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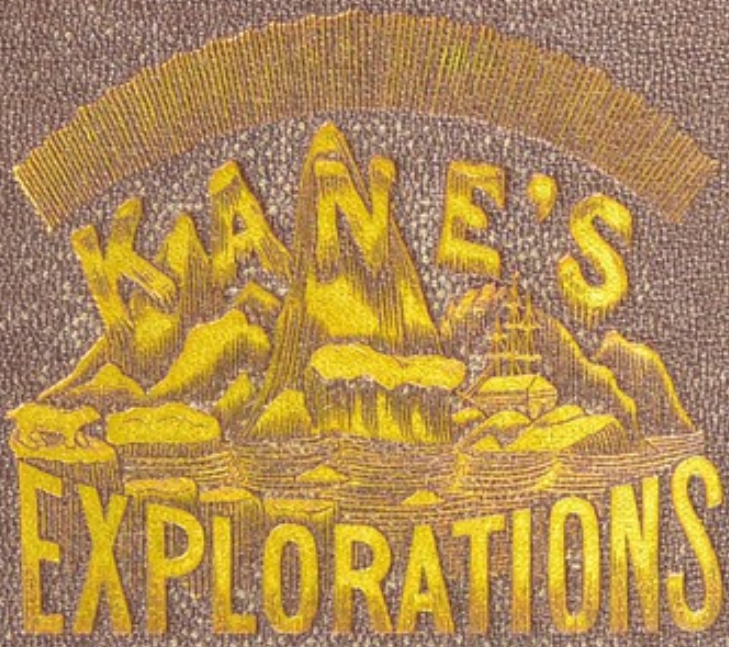
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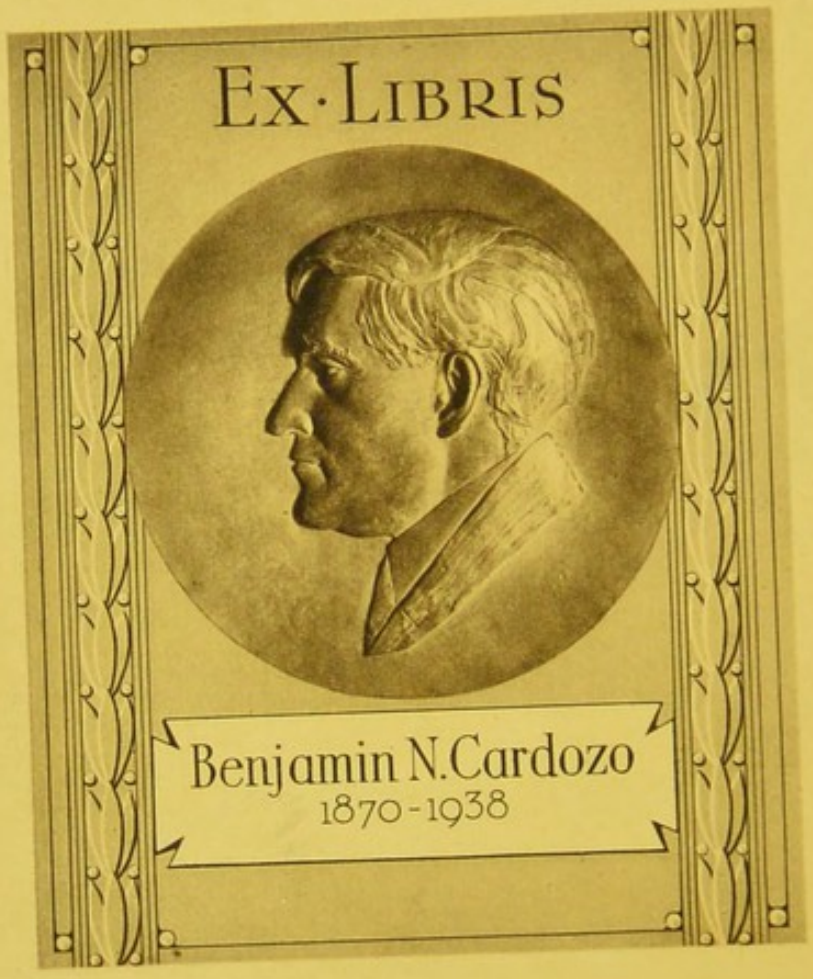
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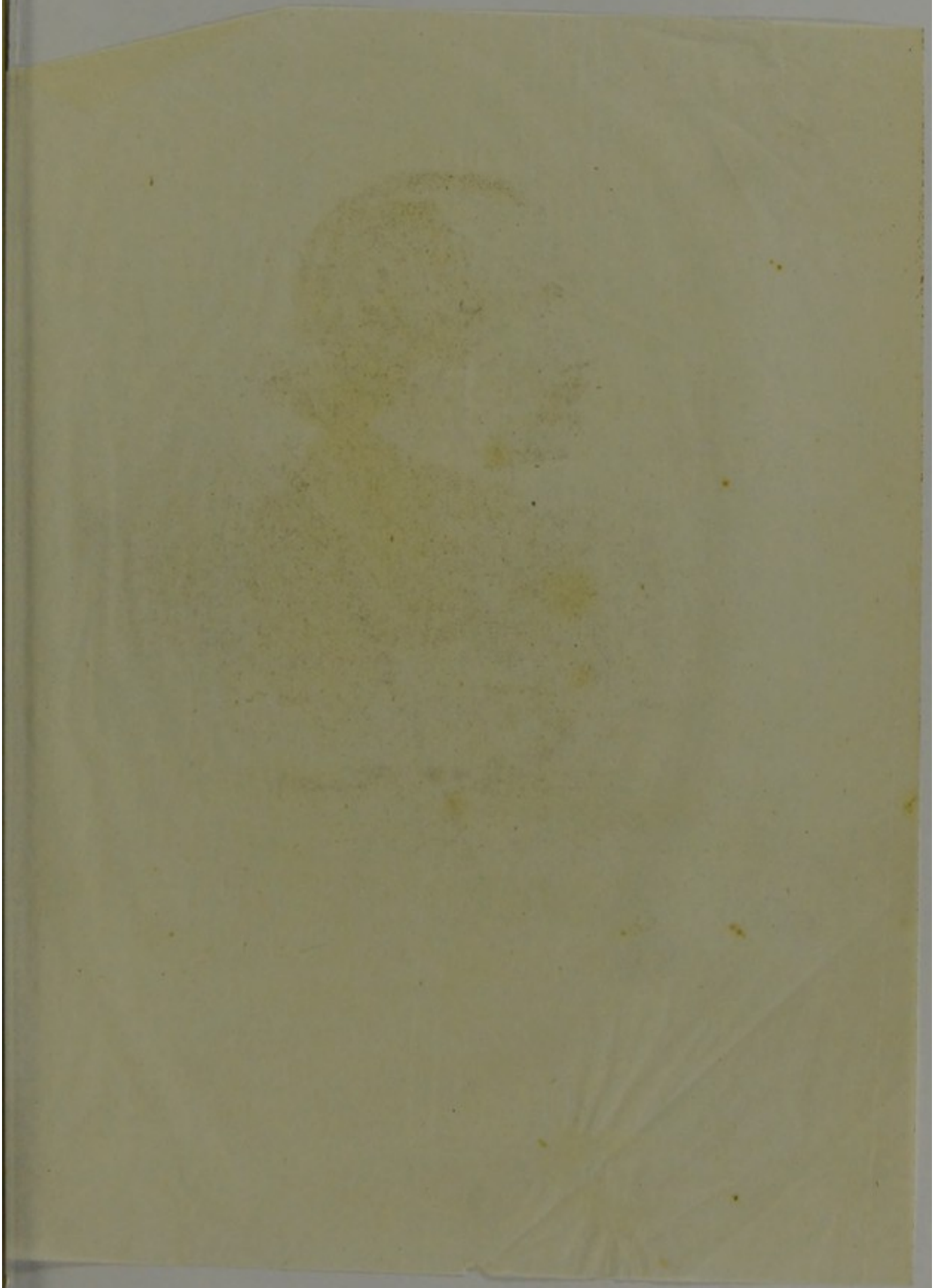

ARCTIC EXPLORATIONS

IN THE YEARS 1853, '54, '55

BY

ELISHA KENT KANE, M.D., U.S.N.

HARTFORD

R. W. BLISS AND COMPANY.

1856.

ARCTIC EXPLORATIONS:

The Second and Last

United States Grinnell Expedition

IN SEARCH OF

SIR JOHN FRANKLIN.

BEAUTIFULLY ILLUSTRATED WITH TWENTY-THREE STEEL ENGRAVINGS, AND MORE THAN TWO HUNDRED AND FIFTY WOOD ENGRAVINGS, FROM ORIGINAL DESIGNS.

BY

ELISHA KENT KANE, M. D., U. S. N.

WITH A

BIOGRAPHICAL SKETCH OF THE AUTHOR,

BY

PROF. CHARLES W. SHIELDS, D. D.,

OF PRINCETON COLLEGE, N. J.

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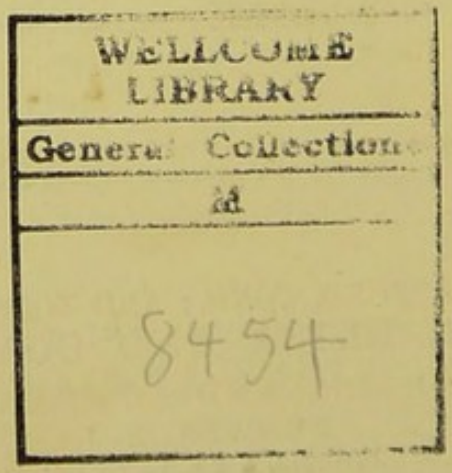

Up signal there! and let us hail
  Yon looming phantom as we pass;—
Note all her fashion, hull, and sail,
  Within the compass of your glass.

And speak her well; for she might say,
  If from her heart the words could thaw
Great news from some far frozen bay,
  Or the remotest Esquimaux;

Of wonders which alone prevail
  Where day and darkness dimly meet;—
Of all which spreads the Arctic sail;
  Of Franklin and his venturous fleet:

How, haply, at some glorious goal—
  His anchor holds—his sails are furled;
That Fame has named him on her scroll,
  "Columbus of the Polar world."

Or how his plowing Barques wedge on
  Through splintering fields, with battered shares,
Lit only by that spectral dawn,
  The mask that mocking darkness wears;—

Or how o'er embers black and few,
  The last of shivered masts and spars,
He sits amid his frozen crew
  In council with the Norland stars.

From Read's "*Passing the Icebergs.*"

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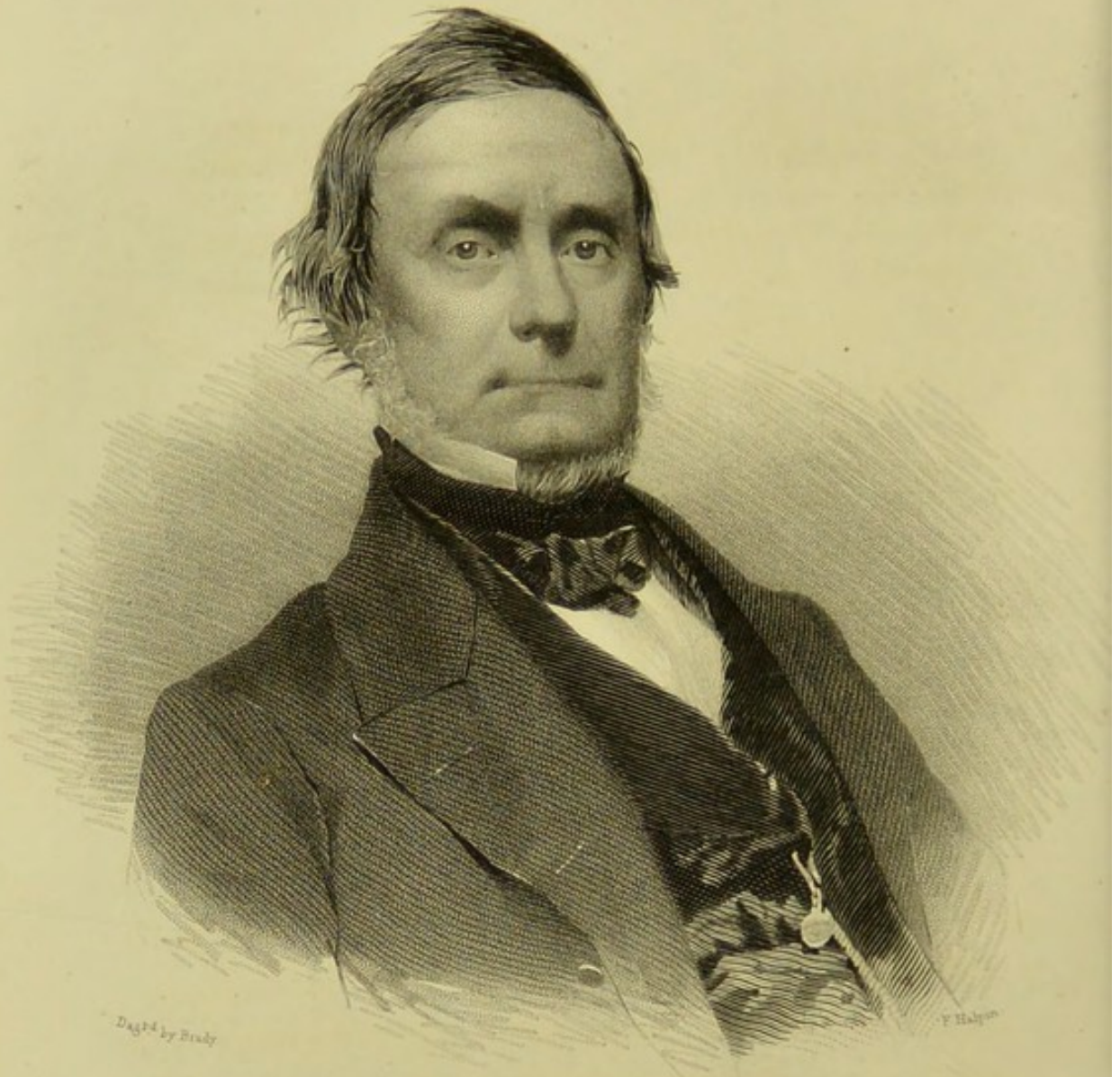


HENRY GRINNELL.

Henry Grinnell

ARCTIC EXPLORATIONS.

CHAPTER I.

ORGANIZATION—PLAN OF OPERATIONS—COMPLEMENT—EQUIPMENT —ST. JOHN'S.

In the month of December, 1852, I had the honor of receiving special orders from the Secretary of the Navy, to "conduct an expedition to the Arctic seas in search of Sir John Franklin."

I had been engaged, under Lieutenant De Haven, in the Grinnell Expedition, which sailed from the United States in 1850 on the same errand; and I had occupied myself for some months after our return in maturing the scheme of a renewed effort to rescue the missing party, or at least to resolve the mystery of its fate. Mr. Grinnell, with a liberality altogether characteristic, had placed the Advance, in which I sailed before, at my disposal for the cruise; and Mr. Peabody, of London, the generous representative of many American sympathies, had proffered his aid largely toward her outfit. The Geographical Society of New York, the Smithsonian Institution, the American Phi-

losophical Society,—I name them in the order in which they announced their contributions,—and a number of scientific associations and friends of science besides, had come forward to help me; and by their aid I managed to secure a better outfit for purposes of observation than would otherwise have been possible to a party so limited in numbers and absorbed in other objects.

Ten of our little party belonged to the United States Navy, and were attached to my command by orders from the Department; the others were shipped by me for the cruise, and at salaries entirely disproportioned to their services: all were volunteers. We did not sail under the rules that govern our national ships; but we had our own regulations, well considered and announced beforehand, and rigidly adhered to afterward through all the vicissitudes of the expedition. These included—first, absolute subordination to the officer in command or his delegate; second, abstinence from all intoxicating liquors, except when dispensed by special order; third, the habitual disuse of profane language. We had no other laws.

I had developed our plan of search in a paper read before the Geographical Society. It was based upon the probable extension of the land-masses of Greenland to the Far North,—a fact at that time not verified by travel, but sustained by the analogies of physical geography. Greenland, though looked upon as a congeries of islands connected by interior glaciers, was still to be regarded as a peninsula whose forma-

tion recognised the same general laws as other peninsulas having a southern trend.

From the alternating altitudes of its mountain-ranges, continued without depression throughout a meridional line of nearly eleven hundred miles, I inferred that this chain must extend very far to the north, and that Greenland might not improbably approach nearer the Pole than any other known land.

Believing, then, in such an extension of this peninsula, and feeling that the search for Sir John Franklin would be best promoted by a course that might lead most directly to the open sea of which I had inferred the existence, and that the approximation of the meridians would make access to the West as easy from Northern Greenland as from Wellington Channel, and access to the East far more easy,—feeling, too, that the highest protruding headland would be most likely to afford some traces of the lost party,—I named, as the inducements in favor of my scheme,—

1. Terra firma as the basis of our operations, obviating the capricious character of ice-travel.

2. A due northern line, which, throwing aside the influences of terrestrial radiation, would lead soonest to the open sea, should such exist.

3. The benefit of the fan-like abutment of land, on the north face of Greenland, to check the ice in the course of its southern or equatorial drift, thus obviating the great drawback of Parry in his attempts to reach the Pole by the Spitzbergen Sea.

4. Animal life to sustain travelling parties.

5. The co-operation of the Esquimaux; settlements of these people having been found as high as Whale Sound, and probably extending still farther along the coast.

We were to pass up Baffin's Bay therefore to its most northern attainable point; and thence, pressing on toward the Pole as far as boats or sledges could carry us, examine the coast-lines for vestiges of the lost party.

All hands counted, we were seventeen at the time of sailing. Another joined us a few days afterward; so that the party under my command, as it reached the coast of Greenland, consisted of

Henry Brooks, First Officer.	Isaac I. Hayes, M.D., Surgeon.
John Wall Wilson,	August Sontag, Astronomer.
James McGary,	Amos Bonsall,
George Riley,	George Stephenson,
William Morton,	George Whipple,
Christian Ohlsen,	William Godfrey.
Henry Goodfellow,	John Blake,
	Jefferson Baker,
	Peter Schubert,
	Thomas Hickey.

Two of these, Brooks and Morton, had been my associates in the first expedition; gallant and trustworthy men, both of them, as ever shared the fortunes or claimed the gratitude of a commander.

The Advance had been thoroughly tried in many encounters with the Arctic ice. She was carefully

inspected, and needed very little to make her all a seaman could wish. She was a hermaphrodite brig of one hundred and forty-four tons, intended originally for carrying heavy castings from an iron-foundry, but strengthened afterward with great skill and at large expense. She was a good sailer, and easily managed. We had five boats; one of them a metallic life-boat, the gift of the maker, Mr. Francis.

Our equipment was simple. It consisted of little else than a quantity of rough boards, to serve for housing over the vessel in winter, some tents of India-rubber and canvas, of the simplest description, and several carefully-built sledges, some of them on a model furnished me by the kindness of the British Admiralty, others of my own devising.

Our store of provisions was chosen with little regard to luxury. We took with us some two thousand pounds of well-made pemmican, a parcel of Borden's meat-biscuit, some packages of an exsiccated potato, resembling Edwards's, some pickled cabbage, and a liberal quantity of American dried fruits and vegetables; besides these, we had the salt beef and pork of the navy ration, hard biscuit, and flour. A very moderate supply of liquors, with the ordinary *et ceteras* of an Arctic cruiser, made up the diet-list. I hoped to procure some fresh provisions in addition before reaching the upper coast of Greenland; and I carried some barrels of malt, with a compact apparatus for brewing.

We had a moderate wardrobe of woollens, a full

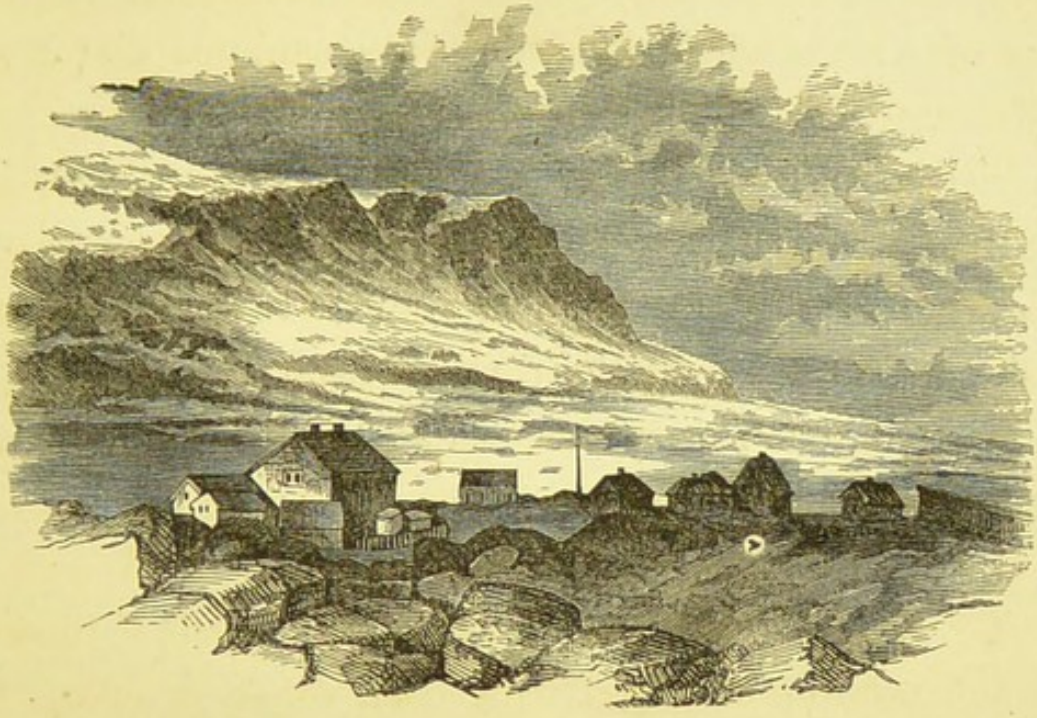
supply of knives, needles, and other articles for barter. a large, well-chosen library, and a valuable set of instruments for scientific observations.

We left New York on the 30th of May, 1853, escorted by several noble steamers; and, passing slowly on to the Narrows amid salutes and cheers of farewell, cast our brig off from the steam-tug and put to sea.

It took us eighteen days to reach St. John's, Newfoundland. The Governor, Mr. Hamilton, a brother of the Secretary of the Admiralty, received us with a hearty English welcome; and all the officials, indeed all the inhabitants, vied with each other in efforts to advance our views. I purchased here a stock of fresh beef, which, after removing the bones and tendons, we compressed into rolls by wrapping it closely with twine, according to the nautical process of *marling*, and hung it up in the rigging.

After two days we left this thriving and hospitable city; and, with a noble team of Newfoundland dogs on board, the gift of Governor Hamilton, headed our brig for the coast of Greenland.

We reached Baffin's Bay without incident. We took deep-sea-soundings as we approached its axis, and found a reliable depth of nineteen hundred fathoms: an interesting result, as it shows that the ridge which is known to extend between Ireland and Newfoundland in the bed of the Atlantic is depressed as it passes farther to the north. A few days more found us off the coast of Greenland, making our way toward Fiskernaes.



FISKERNAES.

CHAPTER II.

FISKERNAES — THE FISHERY — MR. LASSEN — HANS CHRISTIAN — LICHTENFELS — SUKKERTOPPEN.

We entered the harbor of Fiskernaes on the 1st of July, amid the clamor of its entire population, assembled on the rocks to greet us. This place has an enviable reputation for climate and health. Except perhaps Holsteinberg, it is the dryest station upon the coast; and the springs, which well through the mosses, frequently remain unfrozen throughout the year.

The sites of the different Greenland colonies seem to have been chosen with reference to their trading resources. The southern posts around Julianshaab and

Fredericstahl supply the Danish market with the valued furs of the saddle-back seal; Sukkertoppen and Holsteinberg with reindeer-skins; Disco and the northern districts with the seal and other oils. The little settlement of Fiskernaes rejoices in its codfish, as well as the other staples of the upper coast. It is situated on Fisher's Fiord, some eight miles from the open bay, and is approached by an island-studded channel of moderate draught.

OOMIAK, OR WOMEN'S BOAT, FISHING—FISKERNAES.

We saw the codfish here in all the stages of preparation for the table and the market; the stockfish, dried in the open air, without salt; crapefish, salted and pressed; fresh-fish, a *lucus a non lucendo*, as salt as a Mediterranean anchovy: we laid in supplies of all of them. The exemption of Fiskernaes from the continued fogs, and its free exposure to the winds as they draw up the fiord, make it a very favorable place for drying cod. The backbone is cut out, with the exception of about four inches near the tail; the body expanded and simply hung upon a frame: the head, a

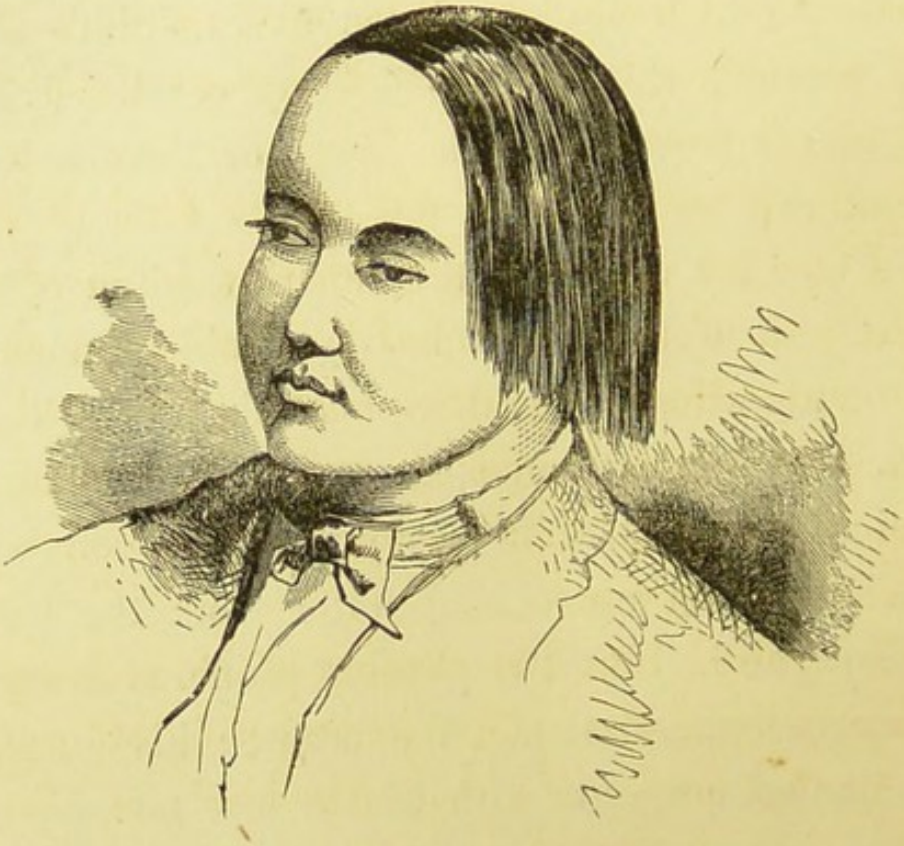
luxury neglected with us, is carefully dried in a separate piece.

Seal and shark oils are the next in importance among the staples of Fiskernaes. The *spec* or blubber is purchased from the natives with the usual articles of exchange, generally coffee and tobacco, and rudely *tried out* by exposure in vats or hot expression in iron boilers. None of the nicer processes which economy and despatch have introduced at St. John's seem to have reached this out-of-the-way coast. Even the cod-livers are given to the dogs, or thrown into the general vat.

We found Mr. Lassen, the superintending official of the Danish Company, a hearty, single-minded man, fond of his wife, his children, and his pipe. The visit of our brig was, of course, an incident to be marked in the simple annals of his colony; and, even before I had shown him my official letter from the Court of Denmark, he had most hospitably proffered every thing for our accommodation. We became his guests, and interchanged presents with him before our departure; this last transaction enabling me to say, with confidence, that the inner fiords produce noble salmon-trout, and that the reindeer-tongue, a recognised delicacy in the old and new Arctic continents, is justly appreciated at Fiskernaes.

Feeling that our dogs would require fresh provisions, which could hardly be spared from our supplies on shipboard, I availed myself of Mr. Lassen's influence to obtain an Esquimaux hunter for our party. He

recommended to me one Hans Christian, a boy of nineteen, as an expert with the kayak and javelin; and after Hans had given me a touch of his quality by spearing a bird on the wing, I engaged him. He was fat, good-natured, and, except under the excitements of the hunt, as stolid and unimpressible as one of our own Indians. He stipulated that, in addition to his



PORTRAIT OF HANS.

very moderate wages, I should leave a couple of barrels of bread and fifty-two pounds of pork with his mother; and I became munificent in his eyes when I added the gift of a rifle and a new kayak. We found him very useful; our dogs required his services as a caterer, and our own table was more than once dependent on his energies.

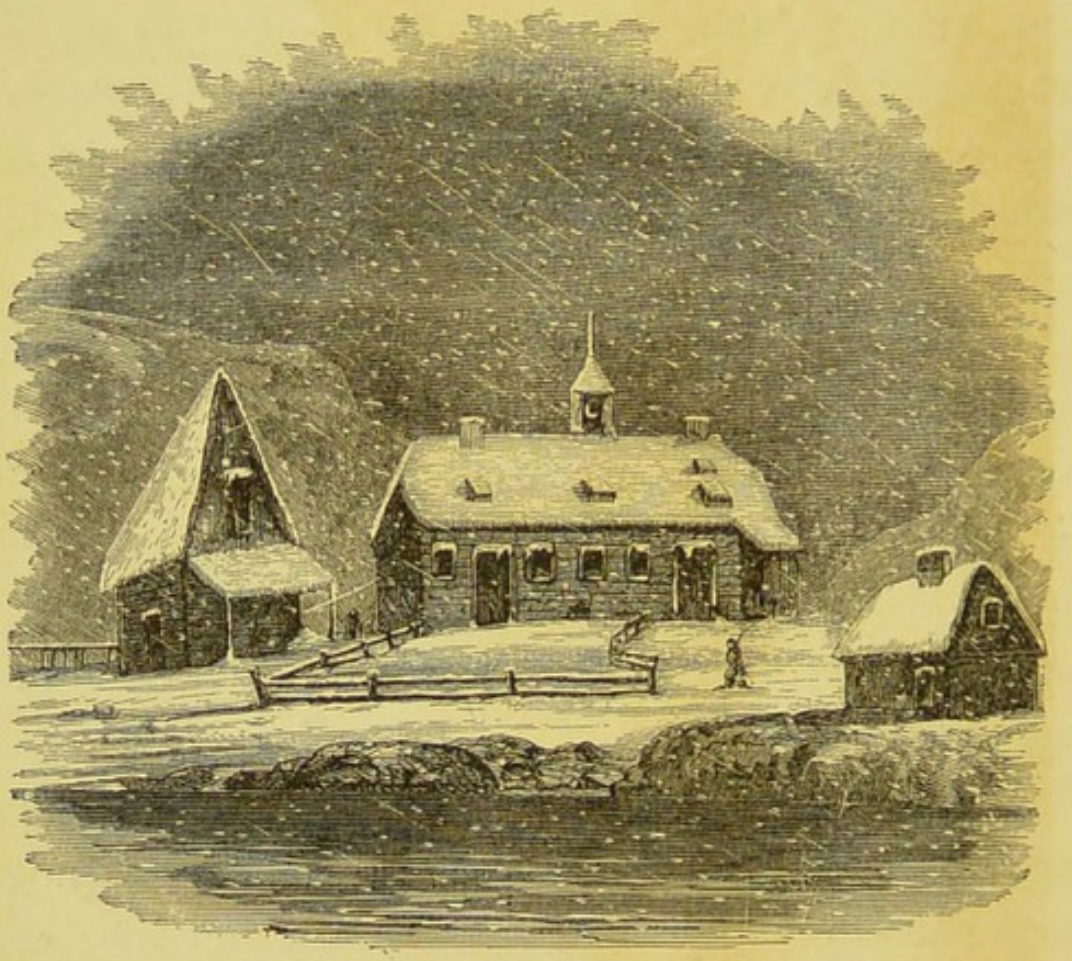
No one can know so well as an Arctic voyager the value of foresight. My conscience has often called for the exercise of it, but my habits make it an effort. I can hardly claim to be provident, either by impulse or education. Yet, for some of the deficiencies of our outfit I ought not, perhaps, to hold myself responsible. Our stock of fresh meats was too small, and we had no preserved vegetables: but my personal means were limited; and I could not press more severely than a strict necessity exacted upon the unquestioning liberality of my friends.

While we were beating out of the fiord of Fiskernaes, I had an opportunity of visiting Lichtenfels, the ancient seat of the Greenland congregations, and one of the three Moravian settlements. I had read much of the history of its founders; and it was with feelings almost of devotion, that I drew near the scene their labors had consecrated.

As we rowed into the shadow of its rock-embayed cove, every thing was so desolate and still, that we might have fancied ourselves outside the world of life; even the dogs—those querulous, never-sleeping sentinels of the rest of the coast—gave no signal of our approach. Presently, a sudden turn around a projecting cliff brought into view a quaint old Silesian mansion, bristling with irregularly-disposed chimneys, its black overhanging roof studded with dormer windows and crowned with an antique belfry.

We were met, as we landed, by a couple of grave ancient men in sable jackets and close velvet skull-

caps, such as Vandyke or Rembrandt himself might have painted, who gave us a quiet but kindly welcome. All inside of the mansion-house—the furniture, the matron, even the children—had the same time-sobered look. The sanded floor was dried by one of those huge



MORAVIAN SETTLEMENT OF LICHTENFELS.

white-tiled stoves, which have been known for generations in the north of Europe; and the stiff-backed chairs were evidently coeval with the first days of the settlement. The heavy-built table in the middle of the room was soon covered with its simple offerings of hospitality; and we sat around to talk of the lands we had come from and the changing wonders of the times.

FISKENAES, FROM THE GOVERNORS HOUSE.

We learned that the house dated back as far as the days of Matthew Stach; built, no doubt, with the beams that floated so providentially to the shore some twenty-five years after the first landing of Egedé; and that it had been the home of the brethren who now greeted us, one for twenty-nine and the other twenty-seven years. The "Congregation Hall" was within the building, cheerless now with its empty benches; a couple of French horns, all that I could associate with the gladsome piety of the Moravians, hung on each side the altar. Two dwelling-rooms, three chambers, and a kitchen, all under the same roof, made up the one structure of Lichtenfels.

