made by our account only two miles of southing, over a road not less than five in length. Heavy rain prevented our setting out again till eight in the evening, when the weather cleared up, the wind now blowing fresh from the W.S.W. We had, as usual, a great quantity of loose ice to pass through or over before we could get to anything like a floe. As we came along, we had seen some recent bear-tracks, and soon after discovered Bruin himself. Halting the boats, and concealing the people behind them, we drew him almost within gun-shot; but after making a great many traverses behind some hummocks, and even mounting one of them to examine us more narrowly, he set off and escaped—I must say, to our grievous disappointment; for we had already, by anticipation, consigned a tolerable portion of his flesh to our cooking kettle, over a fire of his own blubber.

In the course of our journey on the 2nd of August we met with a quantity of snow, tinged, to the depth of several inches, with some red colouring matter, of which a portion was preserved in a bottle for future examination. This circumstance recalled to our recollection our having frequently before, in the course of this journey, remarked that the loaded sledges, in passing over hard snow, left upon it a light rose-coloured tint, which at the time we attri-

buted to the colouring matter being pressed out of the birch of which they were made. To-day, however, we observed that the runners of the boats, and even our own footsteps, exhibited the same appearance; and on watching it more narrowly afterwards, we found the same effect to be produced, in a greater or less degree, by heavy pressure, on almost all the ice over which we passed, though a magnifying-glass could detect nothing to give it this tinge. The colour of the red snow which we bottled, and which only occurred in two or three spots, appeared somewhat different from this, being rather of a salmon than a rose colour; but both were so striking as to be the subject of constant remark. Halting at seven A.M., after making only three miles and a half of southing, we observed the variation of the magnetic needle to be 20° 46′ 54″ westerly, being in latitude 82° 6′, and longitude 17° 45′ 33″ east. A fog, which prevailed during most of the day, cleared away soon after our setting out, at eight in the evening, and we enjoyed, during the night, some of the most beautiful weather that we experienced during our whole excursion, the wind being light from the S.W. The temperature of the air at midnight did not exceed 31½° in the sun, and yet on the north side of the hummocks the water was dropping from the ice. The *small* ponds of fresh water on the ice were frozen, but there was little or

no young ice, even in the smallest pools, upon the sea. We saw some seals, and five or six birds, among the rest two Ross gulls, during this journey. Halting at seven A.M., on the third, after launching and hauling up the boats a great number of times, we had not only the comfort of drying all our wet clothes, but were even able to wash many of our woollen things, which dried in a few hours. The latitude observed at noon was 82° 1′ 48″, or twelve miles and a half to the southward of our place on the 31st, which was about three more than our log gave, though there had been southing in the wind during the whole interval.

We proceeded on our journey southward at eight P.M., and were again favoured with a clear and beautiful night, though the travelling was as slow and laborious as ever, there being scarcely a tolerable floe lying in our road. Almost the only one over which we passed was so intersected by deep ponds and water-courses, that, although it was in other respects level, we were obliged to walk nearly two miles to gain one of southing. The water was again dropping from the sunny side of the hummocks about midnight, the thermometer in the shade being 29½°, and in the sun 36°. The temperature of the sea water was 32½°. The sun now became so much lower at night, that we were seldom annoyed by the glare from the snow. It was also

a very comfortable change to those who had to look out for the road, to have the sun behind us, instead of facing it, as on our outward journey. We stopped to rest at a quarter past six A.M., on the 4th, after accomplishing three miles in a south direction, over a troublesome road of nearly twice that length. It was almost calm, and to *our* feelings oppressively warm during the day, the thermometer within the boats rising as high as 66° which put our fur dresses nearly "out of commission," though the mercury exposed to the sun outside did not rise above 39°. Pursuing our journey at eight P.M., we paid, as usual, for this comfort, by the extreme softness of the snow. The upper crust would sometimes support a man's weight for a short time, and then suddenly let him down two or three feet, so that we could never make sure of our footing for two steps together. We saw patches of the red snow in two or three different places, and always near the margin of a floe. The weather continued beautifully clear, with a light air from the eastward. The thermometer at midnight was 29½° in the shade, and 32° in the sun. No young ice appeared upon the sea, nor upon the larger ponds upon the ice, but the small ones were quite frozen over. For several hours after midnight on the 5th we remarked to the southward, for the first time since we had entered the ice, a great deal of that appearance

which is called by our Greenland sailors the "treeing" of ice. It consists in the ice being apparently raised in the horizon by refraction; sometimes so considerably, as it was in the present instance, as to resemble a perpendicular wall of some height above the general level. It is usually considered an indication of open water in that quarter, though I believe it is by no means an infallible one. However, on this occasion, we were willing to flatter ourselves that the popular notion might be the right one, as indeed it subsequently proved to be, though we scarcely dared to hope that we could as yet be very near the open water to the southward. The temperature of the sea in a large hole of water was 33½°, which is unusually high in a sea thus encumbered with ice. The floes were larger to-day than any we had seen for some time; and one over which we passed was considered to be from two to three miles in length, though not in the direction of our course. We halted on another at seven A.M., and observed at noon in latitude 81° 54′ 47″, which agreed very well with our reckoning, notwithstanding the southing in the winds for some days past. The temperature of the air in the shade at noon was 35°, and in the sun as high as 42°. We moved again at eight P.M., travelling over floes of tolerable size, but so covered with hummocks, water, and snow, that our progress was but slow. Several of

the men were also suffering much at this time from chilblains, which, from the constant wet and cold, as well as the irritation in walking, became serious sores, keeping them quite lame. With many of our people, also, the epidermis, or scarf-skin, peeled off in large flakes, not merely in the face and hands, which were exposed to the action of the sun and the weather, but in every other part of the body; this, however, was attended with no pain, nor with much inconvenience.