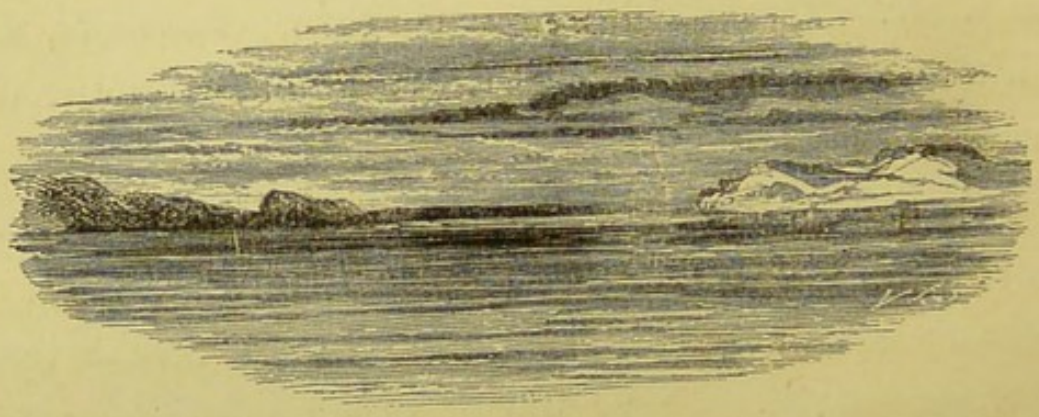
Its kind-hearted inmates were not without intelligence and education. In spite of the formal cut of their dress, and something of the stiffness that belongs to a protracted solitary life, it was impossible not to recognise, in their demeanor and course of thought, the liberal spirit that has always characterized their church. Two of their "children," they said, had "gone to God" last year with the scurvy; yet they hesitated at receiving a scanty supply of potatoes as a present from our store.

We lingered along the coast for the next nine days, baffled by calms and light adverse winds; and it was only on the 10th of July that we reached the settlement of Sukkertoppen.

The Sukkertop, or Sugar-loaf, a noted landmark, is a wild isolated peak, rising some 3000 feet from the sea. The little colony which nestles at its base occupies a

rocky gorge, so narrow and broken that a stairway connects the detached groups of huts, and the tide, as it rises, converts a part of the groundplot into a temporary island.

Of all the Danish settlements on this coast, it struck me as the most picturesque. The rugged cliffs seemed to blend with the grotesque structures about their base. The trim red and white painted frame mansion, which, in virtue of its green blinds and flagstaff, asserted the



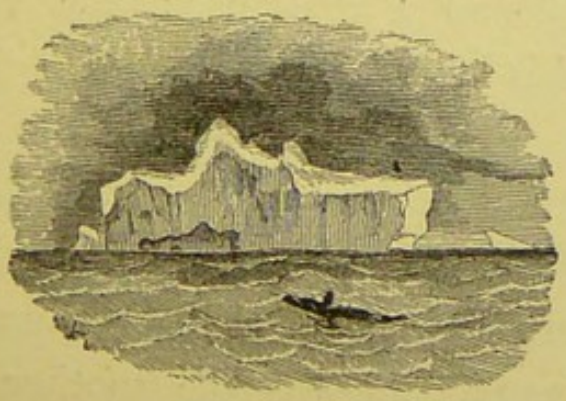
APPROACH TO SUKKERTOPPEN.

gubernatorial dignity at Fiskernaes, was here a lowly, dingy compound of tarred roof and heavy gables. The dwellings of the natives, the natives themselves, and the wild packs of dogs that crowded the beach, were all in keeping. It was after twelve at night when we came into port; and the peculiar light of the Arctic summer at this hour,—which reminds one of the effect of an eclipse, so unlike our orthodox twilight,—bathed every thing in gray but the northern background—an Alpine chain standing out against a blazing crimson sky.

Sukkertoppen is a principal depôt for reindeer-skins;

and the natives were at this season engaged in their summer hunt, collecting them. Four thousand had already been sent to Denmark, and more were on hand. I bought a stock of superior quality for fifty cents a piece. These furs are valuable for their lightness and warmth. They form the ordinary upper clothing of both sexes; the seal being used only for pantaloons and for waterproof dresses. I purchased also all that I could get of the crimped seal-skin boots or moccasins, an admirable article of walking gear, much more secure against the wet than any made by sewing. I would have added to my stock of fish; but the cod had not yet reached this part of the coast, and would not for some weeks.

Bidding good-bye to the governor, whose hospitality we had shared liberally, we put to sea on Saturday, the 10th, beating to the northward and westward in the teeth of a heavy gale.



CHAPTER III.

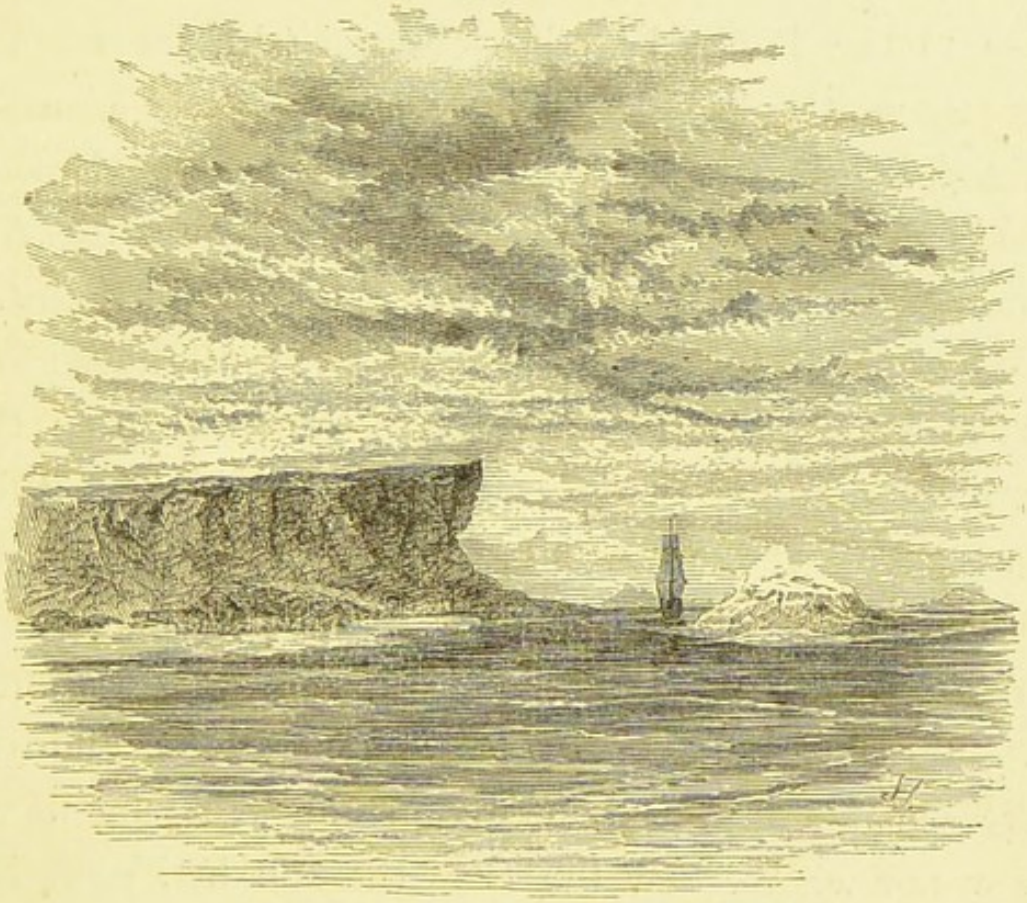
COAST OF GREENLAND — SWARTE-HUK — LAST DANISH OUTPOSTS — MELVILLE BAY — IN THE ICE — BEARS — BERGS — ANCHOR TO A BERG — MIDNIGHT SUNSHINE.

THE lower and middle coast of Greenland has been visited by so many voyagers, and its points of interest have been so often described, that I need not dwell upon them. From the time we left Sukkertoppen, we had the usual delays from fogs and adverse currents, and did not reach the neighborhood of Wilcox Point, which defines Melville Bay, until the 27th of July.

On the 16th we passed the promontory of Swarte-huk, and were welcomed the next day at Proven by my old friend Christiansen, the superintendent, and found his family much as I left them three years before. Frederick, his son, had married a native woman, and added a summer tent, a half-breed boy, and a Danish rifle to his stock of valuables. My former patient, Anna, had united fortunes with a fat-faced Esquimaux, and was the mother of a chubby little girl. Madame Christiansen, who counted all these and so many others as her happy progeny, was hearty

and warm-hearted as ever. She led the household in sewing up my skins into various serviceable garments; and I had the satisfaction, before I left, of completing my stock of furs for our sledge parties.

While our brig passed, half sailing, half drifting, up the coast, I left her under the charge of Mr. Brooks,



SWARTE-HUK—BLACK HEAD.

and set out in the whale-boat to make my purchases of dogs among the natives. Gathering them as we went along from the different settlements, we reached Upernavik, the resting-place of the Grinnell Expedition in 1851 after its winter drift, and for a couple of days shared, as we were sure to do, the generous hospitality of Governor Flaischer.

Still coasting along, we passed in succession the Esquimaux settlement of Kingatok, the Kettle,—a mountain-top so named from the resemblances of its profile,—and finally Yotlik, the farthest point of colonization; beyond which, save the sparse headlands of the charts, the coast may be regarded as unknown. Then, inclining more directly toward the north, we ran close to the Baffin Islands,—clogged with ice when I saw them three years before, now entirely clear,—sighted the landmark which is known as the Horse's Head, and, passing the Duck Islands, where the Advance grounded in 1851, bore away for Wilcox Point.

We stood lazily along the coast, with alternations of perfect calm and off-shore breezes, generally from the south or east; but on the morning of the 27th of July, as we neared the entrance of Melville Bay, one of those heavy ice-fogs, which I have described in my former narrative as characteristic of this region, settled around us. We could hardly see across the decks, and yet were sensible of the action of currents carrying us we knew not where. By the time the sun had scattered the mist, Wilcox Point was to the south of us; and our little brig, now fairly in the bay, stood a fair chance of drifting over toward the Devil's Thumb, which then bore east of north. The bergs which infest this region, and which have earned for it among the whalers the title of the "Bergy Hole," showed themselves all around us: we had come in among them in the fog.

It was a whole day's work, towing with both boats; but toward evening we had succeeded in crawling off

shore, and were doubly rewarded for our labor with a wind. I had observed with surprise, while we were floating near the coast, that the land ice was already broken and decayed; and I was aware, from what I had read, as well as what I had learned from whalers and observed myself of the peculiarities of this navigation, that the in-shore track was in consequence beset with difficulty and delays. I made up my mind at once. I would stand to the westward until arrested by the pack, and endeavor to *double* Melville Bay by an outside passage. A chronicle of this transit, condensed from my log-book, will have interest for navigators:—

"July 28, Thursday, 6 A.M.—Made the offsetting streams of the pack, and bore up to the northward and eastward; heading for Cape York in tolerably free water.

"July 29, Friday, 9½ A.M.—Made loose ice, and very rotten; the tables nearly destroyed, and much broken by wave action: water-sky to the northward. Entered this ice, intending to work to the northward and eastward, above or about Sabine Islands, in search of the northeastern land-ice. The breeze freshened off shore, breaking up and sending out the floes, the leads rapidly closing. Fearing a besetment, I determined to fasten to an iceberg; and after eight hours of very heavy labor, warping, heaving, and planting ice-anchors, succeeded in effecting it.

"We had hardly a breathing spell, before we were startled by a set of loud crackling sounds above us; and small fragments of ice not larger than a walnut

began to dot the water like the first drops of a summer shower. The indications were too plain: we had barely time to cast off before the face of the berg fell in ruins, crashing like near artillery.

FASTENED TO AN ICEBERG.

"Our position in the mean time had been critical, a gale blowing off the shore, and the floes closing and scudding rapidly. We lost some three hundred and sixty fathoms of whale line, which were caught in the floes and had to be cut away to release us from the drift. It was a hard night for boatwork, particularly

with those of the party who were taking their first lessons in floe navigation.

"July 30, Saturday.—Again moored alongside of an iceberg. The wind off shore, but hauling to the southward, with much free water.

"12 M.—The fog too dense to see more than a quarter of a mile ahead; occasional glimpses through it show no practicable leads. Land to the northeast very rugged: I do not recognise its marks. Two lively bears seen about 2 A.M. The 'Red Boat,' with Petersen and Hayes, got one; I took one of the quarter-boats, and shot the other.

"Holding on for clearer weather.

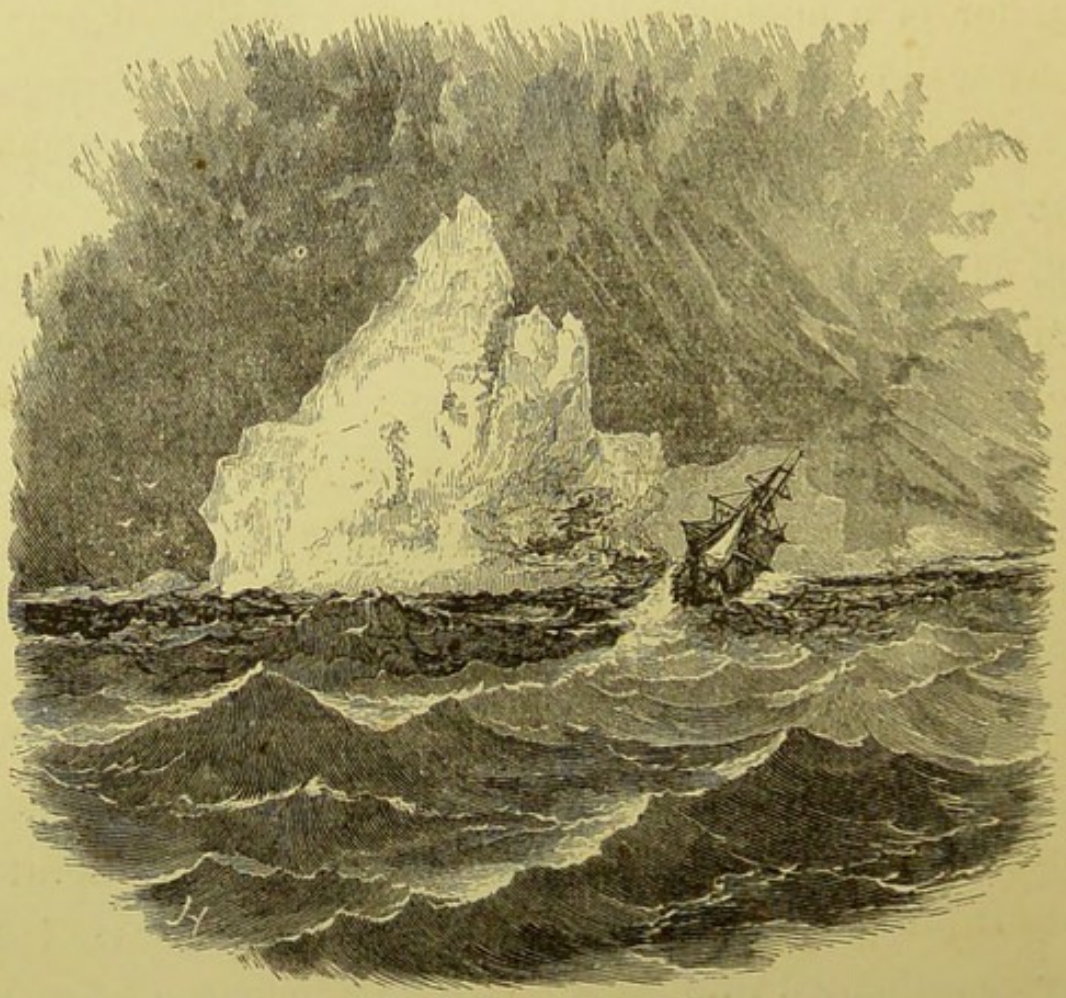
"July 31, Sunday.—Our open water beginning to fill up very fast with loose ice from the south, went around the edges of the lake in my gig, to hunt for a more favorable spot for the brig; and, after five hours' hard heaving, we succeeded in changing our fasts to another berg, quite near the free water. In our present position, the first change must, I think, liberate us. In one hour after we reached it, the place we left was consolidated into pack. We now lie attached to a low and safe iceberg, only two miles from the open sea, which is rapidly widening toward us under the influence of the southerly winds.

"We had a rough time in working to our present quarters, in what the whalers term an open hole. We drove into a couple of bergs, carried away our jib-boom and shrouds, and destroyed one of our quarter-boats.

"August 1, Monday.—Beset thoroughly with drift-

ing ice, small rotten floe-pieces. But for our berg, we would now be carried to the south; as it is, we drift with it to the north and east.

"2 A. M.—The continued pressure against our berg has begun to affect it; and, like the great floe all around us,



MELVILLE BAY.

it has taken up its line of march toward the south. At the risk of being entangled, I ordered a light line to be carried out to a much larger berg, and, after four hours' labor, made fast to it securely. This berg is a moving breakwater, and of gigantic proportions: it keeps its course steadily toward the north, while the loose ice

drifts by on each side, leaving a wake of black water for a mile behind us.

"Our position last night, by midnight altitude of the sun, gave us 75° 27′; to-day at noon, with a more reliable horizon, we made 75° 37′; showing that, in spite of all embarrassments, we still move to the north. We are, however, nearer than I could wish to the land,—a blank wall of glacier.

"About 10 P. M. the immediate danger was past; and, espying a lead to the northeast, we got under weigh, and pushed over in spite of the drifting trash. The men worked with a will, and we bored through the floes in excellent style."

On our road we were favored with a gorgeous spectacle, which hardly any excitement of peril could have made us overlook. The midnight sun came out over the northern crest of the great berg, our late "fast friend," kindling variously-colored fires on every part of its surface, and making the ice around us one great resplendency of gemwork, blazing carbuncles, and rubies and molten gold.

CHAPTER IV.

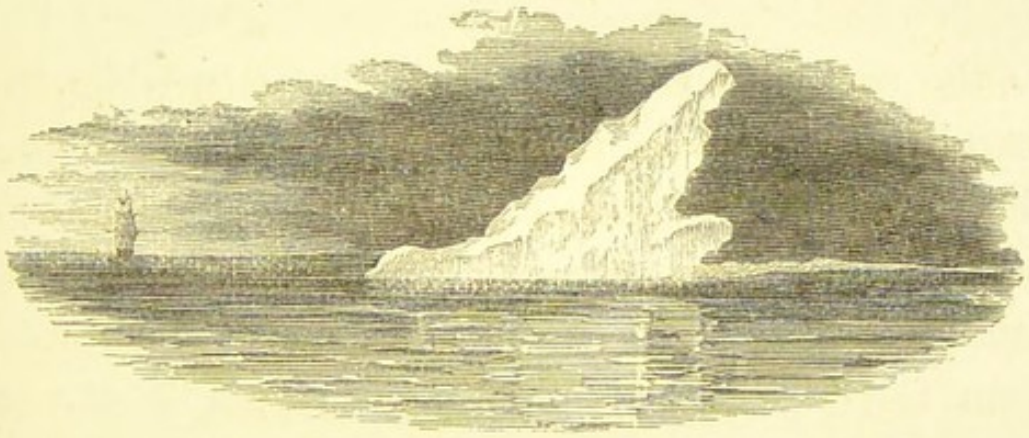
BORING THE FLOES — SUCCESSFUL PASSAGE THROUGH MELVILLE BAY — ICE NAVIGATION — PASSAGE OF THE MIDDLE PACK — THE NORTH WATER.

Our brig went crunching through all this jewelry; and, after a tortuous progress of five miles, arrested here and there by tongues which required the saw and ice-chisels, fitted herself neatly between two floes. Here she rested till toward morning, when the leads opened again, and I was able, from the crow's-nest, to pick our way to a larger pool some distance ahead. In this we beat backward and forward, like China fish seeking an outlet from a glass jar, till the fog caught us again; and so the day ended.

"August 3, Wednesday.—The day did not promise well; but as the wind was blowing in feeble airs from the north-northwest, I thought it might move the ice, and sent out the boats for a tow. But, after they had had a couple of hours of unprofitable work, the breeze freshened, and the floes opened enough to allow us to beat through them. Every thing now depended upon practical ice knowledge; and, as I was not willing to

trust any one else in selecting the leads for our course, I have spent the whole day with McGary at mast-head,—a somewhat confined and unfavorable preparation for a journal entry.

"I am much encouraged, however; this off-shore wind is favoring our escape. The icebergs too have assisted us to hold our own against the rapid passage of the broken ice to the south; and since the larger floes have opened into leads, we have nothing to do but to follow



THE NORTH WATER.

them carefully and boldly. As for the ice-necks, and prongs, and rafts, and tongues, the capstan and windlass have done a great deal to work us through them; but a great deal more, a brave headway and our little brig's hard head of oak.

"Midnight.—We are clear of the bay and its myriads of discouragements. The North Water, our highway to Smith's Sound, is fairly ahead.

"It is only eight days ago that we made Wilcox

Point, and seven since we fairly left the inside track of the whalers, and made our push for the west. I did so, not without full consideration of the chances. Let me set down what my views were and are."

The indentation known as Melville Bay is protected by its northern and northeastern coast from the great ice and current drifts which follow the axis of Baffin's Bay. The interior of the country which bounds upon it is the seat of extensive glaciers, which are constantly shedding off icebergs of the largest dimensions. The greater bulk of these is below the water-line, and the depth to which they sink when floating subjects them to the action of the deeper sea currents, while their broad surface above the water is of course acted on by the wind. It happens, therefore, that they are found not unfrequently moving in different directions from the floes around them, and preventing them for a time from freezing into a united mass. Still, in the late winter, when the cold has thoroughly set in, Melville Bay becomes a continuous field of ice, from Cape York to the Devil's Thumb.

On the return of milder weather, the same causes renew their action; and that portion of the ice which is protected from the outside drift, and entangled among the icebergs that crowd the bay, remains permanent long after that which is outside is in motion. Step by step, as the year advances, its outer edge breaks off; yet its inner curve frequently remains unbroken through the entire summer. This is the "fast ice" of the whalers, so important to their progress in the earlier

portions of the season; for, however it may be encroached upon by storms or currents, they can generally find room to *track* their vessels along its solid margin; or if the outside ice, yielding to off-shore winds, happens to recede, the interval of water between the fast and the drift allows them not unfrequently to use their sails.

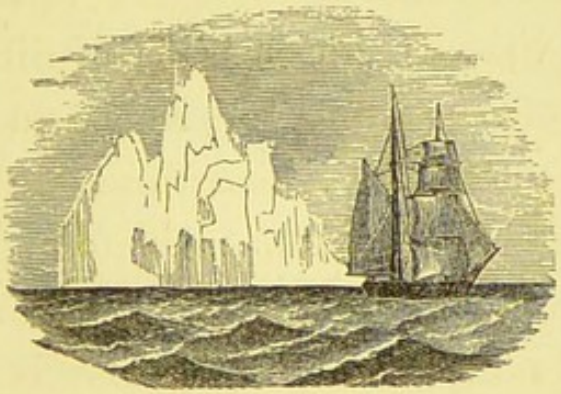
It is therefore one of the whalers' canons of navigation, which they hold to most rigidly, to follow the shore. But it is obvious that this applies only to the early periods of the Arctic season, when the land ice of the inner bay is comparatively unbroken, as in May or June, or part of July, varying of course with the circumstances. Indeed, the bay is seldom traversed except in these months, the northwest fisheries of Pond's Bay, and the rest, ceasing to be of value afterward. Later in the summer, the inner ice breaks up into large floes, moving with wind and tide, that embarrass the navigator, misleading him into the notion that he is attached to his "fast," when in reality he is accompanying the movements of an immense floating ice-field.

I have been surprised sometimes that our national ships of discovery and search have not been more generally impressed by these views. Whether the season has been mild or severe, the ice fast and solid, or broken and in drift, they have followed in August the same course which the whalers do in June, running their vessels into the curve of the bay in search of the fast ice which had disappeared a month before,

and involving themselves in a labyrinth of floes. It was thus the Advance was caught in her second season, under Captain De Haven; while the Prince Albert, leaving us, worked a successful passage to the west. So too the North Star, in 1849, was carried to the northward, and hopelessly entangled there. Indeed, it is the common story of the disasters and delays that we read of in the navigation of these regions.

Now I felt sure, from the known openness of the season of 1852 and the probable mildness of the following winter, that we could scarcely hope to make use of the land ice for tracking, or to avail ourselves of leads along its margin by canvas. And this opinion was confirmed by the broken and rotten appearance of the floes during our coastwise drift at the Duck Islands. I therefore deserted the inside track of the whalers, and stood to the westward, until we made the first streams of the middle pack; and then, skirting the pack to the northward, headed in slowly for the middle portion of the bay above Sabine Islands. My object was to double, as it were, the loose and drifting ice that had stood in my way, and, reaching Cape York, as nearly as might be, trust for the remainder of my passage to warping and tracking by the heavy floes. We succeeded, not without some laborious boring and serious risks of entanglement among the broken icefields. But we managed, in every instance, to combat this last form of difficulty by attaching our vessel to large icebergs, which enabled us to hold our own, however swiftly the surface floes were pressing

by us to the south. Four days of this scarcely varied yet exciting navigation brought us to the extended fields of the pack, and a fortunate northwester opened a passage for us through them. We are now in the North Water.



CHAPTER V.

CRIMSON CLIFFS OF BEVERLEY — HAKLUYT AND NORTHUMBERLAND — RED SNOW — THE GATES OF SMITH'S STRAITS — CAPE ALEXANDER — CAPE HATHERTON — FAREWELL CAIRN — LIFE-BOAT DEPÔT — ESQUIMAUX RUINS FOUND — GRAVES — FLAGSTAFF POINT.

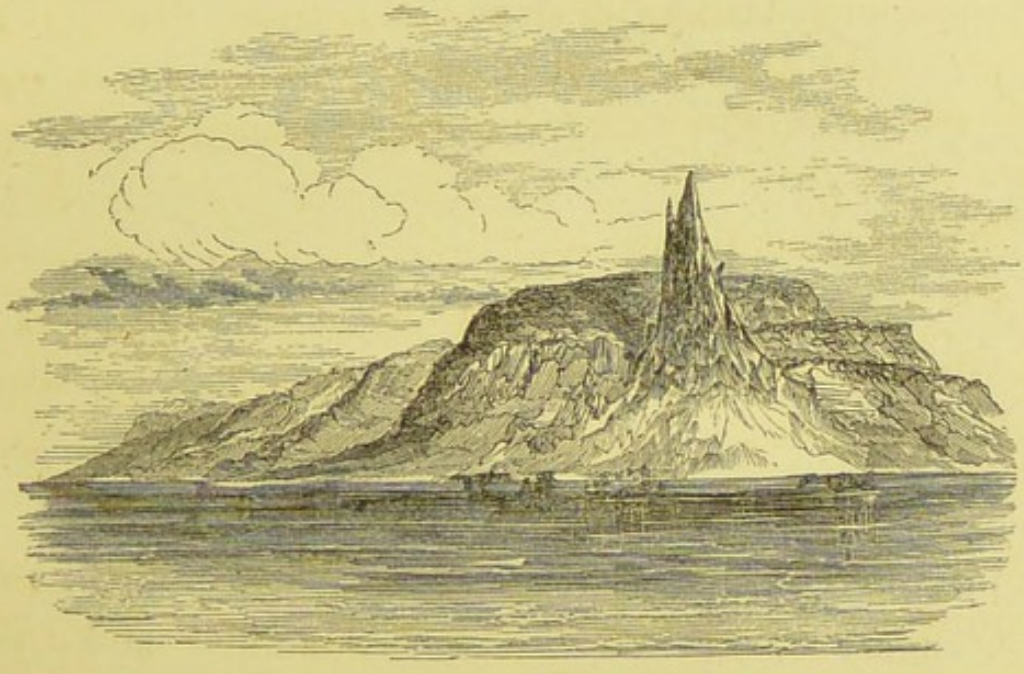
My diary continues:—

"We passed the 'Crimson Cliffs' of Sir John Ross in the forenoon of August 5th. The patches of red snow, from which they derive their name, could be seen clearly at the distance of ten miles from the coast. It had a fine deep rose hue, not at all like the brown stain which I noticed when I was here before. All the gorges and ravines in which the snows had lodged were deeply tinted with it. I had no difficulty now in justifying the somewhat poetical nomenclature which Sir John Franklin applied to this locality; for if the snowy surface were more diffused, as it is no doubt earlier in the season, crimson would be the prevailing color.

"Late at night we passed Conical Rock, the most insulated and conspicuous landmark of this coast; and, still later, Wostenholm and Saunder's Islands, and Oomenak, the place of the 'North Star's' winter-quar-

ters:—an admirable day's run; and so ends the 5th of August. We are standing along, with studding-sails set, and open water before us, fast nearing our scene of labor. We have already got to work sewing up blanket bags and preparing sledges for our campaignings on the ice."

We reached Hakluyt Island in the course of the next day. I have only this wood-cut to give an idea of its



HAKLUYT POINT, FROM NORTH-NORTHWEST.

northern face. The tall spire, probably of gneiss, rises six hundred feet above the water-level, and is a valuable landmark for very many miles around. We were destined to become familiar with it before leaving this region. Both it and Northumberland, to the southeast of it, afforded studies of color that would have rewarded an artist. The red snow was diversified with large surfaces of beautifully-green mosses and alope-

curus; and where the sandstone was bare, it threw in a rich shade of brown.

The coast to the north of Cape Atholl is of broken greenstone, in terraces. Nearing Hakluyt Island, the truncated and pyramidal shapes of these rocks may still be recognised in the interior; but the coast presents a coarse red sandstone, which continues well characterized as far as Cape Saumarez. The nearly horizontal strata of the sandstone thus exhibited contrast conspicuously with the snow which gathers upon their exposed ledges. In fact, the parallelism and distinctness of the lines of white and black would have dissatisfied a lover of the picturesque. Porphyritic rocks, however, occasionally broke their too great uniformity; occasionally, too, the red snow showed its colors; and at intervals of very few miles—indeed, wherever the disrupted masses offered a passage-way—glaciers were seen descending toward the water's edge. All the back country appeared one great rolling distance of glacier.

"August 6, Saturday.—Cape Alexander and Cape Isabella, the headlands of Smith's Sound, are now in sight; and, in addition to these indications of our progress toward the field of search, a marked swell has set in after a short blow from the northward, just such as might be looked for from the action of the wind upon an open water-space beyond.

"Whatever it may have been when Captain Inglefield saw it a year ago, the aspect of this coast is now most uninviting. As we look far off to the west, the snow comes down with heavy uniformity to the water's

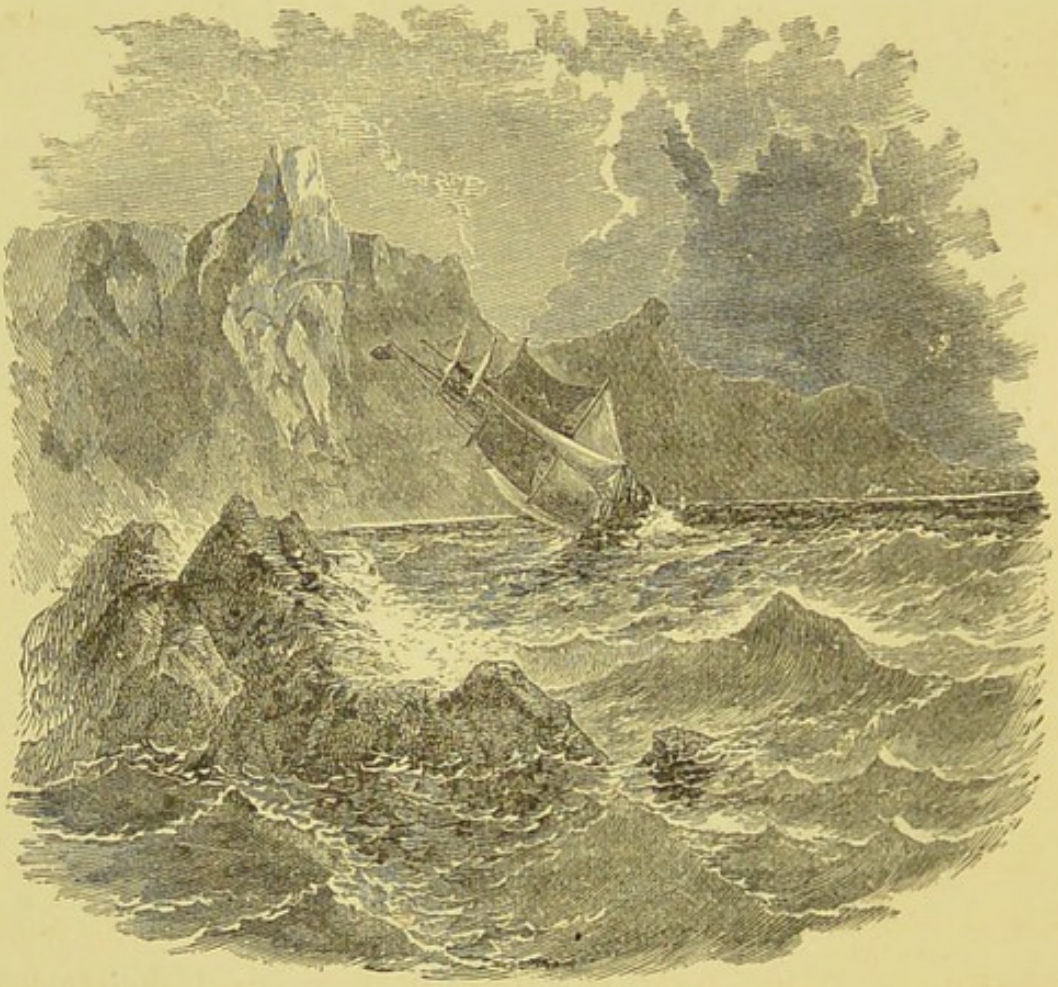
edge, and the patches of land seem as rare as the summer's snow on the hills about Sukkertoppen and Fiskernaes. On the right we have an array of cliffs, whose frowning grandeur might dignify the entrance to the proudest of southern seas. I should say they

CAPE ALEXANDER.

would average from four to five hundred yards in height, with some of their precipices eight hundred feet at a single steep. They have been until now the Arctic pillars of Hercules; and they look down on us as if they challenged our right to pass. Even the sailors are impressed, as we move under their dark shadow. One

of the officers said to our look-out, that the gulls and eider that dot the water about us were as enlivening as the white sails of the Mediterranean. 'Yes, sir,' he rejoined, with sincere gravity; 'yes, sir, in proportion to their size.'"

"August 7, Sunday.—We have left Cape Alexander



HARTSTENE BAY—LEAVING CAPE ALEXANDER.

to the south; and Littleton Island is before us, hiding Cape Hatherton, the latest of Captain Inglefield's positively-determined headlands. We are fairly inside of Smith's Sound.

"On our left is a capacious bay; and deep in its north-eastern recesses we can see a glacier issuing from a fiord."

We knew this bay familiarly afterward, as the residence of a body of Esquimaux with whom we had many associations; but we little dreamt then that it would bear the name of a gallant friend, who found there the first traces of our escape. A small cluster of rocks, hidden at times by the sea, gave evidence of the violent tidal action about them.