One variety in our monotonous mode of travelling was afforded this day by our rowing across a lake of fresh water in the boats in order to avoid passing some heavy hummocks. It was a quarter of a mile long, and varied in depth from two to four feet, which, together with an island that happened to be in the middle of it, the rugged ice by which it was bounded, and the beautiful blue of the water, gave it a singular and picturesque appearance. We halted at a quarter past six A.M., on the 6th, after making three miles of southing. A thick wet fog prevailed during the day, and the breeze freshened from the S.E.b.E. We again proceeded at eight P.M., and travelling till half-past six on the following morning, had accomplished only three miles of southing over a difficult road of five in length. Some small rain fell during the night, but we were fortunate in getting housed before it came

down more heavily, which it did the whole day. A fat bear crossed over a lane of water to visit us, and approaching the boats within twenty yards, was killed by Lieutenant Ross. The scene which followed was laughable, even to us who participated in it. Before the animal had done biting the snow, one of the men was alongside of him with an open knife, and being asked what he was about to do, replied that he was going to cut out his heart and liver to put into the pot, which happened to be then boiling for our supper. In short, before the bear had been dead an hour, all hands of us were employed, to our great satisfaction, in discussing the merits, not only of the said heart and liver, but a pound per man of the flesh; besides which, some or other of the men were constantly frying steaks during the whole day, over a large fire made of the blubber. The consequence of all this, and other similar indulgences, necessarily was, that some of them complained, for several days after, of the pains usually arising from indigestion; though they all, amusingly enough, attributed this effect to the quality, and not the quantity of meat they had eaten. The fact, however, is, that the flesh of the bear is just as wholesome, though not quite as palatable as any other; and had they eaten moderately of it, as the officers did, they would have suffered no inconvenience whatever. However,

notwithstanding these excesses at first, we were really thankful for this additional supply of meat; for we had observed, for some time past, that the men were evidently not so strong as before, and would be the better for more sustenance. A second bear, being attracted by the smell of our fire, was wounded, but luckily (for us!) escaped. We had also more birds about us than usual, and a narwhal, the only one we had seen since leaving the ship, was blowing in a small hole of water near us.

The rain continued so hard, at our usual time of setting out, that I was obliged to delay doing so till six P.M. on the 8th, when it ceased a little, after falling hard for twenty-four hours, and less violently for twelve more. When we first launched the boats, our prospect of making progress seemed no better than usual, but we found one small hole of water leading into another in so extraordinary a manner that, though the space in which we were rowing seemed to be always coming to an end, we continued to creep through narrow passages, and when we halted to dine at half an hour before midnight, had only hauled the boats up once, and had made, though by a winding channel, four or five miles of southing. This was so unusual a circumstance, that we could not help entertaining some hope of our being at no great distance from the open sea, which seemed the more probable from our having

seen seven or eight narwhals, and not less than two hundred rotges, a flock of these little birds occurring in every hole of water. The wind was from the southward, with a thick fog, and the clear water increased so much, as we proceeded, that at six A.M. on the 9th, instead of hauling up the boats as usual, we served an extra supper, and then pursued our way. However, at nine o'clock, the wind having freshened from the southward, and there being only one floe in sight, with immense spaces of open water between the streams of loose ice, I thought it better to halt upon the floe, than to incur the probable risk of being driven back, should we be obliged to rest on any of the smaller pieces. It was fortunate that we adopted this plan; for, the wind still increasing from the southward, the loose ice continued to drive past us to the northward, during the whole of this and the following day, at the rate of a mile and a half an hour; and we were, therefore, very glad to retain our present quarters. The weather being wet, with fog, we occupied the men in making additional sails out of our empty bread-bags, and in filling the empty vessels with water, since it now appeared more than probable that we were close to the open sea. At noon, on the 10th of August, we observed in latitude 81° 40′ 13″, which was only four miles to the northward of our reckoning from the last observation, although

there had been almost constantly southing in the wind ever since, and it had been blowing strong from that quarter for the last thirty hours. This circumstance afforded a last and striking proof of the general tendency of the ice to drift southward, about the meridians on which we had been travelling. Another bear came towards the boats in the course of the day, and was killed. We were now so abundantly supplied with meat, that the men would again have eaten immoderately, had we not interposed the necessary authority to prevent them. As it was, our encampment became so like an Esquimaux establishment, that we were obliged to shift our place upon the floe, in the course of the day, for the sake of cleanliness and comfort.

The wind falling towards midnight, we launched the boats at half-past one A.M. on the 11th, paddling alternately in large spaces of clear water, and among streams of loose "sailing-ice." We soon afterwards observed such indications of an open sea as could not be mistaken, much of the ice being "washed" as by a heavy sea, with small rounded fragments thrown on the surface, and a good deal of "dirty ice" occurring. We also met with several pieces of drift-wood and birch-bark, the first since we had entered the ice; and the sea was crowded with shrimps and other sea-insects, principally the *Clio Borealis* and *Argonauta Arctica*, on which nume-

rous birds were feeding. After passing through a good deal of loose ice, it became gradually more and more open, till at length, at a quarter before seven A.M., we heard the first sound of the swell under the hollow margins of the ice, and in a quarter of an hour had reached the open sea, which was dashing with heavy surges against the outer masses. We hauled the boats upon one of these, to eat our last meal upon the ice, and to complete the necessary supply of water for our little voyage to Table Island, from which we were now distant fifty miles, our latitude being 81° 34′, and longitude $18\frac{1}{4}$° E. A light air springing up from the N.W., we again launched the boats, and at eight A.M. finally quitted the ice, after having taken up our abode upon it for forty-eight days.