"As we neared the west end of Littleton Island, after breakfast this morning, I ascended to the crow's-nest, and saw to my sorrow the ominous blink of ice ahead. The wind has been freshening for a couple of days from the northward, and if it continues it will bring down the floes on us.

"My mind has been made up from the first that we are to force our way to the north as far as the elements will let us; and I feel the importance therefore of securing a place of retreat, that in case of disaster we may not be altogether at large. Besides, we have now reached one of the points, at which, if any one is to follow us, he might look for some trace to guide him."

I determined to leave a cairn on Littleton Island, and to deposit a boat with a supply of stores in some convenient place near it. One of our whale-boats had been crushed in Melville Bay, and Francis's metallic life-boat was the only one I could spare. Its length did not exceed twenty feet, and our crew of twenty could hardly stow themselves in it with even a few days' rations; but it was air-chambered and buoyant.

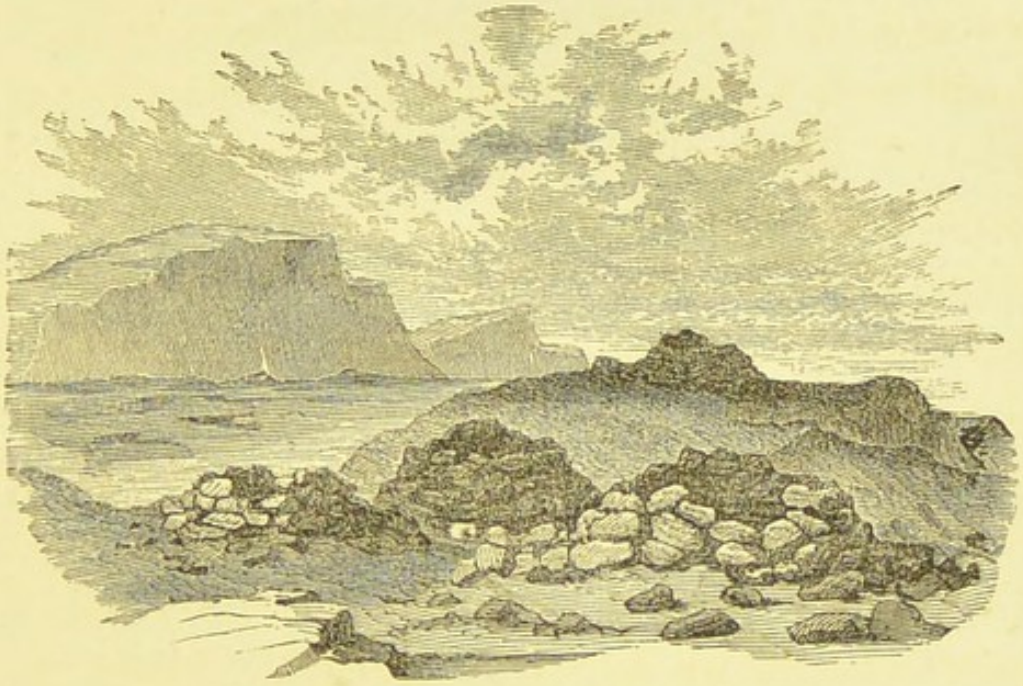
Selecting from our stock of provisions and field equipage such portions as we might by good luck be

able to dispense with, and adding with reluctant liberality some blankets and a few yards of India-rubber cloth, we set out in search of a spot for our first depôt. It was essential that it should be upon the mainland; for the rapid tides might so wear away the ice as to make an island inaccessible to a foot-party; and yet it was desirable that, while secure against the action of sea and ice, it should be approachable by boats. We found such a place after some pretty cold rowing. It was off the northeast cape of Littleton, and bore S.S.E. from Cape Hatherton, which loomed in the distance above the fog. Here we buried our life-boat with her little cargo. We placed along her gunwale the heaviest rocks we could handle, and, filling up the interstices with smaller stones and sods of andromeda and moss, poured sand and water among the layers. This, frozen at once into a solid mass, might be hard enough, we hoped, to resist the claws of the polar bear.

We found to our surprise that we were not the first human beings who had sought a shelter in this desolate spot. A few ruined walls here and there showed that it had once been the seat of a rude settlement; and in the little knoll which we cleared away to cover in our storehouse of valuables, we found the mortal remains of their former inhabitants.

Nothing can be imagined more sad and homeless than these memorials of extinct life. Hardly a vestige of growth was traceable on the bare ice-rubbed rocks; and the huts resembled so much the broken

fragments that surrounded them, that at first sight it was hard to distinguish one from the other. Walrus bones lay about in all directions, showing that this animal had furnished the staple of subsistence. There were some remains too of the fox and the narwhal; but I found no signs of the seal or reindeer.



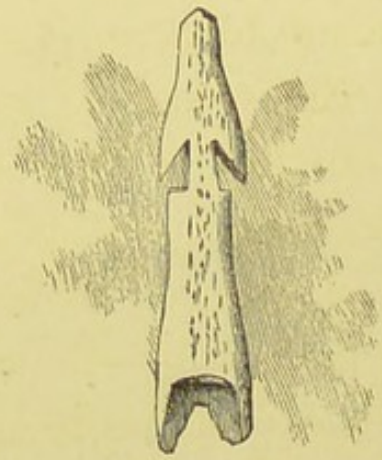
ESQUIMAUX RUINED HUTS—LIFE-BOAT COVE.

These Esquimaux have no mother earth to receive their dead; but they seat them as in the attitude of repose, the knees drawn close to the body, and enclose them in a sack of skins. The implements of the living man are then grouped around him; they are covered with a rude dome of stones, and a cairn is piled above. This simple cenotaph will remain intact for generation after generation. The Esquimaux never disturb a grave.

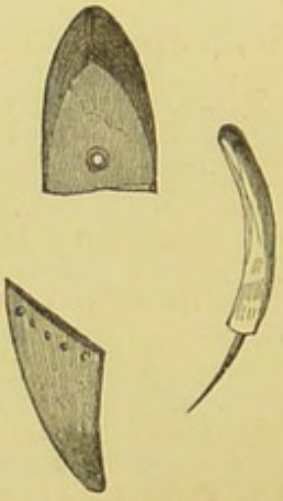
From one of the graves I took several perforated

and rudely-fashioned pieces of walrus ivory, evidently parts of sledge and lance gear. But wood must have been even more scarce with them than with the natives of Baffin's Bay north of the Melville glacier.

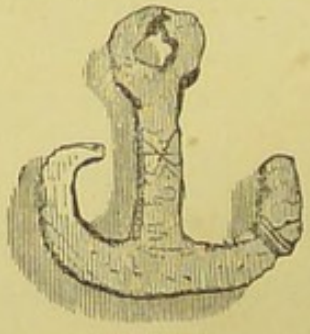
Child's Spear.



Bone Spear Head.



Sewing Implements.



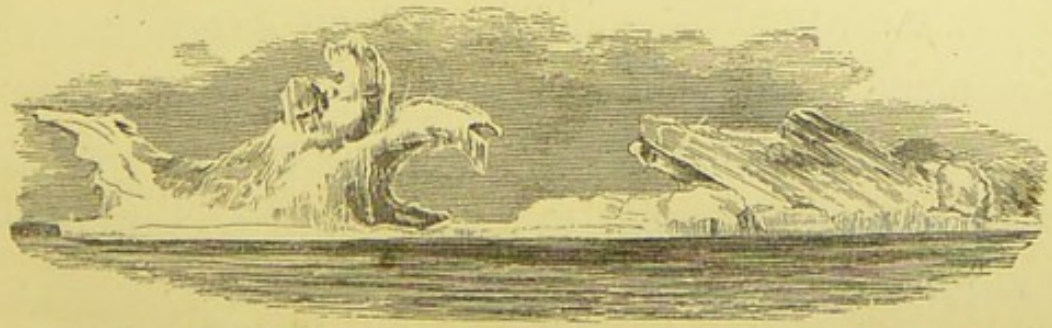
Pot Hook.

ESQUIMAUX IMPLEMENTS, FROM GRAVES.

We found, for instance, a child's toy spear, which, though elaborately tipped with ivory, had its wooden handle pieced out of four separate bits, all carefully patched and bound with skin. No piece was more than six inches in length or half an inch in thickness.

We found other traces of Esquimaux, both on Littleton Island and in Shoal-Water Cove, near it. They consisted of huts, graves, places of deposit for meat, and rocks arranged as foxtraps. These were evidently very ancient; but they were so well preserved, that it was impossible to say how long they had been abandoned, whether for fifty or a hundred years before.

Our stores deposited, it was our next office to erect a beacon and intrust to it our tidings. We chose for this purpose the Western Cape of Littleton Island, as more conspicuous than Cape Hatherton; built our cairn; wedged a staff into the crevices of the rocks; and, spreading the American flag, hailed its folds with three cheers as they expanded in the cold midnight breeze. These important duties performed,—the more lightly, let me say, for this little flicker of enthusiasm,—we rejoined the brig early in the morning of the 7th, and forced on again toward the north, beating against wind and tide.



CHAPTER VI.

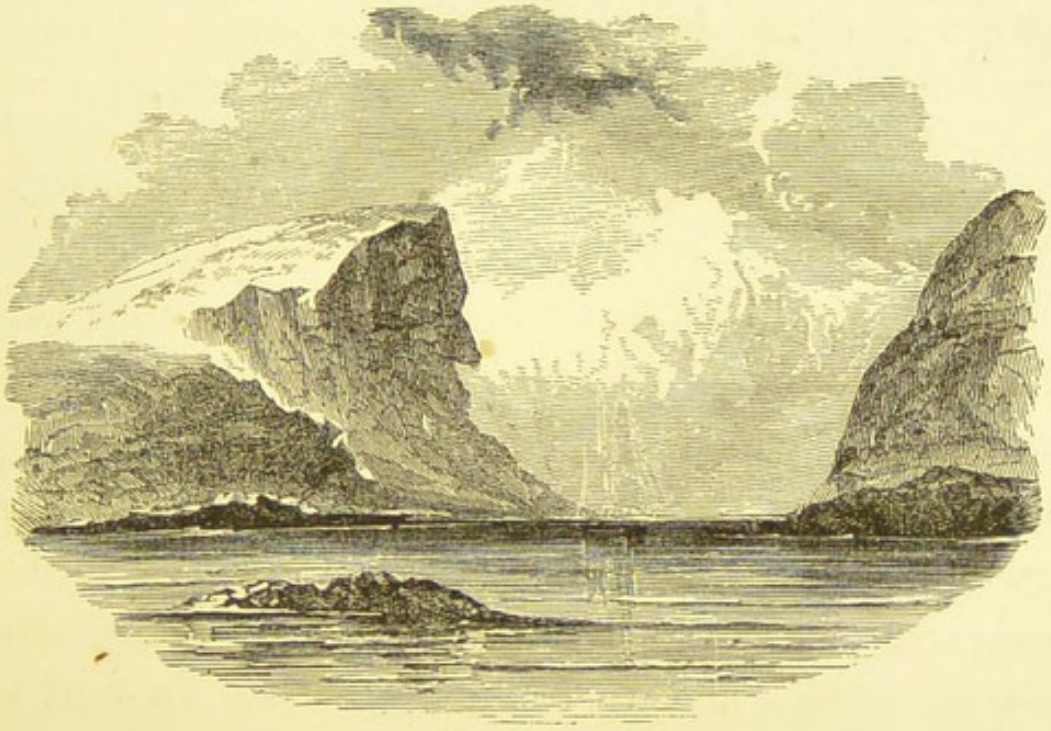
CLOSING WITH THE ICE — REFUGE HARBOR — DOGS — WALRUS — NARWHAL — ICE-HILLS — BEACON-CAIRN — ANCHORED TO A BERG — ESQUIMAUX HUTS — PETER FORCE BAY — CAPE CORNELIUS GRINNELL — SHALLOWS — A GALE — THE RECREANT DOGS.

"AUGUST 8, Monday.—I had seen the ominous blink ahead of us from the Flagstaff Point of Littleton Island; and before two hours were over, we closed with ice to the westward. It was in the form of a pack, very heavy, and several seasons old; but we stood on, boring the loose stream-ice, until we had passed some forty miles beyond Cape Life-boat Cove. Here it became impossible to force our way farther; and, a dense fog gathering round us, we were carried helplessly to the eastward. We should have been forced upon the Greenland coast; but an eddy close in shore released us for a few moments from the direct pressure, and we were fortunate enough to get out a whale-line to the rocks and warp into a protecting niche.

"In the evening I ventured out again with the change of tide, but it was only to renew a profitless conflict. The flood, encountering the southward movement of

the floes, drove them in upon the shore, and with such rapidity and force as to carry the smaller bergs along with them. We were too happy, when, after a manful struggle of some hours, we found ourselves once more out of their range.

"Our new position was rather nearer to the south than the one we had left. It was in a beautiful cove,



REFUGE HARBOR.

landlocked from east to west, and accessible only from the north. Here we moored our vessel securely by hawsers to the rocks, and a whale-line carried out to the narrow entrance. At McGary's suggestion, I called it 'Fog Inlet;' but we afterward remembered it more thankfully as REFUGE HARBOR.

"August 9, Tuesday.—It may be noted among our little miseries that we have more than fifty dogs on

board, the majority of whom might rather be characterized as 'ravening wolves.' To feed this family, upon whose strength our progress and success depend, is really a difficult matter. The absence of shore or land ice to the south in Baffin's Bay has prevented our rifles from contributing any material aid to our commissariat. Our two bears lasted the cormorants but eight days; and to feed them upon the meagre allowance of two pounds of raw flesh every other day is an almost impossible necessity. Only yesterday they were ready to eat the caboose up, for I would not give them pemmican. Corn meal or beans, which Penny's dogs fed on, they disdain to touch; and salt junk would kill them.

"Accordingly, I started out this morning to hunt walrus, with which the Sound is teeming. We saw at least fifty of these dusky monsters, and approached many groups within twenty paces. But our rifle-balls reverberated from their hides like cork pellets from a pop-gun target, and we could not get within harpoon distance of one. Later in the day, however, Ohlsen, climbing a neighboring hill to scan the horizon and see if the ice had slackened, found the dead carcass of a narwhal or sea-unicorn: a happy discovery, which has secured for us at least six hundred pounds of good fetid wholesome flesh. The length of the narwhal was fourteen feet, and his process, or 'horn,' from the tip to its bony encasement, four feet—hardly half the size of the noble specimen I presented to the Academy of Natural Sciences after my last cruise. We built a fire

on the rocks, and melted down his blubber: he will yield readily two barrels of oil.

"While we were engaged getting our narwhal on board, the wind hauled round to the southwest, and the ice began to travel back rapidly to the north. This looks as if the resistance to the northward was not very permanent: there must be either great areas

ICE-HILLS ON THE COAST ABOVE REFUGE HARBOR.

of relaxed ice or open-water leads along the shore. But the choking up of the floes on our eastern side still prevents an attempt at progress. This ice is the heaviest I have seen; and its accumulation on the coast produces barricades, more like bergs than hummocks. One of these rose perpendicularly more than sixty feet. Except the 'ice-hills' of Admiral Wrangell,

on the coast of Arctic Asia, nothing of ice-upheaval has ever been described equal to this.

"Still, anxious beyond measure to get the vessel released, I forced a boat through the drift to a point about a mile north of us, from which I could overlook the sound. There was nothing to be seen but a melancholy extent of impacted drift, stretching northward as far as the eye could reach. I erected a small beacon-cairn on the point; and, as I had neither paper, pencil, nor pennant, I burnt a K. with powder on the rock, and scratching O.K. with a pointed bullet on my cap-lining, hoisted it as the representative of a flag."*

With the small hours of Wednesday morning came a breeze from the southwest, which was followed by such an apparent relaxation of the floes at the slack-water of flood-tide that I resolved to attempt an escape from our little basin. We soon warped to a narrow cul-de-sac between the main pack on one side and the rocks on the other, and after a little trouble made ourselves fast to a berg.

There was a small indentation ahead, which I had noticed on my boat reconnoissance; and, as the breeze seemed to be freshening, I thought we might venture for it. But the floes were too strong for us: our eight-inch hawser parted like a whip-cord. There was no

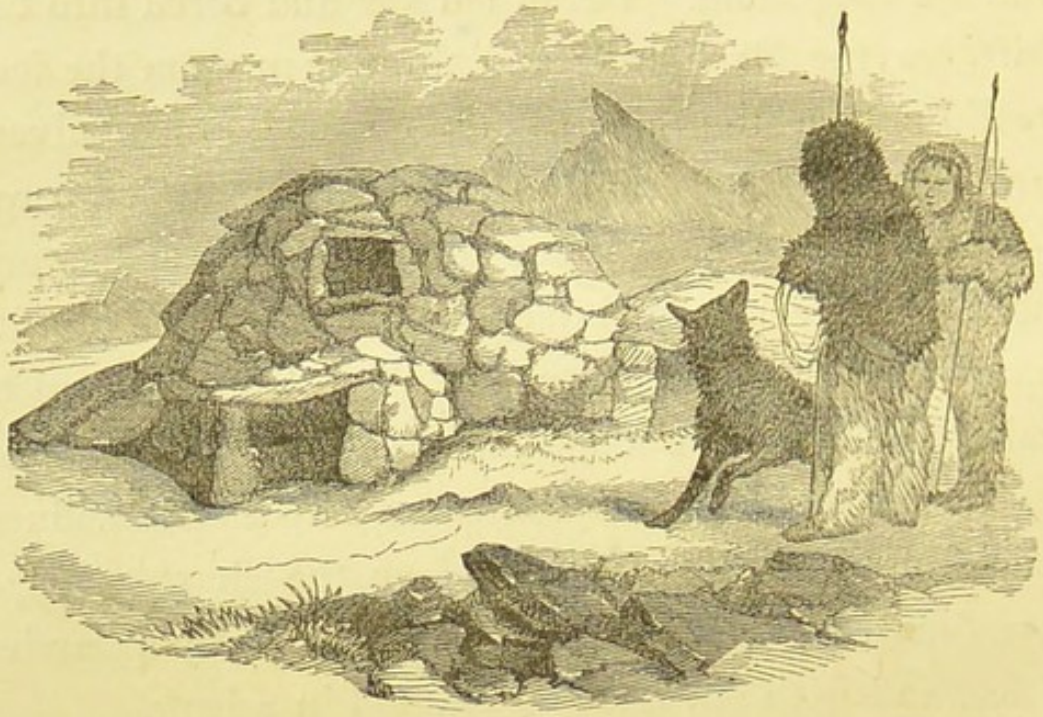
* It was our custom, in obedience to a general order, to build cairns and leave notices at every eligible point. One of these, rudely marked, much as I have described this one, was found by Captain Hartstene, and, strange to say, was the only direct memorial of my whereabouts communicated from some hundred of beacons.

time for hesitation. I crowded sail and bored into the drift, leaving Mr. Sontag and three men upon the ice: we did not reclaim them till, after some hours of adventure, we brought up under the lee of a grounded berg.

I pass without notice our successive efforts to work the vessel to seaward through the floes. Each had its somewhat varied incidents, but all ended in failure to make progress. We found ourselves at the end of the day's struggles close to the same imperfectly-defined headland which I have marked on the chart as Cape Cornelius Grinnell, yet separated from it by a barrier of ice, and with our anchors planted in a berg.

In one of the attempts which I made with my boat to detect some pathway or outlet for the brig, I came upon a long rocky ledge, with a sloping terrace on its southern face, strangely green with sedges and poppies. I had learned to refer these unusual traces of vegetation to the fertilizing action of the refuse which gathers about the habitations of men. Yet I was startled, as I walked round its narrow and dreary limits, to find an Esquimaux hut, so perfect in its preservation that a few hours' labor would have rendered it habitable. There were bones of the walrus, fox, and seal, scattered round it in small quantities; a dead dog was found close by, with the flesh still on his bones; and, a little farther off, a bear-skin garment that retained its fur. In fact, for a deserted homestead, the scene had so little of the air of desolation about it that it cheered my good fellows perceptibly.

The scenery beyond, upon the main shore, might



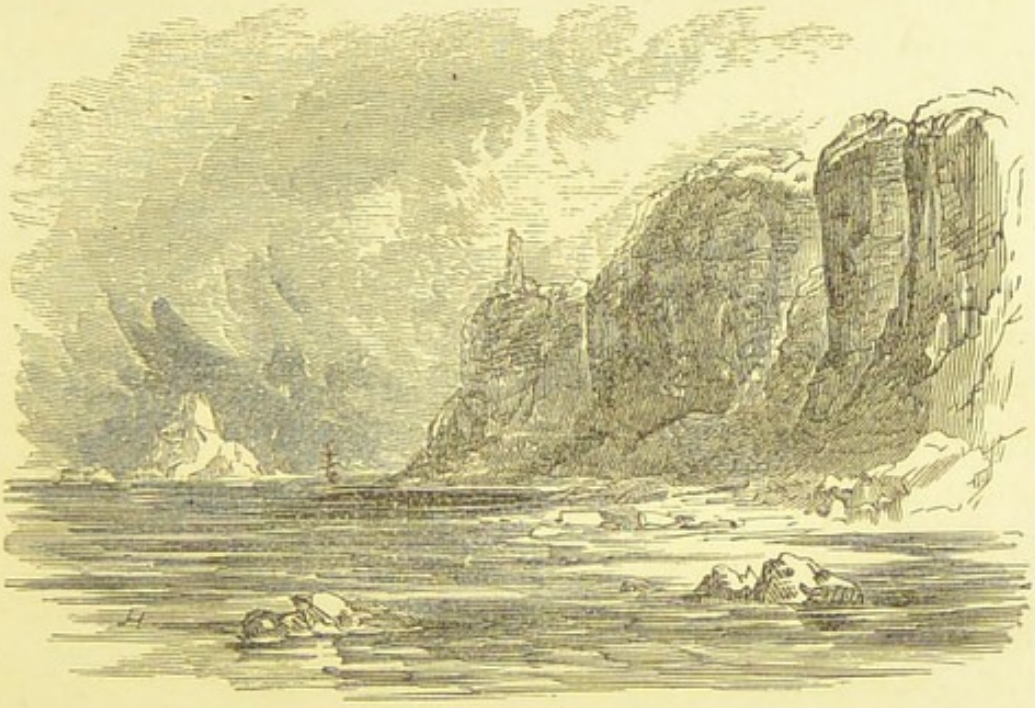
ESQUIMAUX HUT.

have impressed men whose thoughts were not otherwise absorbed. An opening through the cliffs of trap rock disclosed a valley slope and distant rolling hills,—in fine contrast with the black precipices in front,—and a stream that came tumbling through the gorge: we could hear its pastoral music even on board the brig, when the ice clamor intermitted.

The water around was so shoal that at three hundred yards from the shore we had but twelve-feet soundings at low tide. Great rocks, well worn and rounded, that must have been floated out by the ice at some former period, rose above the water at a half mile's distance, and the inner drift had fastened itself about them in fantastic shapes. The bergs, too, were aground well out to seaward; and the cape ahead was completely packed with the ice which they hemmed

in. Tied up as we were to our own berg, we were for the time in safety, though making no progress; but to cast loose and tear out into the pack was to risk progress in the wrong direction.

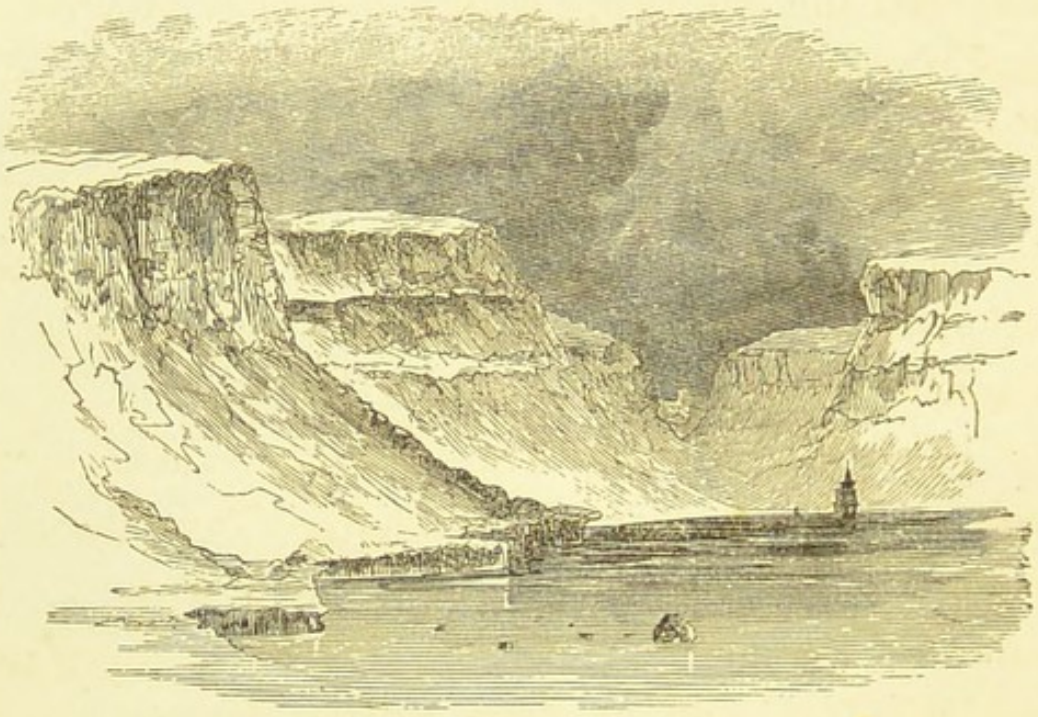
"August 12, Friday.—After careful consideration, I have determined to try for a further northing, by fol-



PREPARING TO ENTER THE SHALLOWS—BEDEVILLED REACH—FORCE BAY.

lowing the coast-line. At certain stages of the tides—generally from three-quarters flood to the commencement of the ebb—the ice evidently relaxes enough to give a partial opening close along the land. The strength of our vessel we have tested pretty thoroughly: if she will bear the frequent groundings that we must look for, I am persuaded we may seek these openings, and warp along them from one lump of

grounded ice to another. The water is too shoal for ice masses to float in that are heavy enough to make a nip very dangerous. I am preparing the little brig for this novel navigation, clearing her decks, securing things below with extra lashings, and getting out spars, to serve in case of necessity as shores to keep her on an even keel.



CAPE CORNELIUS GRINNELL.

"August 13, Saturday.—As long as we remain entangled in the wretched shallows of this bight, the long precipitous cape ahead may prevent the north wind from clearing us; and the nearness of the cliffs will probably give us squalls and flaws. Careful angular distances taken between the shore and the chain of bergs to seaward show that these latter do not budge with either wind or tide. It looks as if we were to

have a change of weather. Is it worth another attempt to warp out and see if we cannot double these bergs to seaward? I have no great time to spare: the young ice forms rapidly in quiet spots during the entire twenty-four hours.

"August 14, Sunday.—The change of weather yesterday tempted us to forsake our shelter and try another tussle with the ice. We met it as soon as we ventured out; and the day closed with a northerly progress, by hard warping, of about three-quarters of a mile. The men were well tired; but the weather looked so threatening, that I had them up again at three o'clock this morning. My immediate aim is to attain a low rocky island which we see close into the shore, about a mile ahead of us.

"These low shallows are evidently caused by the rocks and foreign materials discharged from the great valley. It is impossible to pass inside of them, for the huge boulders run close to the shore. Yet there is no such thing as doubling them outside, without leaving the holding-ground of the coast and thrusting ourselves into the drifting chaos of the pack. If we can only reach the little islet ahead of us, make a lee of its rocky crests, and hold on there until the winds give us fairer prospects!

"Midnight.—We did reach it; and just in time. At 11·30 P.M. our first whale-line was made fast to the rocks. Ten minutes later, the breeze freshened, and so directly in our teeth that we could not have gained our mooring-ground. It is blowing a gale now, and

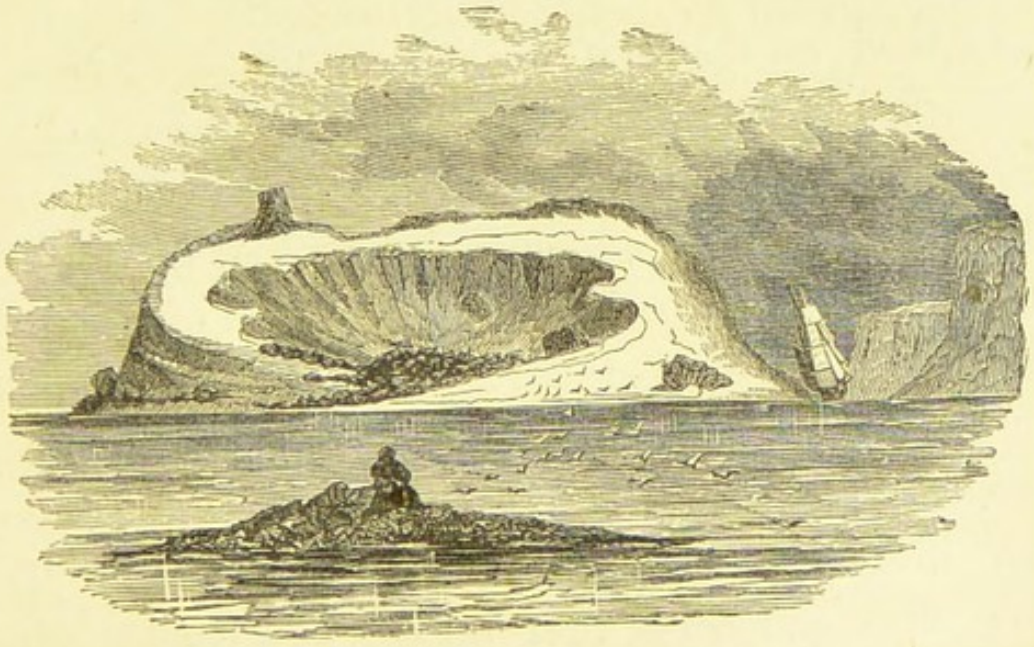
the ice driving to the northward before it; but we can rely upon our hawsers. All behind us is now solid pack.

"August 15, Monday.—We are still fast, and, from the grinding of the ice against the southern cape, the wind is doubtlessly blowing a strong gale from the southward. Once, early this morning, the wind shifted by a momentary flaw, and came from the northward, throwing our brig with slack hawser upon the rocks. Though she bumped heavily she started nothing, till we got out a stern-line to a grounded iceberg.

"August 16, Tuesday.—Fast still; the wind dying out and the ice outside closing steadily. And here, for all I can see, we must hang on for the winter, unless Providence shall send a smart ice-shattering breeze, to open a road for us to the northward.

"More bother with these wretched dogs! worse than a street of Constantinople emptied upon our decks; the unruly, thieving, wild-beast pack! Not a bear's paw, or an Esquimaux cranium, or basket of mosses, or any specimen whatever, can leave your hands for a moment without their making a rush at it, and, after a yelping scramble, swallowing it at a gulp. I have seen them attempt a whole feather bed; and here, this very morning, one of my Karsuk brutes has eaten up two entire birds'-nests which I had just before gathered from the rocks; feathers, filth, pebbles, and moss,—a peckful at the least. One was a perfect specimen of the nest of the tridactyl, the other of the big burgomaster.

"When we reach a floe, or berg, or temporary harbor, they start out in a body, neither voice nor lash restraining them, and scamper off like a drove of hogs in an Illinois oak-opening. Two of our largest left themselves behind at Fog Inlet, and we had to send off a boat party to-day to their rescue. It cost a pull through ice and water of about eight miles before they found the recreants, fat and saucy, beside the carcass of the dead narwhal. After more than an hour spent in attempts to catch them, one was tied and brought on board; but the other suicidal scamp had to be left to his fate."



DEGRADED BERG.

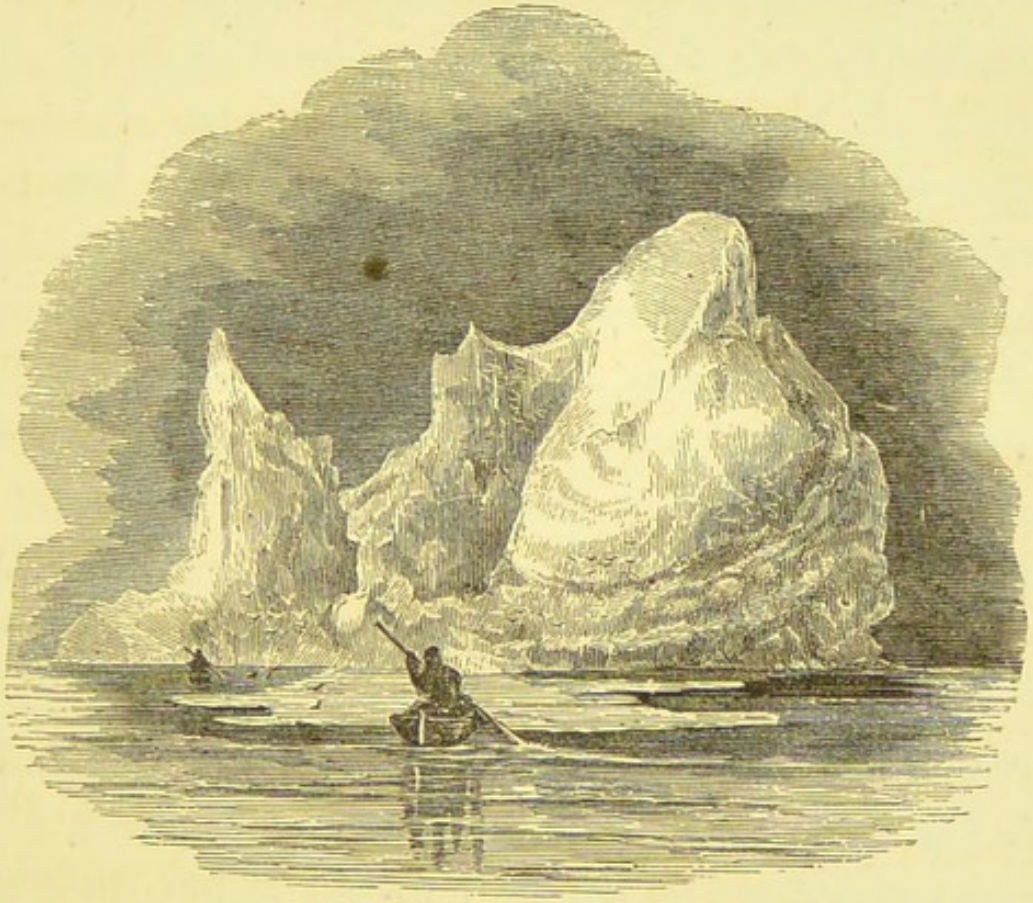
CHAPTER VII.

THE ERIC ON A BERG — GODSEND LEDGE — HOLDING ON — ADRIFT — SCUDDING — TOWED BY A BERG — UNDER THE CLIFFS — NIPPINGS — AGROUND — ICE PRESSURE — AT REST.

"AUGUST 16, Tuesday.—The formation of the young ice seems to be retarded by the clouds: its greatest nightly freezing has been three-quarters of an inch. But I have no doubt, if we had continued till now in our little Refuge Harbor, the winter would have closed around us, without a single resource or chance for escape. Where we are now, I cannot help thinking our embargo must be temporary. Ahead of us to the northeast is the projecting headland, which terminates the long shallow curve of Bedevilled Reach. This serves as a lee to the northerly drift, and forms a bight into which the south winds force the ice. The heavy floes and bergs that are aground outside of us have encroached upon the lighter ice of the reach, and choke its outlet to the sea. But a wind off shore would start this whole pack, and leave us free. Meanwhile, for our comfort, a strong breeze is setting in

from the southward, and the probabilities are that it will freshen to a gale.

"August 17, Wednesday.—This morning I pushed out into the drift, with the useful little specimen of naval architecture, which I call 'Eric the Red,' but which the crew have named, less poetically, the 'Red



THE RED BOAT FORCED ON AN ICEBERG.

Boat.' We succeeded in forcing her on to one of the largest bergs of the chain ahead, and I climbed it, in the hope of seeing something like a lead outside, which might be reached by boring. But there was nothing of the sort. The ice looked as if perhaps an off-shore wind might spread it; but, save a few meagre pools,

which from our lofty eminence looked like the merest ink-spots on a table-cloth, not a mark of water could be seen. I could see our eastern or Greenland coast extending on, headland after headland, no less than five of them in number, until they faded into the mysterious North. Every thing else, Ice!

"Up to this time we have had but two reliable observations to determine our geographical position since entering Smith's Sound. These, however, were carefully made on shore by theodolite and artificial horizons; and, if our five chronometers, rated but two weeks ago at Upernavik, are to be depended upon, there can be no correspondence between my own and the Admiralty charts north of latitude 78° 18′. Not only do I remove the general coast-line some two degrees in longitude to the eastward, but its trend is altered sixty degrees of angular measurement. No landmarks of my predecessor, Captain Inglefield, are recognisable.

"In the afternoon came a gale from the southward. We had some rough rubbing from the floe-pieces, with three heavy hawsers out to the rocks of our little ice-breaker; but we held on. Toward midnight, our six-inch line, the smallest of the three, parted; but the other two held bravely. Feeling what good service this island has done us, what a Godsend it was to reach her, and how gallantly her broken rocks have protected us from the rolling masses of ice that grind by her, we have agreed to remember this anchorage as 'Godsend Ledge.'

"The walrus are very numerous, approaching within twenty feet of us, shaking their grim wet fronts, and mowing with their tusks the sea-ripples.

"August 19, Friday.—The sky looks sinister: a sort of scowl overhangs the blink under the great brow of clouds to the southward. The dovekies seem to distrust the weather, for they have forsaken the channel; but the walrus curvet around us in crowds. I have always heard that the close approach to land of these sphinx-faced monsters portends a storm. I was anxious to find a better shelter, and warped yesterday well down to the south end of the ledge; but I could not venture into the floes outside, without risking the loss of my dearly-earned ground. It may prove a hard gale; but we must wait it out patiently.

"August 20, Saturday, 3½ P.M.—By Saturday morning it blew a perfect hurricane. We had seen it coming, and were ready with three good hawsers out ahead, and all things snug on board.

"Still it came on heavier and heavier, and the ice began to drive more wildly than I thought I had ever seen it. I had just turned in to warm and dry myself during a momentary lull, and was stretching myself out in my bunk, when I heard the sharp twanging snap of a cord. Our six-inch hawser had parted, and we were swinging by the two others; the gale roaring like a lion to the southward.

"Half a minute more, and 'twang, twang!' came a second report. I knew it was the whale-line by the shrillness of the ring. Our noble ten-inch manilla still

held on. I was hurrying my last sock into its seal-skin boot, when McGary came waddling down the companion-ladders:—'Captain Kane, she won't hold much longer: it's blowing the devil himself, and I am afraid to surge.'

"The manilla cable was proving its excellence when I reached the deck; and the crew, as they gathered

PARTING HAWSERS OFF GODSEND LEDGE.

round me, were loud in its praises. We could hear its deep Eolian chant, swelling through all the rattle of the running-gear and moaning of the shrouds. It was the death-song! The strands gave way, with the noise of a shotted gun; and, in the smoke that followed their recoil, we were dragged out by the wild ice, at its mercy.

PARTING HAWSERS OFF CODSEND LEDGE.

"We steadied and did some petty warping, and got the brig a good bed in the rushing drift; but it all came to nothing. We then tried to beat back through the narrow ice-clogged water-way, that was driving, a quarter of a mile wide, between the shore and the pack. It cost us two hours of hard labor, I thought skilfully bestowed; but at the end of that time, we were at least four miles off, opposite the great valley in the centre of Bedevilled Reach. Ahead of us, farther to the north, we could see the strait growing still narrower, and the heavy ice-tables grinding up, and clogging it between the shore-cliffs on one side and the ledge on the other. There was but one thing left for us;—to keep in some sort the command of the helm, by going freely where we must otherwise be driven. We allowed her to scud under a reefed foretopsail; all hands watching the enemy, as we closed, in silence.

"At seven in the morning, we were close upon the piling masses. We dropped our heaviest anchor with the desperate hope of winding the brig; but there was no withstanding the ice-torrent that followed us. We had only time to fasten a spar as a buoy to the chain, and let her slip. So went our best bower!

"Down we went upon the gale again, helplessly scraping along a lee of ice seldom less than thirty feet thick; one floe, measured by a line as we tried to fasten to it, more than forty. I had seen such ice only once before, and never in such rapid motion. One upturned mass rose above our gunwale, smashing in our bulwarks, and depositing half a ton of ice in a lump

upon our decks. Our stanch little brig bore herself through all this wild adventure as if she had a charmed life.

"But a new enemy came in sight ahead. Directly in our way, just beyond the line of floe-ice against which we were alternately sliding and thumping, was a group of bergs. We had no power to avoid them; and the only question was, whether we were to be dashed in pieces against them, or whether they might not offer us some providential nook of refuge from the storm. But, as we neared them, we perceived that they were at some distance from the floe-edge, and separated from it by an interval of open water. Our hopes rose, as the gale drove us toward this passage, and into it; and we were ready to exult, when, from some unexplained cause,—probably an eddy of the wind against the lofty ice-walls,—we lost our headway. Almost at the same moment, we saw that the bergs were not at rest; that with a momentum of their own they were bearing down upon the other ice, and that it must be our fate to be crushed between the two.

"Just then, a broad sconce-piece or low water-washed berg came driving up from the southward. The thought flashed upon me of one of our escapes in Melville Bay; and as the sconce moved rapidly close alongside us, McGary managed to plant an anchor on its slope and hold on to it by a whale-line. It was an anxious moment. Our noble tow-horse, whiter than the pale horse that seemed to be pursuing us, hauled us bravely on; the spray dashing over his windward flanks, and his

forehead ploughing up the lesser ice as if in scorn. The bergs encroached upon us as we advanced: our channel narrowed to a width of perhaps forty feet: we braced the yards to clear the impending ice-walls.

"....We passed clear; but it was a close shave,—so close that our port quarter-boat would have been crushed if we had not taken it in from the davits,—and found ourselves under the lee of a berg, in a comparatively open lead. Never did heart-tried men acknowledge with more gratitude their merciful deliverance from a wretched death....

"The day had already its full share of trials; but there were more to come. A flaw drove us from our shelter, and the gale soon carried us beyond the end of the lead. We were again in the ice, sometimes escaping its onset by warping, sometimes forced to rely on the strength and buoyancy of the brig to stand its pressure, sometimes scudding wildly through the half-open drift. Our jib-boom was snapped off in the cap; we carried away our barricade stanchions, and were forced to leave our little Eric, with three brave fellows and their warps, out upon the floes behind us.

UNDER THE CLIFFS.

"A little pool of open water received us at last. It was just beyond a lofty cape that rose up like a wall, and under an iceberg that anchored itself between us and the gale. And here, close

under the frowning shore of Greenland, ten miles nearer the Pole than our holding-ground of the morning, the men have turned in to rest.

"I was afraid to join them; for the gale was unbroken, and the floes kept pressing heavily upon our berg,—at one time so heavily as to sway it on its vertical axis toward the shore, and make its pinnacle overhang our vessel. My poor fellows had but a precarious sleep before our little harbor was broken up. They hardly reached the deck, when we were driven astern, our rudder splintered, and the pintles torn from their boltings.

"Now began the nippings. The first shock took us on our port-quarter; the brig bearing it well, and, after a moment of the old-fashioned suspense, rising by jerks handsomely. The next was from a veteran floe, tongued and honeycombed, but floating in a single table over twenty feet in thickness. Of course, no wood or iron could stand this; but the shoreward face of our iceberg happened to present an inclined plane, descending deep into the water; and up this the brig was driven, as if some great steam screw-power was forcing her into a dry dock.

"At one time I expected to see her carried bodily up its face and tumbled over on her side. But one of those mysterious relaxations, which I have elsewhere called the pulses of the ice, lowered us quite gradually down again into the rubbish, and we were forced out of the line of pressure toward the shore. Here we succeeded in carrying out a warp, and making fast

THE NIP OFF CAPE CORNELIUS GRINNELL, FORCE BAY.

(From a sketch by Dr Kane)

We grounded as the tide fell; and would have heeled over to seaward, but for a mass of detached land-ice that grounded alongside of us, and, although it stove our bulwarks as we rolled over it, shored us up."

I could hardly get to my bunk, as I went down into our littered cabin on the Sunday morning after our hard-working vigil of thirty-six hours. Bags of

SHORED UP.

clothing, food, tents, India-rubber blankets, and the hundred little personal matters which every man likes to save in a time of trouble, were scattered around in places where the owners thought they might have them at hand. The pemmican had been on deck, the boats equipped, and every thing of real importance ready for a march, many hours before.

During the whole of the scenes I have been trying

to describe, I could not help being struck by the composed and manly demeanor of my comrades. The turmoil of ice under a heavy sea often conveys the impression of danger when the reality is absent; but in this fearful passage, the parting of our hawsers, the loss of our anchors, the abrupt crushing of our stoven bulwarks, and the actual deposit of ice upon our decks, would have tried the nerves of the most experienced icemen. All—officers and men—worked alike. Upon each occasion of collision with the ice which formed our lee-coast, efforts were made to carry out lines; and some narrow escapes were incurred, by the zeal of the parties leading them into positions of danger. Mr. Bonsall avoided being crushed by leaping to a floating fragment; and no less than four of our men at one time were carried down by the drift, and could only be recovered by a relief party after the gale had subsided.

As our brig, borne on by the ice, commenced her ascent of the berg, the suspense was oppressive. The immense blocks piled against her, range upon range, pressing themselves under her keel and throwing her over upon her side, till, urged by the successive accumulations, she rose slowly and as if with convulsive efforts along the sloping wall. Still there was no relaxation of the impelling force. Shock after shock, jarring her to her very centre, she continued to mount steadily on her precarious cradle. But for the groaning of her timbers and the heavy sough of the floes, we might have heard a pin drop. And then, as she settled

down into her old position, quietly taking her place among the broken rubbish, there was a deep-breathing silence, as though all were waiting for some signal before the clamor of congratulation and comment could burst forth.

THE RESCUE.

CHAPTER VIII.

TRACKING—INSPECTING A HARBOR—THE MUSK OX—STILL TRACKING—CONSULTATION—WARPING AGAIN—AGROUND NEAR THE ICE-FOOT—A BREATHING SPELL—THE BOAT EXPEDITION—DEPARTURE.

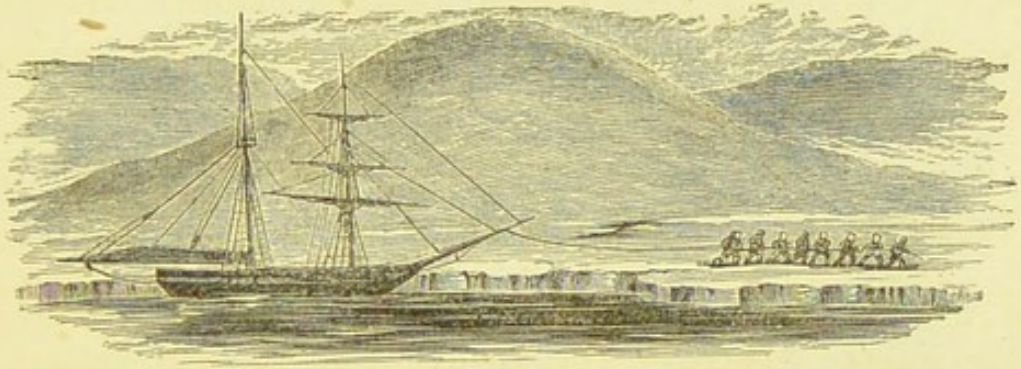
It was not until the 22d that the storm abated, and our absent men were once more gathered back into their mess. During the interval of forced inaction, the little brig was fast to the ice-belt which lined the bottom of the cliffs, and all hands rested; but as soon as it was over, we took advantage of the flood-tide to pass our tow-lines to the ice-beach, and, harnessing ourselves in like mules on a canal, made a good three miles by tracking along the coast.

"August 22, Monday.—Under this coast, at the base of a frowning precipice, we are now working toward a large bay which runs well in, facing at its opening to the north and west. I should save time if I could cross from headland to headland; but I am obliged to follow the tortuous land-belt, without whose aid we would go adrift in the pack again.

"The trend of our line of operations to-day is almost

due east. We are already protected from the south, but fearfully exposed to a northerly gale. Of this there are fortunately no indications.

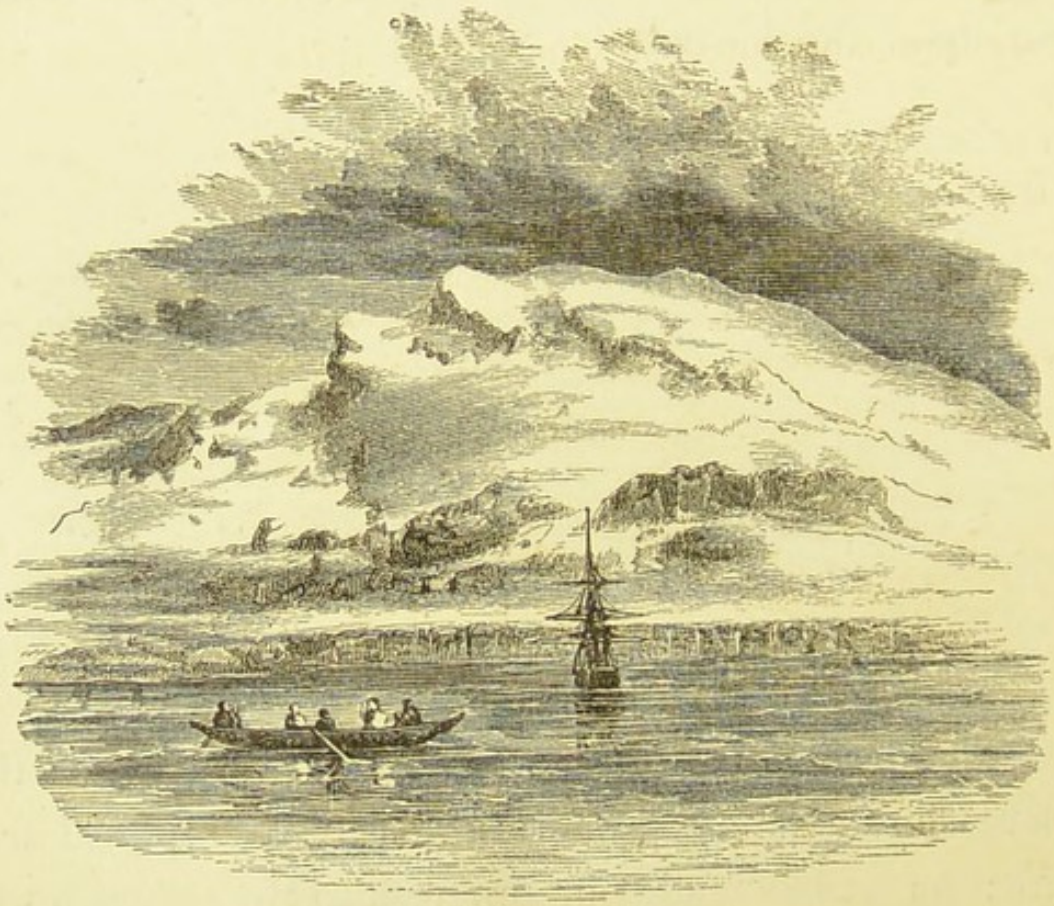
"August 23, Tuesday.—We tracked along the ice-belt for about one mile, when the tide fell, and the brig grounded, heeling over until she reached her bearings. She rose again at 10 P. M., and the crew turned out upon the ice-belt.



TRACKING ALONG THE ICE-BELT.

"The decided inclination to the eastward which the shore shows here is important as a geographical feature; but it has made our progress to the actual north much less than our wearily-earned miles should count for us. Our latitude, determined by the sun's lower culmination, if such a term can be applied to his midnight depression, gives 78° 41′. We are farther north, therefore, than any of our predecessors, except Parry on his Spitzbergen foot-tramp. There are those with whom, no matter how insuperable the obstacle, failure involves disgrace: we are safe at least from their censure.

"Last night I sent out Messrs. Wilson, Petersen, and Bonsall, to inspect a harbor which seems to lie between a small island and a valley that forms the inner slope of our bay. They report recent traces of deer, and bring back the skull of a musk ox.

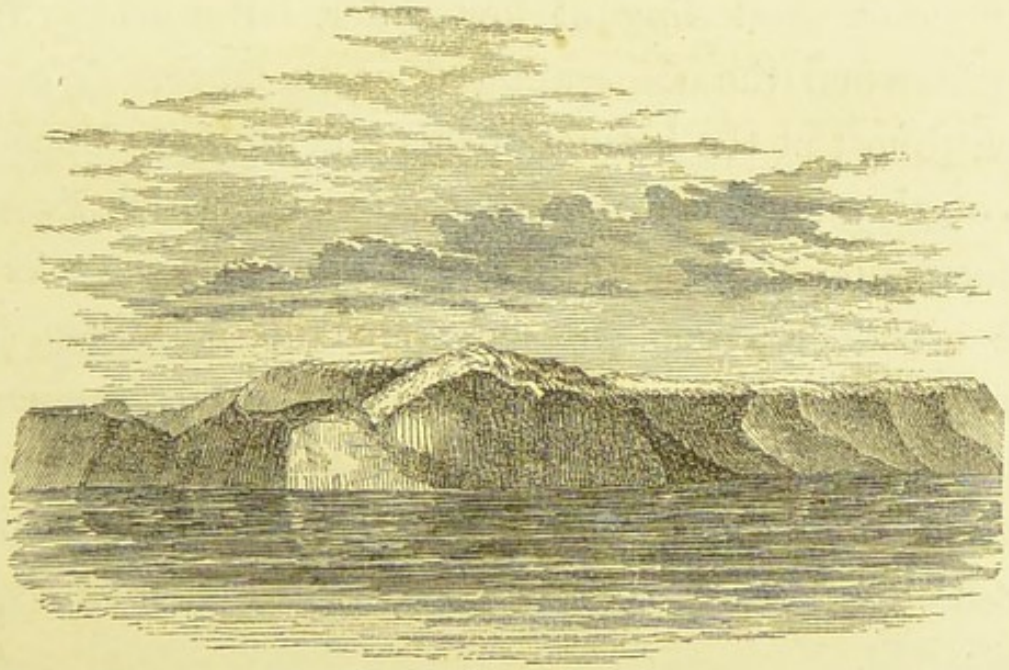


SYLVIA HEADLAND—INSPECTING A HARBOR.

"Hitherto this animal has never been seen east of Melville Island. But his being here does not surprise me. The migratory passages of the reindeer, who is even less Arctic in his range than the musk ox, led me to expect it. The fact points to some probable land connection between Greenland and America, or an ap-

proach sufficiently close to allow these animals to migrate between the two.

"The head is that of a male, well-marked, but old; the teeth deficient, but the horns very perfect. These last measure two feet three inches across from tip to tip, and are each one foot ten inches in length measured to the medium line of the forehead, up to which they are continued in the characteristic boss or pro-



THE ICE-BELT.

tuberance. Our winter may be greatly cheered by their beef, should they revisit this solitude.

"We have collected thus far no less than twenty-two species of flowering plants on the shores of this bay. Scanty as this starved flora may seem to the botanists of more favored zones, it was not without surprise and interest that I recognised among its thoroughly Arctic types many plants which had before

been considered as indigenous only to more southern latitudes.

"The thermometer gave twenty-five degrees last night, and the young ice formed without intermission: it is nearly two inches alongside the brig. I am loth to recognise these signs of the advancing cold. Our latitude to-day gives us 78° 37′, taken from a station some three miles inside the indentation to the south.

"August 24, Wednesday.—We have kept at it, tracking along, grounding at low water, but working like horses when the tides allowed us to move. We are now almost at the bottom of this indentation. Opposite us, on the shore, is a remarkable terrace, which rises in a succession of steps until it is lost in the low rocks of the back country. The ice around us is broken, but heavy, and so compacted that we can barely penetrate it. It has snowed hard since 10 P.M. of yesterday, and the sludge fills up the interstices of the floes. Nothing but a strong south wind can give us further progress to the north.

"August 25, Thursday.—The snow of yesterday has surrounded us with a pasty sludge; but the young ice continues to be our most formidable opponent. The mean temperatures of the 22d and 23d were 27° and 30° Fahrenheit. I do not like being caught by winter before attaining a higher northern latitude than this, but it appears almost inevitable. Favored as we have been by the mildness of the summer and by the abrading action of the tides, there are indications around us which point to an early winter.

We are sufficiently surrounded by ice to make our chances of escape next year uncertain, and yet not as far as I could wish for our spring journeys by the sledge.

"August 26, Friday.—My officers and crew are stanch and firm men; but the depressing influences of want of rest, the rapid advance of winter, and, above all, our slow progress, make them sympathize but little with this continued effort to force a way to the north. One of them, an excellent member of the party, volunteered an expression of opinion this morning in favor of returning to the south and giving up the attempt to winter."

It is unjust for a commander to measure his subordinates in such exigencies by his own standard. The interest which they feel in an undertaking is of a different nature from his own. With him there are always personal motives, apart from official duty, to stimulate effort. He receives, if successful, too large a share of the credit, and he justly bears all the odium of failure.

An apprehension—I hope a charitable one—of this fact leads me to consider the opinions of my officers with much respect. I called them together at once, in a formal council, and listened to their views in full. With but one exception, Mr. Henry Brooks, they were convinced that a further progress to the north was impossible, and were in favor of returning southward to winter.

Not being able conscientiously to take the same view,

I explained to them the importance of securing a position which might expedite our sledge journeys in the future; and, after assuring them that such a position could only be attained by continuing our efforts, announced my intention of warping toward the northern headland of the bay. "Once there, I shall be able to determine from actual inspection the best point for set-

CAPE THOMAS LEIPER.

ting out on the operations of the spring; and at the nearest possible shelter to that point I will put the brig into winter harbor." My comrades received this decision in a manner that was most gratifying, and entered zealously upon the hard and cheerless duty it involved.

The warping began again, each man, myself included, taking his turn at the capstan. The ice seemed less heavy as we penetrated into the recess of the bay;

our track-lines and shoulder-belts replaced the warps. Hot coffee was served out; and, in the midst of cheering songs, our little brig moved off briskly.

Our success, however, was not complete. At the very period of high-water she took the ground, while close under the walls of the ice-foot. It would have been madness to attempt shoring her up. I could only fasten heavy tackle to the rocks which lined the base of the cliffs, and trust to the noble little craft's unassisted strength.

"August 27, Saturday.—We failed, in spite of our efforts, to get the brig off with last night's tide; and, as our night-tides are generally the highest, I have some apprehensions as to her liberation.

"We have landed every thing we could get up on the rocks, put out all our boats and filled them with ponderables alongside, sunk our rudder astern, and lowered our remaining heavy anchor into one of our quarter-boats. Heavy hawsers are out to a grounded lump of berg-ice, ready for instant heaving.

"Last night she heeled over again so abruptly that we were all tumbled out of our berths. At the same time, the cabin stove with a full charge of glowing anthracite was thrown down. The deck blazed smartly for a while; but, by sacrificing Mr. Sontag's heavy pilot-cloth coat to the public good, I choked it down till water could be passed from above to extinguish it. It was fortunate we had water near at hand, for the powder was not far off.

"3 P. M.—The ground-ice is forced in upon our stern,

splintering our rudder, and drawing again the bolts of the pintle-casings.

"5 P.M.—She floats again, and our track-lines are manned. The men work with a will, and the brig moves along bravely.

AGROUND NEAR THE ICE-FOOT.

"10 P.M.—Aground again; and the men, after a hot supper, have turned in to take a spell of sleep. The brig has a hard time of it with the rocks. She has been high and dry for each of the two last tides, and within three days has grounded no less than five times. I feel that this is hazardous navigation, but am convinced it is my duty to keep on. Except the loss of a portion of

our false keel, we have sustained no real injury. The brig is still water-tight; and her broken rudder and one shattered spar can be easily repaired.

"August 28, Sunday.—By a complication of purchases, jumpers, and shores, we started the brig at 4·10; and, Mr. Ohlsen having temporarily secured the rudder, I determined to enter the floe and trust to the calm of the morning for a chance of penetrating to the northern land-ice ahead.

"This land-ice is very old, and my hope is to get through the loose trash that surrounds it by springing, and then find a fast that may serve our tracking-lines. I am already well on my way, and, in spite of the ominous nods of my officers, have a fair prospect of reaching it. Here it is that splicing the main-brace is of service!

"I took the boat this morning with Mr. McGary, and sounded along outside the land-floe. I am satisfied the passage is practicable, and, by the aid of tide, wind, and springs, have advanced into the trash some two hundred yards.

"We have reached the floe, and find it as I hoped; the only drawback to tracking being the excessive tides, which expose us to grounding at low-water."

We had now a breathing spell, and I could find time to look out again upon the future. The broken and distorted area around us gave little promise of successful sledge-travel. But all this might change its aspect under the action of a single gale, and it was by no means certain that the ice-fields farther north would

have the same rugged and dispiriting character. Besides, the ice-belt was still before us, broken sometimes and difficult to traverse, but practicable for a party on foot, apparently for miles ahead; and I felt sure that a resolute boat's crew might push and track their way for some distance along it. I resolved to make the trial, and to judge what ought to be

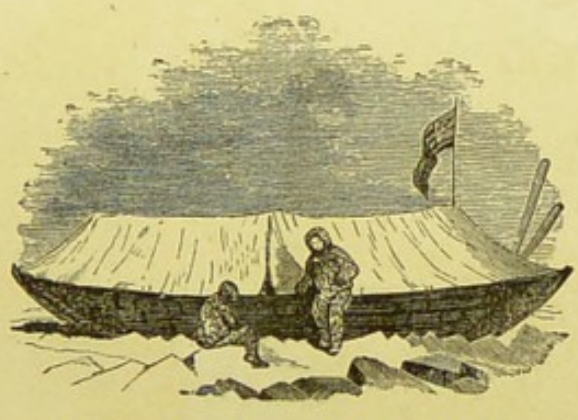
THE FORLORN HOPE.

our wintering ground from a personal inspection of the coast.

I had been quietly preparing for such an expedition for some time. Our best and lightest whale-boat had been fitted with a canvas cover, that gave it all the comfort of a tent. We had a supply of pemmican ready packed in small cases, and a sledge taken to pieces was stowed away under the thwarts. In the morning of

the 29th, Mr. Brooks, McGary, and myself, walked fourteen miles along the marginal ice: it was heavy and complicated with drift, but there was nothing about it to make me change my purpose.

My boat crew consisted of seven, all of them volunteers and reliable:—Brooks, Bonsall, McGary, Sontag, Riley, Blake, and Morton. We had buffalo-robes for our sleeping-gear, and a single extra day-suit was put on board as common property. Each man carried his



THE FORLORN HOPE, EQUIPPED.

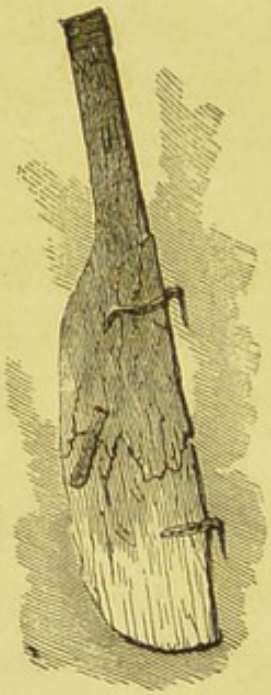
girdle full of woollen socks, so as to dry them by the warmth of his body, and a tin cup, with a sheath-knife, at the belt: a soup-pot and lamp for the mess completed our outfit.

In less than three hours from my first order, the "Forlorn Hope" was ready for her work, covered with tin to prevent her being cut through by the bay-ice; and at half-past three in the afternoon she was freighted, launched, and on her way.

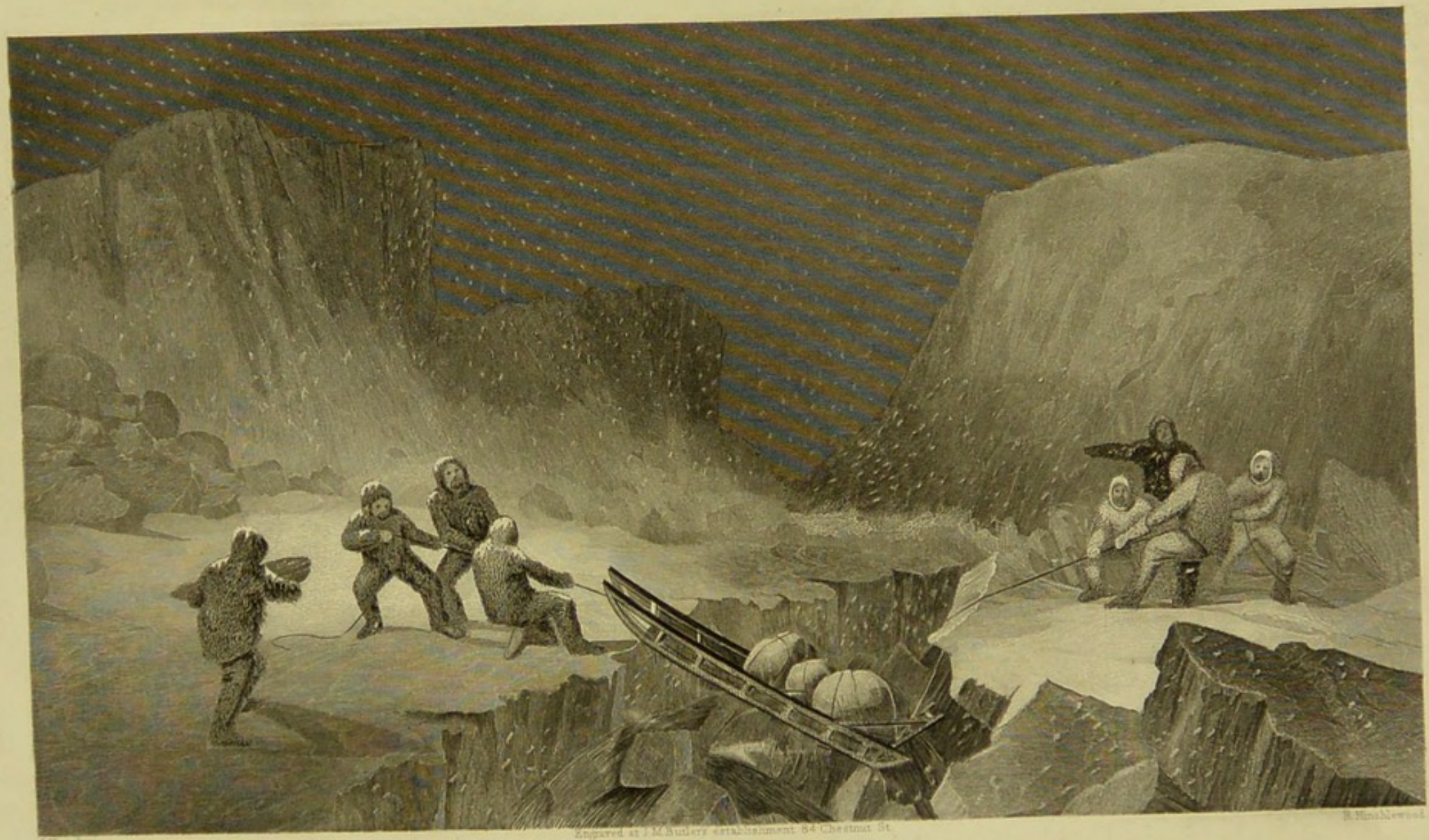
I placed Mr. Ohlsen in command of the Advance, and Dr. Hayes in charge of her log: Mr. Ohlsen with orders

to haul the brig to the southward and eastward into a safe berth, and there to await my return.

Many a warm shake of the hand from the crew we left showed me that our good-bye was not a mere formality. Three hearty cheers from all hands followed us,—a God-speed as we pushed off.



BROKEN RUDDER.



J. Hamilton.

Engraved at J. M. Butler's establishment 64 Chestnut St.

R. Hinshelwood.

"CROSSING THE ICE BELT AT COFFEE GORGE."

(From a sketch by Dr Kane.)

CHAPTER IX.

THE DEPÔT JOURNEY — THE ICE-BELT — CROSSING MINTURN RIVER — SKELETON MUSK OX — CROSSING THE GLACIER — PORTAGE OF INSTRUMENTS — EXCESSIVE BURDEN — MARY MINTURN RIVER — FORDING THE RIVER — THACKERAY HEADLAND — CAPE GEORGE RUSSELL — RETURN TO THE BRIG — THE WINTER HARBOR.

In the first portions of our journey, we found a narrow but obstructed passage between the ice-belt and the outside pack. It was but a few yards in width, and the young ice upon it was nearly thick enough to bear our weight. By breaking it up we were able with effort to make about seven miles a day.

After such work, wet, cold, and hungry, the night's rest was very welcome. A couple of stanchions were rigged fore and aft, a sail tightly spread over the canvas cover of our boat, the cooking-lamp lit, and the buffalo-robes spread out. Dry socks replaced the wet; hot tea and pemmican followed; and very soon we forgot the discomforts of the day, the smokers musing over their pipes, and the sleepers snoring in dreamless forgetfulness.

We had been out something less than twenty-four

hours when we came to the end of our boating. In front and on one side was the pack, and on the other a wall some ten feet above our heads, the impracticable ice-belt. By waiting for high tide, and taking advantage of a chasm which a water-stream had worn in the ice, we managed to haul up our boat on its surface; but it was apparent that we must leave her there. She was stowed away snugly under the shelter of a large hummock; and we pushed forward in our sledge, laden with a few articles of absolute necessity.