The wind dying away, our progress wholly depended on the paddles, which made it very laborious for the men. At two P.M., we came to some loose ice a mile or two wide, but so open as scarcely to oblige us to alter our course. At three the temperature of the sea had increased to 36°, the air being the same; and at nine P.M., both had risen to 38°, not a piece of ice being in sight in any direction. The weather continued quite calm, and the atmosphere very pleasant to our feelings We saw a great many seals sporting about, as well as large flocks of rotges, the latter feeding on the *Argonaula*

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Engd by E. Finden.

THE BOATS HAULED UP FOR THE NIGHT.

Publd 1st 1828 by John Murray London

Arctica, which now swarmed in myriads. We also passed a great many pieces of drift-wood, and laid in a stock, as fuel, lest we should find none at Table Island.

We had some fog during the night, so that we steered entirely by compass, according to our last observations by the chronometers, which proved so correct, that at five A.M. on the 12th, on the clearing up of the haze, we made the island right ahead. At ten A.M., when within three miles of it, the temperature of the air was as high as 41°, and the sea still continued at 38°. At eleven A.M. we reached the island, or rather the rock to the northward of it, where our provisions had been deposited; and I cannot describe the comfort we experienced in once more feeling a dry and solid footing. We found that the bears had devoured all the bread (one hundred pounds), which occasioned a remark among the men, with reference to the quantity of these animals' flesh that we had eaten, that "Bruin was only square with us." We also found that Lieutenant Crozier had been here since we left the island, bringing some materials for repairing our boats, as well as various little luxuries to which we had lately been strangers, and depositing in a copper cylinder a letter from Lieutenant Foster, giving me a detailed account of the proceedings of the ship up to the 23rd of July. By this I learned that the

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Hecla had been forced on shore on the 7th of July, by the breaking-up of the ice at the head of the bay, which came down upon her in one solid mass; but by the unwearied and zealous exertions of the officers and men, she had again been hove off without incurring the slightest damage, and placed in perfect security. Finding the ship thus liable to be disturbed by the ice, Lieutenant Foster had prudently relinquished the idea of leaving her for any length of time, so as to make an extended survey of the eastern coast, confining himself to the neighbouring parts of Waygatz Strait, which were more within his reach. Among the supplies with which the anxious care of our friends on board had now furnished us, some lemon-juice and sugar were not the least acceptable; two or three of the men having for some days past suffered from œdematous swellings of the legs, and evinced other symptoms apparently scorbutic, but which soon improved after administering this valuable specific.

Having got our stores into the boats, we rowed round Table Island, to look for a place on which to rest, the men being much fatigued; but so rugged and inhospitable is this northern rock, that not a single spot could we find where the boats could possibly be hauled up, or lie afloat in security. I therefore determined to take advantage of the freshening of the N.E. wind, and to bear up for Walden

Island, which we accordingly did at two P.M. To the Islet which lies off Little Table Island, and which is interesting as being the northernmost known land upon the globe, I have applied the name of Lieutenant Ross in the chart; for I believe no individual can have exerted himself more strenuously to rob it of this distinction. We had scarcely made sail when the weather became extremely inclement, with a fresh gale and very thick snow, which obscured Walden Island from our view. Steering by compass, however, we made a good landfall, the boats behaving well in a sea; and at seven P.M. landed in the smoothest place we could find under the lee of the island. Everything belonging to us was now completely drenched by the spray and snow; we had been fifty-six hours without rest, and forty-eight at work in the boats, so that, by the time they were unloaded, we had barely strength left to haul them up on the rock. We noticed, on this occasion, that the men had that wildness in their looks which usually accompanies excessive fatigue; and though just as willing as ever to obey orders, they seemed at times not to comprehend them. However, by dint of great exertion, we managed to get the boats above the surf; after which, a hot supper, a blazing fire of drift-wood, and a few hours' quiet rest, quite restored us.

The next morning, the 13th, I despatched Lieutenant Ross, with a party of hands, to the N.E. part of the island, to launch the spare boat which, according to my directions, Lieutenant Foster had sent for our use, and to bring round the stores deposited there, in readiness for our setting off for Low Island. They found every thing quite undisturbed; but, by the time they reached us, the wind had backed to the westward, and the weather become very wet, so that I determined to remain here till it improved.

The south-eastern, or lowest part of Walden Island, which we had not before visited, is composed of coarse-grained red and grey granite. Mr. Beverly remarked, that "on the face of the rock may be observed veins of a finer grey granite, from twelve to twenty inches wide, bordered by a ribbon of whitish felspar, about three inches wide on each side, and dipping at an angle of 10° to the south-eastward." Heaps of large rounded masses of granite, in regular horizontal beds, are lying at the height of thirty to forty feet above the present level of the sea, but giving the idea of their having once been washed by it. A great number of female eider-ducks, with their flocks of young, were swimming about the island; and the *tripe de roche* and *cochlearia* were here more luxuriant than we had ever seen them. Drift wood was, as usual, in great abundance in

every spot where it could effect a landing. We here observed the dip of the magnetic needle to be 81° 24.19′ North; and, in taking angles for the survey, discovered a very dangerous rock, with the sea breaking upon it, at the distance of a mile and a half from the island, which I have distinguished as the "Hecla Rock" upon the chart. No ice was here in sight, to the utmost limit of a very extensive view.