Here, for the first time, we were made aware of a remarkable feature of our travel. We were on a table or shelf of ice, which clung to the base of the rocks overlooking the sea, but itself overhung by steep and lofty cliffs. Pure and beautiful as this icy highway was, huge angular blocks, some many tons in weight, were scattered over its surface; and long tongues of worn-down rock occasionally issued from the sides of the cliffs, and extended across our course. The cliffs measured one thousand and ten feet to the crest of the plateau above them.*

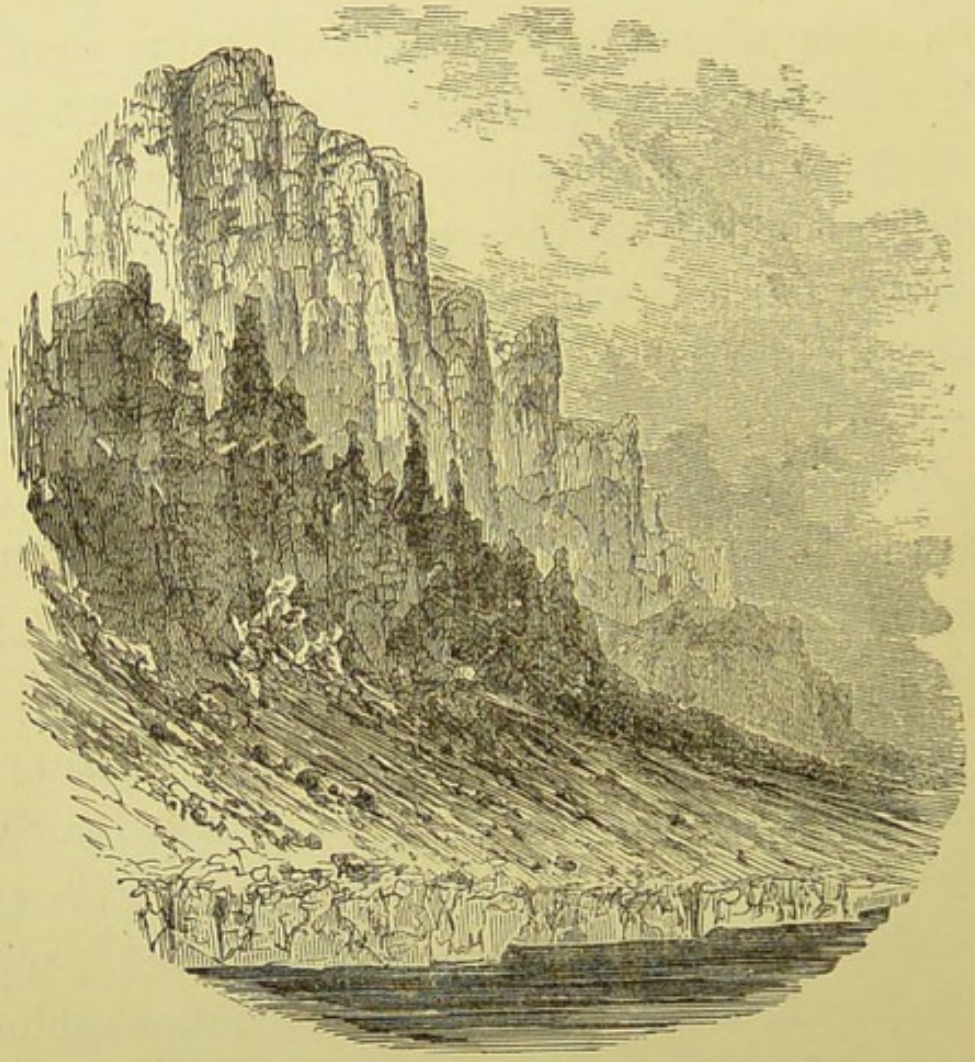
We pushed forward on this ice-table shelf as rapidly as the obstacles would permit, though embarrassed a good deal by the frequent watercourses, which created

* The cliffs were of tabular magnesian limestone, with interlaid and inferior sandstones. Their height, measured to the crest of the plateau, was nine hundred and fifty feet—a fair mean of the profile of the coast. The height of the talus of debris, where it united with the face of the cliff, was five hundred and ninety feet, and its angle of inclination between 38° and 45°.

large gorges in our path, winding occasionally, and generally steep-sided. We had to pass our sledge carefully down such interruptions, and bear it upon our shoulders, wading, of course, through water of an extremely low temperature. Our night halts were upon knolls of snow under the rocks. At one of these, the tide overflowed our tent, and forced us to save our buffalo sleeping-gear by holding it up until the water subsided. This exercise, as it turned out, was more of a trial to our patience than to our health. The circulation was assisted perhaps by a perception of the ludicrous. Eight Yankee Caryatides, up to their knees in water, and an entablature sustaining such of their household gods as could not bear immersion!

On the 1st of September, still following the ice-belt, we found that we were entering the recesses of another bay but little smaller than that in which we had left our brig. The limestone walls ceased to overhang us; we reached a low fiord, and a glacier blocked our way across it. A succession of terraces, rising with symmetrical regularity, lost themselves in long parallel lines in the distance. They were of limestone shingle, and wet with the percolation of the melted ice of the glacier. Where the last of these terraced faces abutted upon the sea, it blended with the ice-foot, so as to make a frozen compound of rock and ice. Here, lying in a pasty silt, I found the skeleton of a musk ox. The head was united to the atlas; but the bones of the spine were separated about two inches apart, and conveyed the idea of a displacement produced rather by

the sliding of the bed beneath, than by a force from without. The paste, frozen so as to resemble limestone rock, had filled the costal cavity, and the ribs were beautifully polished. It was to the eye an imbedded fossil, ready for the museum of the collector.

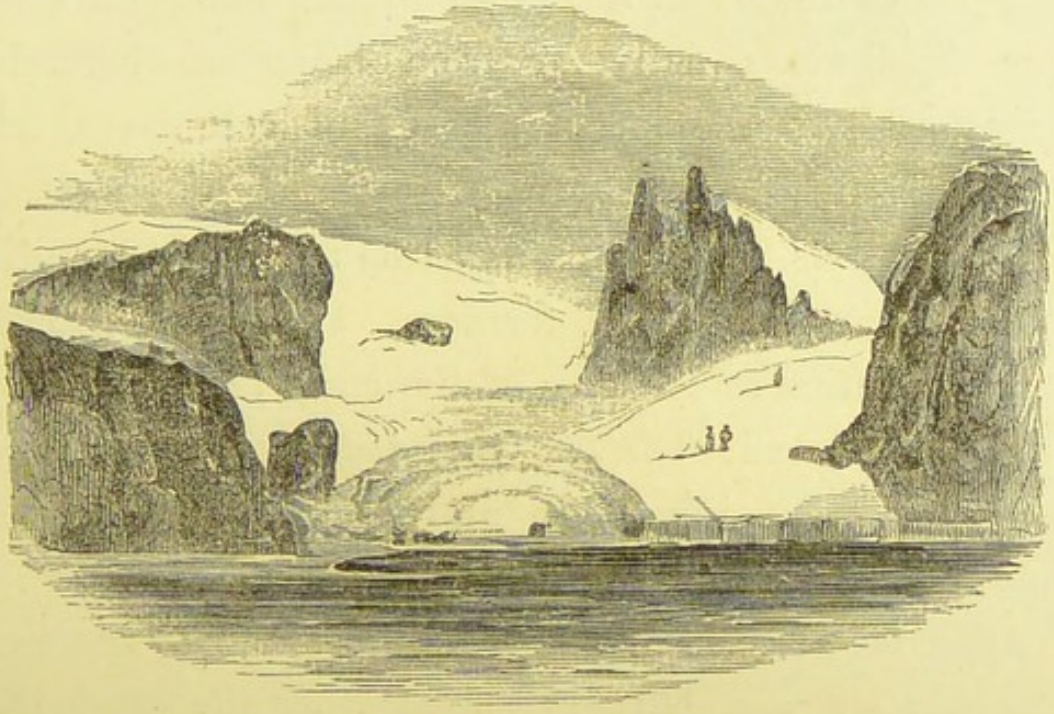


THE CLIFFS OF GLACIER BAY.

I am minute in detailing these appearances, for they connect themselves in my mind with the fossils of the Eischoltz cliffs and the Siberian alluvions. I was startled at the facility with which the silicious limestone, under the alternate energies of frost and thaw, had been incorporated with the organic remains. It

had already begun to alter the structure of the bones, and in several instances the vertebræ were entirely enveloped in travertin.

The table-lands and ravines round about this coast abound in such remains. Their numbers and the manner in which they are scattered imply that the animals made their migrations in droves, as is the case with



CROSSING THE GLACIER.

the reindeer now. Within the area of a few acres we found seven skeletons and numerous skulls: these all occupied the snow-streams or gullies that led to a gorge opening on the ice-belt, and might thus be gathered in time to one spot by the simple action of the watershed.

To cross this glacier gave us much trouble. Its sides were steep, and a slip at any time might have sent us

into the water below. Our shoes were smooth, unfortunately; but, by using cords, and lying at full length upon the ice, we got over without accident. On the other side of the glacier we had a portage of about three miles; the sledge being unladen and the baggage carried on our backs. To Mr. Brooks, admitted with singular unanimity to be the strongest man of our party, was voted our theodolite, about sixty pounds of well-polished mechanism, in an angular mahogany box. Our dip-circle, equally far from being an honorary tribute, fell to the lot of a party of volunteers, who bore it by turns.

During this inland crossing, I had fine opportunities of making sections of the terraces. We ascertained the mean elevation of the face of the coast to be one thousand three hundred feet. On regaining the seaboard, the same frowning cliffs and rock-covered ice-belt that we had left greeted us.

After an absence of five days, we found by observation that we were but forty miles from the brig. Besides our small daily progress, we had lost much by the tortuous windings of the coast. The ice outside did not invite a change of plan in that direction; but I determined to leave the sledge and proceed over land on foot. With the exception of our instruments, we carried no weight but pemmican and one buffalo-robe. The weather, as yet not far below the freezing-point, did not make a tent essential to the bivouac; and, with this light equipment, we could travel readily two miles to one with our entire outfit. On the 4th of

September we made twenty-four miles with comparative ease, and were refreshed by a comfortable sleep after the toils of the day.*

The only drawback to this new method of advance was the inability to carry a sufficient quantity of food. Each man at starting had a fixed allowance of pemmican, which, with his other load, made an average weight of thirty-five pounds. It proved excessive: the Canadian voyageurs will carry much more, and for an almost indefinite period; but we found—and we had good walkers in our party—that a very few pounds overweight broke us down.

Our progress on the 5th was arrested by another bay much larger than any we had seen since entering Smith's Straits. It was a noble sheet of water, perfectly open, and thus in strange contrast to the ice outside. The cause of this at the time inexplicable phenomenon was found in a roaring and tumultuous river, which, issuing from a fiord at the inner sweep of the bay, rolled with the violence of a snow-torrent over a broken bed of rocks. This river, the largest probably yet known in North Greenland, was about three-quarters of a mile wide at its mouth, and admitted the tides for about three miles; when its bed rapidly ascended,

* This halt was under the lee of a large boulder of greenstone, measuring fourteen feet in its long diameter. It had the rude blocking out of a cube, but was rounded at the edges. The country for fourteen miles around was of the low-bottom series; the nearest greenstone must have been many miles remote. Boulders of syenite were numerous; their line of deposit nearly due north and south.

and could be traced by the configuration of the hills as far as a large inner fiord. I called it Mary Minturn River, after the sister of Mrs. Henry Grinnell. Its course was afterward pursued to an interior glacier, from the base of which it was found to issue in numerous streams, that united into a single trunk about forty miles above its mouth. By the banks of this stream we encamped, lulled by the unusual music of running waters.

MARY MINTURN RIVER.

Here, protected from the frost by the infiltration of the melted snows, and fostered by the reverberation of

solar heat from the rocks, we met a flower-growth, which, though drearily Arctic in its type, was rich in variety and coloring. Amid festuca and other tufted grasses twinkled the purple lychnis and the white star of the chickweed; and not without its pleasing associations I recognised a solitary hesperis,—the Arctic representative of the wallflowers of home.

We forded our way across this river in the morning, carrying our pemmican as well as we could out of water, but submitting ourselves to a succession of plunge-baths as often as we trusted our weight on the ice-capped stones above the surface. The average depth was not over our hips; but the crossing cost us so much labor that we were willing to halt half a day to rest.

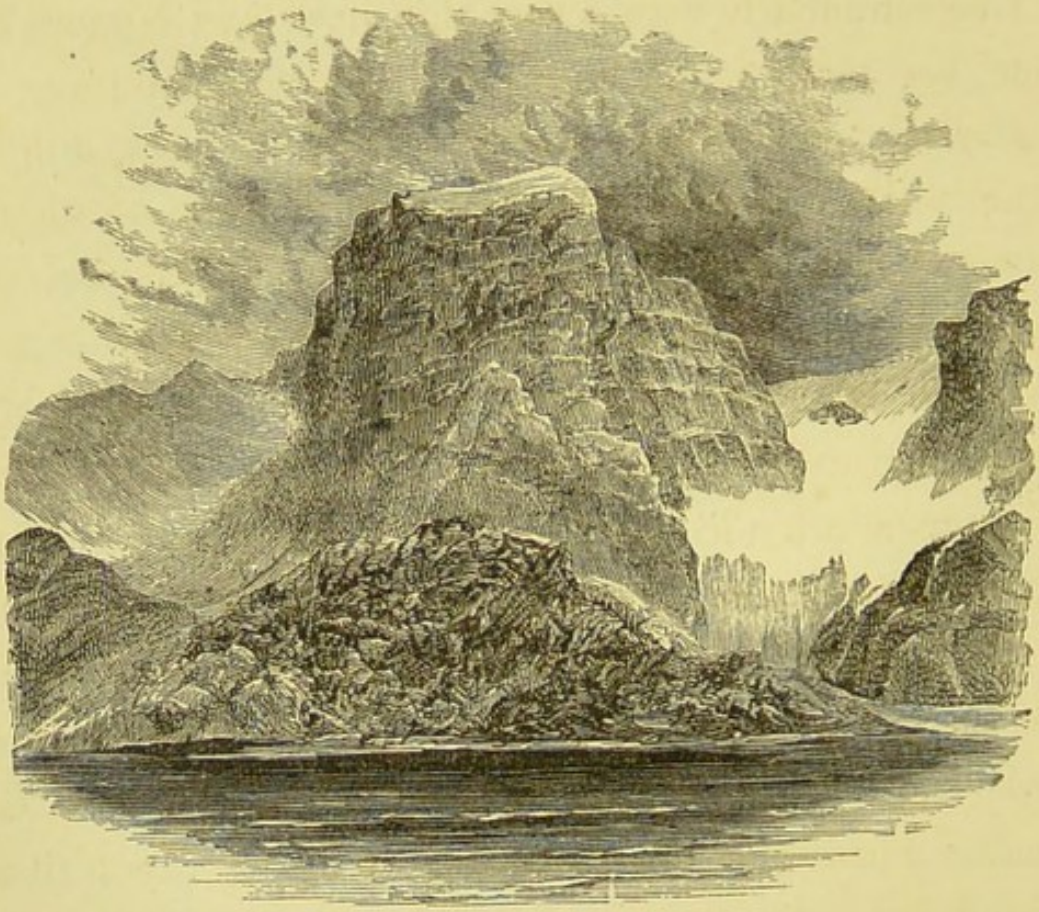
Some seven miles farther on, a large cape projects into this bay, and divides it into two indentations, each of them the seat of minor watercourses, fed by the glaciers. From the numerous tracks found in the moss-beds, they would seem to be the resort of deer. Our meridian observations by theodolite gave the latitude of but 78° 52′: the magnetic dip was 84° 49′.

It was plain that the coast of Greenland here faced toward the north. The axis of both these bays and the general direction of the watercourses pointed to the same conclusion. Our longitude was 68° 41′ W.

Leaving four of my party to recruit at this station, I started the next morning, with three volunteers, to cross the ice to the northeastern headland, and thus save the almost impossible circuit by the shores of the bay.

This ice was new, and far from safe: its margin along the open water made by Minturn River required both care and tact in passing over it. We left the heavy theodolite behind us; and, indeed, carried nothing except a pocket-sextant, my Fraunhöfer, a walking-pole, and three days' allowance of raw pemmican.

We reached the headland after sixteen miles of



THACKERAY HEADLAND

walk, and found the ice-foot in good condition, evidently better fitted for sledge-travel than it was to the south. This point I named Cape William Makepeace Thackeray. Our party knew it as Chimney Rock. It was the last station on the coast of Greenland, determined by intersecting bearings of theodolite, from known positions to the south. About eight miles be-

yond it is a large headland, the highest visible from the late position of our brig, shutting out all points farther north. It is indicated on my chart as Cape Francis Hawks. We found the table-lands were twelve hundred feet high by actual measurement, and interior plateaus were seen of an estimated height of eighteen hundred.

I determined to seek some high headland beyond the cape, and make it my final point of reconnoissance.

I shall never forget the sight, when, after a hard day's walk, I looked out from an altitude of eleven hundred feet upon an expanse extending beyond the eightieth parallel of latitude. Far off on my left was the western shore of the Sound, losing itself in distance toward the north. To my right, a rolling primary country led on to a low dusky wall-like ridge, which I afterward recognised as the Great Glacier of Humboldt; and still beyond this, reaching northward from the north-northeast, was the land which now bears the name of Washington: its most projecting headland, Cape Andrew Jackson, bore fourteen degrees by sextant from the farthest hill, Cape John Barrow, on the opposite side. The great area between was a solid sea of ice. Close along its shore, almost looking down upon it from the crest of our lofty station, we could see the long lines of hummocks dividing the floes like the trenches of a beleaguered city. Farther out, a stream of icebergs, increasing in numbers as they receded, showed an almost impenetrable barrier; since I could not doubt that among

their recesses the ice was so crushed as to be impassable by the sledge.

Nevertheless, beyond these again, the ice seemed less obstructed. Distance is very deceptive upon the ice, subduing its salient features, and reducing even lofty bergs to the appearance of a smooth and attractive plain. But, aided by my Fraunhöfer telescope, I could see that traversable areas were still attainable. Slowly, and almost with a sigh, I laid the glass down and made up my mind for a winter search.

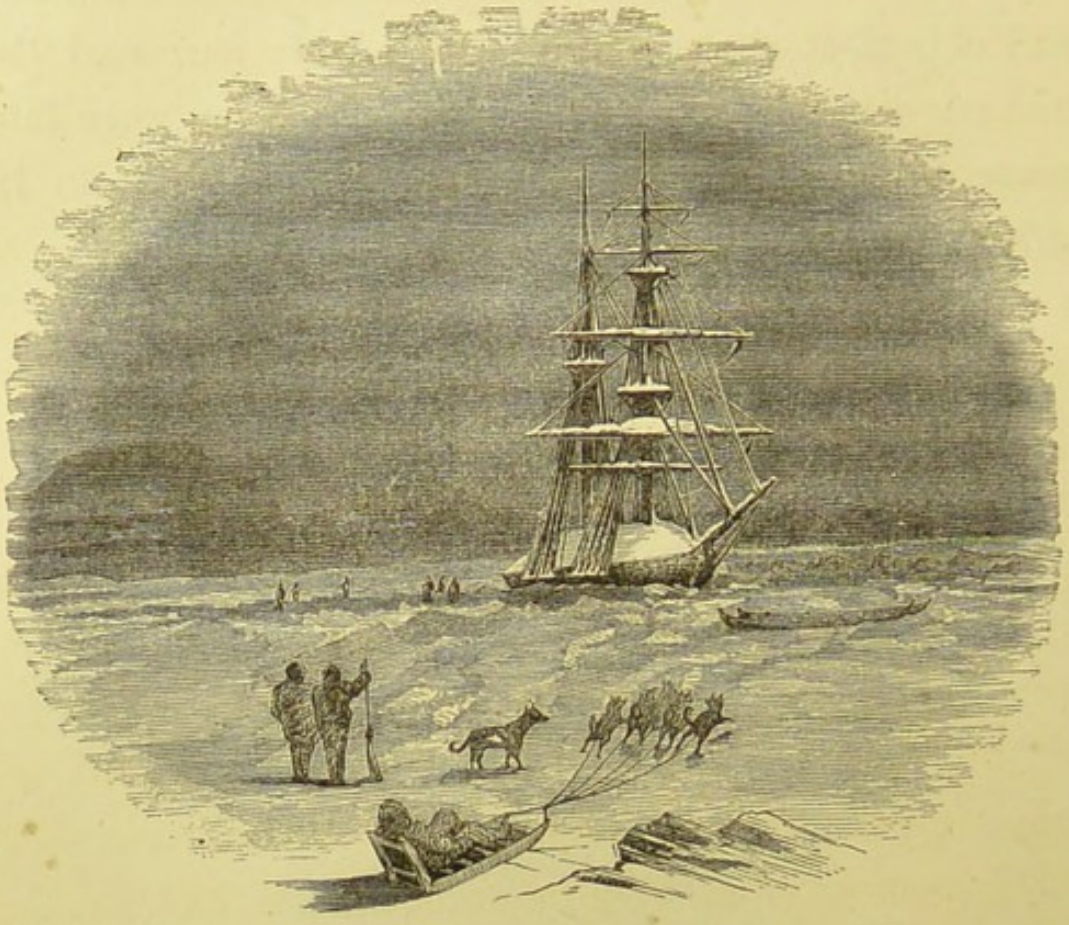
I had seen no place combining so many of the requisites of a good winter harbor as the bay in which we left the Advance. Near its southwestern corner the wide streams and the watercourses on the shore promised the earliest chances of liberation in the coming summer. It was secure against the moving ice: lofty headlands walled it in beautifully to seaward, enclosing an anchorage with a moderate depth of water; yet it was open to the meridian sunlight, and guarded from winds, eddies, and drift. The space enclosed was only occupied by a few rocky islets and our brig. We soon came in sight of her on our return march, as she lay at anchor in its southern sweep, with her masts cutting sharply against the white glacier; and, hurrying on through a gale, were taken on board without accident.

My comrades gathered anxiously around me, waiting for the news. I told them in few words of the results of our journey, and why I had determined upon remaining, and gave at once the order to warp in be-

tween the islands. We found seven-fathom soundings and a perfect shelter from the outside ice; and thus laid our little brig in the harbor, which we were fated never to leave together,—a long resting-place to her indeed, for the same ice is around her still.

WINTER HARBOR.

"The same ice is around her still."



RENSSELAER HARBOR.

CHAPTER X.

APPROACHING WINTER — STORING PROVISIONS — BUTLER STOREHOUSE — SUNDAY AT REST — BUILDING OBSERVATORY — TRAINING THE DOGS — THE LITTLE WILLIE — THE ROAD — THE FAITH — SLEDGING — RECONNOISSANCE — DEPÔT PARTY.

The winter was now approaching rapidly. The thermometer had fallen by the 10th of September to 14°, and the young ice had cemented the floes so that we could walk and sledge round the brig. About sixty paces north of us an iceberg had been caught, and was

frozen in: it was our neighbor while we remained in Rensselaer Harbor. The rocky islets around us were fringed with hummocks; and, as the tide fell, their sides were coated with opaque crystals of bright white. The birds had gone. The sea-swallows, which abounded when we first reached here, and even the young burgomasters that lingered after them, had all taken their departure for the south. Except the snow-birds, these are the last to migrate of all the Arctic birds.

"September 10, Saturday.—We have plenty of responsible work before us. The long 'night in which no man can work' is close at hand: in another month we shall lose the sun. Astronomically, he should disappear on the 24th of October if our horizon were free; but it is obstructed by a mountain ridge, and, making all allowance for refraction, we cannot count on seeing him after the 10th.

"First and foremost, we have to unstow the hold, and deposit its contents in the storehouse on Butler Island. Brooks and a party are now briskly engaged in this double labor, running loaded boats along a canal that has to be recut every morning.

"Next comes the catering for winter diet. We have little or no game as yet in Smith's Sound; and, though the traces of deer that we have observed may be followed by the animals themselves, I cannot calculate upon them as a resource. I am without the hermetically-sealed meats of our last voyage; and the use of salt meat in circumstances like ours is never safe. A fresh-water pond, which fortunately remains open at

Medary, gives me a chance for some further experiments in freshening this portion of our stock. Steaks of salt junk, artistically cut, are strung on lines like a countrywoman's dried apples, and soaked in festoons under the ice. The salmon-trout and salt codfish which we bought at Fiskernaes are placed in barrels, perforated to permit a constant circulation of fresh water through them. Our pickled cabbage is similarly treated, after a little potash has been used to neutralize the acid. All these are submitted to twelve hours of alternate soaking and freezing, the crust of ice being removed from them before each immersion. This is the steward's province, and a most important one it is.

"Every one else is well employed; McGary arranging and Bonsall making the inventory of our stores; Ohlsen and Petersen building our deck-house; while I am devising the plan of an architectural interior, which is to combine, of course, the utmost ventilation, room, dryness, warmth, general accommodation, comfort,—in a word, all the appliances of health.

"We have made a comfortable dog-house on Butler Island; but though our Esquimaux *canaille* are within scent of our cheeses there, one of which they ate yesterday for lunch, they cannot be persuaded to sleep away from the vessel. They prefer the bare snow, where they can couch within the sound of our voices, to a warm kennel upon the rocks. Strange that this dog-distinguishing trait of affection for man should show itself in an animal so imperfectly reclaimed from

a savage state that he can hardly be caught when wanted!

"September 11, Sunday.—To-day came to us the first quiet Sunday of harbor life. We changed our log registration from sea-time to the familiar home series that begins at midnight. It is not only that the season has

BUTLER'S ISLAND STOREHOUSE.

given us once more a local habitation; but there is something in the return of varying day and night that makes it grateful to reinstate this domestic observance. The long staring day, which has clung to us for more than two months, to the exclusion of the stars, has begun to intermit its brightness. Even Aldebaran, the red eye of the Bull, flared out into familiar recollection as early as ten o'clock; and the hea-

vens, though still somewhat reddened by the gaudy tints of midnight, gave us Capella and Arcturus, and even that lesser light of home memories, the Polar Star. Stretching my neck to look uncomfortably at this indication of our extreme northernness, it was hard to realize that he was not directly overhead: and it made me sigh, as I measured the few degrees of distance that separated our zenith from the Pole over which he hung.

"We had our accustomed morning and evening prayers; and the day went by, full of sober thought, and, I trust, wise resolve.

"September 12, Monday.—Still going on with Saturday's operations, amid the thousand discomforts of house-cleaning and moving combined. I dodged them for an hour this morning, to fix with Mr. Sontag upon a site for our observatory; and the men are already at work hauling the stone for it over the ice on sledges. It is to occupy a rocky islet, about a hundred yards off, that I have named after a little spot that I long to see again, 'Fern Rock.' This is to be for me the centre of familiar localities. As the classic Mivins breakfasted lightly on a cigar and took it out in sleep, so I have dined on salt pork and made my dessert of home dreams.

"September 13, Tuesday.—Besides preparing our winter quarters, I am engaged in the preliminary arrangements for my provision-depôts along the Greenland coast. Mr. Kennedy is, I believe, the only one of my predecessors who has used October and Novem-

ber for Arctic field-work; but I deem it important to our movements during the winter and spring, that the depôts in advance should be made before the darkness sets in. I purpose arranging three of them at intervals,—pushing them as far forward as I can,—to contain in all some twelve hundred pounds of provision, of which eight hundred will be pemmican."

My plans of future search were directly dependent upon the success of these operations of the fall. With a chain of provision-depôts along the coast of Greenland, I could readily extend my travel by dogs. These noble animals formed the basis of my future plans: the only drawback to their efficiency as a means of travel was their inability to carry the heavy loads of provender essential for their support. A badly-fed or heavily-loaded dog is useless for a long journey; but with relays of provisions I could start empty, and fill up at our final station.

My dogs were both Esquimaux and Newfoundlanders. Of these last I had ten: they were to be carefully broken, to travel by voice without the whip, and were expected to be very useful for heavy draught, as their tractability would allow the driver to regulate their pace. I was already training them in a light sledge, to drive, unlike the Esquimaux, two abreast, with a regular harness, a breast-collar of flat leather, and a pair of traces. Six of them made a powerful travelling-team; and four could carry me and my instruments, for short journeys around the brig, with great ease.

The sledge I used for them was built, with the care of cabinet-work, of American hickory thoroughly seasoned. The curvature of the runners was determined experimentally. they were shod with annealed steel, and fastened by copper rivets which could be renewed at pleasure. Except this, no metal entered into its construction. All its parts were held together by seal-skin lashings, so that it yielded to inequalities of surface and to sudden shock. The three paramount con-

LITTLE WILLIE, AND NEWFOUNDLANDERS.

siderations of lightness, strength, and diminished friction, were well combined in it. This beautiful, and, as we afterward found, efficient and enduring sledge was named the "Little Willie."

The Esquimaux dogs were reserved for the great tug of the actual journeys of search. They were now in the semi-savage condition which marks their close approach to the wolf; and according to Mr. Petersen, under whose care they were placed, were totally useless for journeys over such ice as was now before us. A hard experience had not then opened my eyes to

the inestimable value of these dogs: I had yet to learn their power and speed, their patient, enduring fortitude, their sagacity in tracking these icy morasses, among which they had been born and bred.

I determined to hold back my more distant provision parties as long as the continued daylight would permit; making the Newfoundland dogs establish the depôts within sixty miles of the brig. My previous journey had shown me that the ice-belt, clogged with the foreign matters dislodged from the cliffs, would not at this season of the year answer for operations with the sledge, and that the ice of the great pack outside was even more unfit, on account of its want of continuity. It was now so consolidated by advancing cold as to have stopped its drift to the south; but the large floes or fields which formed it were imperfectly cemented together, and would break into hummocks under the action of winds or even of the tides. It was made still more impassable by the numerous bergs* which kept ploughing with irresistible momentum through the ice-tables, and rearing up barricades that defied the passage of a sledge.

It was desirable, therefore, that our depôt parties should not enter upon their work until they could avail themselves of the young ice. This now occupied a belt, about one hundred yards in mean breadth,

* The general drift of these great masses was to the south,—a plain indication of deep sea-currents in that direction, and a convincing proof, to me, of a discharge from some northern water.

close to the shore, and, but for the fluctuations of the tides, would already be a practicable road. For the present, however, a gale of wind or a spring tide might easily drive the outer floes upon it, and thus destroy its integrity.

The party appointed to establish this depôt was furnished with a sledge, the admirable model of which I obtained through the British Admiralty. The only liberty that I ventured to take with this model—which had been previously tested by the adventurous journeys of McClintock in Lancaster Sound—was to lessen the height, and somewhat increase the breadth of the runner; both of which, I think, were improvements, giving increased strength, and preventing too deep a descent into the snow. I named her the "Faith." Her length was thirteen feet, and breadth four. She could readily carry fourteen hundred pounds of mixed stores.

This noble old sledge, which is now endeared to me by every pleasant association, bore the brunt of the heaviest parties, and came back, after the descent of the coast, comparatively sound. The men were attached to her in such a way as to make the line of draught or traction as near as possible in the axis of the weight. Each man had his own shoulder-belt, or "rue-raddy," as we used to call it, and his own track-line, which for want of horse-hair

THE RUE-RADDY

was made of Manilla rope: it traversed freely by a ring on a loop or bridle, that extended from runner to runner in front of the sledge. These track-ropes varied in length, so as to keep the members of the party from interfering with each other by walking abreast. The longest was three fathoms, eighteen feet, in length; the shortest, directly fastened to the sledge runner, as a means of guiding or suddenly arresting and turning the vehicle.

The cargo for this journey, without including the

SLEDGE DRAWN BY NINE MEN.

provisions of the party, was almost exclusively pemmican. Some of this was put up in cylinders of tinned iron with conical terminations, so as to resist the assaults of the white bear; but the larger quantity was in strong wooden cases or kegs, well hooped with iron, holding about seventy pounds each. Surmounting this load was a light India-rubber boat, made quite portable by a frame of basket willow, which I hoped to launch on reaching open water.

The personal equipment of the men was a buffalo-robe for the party to lie upon, and a bag of Mackinaw

blanket for each man to crawl into at night. India-rubber cloth was to be the protection from the snow beneath. The tent was of canvas, made after the plan of our English predecessors. We afterward learned to modify and reduce our travelling gear, and found that in direct proportion to its simplicity and our apparent privation of articles of supposed necessity were our actual comfort and practical efficiency. Step by step, as long as our Arctic service continued, we went on reducing our sledging outfit, until at last we came to the Esquimaux ultimatum of simplicity,—raw meat and a fur bag.

While our arrangements for the winter were still in progress, I sent out Mr. Wilson and Dr. Hayes, accompanied by our Esquimaux, Hans, to learn something of the interior features of the country, and the promise it afforded of resources from the hunt. They returned on the 16th of September, after a hard travel, made with excellent judgment and abundant zeal. They penetrated into the interior about ninety miles, when their progress was arrested by a glacier, four hundred feet high, and extending to the north and west as far as the eye could reach. This magnificent body of interior ice formed on its summit a complete plateau,—a *mer de glace*, abutting upon a broken plain of syenite. They found no large lakes. They saw a few reindeer at a distance, and numerous hares and rabbits, but no ptarmigan.

"September 20, Tuesday.—I was unwilling to delay my depôt party any longer. They left the brig,

McGary, and Bonsall, with five men, at half-past one to-day. We gave them three cheers, and I accompanied them with my dogs as a farewell escort for some miles.

"Our crew proper is now reduced to three men; but all the officers, the doctor among the rest, are hard at work upon the observatory and its arrangements."

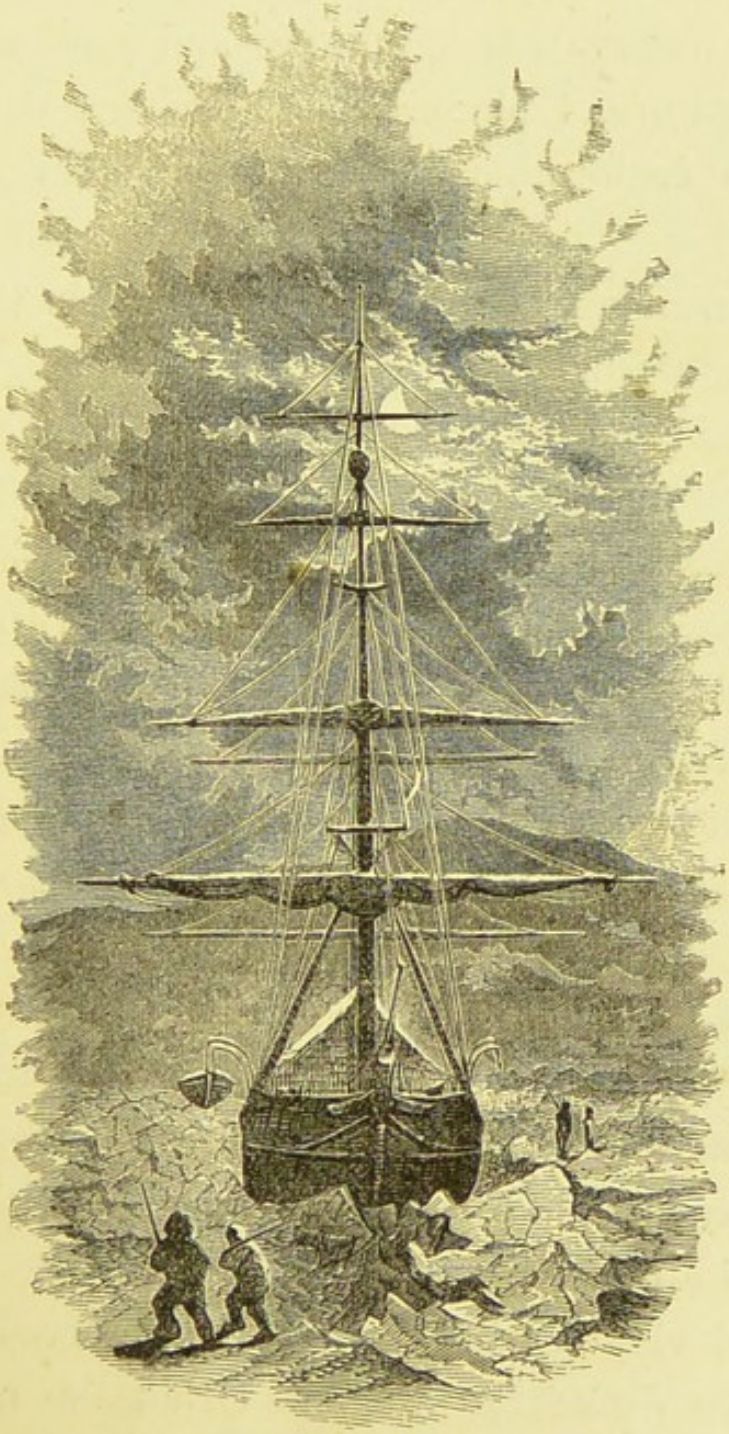
CHAPTER XI.

THE OBSERVATORY — THERMOMETERS — THE RATS — THE BRIG ON FIRE — ANCIENT SLEDGE-TRACKS — ESQUIMAUX HUTS — HYDROPHOBIA — SLEDGE-DRIVING — MUSK OX TRACKS — A SLEDGE PARTY.

THE island on which we placed our observatory was some fifty paces long by perhaps forty broad, and about thirty feet above the water-line. Here we raised four walls of granite blocks, cementing them together with moss and water and the never-failing aid of frost. On these was laid a substantial wooden roof, perforated at the meridian and prime vertical. For pedestals we had a conglomerate of gravel and ice, well rammed down while liquid in our iron-hooped pemmican-casks, and as free from all vibration as the rock they rested on. Here we mounted our transit and theodolite.

The magnetic observatory adjoining, had rather more of the affectation of comfort. It was of stone, ten feet square, with a wooden floor as well as roof, a copper fire-grate, and stands of the same Arctic breccia as those in its neighbor. No iron was used in its construction. Here were our magnetometer and dip instruments.

Our tide-register was on board the vessel, a simple pulley-gauge, arranged with a wheel and index, and dependent on her rise and fall for its rotation.



BRIG IN HARBOR.

Our meteorological observatory was upon the open ice-field, one hundred and forty yards from the ship. It was a wooden structure, latticed and pierced with

auger-holes on all sides, so as to allow the air to pass freely, and firmly luted to its frozen base. To guard against the fine and almost impalpable drift, which insinuates itself everywhere, and which would interfere with the observation of minute and sudden changes of temperature, I placed a series of screens at right angles to each other, so as to surround the inner chamber.

The thermometers were suspended within the central chamber: a pane of glass permitted the light of our lanterns to reach them from a distance, and a lens and eye-glass were so fixed as to allow us to observe the instruments without coming inside the screens. Their sensibility was such that when standing at 40° and 50° below zero, the mere approach of the observer caused a perceptible rise of the column. One of them, a three-feet spirit standard by Taliabue, graduated to 70° minus, was of sufficiently extended register to be read by rapid inspection to tenths of a degree. The influence of winds I did not wish absolutely to neutralize; but I endeavored to make the exposure to them so uniform as to give a relative result for every quarter of the compass. We were well supplied with thermometers of all varieties.

I had devised a wind-gauge to be observed by a tell-tale below deck; but we found that the condensing moisture so froze around it as to clog its motion.

"September 30, Friday.—We have been terribly annoyed by rats. Some days ago, we made a brave effort to smoke them out with the vilest imaginable

compound of vapors,—brimstone, burnt leather, and arsenic,—and spent a cold night in a deck-bivouac to give the experiment fair play. But they survived the fumigation. We now determined to dose them with carbonic acid gas. Dr. Hayes burnt a quantity of charcoal; and we shut down the hatches, after pasting up every fissure that communicated aft and starting three stoves on the skin of the forepeak.

"As the gas was generated with extreme rapidity in the confined area below, great caution had to be exercised. Our French cook, good Pierre Schubert,—who to a considerable share of bull-headed intrepidity unites a commendable portion of professional zeal,—stole below, without my knowledge or consent, to season a soup. Morton fortunately saw him staggering in the dark; and, reaching him with great difficulty as he fell, both were hauled up in the end,—Morton, his strength almost gone, the cook perfectly insensible.

"The next disaster was of a graver sort. I record it with emotions of mingled awe and thankfulness. We have narrowly escaped being burnt out of house and home. I had given orders that the fires, lit under my own eye, should be regularly inspected; but I learned that Pierre's misadventure had made the watch pretermit for a time opening the hatches. As I lowered a lantern, which was extinguished instantly, a suspicious odor reached me, as of burning wood. I descended at once. Reaching the deck of the forecastle, my first glance toward the fires showed me that all was safe there; and, though the quantity of smoke

still surprised me, I was disposed to attribute it to the recent kindling. But at this moment, while passing on my return near the door of the bulkhead, which leads to the carpenter's room, the gas began to affect me. My lantern went out as if quenched by water; and, as I ran by the bulkhead door, I saw the deck near it a mass of glowing fire for some three feet in diameter. I could not tell how much farther it extended; for I became quite insensible at the foot of the ladder, and would have sunk had not Mr. Brooks seen my condition and hauled me out.

"When I came to myself, which happily was very soon, I confided my fearful secret to the four men around me, Brooks, Ohlsen, Blake, and Stevenson. It was all-important to avoid confusion: we shut the doors of the galley, so as to confine the rest of the crew and officers aft; and then passed up water from the fire-hole alongside. It was done very noiselessly. Ohlsen and myself went down to the burning deck; Brooks handed us in the buckets; and in less than ten minutes we were in safety. It was interesting to observe the effect of steam upon the noxious gas. Both Ohlsen and myself were greatly oppressed until the first bucket was poured on; but as I did this, directly over the burning coal, raising clouds of steam, we at once experienced relief: the fine aqueous particles seemed to absorb the carbonic acid instantly. We found the fire had originated in the remains of a barrel of charcoal, which had been left in the carpenter's room, ten feet from the stoves, and with a

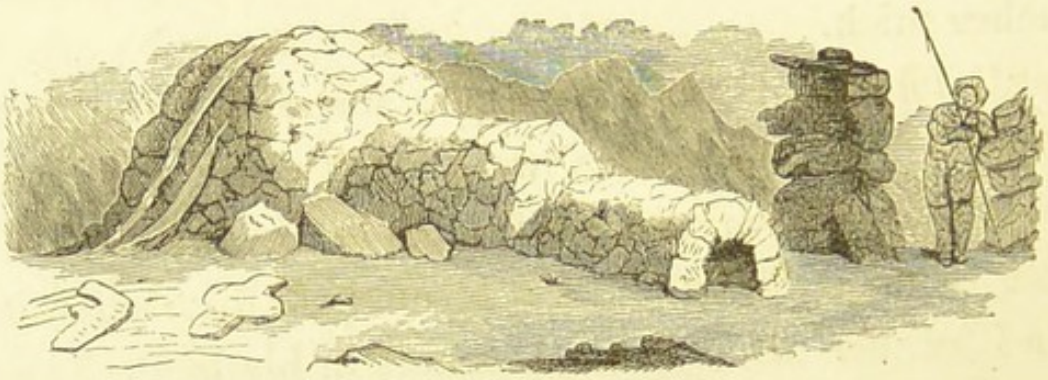
bulkhead separating it from them. How it had been ignited it was impossible to know. Our safety was due to the dense charge of carbonic acid gas which surrounded the fire, and the exclusion of atmospheric air. When the hatches were opened, the flame burst out with energy. Our fire-hole was invaluable; and I rejoiced that in the midst of our heavy duties, this essential of an Arctic winter harbor had not been neglected. The ice around the brig was already fourteen inches thick.

"October 1, Saturday.—Upon inspecting the scene of yesterday's operations, we found twenty-eight well-fed rats of all varieties of age. The cook, though unable to do duty, is better: I can hear him chanting his Béranger through the blankets in his bunk, happy over his holiday, happy to be happy at every thing. I had a larger dose of carbonic acid even than he, and am suffering considerably with palpitations and vertigo. If the sentimental asphyxia of Parisian charcoal resembles in its advent that of the Arctic zone, it must be, I think, a poor way of dying.

"October 3, Monday.—On shore to the southeast, above the first terrace, Mr. Petersen found unmistakeable signs of a sledge-passage. The tracks were deeply impressed, but certainly more than one season old. This adds to our hope that the natives, whose ancient traces we saw on the point south of Godsend Ledge, may return this winter.

"October 5, Wednesday.—I walked this afternoon to another group of Esquimaux huts, about three miles

from the brig. They are four in number, long deserted, but, to an eye unpractised in Arctic antiquarian inductions, in as good preservation as a last year's tenement at home. The most astonishing feature is the presence of some little out-huts, or, as I first thought them, dog-kennels. These are about four feet by three in ground-plan and some three feet



THE ESQUIMAUX HUTS.

high; no larger than the pologs of the Tchuschi. In shape they resemble a rude dome; and the stones of which they are composed are of excessive size, and evidently selected for smoothness. They were, without exception, of waterwashed limestone. They are heavily sodded with turf, and a narrow slab of clay-slate serves as a door. No doubt they are human habitations,—retiring-chambers, into which, away from the crowded families of the hut, one or even two Esquimaux have burrowed for sleep,—chilly dormitories in the winter of this high latitude.

"A circumstance that happened to-day is of serious

concern to us. Our sluts have been adding to our stock. We have now on hand four reserved puppies of peculiar promise; six have been ignominiously drowned, two devoted to a pair of mittens for Dr. Kane, and seven eaten by their mammas. Yesterday, the mother of one batch, a pair of fine white pups, showed peculiar symptoms. We recalled the fact that for days past she had avoided water, or had drunk with spasm and evident aversion; but hydrophobia, which is unknown north of 70°, never occurred to us. The animal was noticed this morning walking up and down the deck with a staggering gait, her head depressed and her mouth frothing and tumid. Finally she snapped at Petersen, and fell foaming and biting at his feet. He reluctantly pronounced it hydrophobia, and advised me to shoot her. The advice was well-timed: I had hardly cleared the deck before she snapped at Hans, the Esquimaux, and recommenced her walking trot. It was quite an anxious moment to me; for my Newfoundlanders were around the housing, and the hatches open. We shot her, of course.

"October 6, Thursday.—The hares are less numerous than they were. They seek the coast when the snows fall in the interior, and the late southeast wind has probably favored their going back. These animals are not equal in size either to the European hare or their brethren of the North American continent. The latter, according to Seamann, weigh upon an average fourteen pounds. A large male, the largest seen by us in

Smith's Sound, weighed but nine; and our average so far does not exceed seven and a half. They measure generally less by some inches in length than those noticed by Dr. Richardson. Mr. Petersen is quite successful in shooting these hares: we have a stock of fourteen now on hand.

"We have been building stone traps on the hills for the foxes, whose traces we see there in abundance, and have determined to organize a regular hunt as soon as they give us the chance.

"October 8, Saturday.—I have been practising with my dog-sledge and an Esquimaux team till my arms ache. To drive such an equipage a certain proficiency with the whip is indispensable, which, like all proficiency, must be worked for. In fact, the weapon has an exercise of its own, quite peculiar, and as hard to learn as single-stick or broadsword.

"The whip is six yards long, and the handle but sixteen inches,—a short lever, of course, to throw out such a length of seal-hide. Learn to do it, however, with a masterly sweep, or else make up your mind to forego driving sledge; for the dogs are guided solely by the lash, and you must be able not only to hit any particular dog out of a team of twelve, but to accompany the feat also with a resounding crack. After this, you find that to get your lash back involves another difficulty; for it is apt to entangle itself among the dogs and lines, or to fasten itself cunningly round bits of ice, so as to drag you head over heels into the snow.

"The secret by which this complicated set of require-

ments is fulfilled consists in properly describing an arc from the shoulder, with a stiff elbow, giving the jerk to the whip-handle from the hand and wrist alone. The lash trails behind as you travel, and when thrown forward is allowed to extend itself without an effort to bring it back. You wait patiently after giving the projectile impulse until it unwinds its slow length, reaches the end of its tether, and cracks to tell you that it is at its journey's end. Such a crack on the ear or forefoot of an unfortunate dog is signalized by a howl quite unmistakeable in its import.

"The mere labor of using this whip is such that the Esquimaux travel in couples, one sledge after the other. The hinder dogs follow mechanically, and thus require no whip; and the drivers change about so as to rest each other.

"I have amused myself, if not my dogs, for some days past with this formidable accessory of Arctic travel. I have not quite got the knack of it yet, though I might venture a trial of cracking against the postillion college of Lonjumeau.

"October 9, Sunday.—Mr. Petersen shot a hare yesterday. They are very scarce now, for he travelled some five hours without seeing another. He makes the important report of musk ox tracks on the recent snow. Dr. Richardson says that these are scarcely distinguishable from the reindeer's except by the practised eye: he characterizes them as larger, but not wider. The tracks that Petersen saw had an interesting confirmation of their being those of the musk ox, for they were

accompanied by a second set of footprints, evidently belonging to a young one of the same species, and about as large as a middle-sized reindeer's. Both impressions also were marked as if by hair growing from the pastern joint, for behind the hoof was a line brushed in the snow.

"To-day Hans brought in another hare he had shot. He saw seven reindeer in a large valley off Bedevilled Reach, and wounded one of them. This looks promising for our winter commissariat.

"October 10, Monday.—Our depôt party has been out twenty days, and it is time they were back: their provisions must have run very low, for I enjoined them to leave every pound at the depôt they could spare. I am going out with supplies to look after them. I take four of our best Newfoundlanders, now well broken, in our lightest sledge; and Blake will accompany me with his skates. We have not hands enough to equip a sledge party, and the ice is too unsound for us to attempt to ride with a large team. The thermometer is still four degrees above zero."

CHAPTER XII.

LEAPING A CHASM — THE ICE-BELT — CAPE WILLIAM WOOD — CAMP ON THE FLOES — RETURN OF DEPÔT PARTY — BONSALL'S ADVENTURE — RESULTS — AN ESCAPE — THE THIRD CACHE — McGARY ISLAND.

I FOUND little or no trouble in crossing the ice until we passed beyond the northeast headland, which I have named Cape William Wood. But, on emerging into the channel, we found that the spring tides had broken up the great area around us, and that the passage of the sledge was interrupted by fissures, which were beginning to break in every direction through the young ice.

My first effort was of course to reach the land; but it was unfortunately low tide, and the ice-belt rose up before me like a wall. The pack was becoming more and more unsafe, and I was extremely anxious to gain an asylum on shore; for, though it was easy to find a temporary refuge by retreating to the old floes which studded the more recent ice, I knew that in doing so we should risk being carried down by the drift.

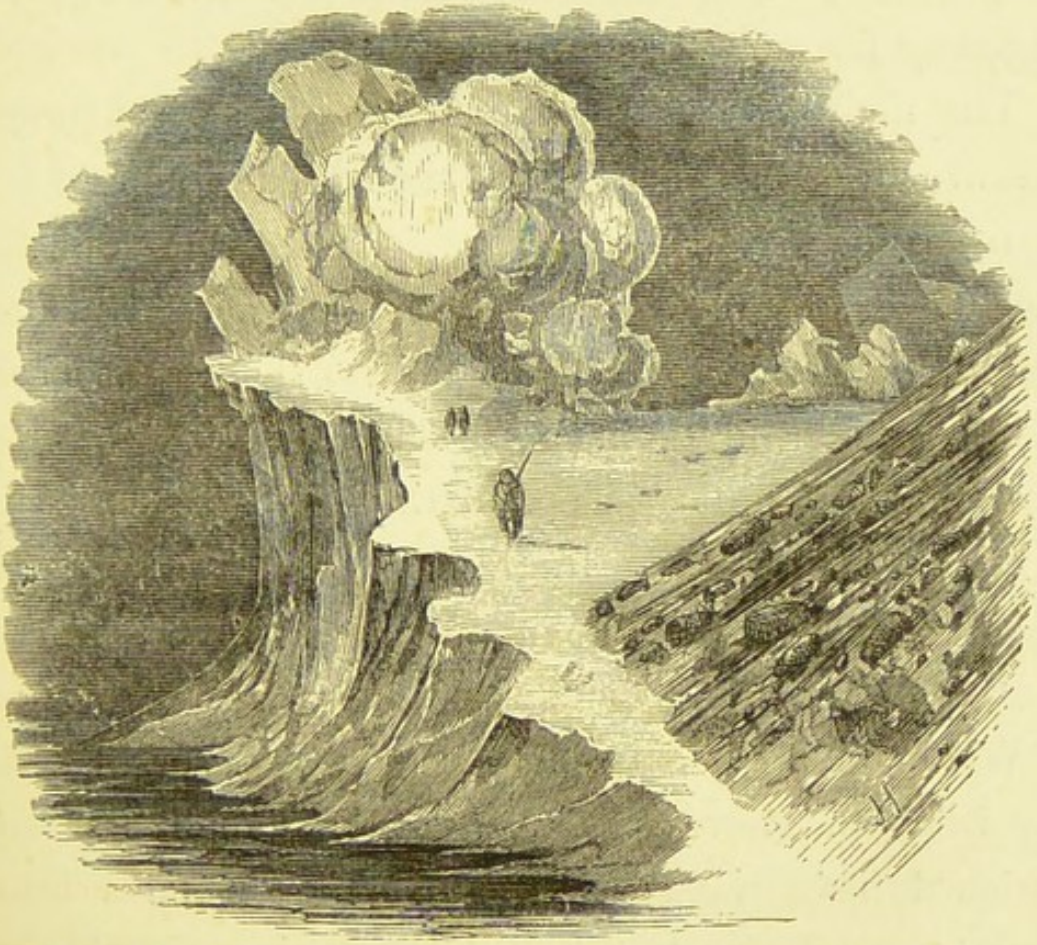
The dogs began to flag; but we had to press them:—

we were only two men; and, in the event of the animals failing to leap any of the rapidly-multiplying fissures, we could hardly expect to extricate our laden sledge. Three times in less than three hours my shaft or hinder dogs went in; and John and myself, who had been trotting alongside the sledge for sixteen miles, were nearly as tired as they were. This state of things could not last; and I therefore made for the old ice to seaward.

We were nearing it rapidly, when the dogs failed in leaping a chasm that was somewhat wider than the others, and the whole concern came down in the water. I cut the lines instantly, and, with the aid of my companion, hauled the poor animals out. We owed the preservation of the sledge to their admirable docility and perseverance. The tin cooking-apparatus and the air confined in the India-rubber coverings kept it afloat till we could succeed in fastening a couple of seal-skin cords to the cross-pieces at the front and back. By these John and myself were able to give it an uncertain support from the two edges of the opening, till the dogs, after many fruitless struggles, carried it forward at last upon the ice.

Although the thermometer was below zero, and in our wet state we ran a considerable risk of freezing, the urgency of our position left no room for thoughts of cold. We started at a run, men and dogs, for the solid ice; and by the time we had gained it we were steaming in the cold atmosphere like a couple of Nootka Sound vapor-baths.

We rested on the floe. We could not raise our tent, for it had frozen as hard as a shingle. But our buffalo-robe bags gave us protection; and, though we were too wet inside to be absolutely comfortable, we managed to



ICE-BELT OF OCTOBER.

get something like sleep before it was light enough for us to move on again.

The journey was continued in the same way; but we found to our great gratification that the cracks closed with the change of the tide, and at high-water we succeeded in gaining the ice-belt under the cliffs. This belt had changed very much since my journey in

September. The tides and frosts together had coated it with ice as smooth as satin, and this glossy covering made it an excellent road. The cliffs discharged fewer fragments in our path, and the rocks of our last journey's experience were now fringed with icicles. I saw with great pleasure that this ice-belt would serve as a highway for our future operations.

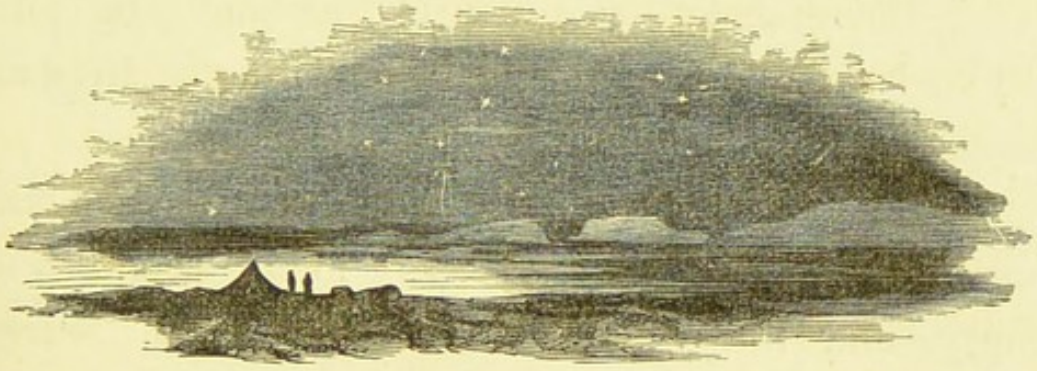
The nights which followed were not so bad as one would suppose from the saturated condition of our equipment. Evaporation is not so inappreciable in this Arctic region as some theorists imagine. By alternately exposing the tent and furs to the air, and beating the ice out of them, we dried them enough to permit sleep. The dogs slept in the tent with us, giving it warmth as well as fragrance. What perfumes of nature are lost at home upon our ungrateful senses! How we relished the companionship!

We had averaged twenty miles a day since leaving the brig, and were within a short march of the cape which I have named William Wood, when a broad chasm brought us to a halt. It was in vain that we worked out to seaward, or dived into the shoreward recesses of the bay: the ice everywhere presented the same impassable fissures. We had no alternative but to retrace our steps and seek among the bergs some place of security. We found a camp for the night on the old floe-ices to the westward, gaining them some time after the darkness had closed in.

On the morning of the 15th, about two hours before the late sunrise, as I was preparing to climb a

berg from which I might have a sight of the road ahead, I perceived far off upon the white snow a dark object, which not only moved, but altered its shape strangely,—now expanding into a long black line, now waving, now gathering itself up into a compact mass. It was the returning sledge party. They had seen our black tent of Kedar, and ferried across to seek it.

They were most welcome; for their absence, in the



CAMP ON THE FLOES.

fearfully open state of the ice, had filled me with apprehensions. We could not distinguish each other as we drew near in the twilight; and my first good news of them was when I heard that they were singing. On they came, and at last I was able to count their voices, one by one. Thank God, seven! Poor John Blake was so breathless with gratulation, that I could not get him to blow his signal-horn. We gave them, instead, the good old Anglo-Saxon greeting, "three cheers!" and in a few minutes were among them.

They had made a creditable journey, and were, on the whole, in good condition. They had no injuries worth talking about, although not a man had escaped some touches of the frost. Bonsall was minus a big toe-nail, and plus a scar upon the nose. McGary had attempted, as Tom Hickey told us, to *pluck* a fox, it being so frozen as to defy skinning by his knife; and his fingers had been tolerably frost-bitten in the operation. "They're very horny, sir, are my fingers," said McGary, who was worn down to a mere shadow of his former rotundity; "very horny, and they water up like bladders." The rest had suffered in their feet; but, like good fellows, postponed limping until they reached the ship.

Within the last three days they had marched fifty-four miles, or eighteen a day. Their sledge being empty, and the young ice north of Cape Bancroft smooth as a mirror, they had travelled, the day before we met them, nearly twenty-five miles. A very remarkable pace for men who had been twenty-eight days in the field.

My supplies of hot food, coffee, and marled beef soup, which I had brought with me, were very opportune. They had almost exhausted their bread; and, being unwilling to encroach on the depôt stores, had gone without fuel in order to save alcohol. Leaving orders to place my own sledge stores in *cache*, I returned to the brig, ahead of the party, with my dog-sledge, carrying Mr. Bonsall with me.

On this return I had much less difficulty with the

NEWFOUNDLAND DOG TEAM.

ice-cracks; my team of Newfoundlanders leaping them in almost every instance, and the impulse of our sledge carrying it across. On one occasion, while we were making these flying leaps, poor Bonsall was tossed out, and came very near being carried under by the rapid tide. He fortunately caught the runner of the sledge as he fell, and I succeeded, by whipping up the dogs, in hauling him out. He was, of course, wet to the skin; but we were only twenty miles from the brig, and he sustained no serious injury from his immersion.

I return to my journal.

"The spar-deck—or, as we call it from its wooden covering, the 'House'—is steaming with the buffalo-robes, tents, boots, socks, and heterogeneous costumings of our returned parties. We have ample work in repairing these and restoring the disturbed order of our domestic life. The men feel the effects of their journey, but are very content in their comfortable quarters. A pack of cards, grog at dinner, and the promise of a three days' holiday, have made the decks happy with idleness and laughter."

I give the general results of the party, as derived from the detailed account of Messrs. McGary and Bonsall.

They left the brig, as may be remembered, on the 20th of September, and they reached Cape Russell on the 25th. Near this spot I had, in my former journey of reconnoissance, established a cairn; and here, as by previously-concerted arrangement, they left their first cache of pemmican, together with some bread and alcohol for fuel.

On the 28th, after crossing a large bay, they met a low cape about thirty miles to the northeast of the first depôt. Here they made a second cache of a hundred and ten pounds of beef and pemmican, and about thirty of a mixture of pemmican and Indian meal, with a bag of bread.

The day being too foggy for sextant observations for position, or even for a reliable view of the landmarks, they built a substantial cairn, and buried the pro-

vision at a distance of ten paces from its centre, bearing by compass, E. by N. ½ N. The point on which this cache stood I subsequently named after Mr. Bonsall, one of the indefatigable leaders of the party.

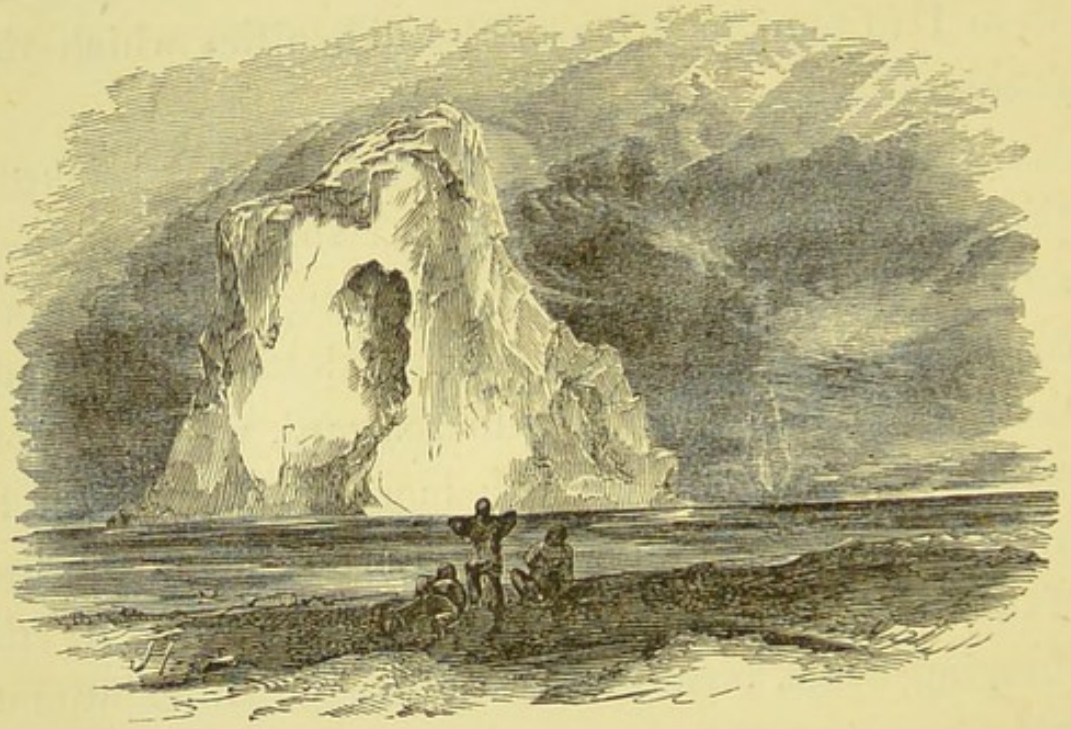
I will give the geographical outline of the track of this party in a subsequent part of this narrative, when I have spoken of the after-travel and surveys which confirmed and defined it. But I should do injustice both to their exertions and to the results of them, were I to omit mention of the difficulties which they encountered.

On the twenty-fifth day of their outward journey they met a great glacier, which I shall describe hereafter. It checked their course along the Greenland coast abruptly; but they still endeavored to make their way outside its edge to seaward, with the commendable object of seeking a more northern point for the provision depôt. This journey was along the base of an icy wall, which constantly threw off its discharging bergs, breaking up the ice for miles around, and compelling the party to ferry themselves and their sledge over the cracks by rafts of ice.

One of these incidents I give nearly in the language of Mr. Bonsall.

They had camped, on the night of 5th October, under the lee of some large icebergs, and within hearing of the grand artillery of the glacier. The floe on which their tent was pitched was of recent and transparent ice; and the party, too tired to seek a safer

asylum, had turned in to rest; when, with a crack like the snap of a gigantic whip, the ice opened directly beneath them. This was, as nearly as they could estimate the time, at about one o'clock in the morning. The darkness was intense; and the cold, about 10° below zero, was increased by a wind which blew from the northeast over the glacier. They gathered together their tent and sleeping furs, and lashed them, according to the best of their ability, upon the sledge.



CAMP UNDER GLACIER—OCTOBER FIFTH.

Repeated intonations warned them that the ice was breaking up; a swell, evidently produced by the avalanches from the glacier, caused the platform on which they stood to rock to and fro.

Mr. McGary derived a hope from the stable character of the bergs near them: they were evidently not

adrift. He determined to select a flat piece of ice, place the sledge upon it, and, by the aid of tent-poles and cooking-utensils, paddle to the old and firm fields which clung to the bases of the bergs. The party waited in anxious expectation until the returning daylight permitted this attempt; and, after a most adventurous passage, succeeded in reaching the desired position.

My main object in sending them out was the deposit of provisions, and I had not deemed it advisable to complicate their duties by any organization for a survey. They reached their highest latitude on the 6th of October; and this, as determined by dead reckoning, was in latitude 79°50′, and longitude 65°20′. From this point they sighted and took sextant bearings of land to the north,* having a trend or inclination west by north and east by south, at an estimated distance of thirty miles. They were at this time entangled in the icebergs; and it was from the lofty summit of one of these, in the midst of a scene of surpassing desolation, that they made their observations.

They began the third or final cache, which was the main object of the journey, on the 10th of October; placing it on a low island at the base of the large

* I may mention that the results of their observations were not used in the construction of our charts, except their interesting sextant bearings. These were both numerous and valuable, but not sustained at the time by satisfactory astronomical observations for position.

glacier which checked their further march along the coast.

Before adopting this site, they had perseveringly skirted the base of the glacier, in a fruitless effort to cross it to the north. In spite of distressing cold, and the nearly constant winds from the ice-clothed shore, they carried out all my instructions for securing this important depôt. The stores were carefully buried in a natural excavation among the cliffs; and heavy rocks, brought with great labor, were piled above them. Smaller stones were placed over these, and incorporated into one solid mass by a mixture of sand and water. The power of the bear in breaking up a provision cache is extraordinary; but the Esquimaux to the south had assured me that frozen sand and water, which would wear away the animal's claws, were more effective against him than the largest rocks. Still, knowing how much trouble the officers of Commodore Austin's Expedition experienced from the destruction of their caches, I had ordered the party to resort to a combination of these expedients.

They buried here six hundred and seventy pounds of pemmican, forty of Borden's meat biscuit, and some articles of general diet; making a total of about eight hundred pounds. They indicated the site by a large cairn, bearing E. ½ S. from the cache, and at the distance of thirty paces. The landmarks of the cairn itself were sufficiently evident, but were afterwards fixed by bearings, for additional certainty.

The island which was so judiciously selected as the seat of this cache was named after my faithful friend and excellent second officer, Mr. James McGary, of New London.

10

MCGARY'S CACHE.

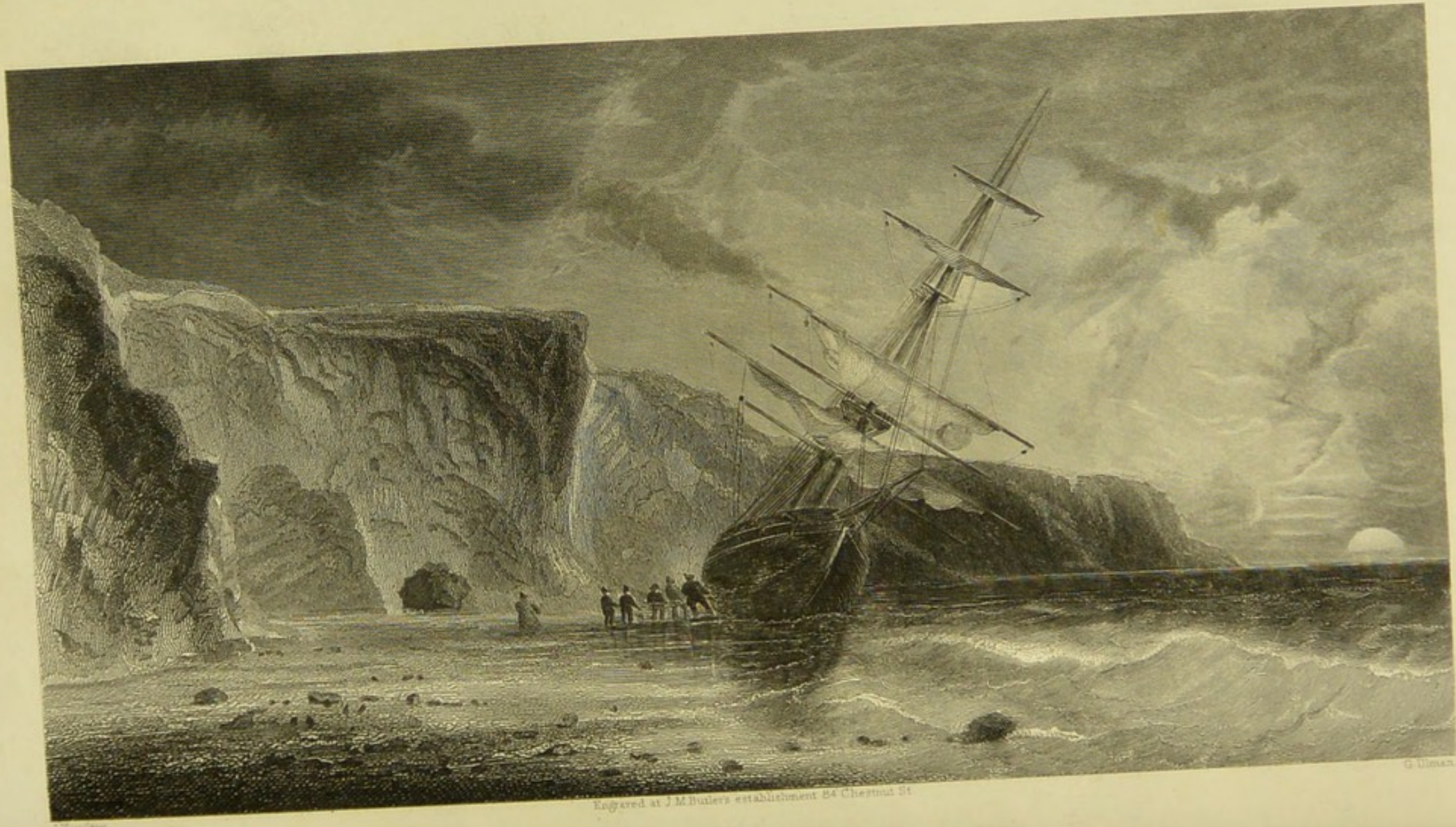
CHAPTER XIII.