At ten A.M., on the 14th, the weather being fine, we launched our three boats, and left Walden Island; but the wind backing more to the westward, we could only fetch into a bay on the opposite or southern shore, where we hauled the boats up on very rugged rocks, under cliffs about six hundred feet high, and of the same granite formation as Walden Island. We found the eastern land of this bay to be an island separated by a narrow strait; and this, and another to the westward of it, having no names in the chart, I have distinguished them by those of our fellow-travellers, Messrs. Beverly and Bird. The wind shifted to the eastward in the night, and at eight A.M., on the 15th, we set out for Low Island, where we arrived at four P.M., landing upon the west point, which is composed of a schistose quartz rock, dipping at an angle of 70° to the S. E., with a fine smooth beach of small pebbles of quartz and clay-slate, strewed in every

part with immense quantities of drift-wood. Beds of clay-slate occur further inland, of a blue, red, and yellow colour, and dipping in various directions. Off this point, and at the distance of one mile, we observed several small rocky islets which had before escaped notice, being then covered with ice. In fact, the whole neighbourhood of this island should be approached very cautiously in a ship, the soundings being irregular and uncertain. We here saw a bear, a great many tern and eider-ducks with their young, and several deer, two of which were killed. By the time we had prepared for setting out, the wind had freshened almost to a gale, with every appèarance of dirty weather, which induced me to remain here for the night. Messrs. Ross and Beverly took a long walk about the island, and found it much intersected by ponds and lagoons, with very little vegetation in any part. In the mean time, I observed the dip of the magnetic needle, which was 81° 22′.9 ; and at nine A.M., on the following morning, set off for the Hecla ; but as we approached the point which I have distinguished by the name of "Shoal Point" on the chart, the wind shifted to the southward, and raised a sea which obliged us to bear up for the south point of Low Island, where we landed at one P.M., on a long narrow beach, almost entirely composed of clay-slate, with a lagoon within it. Near this point is a hill about one hun-

dred and fifty feet above the sea, which is the highest and only conspicuous part of the island. The rocks which compose the hill are of reddish schistose quartz, approaching in some places to sandstone, the strata being disposed in a direction quite vertical. We saw nothing here resembling the hexagonal stones mentioned by Dr. Irving, in Phipps's Voyage*, as occurring about the northern part of the island. Having a commanding view from this eminence, we obtained angles for the survey, and afterwards found that Lieutenant Crozier had observed the latitude not far from our present landing-place to be 80° 15′ 25″. Within, or to the westward of the island, is a considerable bay, in which some heavy masses of ice were lying aground, reminding us more than any that we had seen about Spitzbergen of the smaller bergs in Baffin's Bay, though of much less dimensions. There appears to be a great deal of shoal water in this neighbourhood, and many detached rocks appear above water. No drift-ice was in sight in any direction.

The wind dying away on the morning of the 17th, we once more set out for the ship at nine A.M.; but having a second time nearly reached Shoal Point, were again met by a strong breeze as we opened

* Voyage towards the North Pole, p. 58.

Waygatz Strait, and were therefore obliged to land upon the low shore to the southward of Low Island. It was, however, some time before we discovered a spot on which any fresh water could be obtained; for we found this coast to consist almost entirely of narrow strips of beach, within which are very extensive lagoons, and most of the water near them is brackish. The formation here was different from any we had yet met with about Spitzbergen; the rocks consisting chiefly of a black marble with white and red veins intersecting it, and the flat parts of the land covered with small detached fragments of decomposed limestone. In some places, also, there are beds of clay-slate of considerable extent. A narrow line of marble rock here and there projects into the sea, like jetties thrown out by art, and having fine beaches between them. We found one piece of bituminous wood-coal, which burned with a clear, bright flame, and emitted a pleasant odour. On this and all the land hereabouts, where lagoons occur, enormous quantities of drift-wood line the inner beach, which is now quite inaccessible to the sea, and this wood is always more decayed than that which lies on the outer or present sea-beach; by which it appears that the latter has been thrown up, to the exclusion of the sea, long since the inner wood was landed. A great many small rounded pieces of pumice-stone are also found on this part

of the coast, and these generally occur rather above the inner line of drift-wood, as if they had reached the highest limit to which the sea has ever extended.

On the 18th of August the wind increased to a strong breeze from the S.W., with rain and sleet, which afterwards changed to snow in some of the largest flakes I ever saw, completely changing the whole aspect of the land from summer to winter in a few hours. On the following morning we prepared to move at an early hour, but the wind backed more to the westward, and soon after increased to a gale, raising so much surf on the beach as to oblige us to haul the boats higher up. The rain, which fell heavily, keeping us prisoners under our awnings, dissolved nearly all the snow on the low lands. As the wind now blew so much upon the shore, I was in momentary expectation of seeing some ice come in, but we were agreeably surprised to find that none appeared. This circumstance appeared to us the more remarkable from the extraordinary rapidity with which, in the month of June, the very lightest air from the westward brought the drift-ice in upon the land, rendering these shores quite inaccessible in the course of a few hours. On the 20th, tired as we were of this tedious confinement, and anxious to reach the ship, the wind and sea were still too high to allow us to move, and it was not till half-past seven A.M.,

on the following day, that we could venture to launch the boats. Having now, by means of the drift-wood, converted our paddles into oars, and being occasionally favoured by a light breeze, with a perfectly open sea, we made tolerable progress, and, at half-past four P.M., on the 21st of August, when within three or four miles of Hecla Cove, had the gratification of seeing a boat under sail coming out to meet us. Mr. Weir soon joined us in one of the cutters; and, after hearing good accounts of the safety of the ship, and of the welfare of all on board, together with a variety of details, to us of no small interest, we arrived on board at seven P.M., after an absence of sixty-one days, being received with that warm and cordial welcome, which can alone be felt, and not described.

The distance traversed during this excursion was five hundred and sixty-nine geographical miles; but allowing for the number of times we had to return for our baggage during the greater part of the journeys over the ice, we estimated our actual travelling at nine hundred and seventy-eight geographical, or eleven hundred and twenty-seven statute miles. Considering our constant exposure to wet, cold, and fatigue, our stockings having generally been drenched in snow-water for twelve hours out of every four-and-twenty, I had great

reason to be thankful for the excellent health in which, upon the whole, we reached the ship. There is no doubt that we had all become, in a certain degree, gradually weaker for some time past; but only three men of our party now required medical care, two of them with badly swelled legs and general debility, and the other from a bruise; but even these three returned to their duty in a short time.

I cannot conclude the account of our proceedings without endeavouring to do justice to the cheerful alacrity and unwearied zeal displayed by my companions, both officers and men, in the course of this excursion; and if steady perseverance and active exertion on their parts could have accomplished our object, success would undoubtedly have crowned our labours. I must also mention, to the credit of the officers of Woolwich dock-yard, who took so much pains in the construction of our boats, that, notwithstanding the constant and severe trial to which their strength had been put—and a more severe trial could not well be devised—not a timber was sprung, a plank split, or the smallest injury sustained by them; they were, indeed, as tight and as fit for service when we reached the ship as when they were first received on board, and in every respect answered the intended purpose admirably.

An abstract of our meteorological observations during this excursion, is given in the Appendix to

the 4to edition, together with those kept on board the Hecla. In this there is nothing so remarkable as the extraordinary quantity of rain, of which it may safely be said that *twenty times* as much fell in the course of this one summer, as during any preceding one we had passed in the polar regions, even in latitudes from 8° to 16° lower.

On my arrival on board, I learned from Lieutenant Crozier that Lieutenant Foster, finding that no further disturbance from ice was to be apprehended, and after making an accurate plan of the bay and its neighbourhood, had proceeded on the survey of Waygatz Strait, and proposed returning by the 26th of August, the day to which I had limited his absence. I found the ship quite ready for sea, with the exception of getting on board the launch, with the stores deposited by my direction on the beach. Lieutenant Foster's report informed me that, after the ship had been hauled off the ground *, they had again suffered considerable disturbance for several

* I cannot here omit to mention the invaluable advantage derived, on this occasion, from one of our cutters (a twenty-five feet boat) having been fitted on Mr. Cow's ingenious principle for weighing anchors in the centre, instead of the extremity of the boat. By this beautiful contrivance, six

days, in consequence of some heavy masses of ice driving into the bay, which dragged the anchors, and again threatened them with a similar accident. However, after the middle of July no ice had entered the bay, and, what is still more remarkable, not a piece had been seen in the offing for some weeks past, even after hard northerly and westerly gales. I must here not omit to do justice to the zealous and unwearied exertions which had been made by Lieutenant Foster, and every officer and man left on board, as well to preserve the Hecla from injury, under circumstances of considerable danger, as to get on board all the stores and ballast after they had been landed for the purpose of heaving her off; in the course of which service, the conduct of every individual was highly meritorious. It was also a source of great satisfaction to find everybody on board in good health, with the exception of Mr. Crawford, the Greenland Master, who had for some time past been in a declining state, and now evinced dropsical symptoms, indicating a gradual and rapid decay.

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men could weigh the Hecla's bower-anchor, of thirty cwt., with ease, and transport it any distance with safety. Indeed, but for this facility, added to that afforded by Phillips's capstan, the Hecla's reduced crew would probably have been unable to haul her off the ground at all on this occasion.

No opportunity had been lost of making such observations as, in this latitude, may be considered interesting to science, and in collecting specimens of natural history, in all which pursuits the officers were constantly employed, during every moment that could be spared from the necessary duties of the ship. Among other magnetic observations, an interesting series of hourly experiments had been made on the diurnal changes of variation and intensity, and continued for several days without intermission, by Lieutenants Foster and Crozier. By these it appears that there is a diurnal oscillation of the magnetic needle, usually amounting to about a degree and a half, and in some instances to $2\frac{3}{4}^{\circ}$; the maximum westerly variation occurring at about five P.M., and the minimum about $4^{h}\ 22^{m}$ A.M. The experiments on the change of intensity were not less satisfactory and conclusive, exhibiting an increased action about $10^{h}\ 20^{m}$ A.M., and a minimum intensity about midnight. There was also observed a remarkable coincidence between these two phenomena, the largest amount of diurnal variation and the greatest changes of intensity usually occurring on the same days.

On the 22nd of August, as soon as our people had enjoyed a good night's rest, we commenced bringing the stores on board from the beach, throwing out such a quantity of the stone ballast as was

necessary for trimming the ship, after which the cables and hawsers were cast off from the shore, and the ship hauled off to single anchor. Lieutenant Foster returned on board on the 24th, having surveyed the greater part of the shores of the Strait, as far to the southward as 79° 33′. This Strait was found to vary in breadth from four to eleven miles, and Lieutenant Foster recognised distinctly almost every feature of the lands delineated in the old Dutch chart before alluded to, though the position of these is, in general, very erroneously laid down, both in latitude and longitude. Still, however, there is enough to show that they have been delineated from a sketch actually made upon the spot. The land within the Strait, especially that which he saw to the southward of 79½°, Lieutenant Foster considered to be much higher than any of the northern shores of Spitzbergen, being in some parts probably not less than three thousand feet.

He found in some places a good deal of alluvial soil, such as occurs at the base of the hills in almost every part of this coast on which we have landed. Some islands near the middle of the Strait, to which I have ventured to affix the name of Lieutenant Foster, are composed of hornblende; but at a short distance to the westward of these, a limestone formation occurred, with numerous fossils imbedded in the rock, upon a prominent headland

forming the eastern point of entrance to Bear or Loom Bay, and which Lieutenant Foster distinguished by the name of Cape Fanshawe. A striking feature of the land on the western coast of the Strait consists in the numerous ice-bergs with which the cliffs are in many parts lined. One of these, marked in the chart, is not less than nine miles in length, and one hundred and fifty feet high; immense masses of ice were constantly falling from them at this season, with a sound resembling that of thunder. Several of these ice-bergs are faithfully laid down in the Dutch Chart.