WALRUS-HOLES — ADVANCE OF DARKNESS — DARKNESS — THE COLD — "THE ICE-BLINK" — FOX-CHASE — ESQUIMAUX HUTS — OCCULTATION OF SATURN — PORTRAIT OF OLD GRIM.

"OCTOBER 28, Friday.—The moon has reached her greatest northern declination of about 25° 35′. She is a glorious object: sweeping around the heavens, at the lowest part of her curve, she is still 14° above the horizon. For eight days she has been making her circuit with nearly unvarying brightness. It is one of those sparkling nights that bring back the memory of sleigh-bells and songs and glad communings of hearts in lands that are far away.

"Our fires and ventilation-fixtures are so arranged that we are able to keep a mean temperature below of 65°, and on deck, under our housing, above the freezing-point. This is admirable success; for the weather outside is at 25° below zero, and there is quite a little breeze blowing.

"The last remnant of walrus did not leave us until the second week of last month, when the temperature had sunk below zero. Till then they found open



Engraved at J.M.Butler's establishment 84 Chestnut St

J Hamilton

G Ullman

MIDNIGHT IN SEPTEMBER.

(From a sketch by Dr Kane)

water enough to sport and even sleep in, between the fields of drift, as they opened with the tide; but they had worked numerous breathing-holes besides, in the solid ice nearer shore.* Many of these were inside the capes of Rensselaer Harbor. They had the same circular, cleanly-finished margin as the seals', but they were in much thicker ice, and the radiating

WALRUS SPORTING.

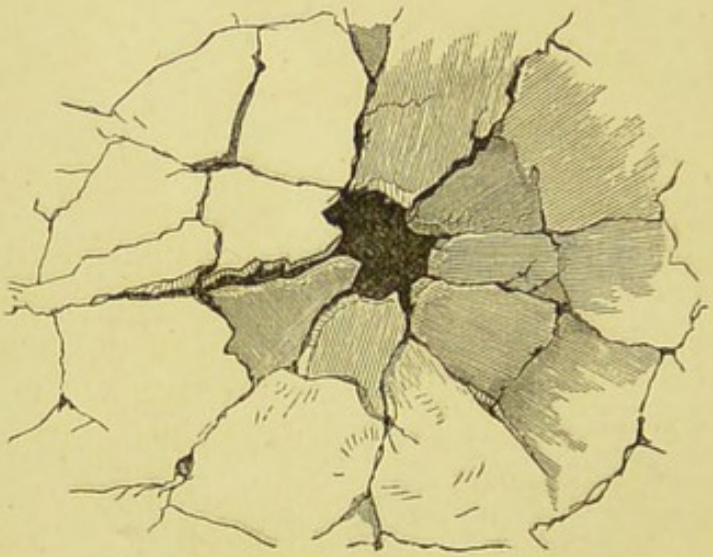
lines of fracture round them much more marked. The animal evidently used his own buoyancy as a means of starting the ice.

"Around these holes the ice was much discolored:

* The walrus often sleeps on the surface of the water while his fellows are playing around him. In this condition I frequently surprised the young ones, whose mothers were asleep by their side.

numbers of broken clam-shells were found near them, and, in one instance, some gravel, mingled with about half a peck of the coarse shingle of the beach. The use of the stones which the walrus swallows is still an interesting question. The ussuk or bearded seal has the same habit.

"November 7, Monday.—The darkness is coming on with insidious steadiness, and its advances can only be

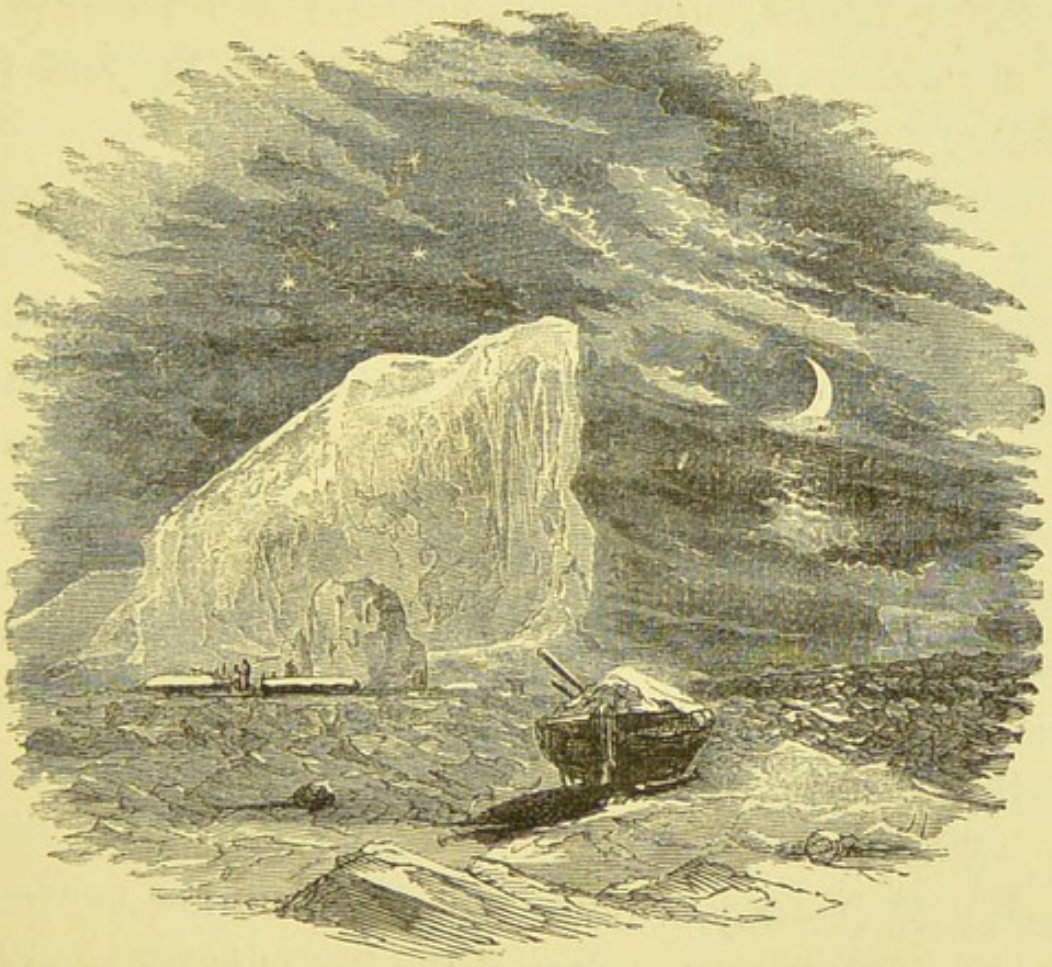


WALRUS-HOLE.

perceived by comparing one day with its fellow of some time back. We still read the thermometer at noonday without a light, and the black masses of the hills are plain for about five hours with their glaring patches of snow; but all the rest is darkness. Lanterns are always on the spar-deck, and the lard-lamps never extinguished below. The stars of the sixth magnitude shine out at noonday.

"Except upon the island of Spitzbergen, which has

the advantages of an insular climate and tempered by ocean currents, no Christians have wintered in so high a latitude as this. They are Russian sailors who make the encounter there, men inured to hardships and cold. I cannot help thinking of the sad chronicles of the early



NOONDAY IN NOVEMBER.

Dutch, who perished year after year, without leaving a comrade to record their fate.

"Our darkness has ninety days to run before we shall get back again even to the contested twilight of to-day. Altogether, our winter will have been sunless for one hundred and forty days.

"It requires neither the 'Ice-foot' with its growing ramparts, nor the rapid encroachments of the night, nor the record of our thermometers, to portend for us a winter of unusual severity. The mean temperatures of October and September are lower than those of Parry for the same months at Melville Island. Thus far we have no indications of that deferred fall cold which marks the insular climate.

"November 9, Wednesday.—Wishing to get the altitude of the cliffs on the southwest cape of our bay before the darkness set in thoroughly, I started in time to reach them with my Newfoundlanders at noonday. Although it was but a short journey, the rough shore-ice and a slight wind rendered the cold severe. I had been housed for a week with my wretched rheumatism, and felt that daily exposure was necessary to enable me to bear up against the cold. The thermometer indicated twenty-three degrees below zero.

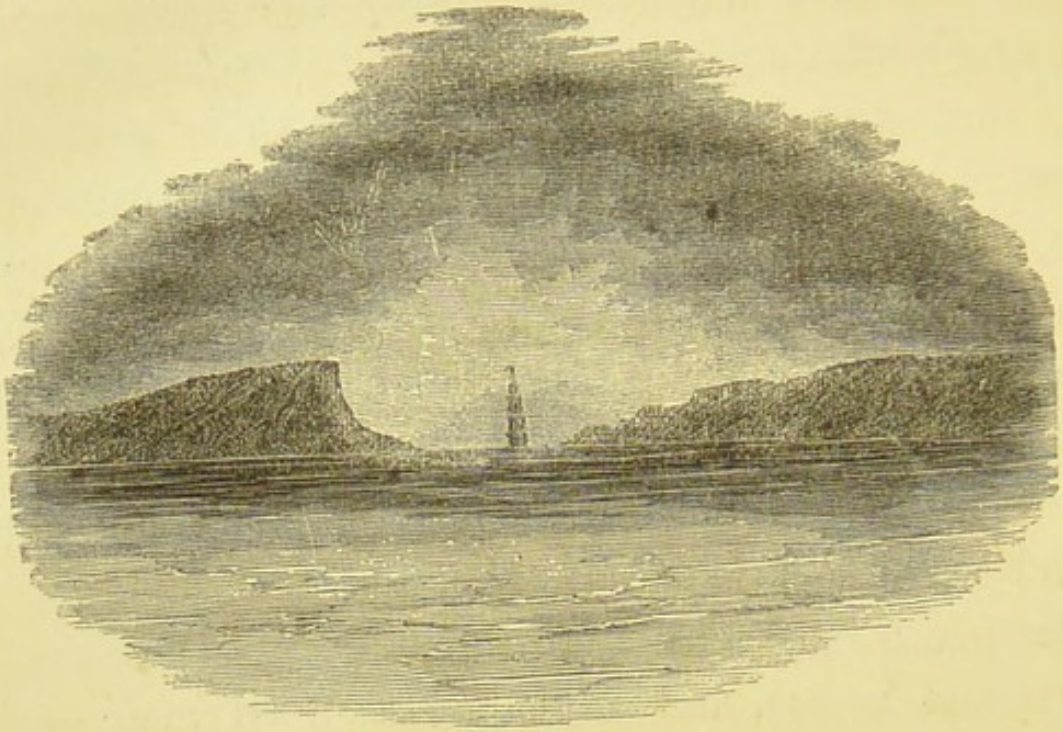
"Fireside astronomers can hardly realize the difficulties in the way of observations at such low temperatures. The mere burning of the hands is obviated by covering the metal with chamois-skin; but the breath, and even the warmth of the face and body, cloud the sextant-arc and glasses with a fine hoarfrost. Though I had much clear weather, we barely succeeded by magnifiers in reading the verniers. It is, moreover, an unusual feat to measure a base-line in the snow at fifty-five degrees below freezing.

"November 16, Wednesday.—The great difficulty is

to keep up a cheery tone among the men. Poor Hans has been sorely homesick. Three days ago he bundled up his clothes and took his rifle to bid us all good-bye. It turns out that besides his mother there is another one of the softer sex at Fiskernaes that the boy's heart is dreaming of. He looked as wretched as any lover of a milder clime. I hope I have treated his nostalgia successfully, by giving him first a dose of salts, and, secondly, promotion. He has now all the dignity of henchman. He harnesses my dogs, builds my traps, and walks with me on my ice-tramps; and, except hunting, is excused from all other duty. He is really attached to me, and as happy as a fat man ought to be.

"November 21, Monday.—We have schemes innumerable to cheat the monotonous solitude of our winter. We are getting up a fancy ball; and to-day the first number of our Arctic newspaper, 'The Ice-Blink,' came out, with the motto, 'IN TENEBRIS SERVARE FIDEM.' The articles are by authors of every nautical grade: some of the best from the forecastle. The sketch on the following page is a fac-simile of the vignette of our little paper.

"November 22, Tuesday.—I offered a prize to-day of a Guernsey shirt to the man who held out longest in a 'fox-chase' round the decks. The rule of the sport was, that 'Fox' was to run a given circuit between galley and capstan, all hands following on his track; every four minutes a halt to be called to blow, and the fox making the longest run to take the prize; each of



"IN TENEBRIS SERVARE FIDEM."

the crew to run as fox in turn. William Godfrey sustained the chase for fourteen minutes, and *wore* off the shirt.

"November 27, Sunday.—I sent out a volunteer party some days ago with Mr. Bonsall, to see whether the Esquimaux have returned to the huts we saw empty at the cape. The thermometer was in the neighborhood of 40° below zero, and the day was too dark to read at noon. I was hardly surprised when they returned after camping one night upon the snow. Their sledge broke down, and they were obliged to leave tents and every thing else behind them. It must have been very cold, for a bottle of Monongahela whiskey of good stiff proof froze under Mr. Bonsall's head.

"Morton went out on Friday to reclaim the things they had left; and to-day at 1 P.M. he returned successful. He reached the wreck of the former party, making nine miles in three hours,—pushed on six miles farther on the Ice-foot,—then camped for the night; and, making a sturdy march the next day without luggage, reached the huts, and got back to his camp to sleep. This journey of his was, we then thought, really an achievement,—sixty-two miles in three marches, with a mean temperature of 40° below zero, and a noonday so dark that you could hardly see a hummock of ice fifty paces ahead.

"Under more favoring circumstances, Bonsall, Morton, and myself made eighty-four miles in three consecutive marches. I go for the system of forced marches on journeys that are not over a hundred and fifty miles. A practised walker unencumbered by weight does twenty miles a day nearly as easily as ten: it is the uncomfortable sleeping that wears a party out.

"Morton found no natives; but he saw enough to satisfy me that the huts could not have been deserted long before we came to this region. The foxes had been at work upon the animal remains that we found there, and the appearances which we noted of recent habitation had in a great degree disappeared. Where these Esquimaux have travelled to is matter for conjecture. The dilapidated character of the huts we have seen farther to the north seems to imply that they cannot have gone in that direction. They have

more probably migrated southward, and, as the spring opens, may return, with the walrus and seal, to their former haunts. We shall see them, I think, before we leave our icy moorings.

"December 12, Monday.—A grand incident in our great monotony of life! We had an occultation of Saturn at 2 A.M., and got a most satisfactory observation. The emersion was obtained with greater accuracy than would have been expected from the excessive atmospheric undulation of these low temperatures. My little Fraunhöfer sustained its reputation well. We can now fix our position without a cavil.

"December 15, Thursday.—We have lost the last vestige of our mid-day twilight. We cannot see print, and hardly paper: the fingers cannot be counted a foot from the eyes. Noonday and midnight are alike, and, except a vague glimmer on the sky that seems to define the hill outlines to the south, we have nothing to tell us that this Arctic world of ours has a sun. In one week more we shall reach the midnight of the year.

"December 22, Thursday.—There is an excitement in our little community that dispenses with reflections upon the solstitial night. 'Old Grim' is missing, and has been for more than a day. Since the lamented demise of Cerberus, my leading Newfoundlander, he has been patriarch of our scanty kennel.

"Old Grim was 'a character' such as peradventure may at some time be found among beings of a higher order and under a more temperate sky. A profound

hypocrite and time-server, he so wriggled his adulatory tail as to secure every one's good graces and nobody's respect. All the spare morsels, the cast-off delicacies of the mess, passed through the winnowing jaws of 'Old Grim,'—an illustration not so much of his eclecticism as his universality of taste. He was never known to refuse any thing offered or approachable, and never known to be satisfied, however prolonged and abundant the bounty or the spoil.

"Grim was an ancient dog: his teeth indicated many winters, and his limbs, once splendid tractors for the sledge, were now covered with warts and ringbones. Somehow or other, when the dogs were harnessing for a journey, 'Old Grim' was sure not to be found; and upon one occasion, when he was detected hiding away in a cast-off barrel, he incontinently became lame. Strange to say, he has been lame ever since except when the team is away without him.

"Cold disagrees with Grim; but by a system of patient watchings at the door of our deck-house, accompanied by a discriminating use of his tail, he became at last the one privileged intruder. My seal-skin coat has been his favorite bed for weeks together. Whatever love for an individual Grim expressed by his tail, he could never be induced to follow him on the ice after the cold darkness of the winter set in; yet the dear good old sinner would wriggle after you to the very threshold of the gangway, and bid you good-bye with a deprecatory wag of the tail which disarmed resentment.

"His appearance was quite characteristic:—his muzzle roofed like the old-fashioned gable of a Dutch garret-window; his forehead indicating the most meagre capacity of brains that could consist with his sanity as a dog; his eyes small; his mouth curtained by long black dewlaps; and his hide a mangy russet studded with chestnut-burrs: if he has gone indeed, we 'ne'er shall look upon his like again.' So much for old Grim!

"When yesterday's party started to take soundings, I thought the exercise would benefit Grim, whose time-serving sojourn on our warm deck had begun to render him over-corpulent. A rope was fastened round him; for at such critical periods he was obstinate and even ferocious; and, thus fastened to the sledge, he commenced his reluctant journey. Reaching a stopping-place after a while, he jerked upon his line, parted it a foot or two from its knot, and, dragging the remnant behind him, started off through the darkness in the direction of our brig. He has not been seen since.

"Parties are out with lanterns seeking him; for it is feared that his long cord may have caught upon some of the rude pinnacles of ice which stud our floe, and thus made him a helpless prisoner. The thermometer is at 44°.6 below zero, and old Grim's teeth could not gnaw away the cord.

"December 23, Friday.—Our anxieties for old Grim might have interfered with almost any thing else; but they could not arrest our celebration of yesterday. Dr. Hayes made us a well-studied oration, and Morton a

capital punch; add to these a dinner of marled beef,—we have two pieces left, for the sun's return and the Fourth of July,—and a bumper of champagne all round; and the elements of our frolic are all registered.

"We tracked old Grim to-day through the snow to within six hundred yards of the brig, and thence to that mass of snow-packed sterility which we call the shore. His not rejoining the ship is a mystery quite in keeping with his character."

PORTRAIT OF OLD GRIM.

CHAPTER XIV.

MAGNETIC OBSERVATORY — TEMPERATURES — RETURNING LIGHT — DARKNESS AND THE DOGS — HYDROPHOBIA — ICE-CHANGES — THE ICE-FOOT — THE ICE-BELT — THE SUNLIGHT — MARCH.

My journal for the first two months of 1854 is so devoid of interest, that I spare the reader the task of following me through it. In the darkness and consequent inaction, it was almost in vain that we sought to create topics of thought, and by a forced excitement to ward off the encroachments of disease. Our observatory and the dogs gave us our only regular occupations.

On the 9th of January we had again an occultation of Saturn. The emersion occurred during a short interval of clear sky, and our observation of it was quite satisfactory; the limit of the moon's disc and that of the planet being well defined: the mist prevented our seeing the immersion. We had a recurrence of the same phenomenon on the 5th of February, and an occultation of Mars on the 14th; both of them observed under favorable circumstances, the latter especially.

Our magnetic observations went on; but the cold made it almost impossible to adhere to them with regularity. Our observatory was, in fact, an ice-house of the coldest imaginable description. The absence of snow prevented our backing the walls with that important non-conductor. Fires, buffalo-robes, and an arras of investing sail-cloth, were unavailing to bring

THE OBSERVATORY.

up the mean temperature to the freezing-point at the level of the magnetometer;* and it was quite common

* We had a good unifilar, that had been loaned to us by Professor Bache, of the Coast Survey, and a dip instrument, a Barrow's circle, obtained from the Smithsonian Institution, through the kindness of Col. Sabine. I owe much to Mr. Sontag, Dr. Hayes, and Mr. Bonsall, who bore the brunt of the term-day observations; it was only toward the close of the season that I was enabled to take my share

to find the platform on which the observer stood full fifty degrees lower, (—20°.) Our astronomical observations were less protracted, but the apartment in which they were made was of the same temperature with the outer air. The cold was, of course, intense; and some of our instruments, the dip-circle particularly, became difficult to manage in consequence of the unequal contraction of the brass and steel.

On the 17th of January, our thermometers stood at forty-nine degrees below zero; and on the 20th, the range of those at the observatory was at —64° to —67°. The temperature on the floes was always somewhat higher than at the island; the difference being due, as I suppose, to the heat conducted from the sea-water, which was at a temperature of +29°; the suspended instruments being affected by radiation.

On the 5th of February, our thermometers began to show unexampled temperature. They ranged from 60° to 75° below zero, and one very reliable instrument stood upon the taffrail of our brig at —65°. The reduced mean of our best spirit-standards gave —67°, or 99° below the freezing-point of water.

At these temperatures chloric ether became solid, and carefully-prepared chloroform exhibited a granu-

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of them. In addition to these, we had weekly determinations of variation of declination, extending through the twenty-four hours, besides observations of intensity, deflection, inclination, and total force, with careful notations of temperature.

lar pellicle on its surface. Spirit of naphtha froze at —54°, and oil of sassafras at —49°. The oil of winter-green was in a flocculent state at —56°, and solid at —63° and —65°.*

The exhalations from the surface of the body invested the exposed or partially-clad parts with a wreath of vapor. The air had a perceptible pungency upon inspiration, but I could not perceive the painful sensation which has been spoken of by some Siberian travellers. When breathed for any length of time, it imparted a sensation of dryness to the air-passages. I noticed that, as it were involuntarily, we all breathed guardedly, with compressed lips.

The first traces of returning light were observed at noon on the 21st of January, when the southern horizon had for a short time a distinct orange tint. Though the sun had perhaps given us a band of illumination before, it was not distinguishable from the cold light of the planets. We had been nearing the sunshine for thirty-two days, and had just reached that degree of mitigated darkness which made the extreme midnight of Sir Edward Parry in latitude 74° 47′. Even as late as the 31st, two very sensitive daguerreotype plates, treated with iodine and bromine, failed to indicate any solar influence when exposed to the southern horizon at noon; the camera being used in-doors, to escape the effects of cold.

* I repeated my observations on the effects of these low temperatures with great care.

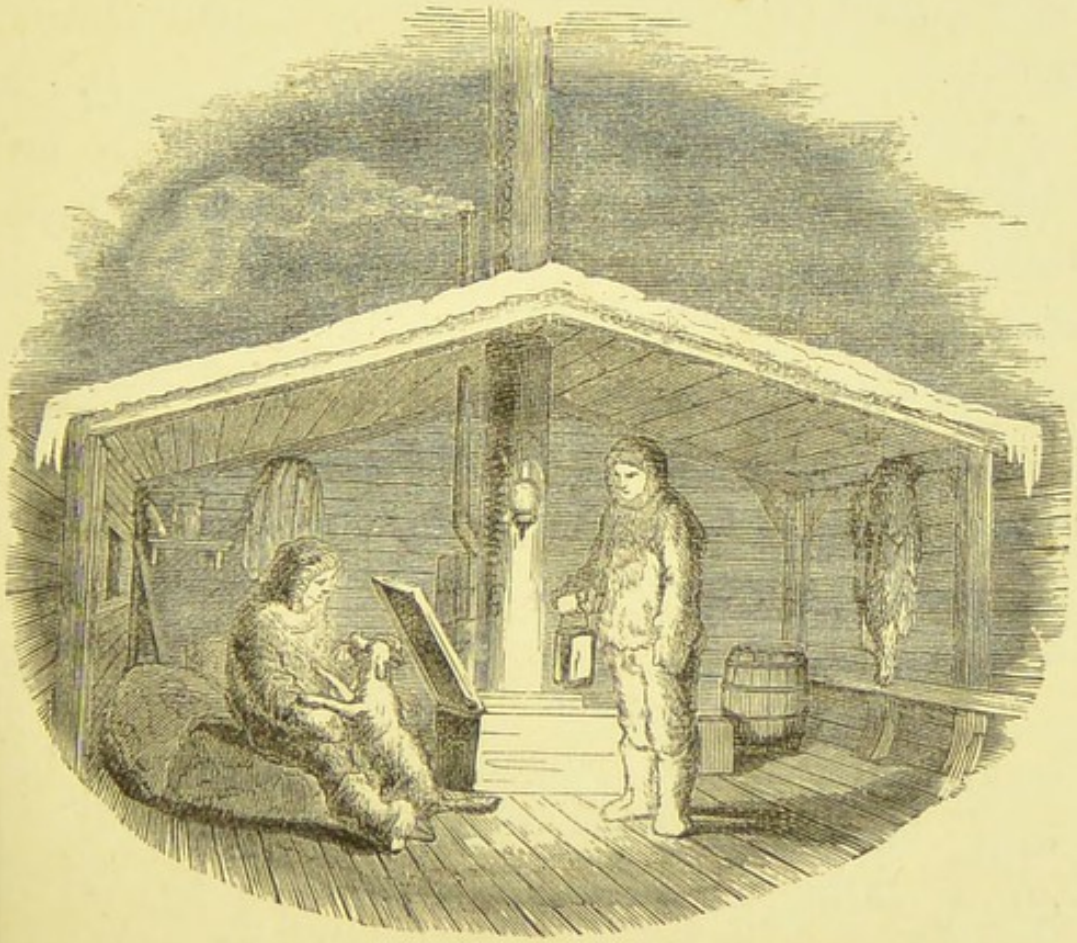
The influence of this long, intense darkness was most depressing. Even our dogs, although the greater part of them were natives of the Arctic circle, were unable to withstand it. Most of them died from an anomalous form of disease, to which, I am satisfied, the absence of light contributed as much as the extreme cold. I give a little extract from my journal of January 20th.

"This morning at five o'clock—for I am so afflicted with the insomnium of this eternal night, that I rise at any time between midnight and noon—I went upon deck. It was absolutely dark; the cold not permitting a swinging lamp. There was not a glimmer came to me through the ice-crusted window-panes of the cabin. While I was feeling my way, half puzzled as to the best method of steering clear of whatever might be before me, two of my Newfoundland dogs put their cold noses against my hand, and instantly commenced the most exuberant antics of satisfaction. It then occurred to me how very dreary and forlorn must these poor animals be, at atmospheres of +10° in-doors and —50° without,—living in darkness, howling at an accidental light, as if it reminded them of the moon,—and with nothing, either of instinct or sensation, to tell them of the passing hours, or to explain the long-lost daylight. They shall see the lanterns more frequently."

I may recur to the influence which our long winter night exerted on the health of these much-valued animals The subject has some interesting bearings; but

I content myself for the present with transcribing another passage from my journal of a few days later.

"January 25, Wednesday.—The mouse-colored dogs, the leaders of my Newfoundland team, have for the past fortnight been nursed like babies. No one can



THE DECKS BY LAMPLIGHT.

tell how anxiously I watch them. They are kept below, tended, fed, cleansed, caressed, and *doctored*, to the infinite discomfort of all hands. To-day I give up the last hope of saving them. Their disease is as clearly mental as in the case of any human being. The more material functions of the poor brutes go on without interruption: they eat voraciously, retain their

strength, and sleep well. But all the indications beyond this go to prove that the original epilepsy, which was the first manifestation of brain disease among them, has been followed by a true lunacy. They bark frenziedly at nothing, and walk in straight and curved lines with anxious and unwearying perseverance.

"They fawn on you, but without seeming to appreciate the notice you give them in return; pushing their heads against your person, or oscillating with a strange pantomime of fear. Their most intelligent actions seem automatic: sometimes they claw you, as if trying to burrow into your seal-skins; sometimes they remain for hours in moody silence, and then start off howling as if pursued, and run up and down for hours.

"So it was with poor Flora, our 'wise dog.' She was seized with the endemic spasms, and, after a few wild violent paroxysms, lapsed into a lethargic condition, eating voraciously, but gaining no strength. This passing off, the same crazy wildness took possession of her, and she died of brain disease (*arachnoidal effusion*) in about six weeks. Generally, they perish with symptoms resembling locked-jaw in less than thirty-six hours after the first attack."

On the 22d, I took my first walk on the great floe, which had been for so long a time a crude, black labyrinth. I give the appearance of things in the words of my journal.

"The floe has changed wonderfully. I remember it

sixty-four days ago, when our twilight was as it now is, a partially snow-patched plain, chequered with ridges of sharp hummocks, or a series of long icy levels, over which I coursed with my Newfoundlanders. All this has gone. A lead-colored expanse stretches its 'rounding gray' in every direction, and the old angular hummocks are so softened down as to blend in rolling dunes with the distant obscurity. The snow upon the levels shows the same remarkable evaporation. It is now in crisp layers, hardly six inches thick, quite undisturbed by drift. I could hardly recognise any of the old localities.

"We can trace the outline of the shore again, and even some of the long horizontal bands of its stratification. The cliffs of Sylvia Mountain, which open toward the east, are, if any thing, more covered with snow than the ridges fronting west across the bay.

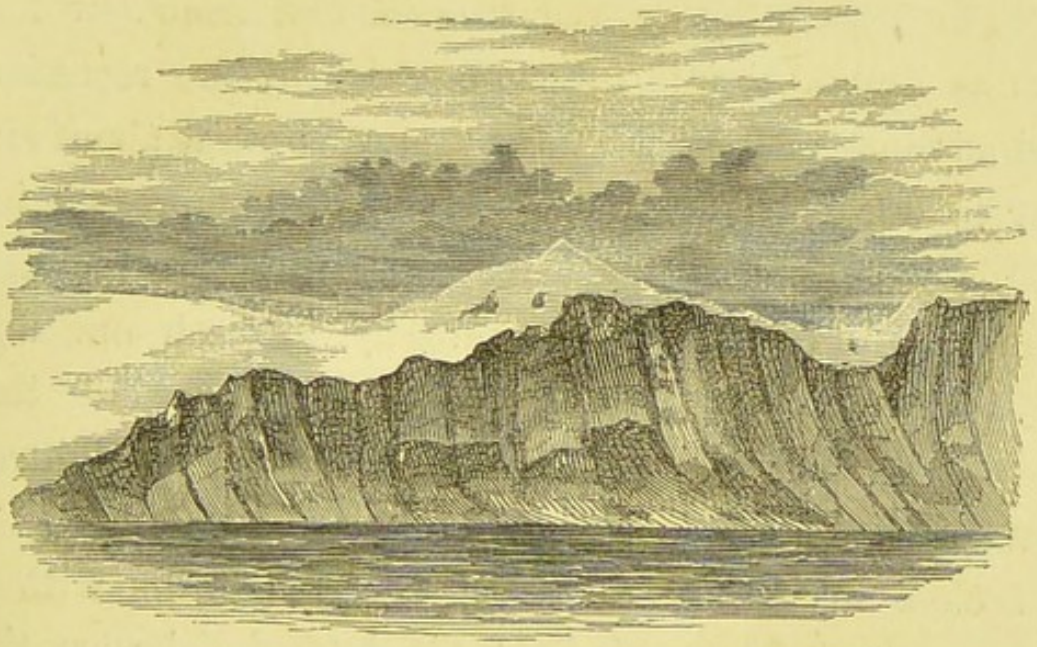
"But the feature which had changed most was the ice-belt. When I saw it last, it was an investing zone of ice, coping the margin of the floe. The constant accumulation by overflow of tides and freezing has turned this into a bristling wall, twenty feet high, (20 ft. 8 in.) No language can depict the chaos at its base. It has been rising and falling throughout the long winter, with a tidal wave of thirteen perpendicular feet. The fragments have been tossed into every possible confusion, rearing up in fantastic equilibrium, surging in long inclined planes, dipping into dark valleys, and piling in contorted hills, often high above the ice-foot.

"The frozen rubbish has raised the floe itself, for a width of fifty yards, into a broken level of crags. To pass over this to our rocky island, with its storehouse, is a work of ingenious pilotage and clambering, only practicable at favoring periods of the tide, and often

THE ICE-FOOT.

impossible for many days together. Fortunately for our observatory, a long table of heavy ice has been so nicely poised on the crest of the ice-foot, that it swings like a seesaw with the changing water-level, and has formed a moving beach to the island, on which the floes could not pile themselves. Shoreward between Medary and the 'terrace,' the shoal-water has reared

up the ice-fields, so as to make them almost as impassable as the floes; and between Fern Rock and the gravestone, where I used to pass with my sledges, there is built a sort of garden-wall of crystal, fully twenty feet high. It needs no iron spikes or broken bottles to defend its crest from trespassers.



THE BELT-ICES.

"Mr. Sontag amuses me quite as much as he does himself with his daily efforts to scale it."

My next extract is of a few days later.

"February 1, Wednesday.—The ice-foot is the most wonderful and unique characteristic of our high northern position. The spring-tides have acted on it

very powerfully, and the coming day enables us now to observe their stupendous effects. This ice-belt, as I have sometimes called it, is now twenty-four feet in solid thickness by sixty-five in mean width: the second or appended ice is thirty-eight feet wide; and the third thirty-four feet. All three are ridges of immense ice-tables, serried like the granite blocks of a rampart, and investing the rocks with a triple circumvallation. We know them as the belt-ices.

"The separation of the true ice-foot from our floe was at first a simple interval, which by the recession and advance of the tides gave a movement of about six feet to our brig. Now, however, the compressed ice grinds closely against the ice-foot, rising into inclined planes, and freezing so as actually to push our floe farther and farther from the shore. The brig has already moved twenty-eight feet, without the slightest perceptible change in the cradle which imbeds her."