Lieutenant Foster saw some sea-horses (narwhals) and white whales, in the course of this excursion, but no black whales; nor did we, in the whole course of the voyage, see any of these, except on the ground already frequented by our whalers, on the western coast of Spitzbergen. It is remarkable, however, that the "crown bones," and other parts of the skeleton of whales, are found in most parts where we landed on this coast. The shores of the Strait, like all the rest in Spitzbergen, are lined with immense quantities of drift-wood, wherever the nature of the coast will allow it to land.

That part of Treurenburg bay, to which I have affixed the name of Hecla Cove, is the only good anchorage it contains, the water being either too deep or too shoal in most other parts. The Hecla's

anchorage is perfectly land-locked and secure, except from the incursions of ice, which, in these regions, occasionally finds its way into every corner, but even in this respect there was nothing to apprehend after the middle of July. The holding-ground is excellent, consisting of a tenacious blue clay, in which the anchors were quite imbedded. The latitude of the flag-staff, on which a copper-plate was fixed, giving an account of the Hecla's visit, is 79° 55′ 20″, and its longitude, by our chronometers, 16° 48′ 45″ east. The dip of the magnetic needle by that employed by Lieutenant Foster is 80° 45′.91, and by mine 81° 4′.58. The mean variation is 18° 46′ 12″ westerly. The time of high water at full and change is $2^h\ 26^m$, the highest rise at spring tides being four feet two inches, and the smallest at the neaps seventeen inches; both of these occurring at the fourth tide after the full moon, and the last quarter, respectively.

The animals met with here, during the Hecla's stay, were principally rein-deer, bears, foxes, kittiwakes, glaucous and ivory gulls, tern, eider-ducks, and a few grouse. Looms and rotges were numerous in the offing. Seventy rein-deer were killed, chiefly very small, and, until the middle of August, not in good condition. They were usually met with in herds of from six or eight to twenty, and were most abundant on the west and north sides

of the bay. Three bears were killed, one of which was somewhat above the ordinary dimensions, measuring eight feet four inches from the snout to the insertion of the tail. The vegetation was tolerably abundant, especially on the western side of the bay, where the soil is good; a considerable collection of plants, as well as minerals, was made by Mr. Halse, and of birds by Mr. M'Cormick.

The following remarks by Mr. Beverly, made during our short stay in Hecla Cove, after returning from the north, may be interesting to geologists:—"The land on the east side of this bay, near the Cove, is a flat, from two to three miles in extent, and is composed, in some parts, of a fine deep alluvial soil, probably formed by the decomposition of the rocks which compose the hills to the southward. On this plain there are beds of schistose quartz, nearly approaching to sand-stone, and chiefly of a pale red colour. Beds of clay-slate also occur, in some places of greenish grey, and in others of a brick-red colour. Next the sea is a fine bold beach, composed of rounded pieces of the above rock, with limestone intermixed. At about a quarter of a mile from the base of the high land, immense masses of a very coarse-grained rock lie scattered about, and appear to have been precipitated from the upper stratum of the mountain. They are composed of ferruginous sand and hornblende, in such

a state of decomposition as to crumble to powder under the blow of the hammer.

"The range of mountains beyond this plain lies in an E.b.S., and afterwards in a more southerly direction, forming the west shore of Waygatz Strait; and, as far as I was able to ascertain, is composed of the same rock, which, being soft, gives their summit a smooth and rounded form. The debris extends about five hundred yards on the plain, and consists of loose fragments, rendering the ascent to the perpendicular face of the rock very difficult. That part of the hill which faces the harbour is composed of quartz rock, in some places schistose, in others massive, with a waxy fracture. This terminates abruptly about a mile and a half to the eastward, where the clay-slate formation commences, being of a deep lead colour, a firm texture, and less talcouse than that on the plain. The inclination of this stratum, as well as that of the quartz rock, is to the south-east, at an angle of about 60°.

"The formation of the rocks on the opposite or western side of the bay, appeared, as far as I had an opportunity of examining them, to be much the same. At the foot of the hills there is a broad belt of flat alluvial ground, much of which consists of a fine deep soil, thickly covered with mosses and other vegetation; upon this flat ground are lying large boulders of mica-slate."

The height of the hill nearest to Hecla Cove, as measured barometrically by Lieutenant Foster, is about two thousand feet; but the barometer having subsequently been found defective, this measure can only be considered an approximation. The hills on the south side of the bay are considerably higher than this.

The neighbourhood of this bay, like most of the northern shores of Spitzbergen, appears to have been much visited by the Dutch at a very early period; of which circumstance records are furnished on almost every spot where we landed, by the numerous graves which we met with. There are thirty of these on a point of land on the north side of the bay*. The bodies are usually deposited in an oblong wooden coffin, which, on account of the difficulty of digging the ground, is not buried, but merely covered by large stones; and a board is generally placed near the head, having, either cut or painted, upon it the name of the deceased, with those of his ship and commander, and the month and year of his burial. Several of these were fifty or sixty years old; one bore the date of 1738; and another, which I found on the beach to the east-

* Perhaps the name of this bay, from the Dutch word *Treuren*, "to lament, or be mournful," may have some reference to the graves found here.

ward of Hecla Cove, that of 1690; the inscription distinctly appearing in prominent relief, occasioned by the preservation of the wood by the paint, while the unpainted part had decayed around it.

The officers who remained on board the Hecla during the summer described the weather as the most beautiful, and the climate altogether the most agreeable, they had ever experienced in the polar regions. Indeed, the Meteorological Journal, of which an abstract for each month is annexed to the 4to volume, shows a temperature, both of the air and of the sea-water, to which we had before been altogether strangers within the Arctic Circle, and which goes far towards showing that the climate of Spitzbergen is a remarkably temperate one for its latitude*. It must, however, be observed, that this remark is principally applicable to the weather experienced *near the land*, that at sea being rendered of a totally different character by the almost con-

* Mr. Crowe, of Hammerfest, who lately passed a winter on the south-western coast of Spitzbergen, in about latitude 78°, informed me that he had *rain at Christmas*, a phenomenon which would indeed have astonished us at any of our former wintering stations in a much lower latitude. Perhaps the circumstance of the rein-deer wintering at Spitzbergen may also be considered a proof of a comparatively temperate climate.

tinual presence of fogs; so that some of our most gloomy days upon the ice were among the finest in Hecla Cove, where, however, a good deal of rain fell in the course of the summer.

The Hecla was ready for sea on the 25th of August; but the wind blowing fresh from the northward and westward prevented our moving till the evening of the 28th, when, the weather improving, we got under way from Hecla Cove, and being favoured with a light air from the S.E., stood along the coast to the westward. On the evening of the 29th, when off Red Beach, we got on board our boat and other stores which had been left there, finding them undisturbed and in good order. The weather was beautifully fine, and the sun (to us for the first time for about four months) just dipped his lower limb into the sea at midnight, and then rose again. It was really wonderful to see that, upon this whole northern coast of Spitzbergen, where in May and June not a "hole" of clear water could be found, it would now have been equally difficult to discover a single mass of ice in any direction. This absence of ice now enabled us to see Moffen Island, which is so low and flat that it was before entirely hidden from our view by the hummocks. On rounding Hakluyt's Headland on the 30th, we came at once into a long swell, such as occurs only in places exposed to the whole range of the ocean,

and, except a small or loose stream or two, we after this saw no more ice of any kind. On the 31st we were off Prince Charles's Foreland, the middle part of which, about Cape Sietoe, appeared to be much the highest land we had seen in Spitzbergen; rising probably to an elevation of above four thousand feet.

We had favourable winds to carry us clear of Spitzbergen; but after the 3rd of September, and between the parallels of 70° and 60°, were detained by continual southerly and south-westerly breezes for a fortnight. On the evening of the 17th we made Shetland, and on the following day, being close off Balta Sound, and the wind blowing strong from the S.W., I anchored in the Voe at two P.M., to wait a more favourable breeze. We were here received by all that genuine hospitality for which the inhabitants of this northern part of the British dominions are so justly distinguished, and we gladly availed ourselves of the supplies with which their kindness furnished us. We here also obtained observations for our chronometers on the spot where Captain Kater and Monsieur Biot swung their pendulums; and it was satisfactory, as regarded our survey of the northern shores of Spitzbergen, to find that we differed from the Ordnance-Survey only eight seconds of time.

Early on the morning of the 19th of September,

the wind suddenly shifted to the N.N.W., and almost immediately blew so strong a gale that we could not safely cast the ship until the evening, when we got under way and proceeded to the southward ; but had not proceeded farther than Fair Island, when, after a few hours' calm, we were once more met by a southerly wind. Against this we continued to beat till the morning of the 23rd, when, finding that we made but little progress, and that there was no appearance of an alteration of wind, I determined to put into Long Hope, in the Orkney Islands, to await a change in our favour, and accordingly ran in and anchored there as soon as the tide would permit.

We found lying here His Majesty's Revenue Cutter the Chichester ; and Mr. Stuart, her commander, who was bound direct to Inverness, came on board as soon as we had anchored, to offer his services in any manner which might be useful. The wind died away in the course of the night of the 24th, and was succeeded on the following morning by a light air from the northward, when we immediately got under way ; but had not entered the Pentland Firth, when it again fell calm and then backed to the southward, rendering it impossible to make any progress in that direction with a dull-sailing ship. I therefore determined on returning with the Hecla to the anchorage, and then taking advan-

tage of Mr. Stuart's offer ; and accordingly left the ship at eight, A.M., accompanied by Mr. Beverly, to proceed to Inverness in the Chichester, and from thence by land to London, in order to lay before his Royal Highness the Lord High Admiral, without further delay, an account of our proceedings. By the zealous exertions of Mr. Stuart, for which I feel greatly obliged to that gentleman, we arrived off Fort George the following morning, and landing at Inverness at noon, immediately set off for London, and arrived at the Admiralty on the morning of the 29th of September.

Owing to the continuance of southerly winds, the Hecla did not arrive in the river Thames until the 6th of October, when I was sorry, though not surprised, to learn the death of Mr. George Crawford, the Greenland master, who departed this life on the 29th of September, sincerely lamented by all who knew him, as a zealous, active, and enterprising seaman, and an amiable and deserving man. Mr. Crawford had accompanied us in five successive voyages to the Polar Seas, and I truly regret the occasion which demands from me this public testimony of the value of his services and the excellence of his character.

A few days having been employed at Northfleet in repeating some of the magnetic observations necessary for completing the series of those experi-

ments, the Hecla proceeded to Deptford. On the 17th of October his Royal Highness the Lord High Admiral was pleased to inspect the ship, together with the equipment of the boats which had been employed in the late Expedition over the ice; after which the Hecla was dismantled, and paid off on the 1st of November.

HAVING finished my Narrative of this Attempt to reach the North Pole, I may perhaps be permitted, in conclusion, to offer such remarks as have lately occurred to me, on the nature and practicability of the enterprise.

That the object is of still more difficult attainment than was before supposed, even by those persons who were the best qualified to judge of it, will, I believe, appear evident from a perusal of the foregoing pages; nor can I, after much consideration and some experience of the various difficulties which belong to it, recommend any material improvement in the plan lately adopted. Among the various schemes suggested for this purpose, it has been proposed to set out from Spitzbergen, and to make a rapid journey to the northward, with sledges, or sledge-boats, drawn wholly by dogs or rein-deer;

but, however feasible this plan may at first sight appear, I cannot say that our late experience of the nature of the ice which they would probably have to encounter, has been at all favourable to it. It would, of course, be a matter of extreme imprudence to set out on this enterprise without the means of crossing—not merely narrow pools and "lanes"—but more extensive spaces of open water, such as we met with between the margin of the ice and the Spitzbergen shores; and I do not conceive that any boat sufficiently large to be efficient and safe for this purpose, could possibly be managed upon the ice, were the power employed to give it motion dependent on dogs or rein-deer. On the contrary, it was a frequent subject of remark among the officers, that reason was a qualification scarcely less indispensable than strength and activity, in travelling over such a road; daily instances occurring of our having to pass over difficult places, which no other animal than man could have been easily prevailed upon to attempt. Indeed, the constant necessity of launching and hauling up the boats (which operations we had frequently to perform eight or ten, and, on one occasion, seventeen times in the same day) would alone render it inexpedient, in my opinion, to depend chiefly upon animals; for it would certainly require more time and labour to get them into and out of the boats,

than their services in the intervals, or their flesh ultimately used as food, would be worth; especially when it is considered how large a weight of provender must be carried for their own subsistence *.

In case of employing rein-deer, which, from their strength, docility, and hardy habits, appear the best suited to this kind of travelling, there would be an evident advantage in setting out much earlier in the year than we did; perhaps about the end of April, when the ice is less broken up, and the snow much harder upon its surface, than at a more advanced part of the season. But this, it must be recollected, would involve the necessity of passing the previous winter on the northern coast of Spitzbergen, which, even under favourable circumstances, would probably tend to weaken in some degree the energies of the men; while, on the other hand, it would be next to impossible to procure there a supply of provender for a number of tame rein-deer, sufficient even to keep them alive, much less in tolerable condition, during a whole winter. In addition to this, it may be observed, that any party setting out earlier must be provided with a much greater weight of warm clothing in order to guard against the severity of the cold, and also with an increased proportion of fuel for procuring water by the melting of

* See p. 108, of this volume.

snow, there being no fresh water upon the ice, in these latitudes, before the month of June.

In the kind of provisions proper to be employed in such enterprises—a very important consideration, where almost the whole difficulty may be said to resolve itself into a question of weight—I am not aware that any improvement could be made upon that with which we were furnished; for I know of none which appears to contain so much nutriment in so small a weight and compass. It may be useful, however, to remark, as the result of absolute experience, that our daily allowance of provisions*, although previously tried for some days on board the ship, and then considered to be enough, proved by no means sufficient to support the strength of men living constantly in the open air, exposed to wet and cold for at least twelve hours a day, seldom enjoying the luxury of a warm meal, and having to perform the kind of labour to which our people were subject. I have before remarked that, previously to our return to the ship, our strength was considerably impaired; and, indeed, there is reason to believe that, very soon after entering upon the ice, the physical energies of the men were gradually diminishing; although, for the first few weeks, they did not appear to labour under any specific com-

* See p. 159, of this volume.

plaint. This diminution of strength, which we considered to be principally owing to the want of sufficient sustenance, became apparent, even after a fortnight, in the lifting of the bread-bags and other heavy weights; and I have no doubt that, in spite of every care on the part of the officers, as well as Mr. Beverly's skilful and humane attention to their ailments, some of the men, who had begun to fail before we quitted the ice, would, in a week or two longer, have suffered very severely, and become a serious incumbrance, instead of an assistance, to our party. As far as we were able to judge, without further trial, Mr. Beverly and myself were of opinion that, in order to maintain the strength of men thus employed, for several weeks together, an addition would be requisite of at least one-third more to the provisions which we daily issued. I need scarcely remark how much this would increase the difficulty of equipping such an expedition.

I cannot dismiss the subject of this enterprise, without attempting to explain, as far as I am able, how it may have happened that the ice over which we passed was found to answer so little to the description of that observed by the respectable authorities quoted in a former part of this volume *. It frequently occurred to us, in the course of our

* See Introduction.

daily journeys, that this may, in some degree, have arisen from our navigators' having generally viewed the ice from a considerable height. The only clear and commanding view on board a ship is that from the crow's-nest; and Phipps's most important remarks concerning the nature of the ice to the north of Spitzbergen were made from a station several hundred feet above the sea; and, as it is well known how much the most experienced eye may thus be deceived, it is possible enough that the irregularities which cost us so much time and labour may, when viewed in this manner, have entirely escaped notice, and the whole surface have appeared one smooth and level plain.

It is, moreover, possible that the broken state in which we unexpectedly found the ice may have arisen, at least in part, from an unusually wet season, preceded, perhaps, by a winter of less than ordinary severity. Of the latter we have no means of judging, there being no record, that I am aware of, of the temperature of that or any other winter passed in the higher latitudes; but, on comparing our Meteorological Register with some others, kept during the corresponding season, and about the same latitude *, it does appear that, though no ma-

* Particularly that of Mr. Scoresby during the month of July, from 1812 to 1818 inclusive, and Captain Franklin's for July and August, 1818.

terial difference is observable in the mean temperature of the atmosphere, the quantity of rain which we experienced is considerably greater than usual; and it is well known how very rapidly ice is dissolved by a fall of rain. At all events, from whatever cause it may have arisen, it is certain that about the meridian on which we proceeded northward in the boats, the sea was in a totally different state from what Phipps experienced, as may be seen from comparing our accounts—his ship being closely beset, near the Seven Islands, for several days about the beginning of August; whereas the Hecla, in the beginning of June, sailed about in the same neighbourhood without obstruction, and, before the close of July, not a piece of ice could be seen from Little Table Island.

I may add, in conclusion, that, before the middle of August, when we left the ice in our boats, a ship might have sailed to the latitude of 82°, almost without touching a piece of ice; and it was the general opinion among us that, by the end of that month, it would probably have been no very difficult matter to reach the parallel of 83°, about the meridian of the Seven Islands.

THE END.

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