I close my notice of these dreary months with a single extract more. It is of the date of February the 21st.

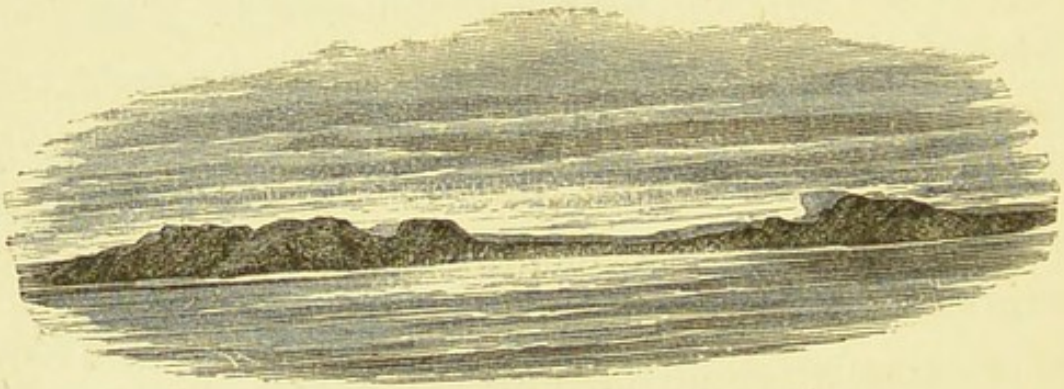
"We have had the sun, for some days, silvering the ice between the headlands of the bay; and to day, toward noon, I started out to be the first of my party to welcome him back. It was the longest walk and toughest climb that I have had since our imprisonment; and scurvy and general debility have made me 'short o' wind.' But I managed to attain my object. I saw him once more; and upon a projecting crag nestled in the sunshine. It was like bathing in perfumed water."

The month of March brought back to us the perpetual day. The sunshine had reached our deck on the last day of February: we needed it to cheer us. We were not as pale as my experience in Lancaster Sound had foretold; but the scurvy-spots that mottled our faces gave sore proof of the trials we had undergone. It was plain that we were all of us unfit for arduous travel on foot at the intense temperatures of the nominal spring; and the return of the sun, by increasing the evaporation from the floes, threatened us with a recurrence of still severer weather.

But I felt that our work was unfinished. The great object of the expedition challenged us to a more northward exploration. My dogs, that I had counted on so largely, the nine splendid Newfoundlanders and thirty-five Esquimaux of six months before, had perished; there were only six survivors of the whole pack, and one of these was unfit for draught. Still, they formed my principal reliance, and I busied myself from the very beginning of the month in training them to run together. The carpenter was set to work upon a small sledge, on an improved model, and adapted to the reduced force of our team; and, as we had exhausted our stock of small cord to lash its parts together, Mr. Brooks rigged up a miniature rope-walk, and was preparing a new supply from part of the material of our deep-sea lines. The operations of shipboard, however, went on regularly; Hans and occasionally Petersen going out on the hunt, though rarely returning successful.

Meanwhile we talked encouragingly of spring hopes and summer prospects, and managed sometimes to force an occasion for mirth out of the very discomforts of our unyielding winter life.

This may explain the tone of my diary.



RETURNING DAY.

CHAPTER XV.

ARCTIC OBSERVATIONS — TRAVEL TO OBSERVATORY — ITS HAZARDS — ARCTIC LIFE — THE DAY — THE DIET — THE AMUSEMENTS — THE LABORS — THE TEMPERATURE — THE "EIS-FOD" — THE ICE-BELT — THE ICE-BELT ENCROACHING — EXPEDITION PREPARING — GOOD-BYE — A SURPRISE — A SECOND GOOD-BYE.

"MARCH 7, Tuesday.—I have said very little in this business journal about our daily Arctic life. I have had no time to draw pictures.

"But we have some trials which might make up a day's adventures. Our Arctic observatory is cold beyond any of its class, Kesan, Pulkowa, Toronto, or even its shifting predecessors, Bossetop and Melville Island. Imagine it a term-day, a magnetic term-day.

"The observer, if he were only at home, would be the 'observed of all observers.' He is clad in a pair of seal-skin pants, a dog-skin cap, a reindeer jumper, and walrus boots. He sits upon a box that once held a transit instrument. A stove, glowing with at least a bucketful of anthracite, represents pictorially a heating apparatus, and reduces the thermometer as near as may

be to ten degrees below zero. One hand holds a chronometer, and is left bare to warm it: the other luxuriates in a fox-skin mitten. The right hand and the left take it 'watch and watch about.' As one burns with cold, the chronometer shifts to the other, and the mitten takes its place.

THE MAGNETIC OBSERVATORY.

"Perched on a pedestal of frozen gravel is a magnetometer; stretching out from it, a telescope: and, bending down to this, an abject human eye. Every six minutes, said eye takes cognizance of a finely-divided arc, and notes the result in a cold memorandum-book. This process continues for twenty-four hours, two sets of eyes

taking it by turns; and, when twenty-four hours are over, term-day is over too.

"We have such frolics every week. I have just been relieved from one, and after a few hours am to be called out of bed in the night to watch and dot again. I have been engaged in this way when the thermometer gave 20° above zero at the instrument, 20° below at two feet above the floor, and 43° below at the floor itself: on my person, facing the little lobster-red fury of a stove, 94° above; on my person, away from the stove, 10° below zero. 'A grateful country' will of course appreciate the value of these labors, and, as it cons over hereafter the four hundred and eighty results which go to make up our record for each week, will never think of asking '*Cui bono* all this?'

"But this is no adventure. The adventure is the travel to and fro. We have night now only half the time; and half the time can go and come with eyes to help us. It was not so a little while since.

"Taking an ice-pole in one hand, and a dark-lantern in the other, you steer through the blackness for a lump of greater blackness, the Fern Rock knob. Stumbling over some fifty yards, you come to a wall: your black knob has disappeared, and nothing but gray indefinable ice is before you. Turn to the right; plant your pole against that inclined plane of slippery smoothness, and jump to the hummock opposite: it is the same hummock you skinned your shins upon the last night you were here. Now wind along, half serpentine, half zigzag, and you cannot mistake that

twenty-feet wall just beyond, creaking and groaning and even nodding its crest with a grave cold welcome: it is the 'seam of the second ice.' Tumble over it at the first gap, and you are upon the first ice: tumble over that, and you are at the ice-foot; and there is nothing else now between you and the rocks, and nothing after them between you and the observatory.

"But be a little careful as you come near this ice-foot. It is munching all the time at the first ice, and you have to pick your way over the masticated fragments. Don't trust yourself to the half-balanced, half-fixed, half-floating ice-lumps, unless you relish a bath like Marshal Suwarrow's,—it might be more pleasant if you were sure of getting out,—but feel your way gingerly, with your pole held crosswise, not disdaining lowly attitudes,—hands and knees, or even full length. That long wedge-like hole just before you, sending up its puffs of steam into the cold air, is the 'seam of the ice-foot:' you have only to jump it and you are on the smooth level ice-foot itself. Scramble up the rocks now, get on your wooden shoes, and go to work observing an oscillating needle for some hours to come.

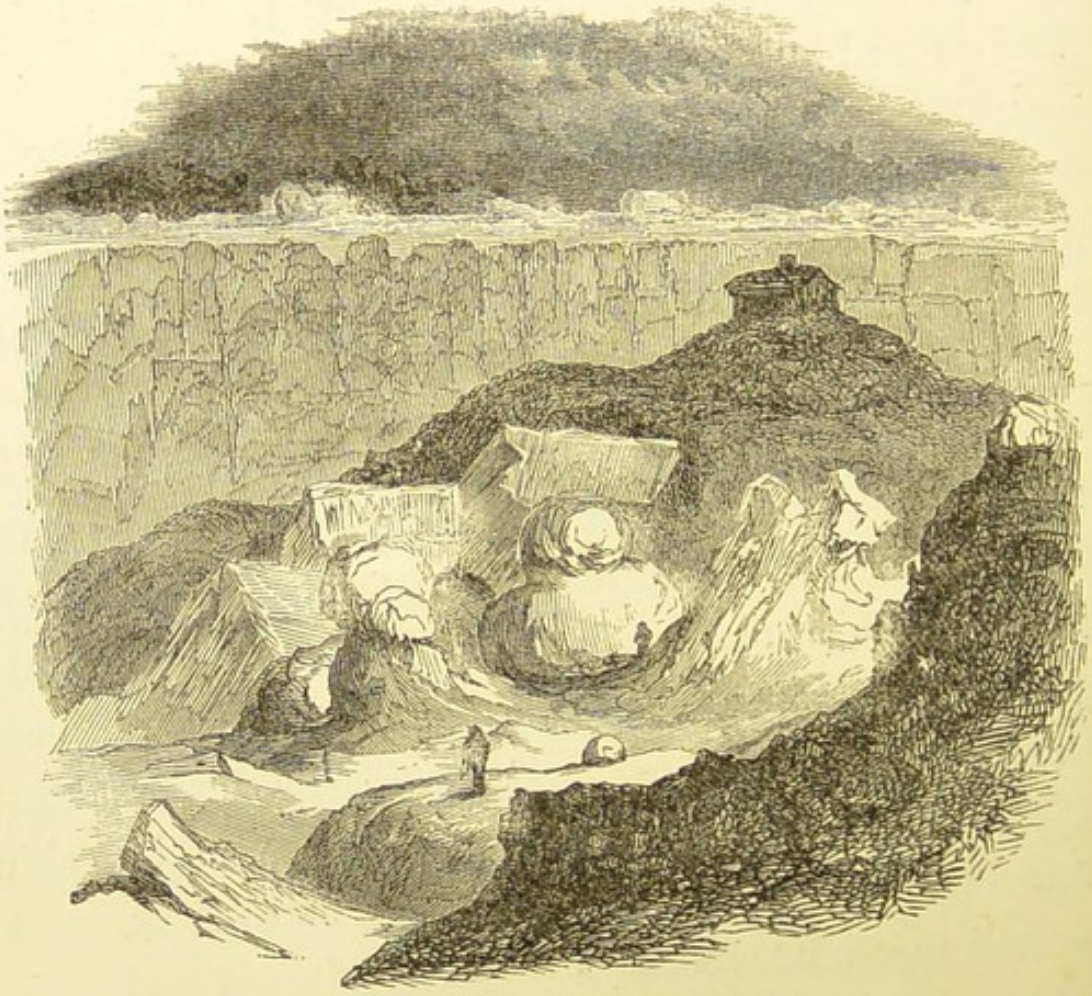
"Astronomy, as it draws close under the pole-star, cannot lavish all its powers of observation on things above. It was the mistake of Mr. Sontag some months ago; when he wandered about for an hour on his way to the observatory, and was afraid after finding it to try and wander back. I myself had a slide down an

inclined plane, whose well-graded talus gave me ample time to contemplate the contingencies at its base;—a chasm peradventure, for my ice-pole was travelling ahead of me and stopped short with a clang; or it might be a pointed hummock—there used to be one just below; or by good luck it was only a water-pool, in which my lantern made the glitter. I exulted to find myself in a cushion of snow.

"March 9, Thursday.—How do we spend the day when it is not term-day, or rather the twenty-four hours? for it is either all day here, or all night, or a twilight mixture of both. How do we spend the twenty-four hours?

"At six in the morning, McGary is called, with all hands who have *slept in*. The decks are cleaned, the ice-hole opened, the refreshing beef-nets examined, the ice-tables measured, and things aboard put to rights. At half-past seven, all hands rise, wash on deck, open the doors for ventilation, and come below for breakfast. We are short of fuel, and therefore cook in the cabin. Our breakfast, for all fare alike, is hard tack, pork, stewed apples frozen like molasses-candy, tea and coffee, with a delicate portion of raw potato. After breakfast, the smokers take their pipe till nine: then all hands turn to, idlers to idle and workers to work; Ohlsen to his bench, Brooks to his 'preparations' in canvas, McGary to play tailor, Whipple to make shoes, Bonsall to tinker, Baker to skin birds,—and the rest to the 'Office!' Take a look into the Arctic Bureau! One table, one salt-pork lamp with rusty chlorinated flame,

three stools, and as many waxen-faced men with their legs drawn up under them, the deck at zero being too cold for the feet. Each has his department: Kane is writing, sketching, and projecting maps; Hayes copying logs and meteorologicals; Sontag reducing his work at Fern Rock. A fourth, as one of the working members



VISITING THE OBSERVATORY.

of the hive, has long been defunct: you will find him in bed, or studying 'Littell's Living Age.' At twelve, a business round of inspection, and orders enough to fill up the day with work. Next, the drill of the Esquimaux dogs,—my own peculiar recreation,—a dog-trot, specially refreshing to legs that creak with every kick, and rheumatic shoulders that chronicle every

descent of the whip. And so we get on to dinner-time; the occasion of another gathering, which misses the tea and coffee of breakfast, but rejoices in pickled cabbage and dried peaches instead.

"At dinner ás at breakfast the raw potato comes in, our hygienic luxury. Like doctor-stuff generally, it is not as appetizing as desirable. Grating it down nicely, leaving out the ugly red spots liberally, and adding the utmost oil as a lubricant, it is as much as I can do to persuade the mess to shut their eyes and bolt it, like Mrs. Squeers's molasses and brimstone at Dotheboys Hall. Two absolutely refuse to taste it. I tell them of the Silesians using its leaves as spinach, of the whalers in the South Seas getting drunk on the molasses which had preserved the large potatoes of the Azores,—I point to this gum, so fungoid and angry the day before yesterday, and so flat and amiable to-day,—all by a potato poultice: my eloquence is wasted: they persevere in rejecting the admirable compound.

"Sleep, exercise, amusement, and work at will, carry on the day till our six o'clock supper, a meal something like breakfast and something like dinner, only a little more scant: and the officers come in with the reports of the day. Doctor Hayes shows me the log, I sign it; Sontag the weather, I sign the weather; Mr. Bonsall the tides and thermometers. Thereupon comes in mine ancient, Brooks; and I enter in his journal No. 3 all the work done under his charge, and discuss his labors for the morrow.

"McGary comes next, with the cleaning-up arrange-

ment, inside, outside, and on decks; and Mr. Wilson follows with ice-measurements. And last of all comes my own record of the day gone by; every line, as I look back upon its pages, giving evidence of a weakened body and harassed mind.

WINTER LIFE ON BOARD SHIP.

"We have cards sometimes, and chess sometimes,—and a few magazines, Mr. Littell's thoughtful present, to cheer away the evening.

"March 11, Saturday.—All this seems tolerable for commonplace routine; but there is a lack of comfort

which it does not tell of. Our fuel is limited to three bucketfuls of coal a day, and our mean temperature outside is 40° below zero; 46° below as I write. London Brown Stout, and somebody's Old Brown Sherry, freeze in the cabin lockers; and the carlines overhead are hung with tubs of chopped ice, to make water for our daily drink. Our lamps cannot be persuaded to burn salt lard; our oil is exhausted; and we work by muddy tapers of cork and cotton floated in saucers. We have not a pound of fresh meat, and only a barrel of potatoes left.

"Not a man now, except Pierre and Morton, is exempt from scurvy; and, as I look around upon the pale faces and haggard looks of my comrades, I feel that we are fighting the battle of life at disadvantage, and that an Arctic night and an Arctic day age a man more rapidly and harshly than a year anywhere else in all this weary world.

"March 13, Monday.—Since January, we have been working at the sledges and other preparations for travel. The death of my dogs, the rugged obstacles of the ice, and the intense cold have obliged me to reorganize our whole equipment. We have had to discard all our India-rubber fancy-work: canvas shoe-making, fur-socking, sewing, carpentering, are all going on; and the cabin, our only fire-warmed apartment, is the workshop, kitchen, parlor, and hall. Pemmican cases are thawing on the lockers; buffalo robes are drying around the stove; camp equipments occupy the corners; and our wo-begone French cook, with an in

finitude of useless saucepans, insists on monopolizing the stove.

"March 15, Wednesday.—The mean temperature of the last five days has been,

March 10	—46°.03
11	—45°.60
12	—46°.64
13	—46°.56
14	—46°.65

giving an average of —46° 22′, with a variation between the extremes of little more than one degree.

"These records are remarkable. The coldest month of the Polar year has heretofore been February; but we are evidently about to experience for March a mean temperature not only the lowest of our own series, but lower than that of any other recorded observations.

"This anomalous temperature seems to disprove the idea of a diminished cold as we approach the Pole. It will extend the isotherm of the solstitial month higher than ever before projected.

"The mean temperature of Parry for March (in lat. 74° 30′) was —29°; our own will be at least 41° below zero.

"At such temperatures, the ice or snow covering offers a great resistance to the sledge-runners. I have noticed this in training my dogs. The dry snow in its finely-divided state resembles sand, and the runners

creak as they pass over it. Baron Wrangell notes the same fact in Siberia at —40°.

"The difficulties of draught, however, must not interfere with my parties. I am only waiting until the sun, now 13° high at noon, brings back a little warmth to the men in sleeping. The mean difference between bright clear sunshine and shade is now 5°. But on the 10th, at noon, the shade gave —42° 2′, and the sun —28°; a difference of more than fourteen degrees. This must make an impression before long.

"March 17, Friday.—It is nine o'clock, P. M., and the thermometer outside at —46°. I am anxious to have this depôt party off; but I must wait until there is a promise of milder weather. It must come soon. The sun is almost at the equator. On deck, I can see to the northward all the bright glare of sunset, streaming out in long bands of orange through the vapors of the ice-foot, and the frost-smoke exhaling in wreaths like those from the house-chimneys a man sees in the valleys as he comes down a mountain-side."

I must reserve for my official report the detailed story of this ice-foot and its changes.

The name is adopted on board ship from the Danish "Eis-fod," to designate a zone of ice which extends along the shore from the untried north beyond us almost to the Arctic circle. To the south it breaks up during the summer months, and disappears as high as Upernavik or even Cape Alexander; but in this our high northern winter harbor, it is a perennial growth, clinging to the bold faces of the cliffs, follow-

ing the sweeps of the bays and the indentations of rivers.

This broad platform, although changing with the seasons, never disappears. It served as our highway

MARY LEIPER RIVER—THE ICE-BELT.

of travel, a secure and level sledge-road, perched high above the grinding ice of the sea, and adapting itself to the tortuosities of the land. As such I shall call it the "ice-belt."

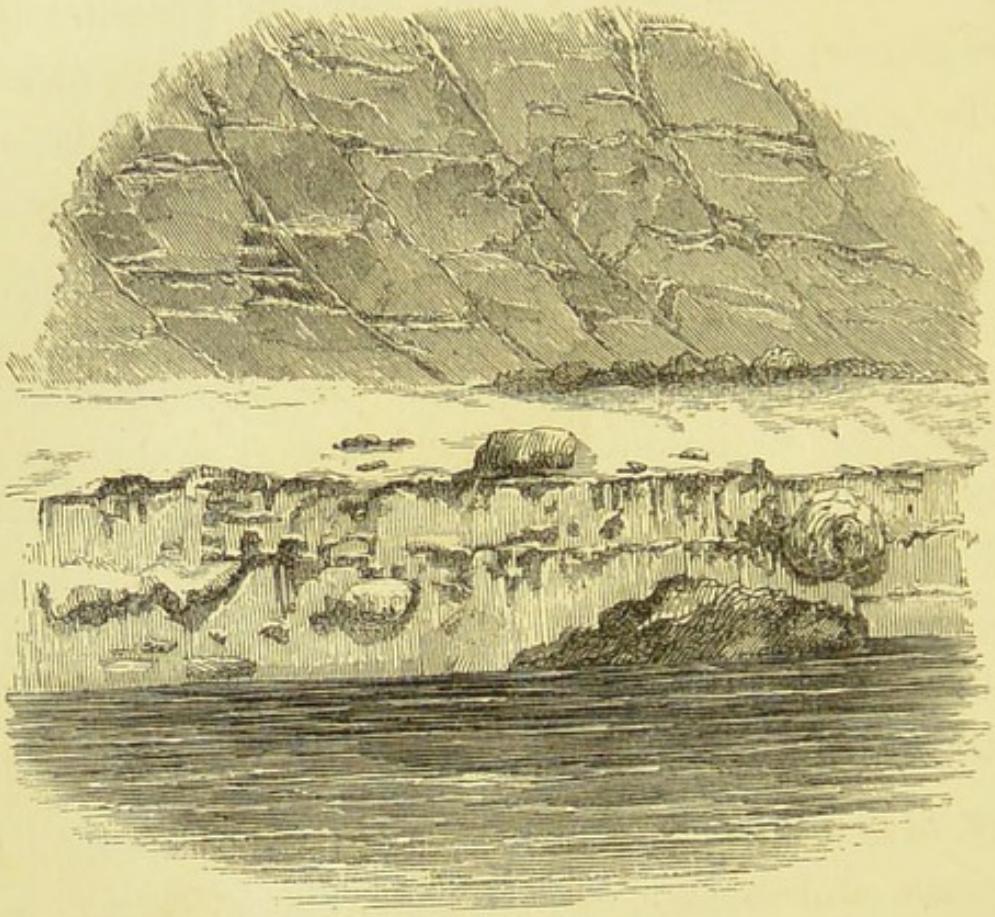
I was familiar with the Arctic shore-ices of the Asiatic and American explorers, and had personally

studied the same formations in Wellington Channel, where, previously to the present voyage, they might have been supposed to reach their greatest development. But this wonderful structure has here assumed a form which none of its lesser growths to the south had exhibited. As a physical feature, it may be regarded as hardly second, either in importance or prominence, to the glacier; and as an agent of geological change, it is in the highest degree interesting and instructive.

Although subject to occasional disruption, and to loss of volume from evaporation and thaws, it measures the severity of the year by its rates of increase. Rising with the first freezings of the late summer, it crusts the sea-line with curious fretwork and arabesques: a little later, and it receives the rude shock of the drifts, and the collision of falling rocks from the cliffs which margin it: before the early winter has darkened, it is a wall, resisting the grinding floes; and it goes on gathering increase and strength from the successive freezing of the tides, until the melted snows and water-torrents of summer for a time check its progress. During our first winter at Rensselaer Harbor, the ice-belt grew to three times the size which it had upon our arrival; and, by the middle of March, the islands and adjacent shores were hemmed in by an investing plane of nearly thirty feet high (27 feet) and one hundred and twenty wide.

The ice-foot at this season was not, however, an unbroken level. It had, like the floes, its barricades, serried and irregular; which it was a work of great labor

and some difficulty to traverse. Our stores were in consequence nearly inaccessible; and, as the ice-foot still continued to extend itself, piling ice-table upon ice-table, it threatened to encroach upon our anchorage and peril the safety of the vessel. The ridges were already



ICE-BELT OF EARLY WINTER.

within twenty feet of her, and her stern was sensibly lifted up by their pressure. We had, indeed, been puzzled for six weeks before, by remarking that the floe we were imbedded in was gradually receding from the shore; and had recalled the observation of the Danes of Upernavik, that their nets were sometimes forced away strangely from the land. The explanation is,

perhaps, to be found in the alternate action of the tides and frost; but it would be out of place to enter upon the discussion here.

"March 18, Saturday.—To day our spring-tides gave to the massive ice which sustains our little vessel a rise and fall of seventeen feet. The crunching and grinding, the dashing of the water, the gurgling of the eddies, and the toppling over of the nicely-poised ice-tables, were unlike the more brisk dynamics of hum-

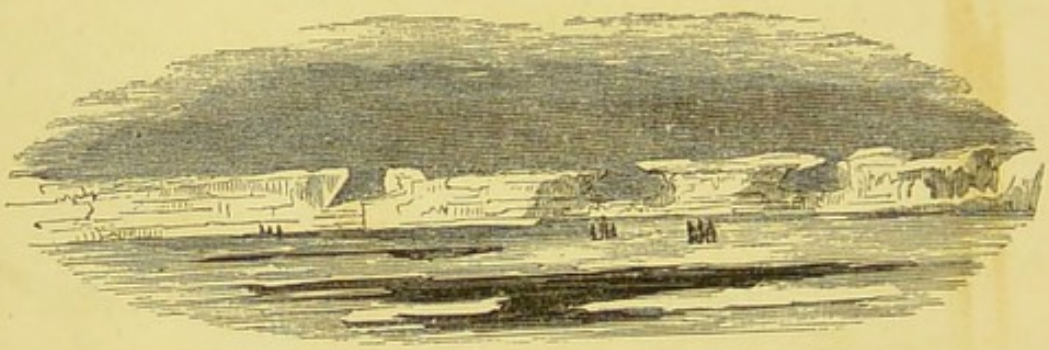
ICE-BELT AND FLOE.

mock action, but conveyed a more striking expression of power and dimension.

"The thermometer at four o'clock in the morning was minus 49°; too cold still, I fear, for our sledgemen to set out. But we packed the sledge and strapped on the boat, and determined to see how she would drag. Eight men attached themselves to the lines, but were scarcely able to move her. This may be due in part to an increase of friction produced by the excessive cold, according to the experience of the Siberian travellers; but I have no doubt it is principally caused by

the very thin runners of our Esquimaux sledge cutting through the snow-crust.

"The excessive refraction this evening, which entirely lifted up the northern coast as well as the ice-bergs, seems to give the promise of milder weather. In the hope that it may be so, I have fixed on to-morrow for the departure of the sledge, after very reluctantly dispensing with more than two hundred pounds of her cargo, besides the boat. The party think they can get along with it now.



EXCESSIVE REFRACTION OF BERGS.

"March 20, Monday.—I saw the depôt party off yesterday. They gave the usual three cheers, with three for myself. I gave them the whole of my brother's great wedding-cake and my last two bottles of Port, and they pulled the sledge they were harnessed to famously. But I was not satisfied. I could see it was hard work; and, besides, they were without the boat, or enough extra pemmican to make their deposit of importance. I followed them, therefore, and found that they encamped at 8 P. M. only five miles from the brig.

J. Hamilton

Engraved at J.M.Butler's establishment 84 Chestnut St

A.W.Graham

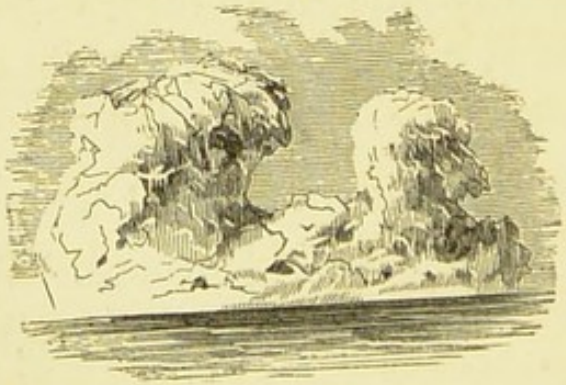
"When I overtook them, I said nothing to discourage them, and gave no new orders for the morning; but after laughing at good Ohlsen's rueful face, and listening to all Petersen's assurances that the cold and nothing but the cold retarded his Greenland sledge, and that no sledge of any other construction could have been moved at all through minus 40° snow, I quietly bade them good-night, leaving all hands under their buffaloes.

"Once returned to the brig, all my tired remaindermen were summoned: a large sled with broad runners, which I had built somewhat after the neat Admiralty model sent me by Sir Francis Beaufort, was taken down, scraped, polished, lashed, and fitted with track-ropes and *rue-raddies;* the lines arranged to draw as near as possible in a line with the centre of gravity. We made an entire cover of canvas, with snugly-adjusted fastenings; and by one in the morning we had our discarded excess of pemmican and the boat once more in stowage.

"Off we went for the camp of the sleepers. It was very cold, but a thoroughly Arctic night; the snow just tinged with the crimson stratus above the sun, which, equinoctial as it was, glared beneath the northern horizon like a smelting-furnace. We found the tent of the party by the bearings of the stranded bergs. Quietly and stealthily we hauled away their Esquimaux sledge, and placed her cargo upon 'the Faith.' Five men were then rue-raddied to the track-lines; and with the whispered word, 'Now, boys, when

Mr. Brooks gives his third snore, off with you!' off they went, and 'the Faith' after them, as free and nimble as a volunteer. The trial was a triumph. We awakened the sleepers with three cheers; and, giving them a second good-bye, returned to the brig, carrying the dishonored vehicle along with us. And now, bating mishaps past anticipation, I shall have a depôt for my long trip.

"The party were seen by McGary from aloft, at noon to-day, moving easily, and about twelve miles from the brig. The temperature too is rising, or rather unmistakably about to rise. Our lowest was —43°, but our highest reached —22°; this extreme range, with the excessive refraction and a gentle misty air from about the S.E., makes me hope that we are going to have a warm spell. The party is well off. Now for my own to follow them!"



CHAPTER XVI.

PREPARATION—TEMPERATURES—ADVENTURE—AN ALARM—PARTY ON THE FLOES—RESCUE PARTY—LOST ON THE FLOES—PARTY FOUND—RETURN—FREEZING—RETURNING CAMP—A BIVOUAC—EXHAUSTED—ESCAPE—CONSEQUENCES.

"March 21, Tuesday.—All hands at work house-cleaning. Thermometer —48°. Visited the fox-traps with Hans in the afternoon, and found one poor animal frozen dead. He was coiled up, with his nose buried in his bushy tail, like a fancy foot-muff or the *prie-dieu* of a royal sinner. A hard thing about his fate was that he had succeeded in effecting his escape from the trap; but, while working his way underneath, had been frozen fast to a smooth stone by the moisture of his own breath. He was not probably aware of it before the moment when he sought to avail himself of his hard-gained liberty. These saddening thoughts did not impair my appetite at supper, where the little creature looked handsomer than ever.

"March 22, Wednesday.—We took down the forward bulkhead to-day, and moved the men aft, to save fuel. All hands are still at work clearing up the

decks, the scrapers sounding overhead, and the hickory brooms crackling against the frozen woodwork. Afternoon comes, and McGary brings from the traps two foxes, a blue and a white. Afternoon passes, and we skin them. Evening passes, and we eat them. Never were foxes more welcome visitors, or treated more like domestic animals.

"March 23, Thursday.—The accumulated ice upon our housing shows what the condensed and frozen moisture of the winter has been. The average thickness of this curious deposit is five inches, very hard and well crystallized. Six cart-loads have been already chopped out, and about four more remain.

"It is very far from a hardship to sleep under such an ice-roof as this. In a climate where the intense cold approximates all ice to granite, its thick air-tight coating contributes to our warmth, gives a beautiful and cheerful lustre to our walls, and condenses any vapors which our cooks allow to escape the funnels. I only remove it now because I fear the effects of damp in the season of sunshine.

"March 27, Monday.—We have been for some days in all the flurry of preparation for our exploration trip: buffalo-hides, leather, and tailoring-utensils everywhere. Every particle of fur comes in play for mits and muffs and wrappers. Poor Flora is turned into a pair of socks, and looks almost as pretty as when she was heading the team.

"The wind to-day made it intensely cold. In riding but four miles to inspect a fox-trap, the movement

froze my cheeks twice. We avoid masks with great care, reserving them for the severer weather: the jaw when protected recovers very soon the sensibility which exposure has subdued.

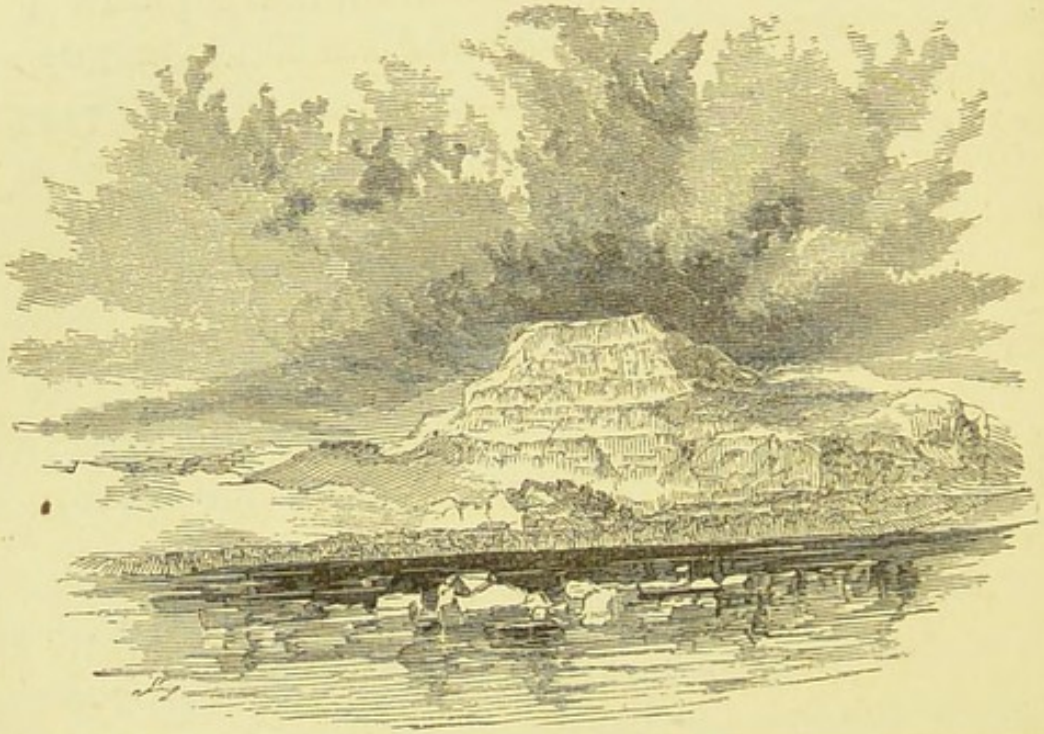
"Our party is now out in its ninth day. It has had some trying weather:

On the 19th	—42°.3
20th	—35°.4
21st	—19°.37
22d	— 7°.47
23d	— 9°.07
24th	—18°.32
25th	—34°.80
26th	—42°.8
27th	—34°.38

of mean daily temperature; making an average of 27°.13 below zero.

"March 29, Wednesday.—I have been out with my dog-sledge, inspecting the ice to-day from the north-western headland. There seems a marked difference between this sound and other estuaries, in the number of ice-bergs. Unlike Prince Regent's, or Wellington, or Lancaster Sounds, the shores here are lined with glaciers, and the water is everywhere choked and harassed by their discharges. This was never so apparent to me as this afternoon. The low sun lit up line after line of lofty bergs, and the excessive refraction elevated them so much, that I thought I could see a chain of continuous ice running on toward the north until it was lost in illimitable distance.

'March 31, Friday.—I was within an ace to-day of losing my dogs, every one of them. When I reached the ice-foot, they balked:—who would not?—the tide was low, the ice rampant, and a jump of four feet necessary to reach the crest. The howling of the wind and the whirl of the snow-drift confused the



NORTHWESTERN HEADLAND.

poor creatures; but it was valuable training for them, and I strove to force them over. Of course I was on foot, and they had a light load behind them. 'Now, Stumpy! Now, Whitey!' 'Good dogs!' 'Tu-lee-ēē-ēē! Tuh!' They went at it like good stanch brutes, and the next minute the whole team was rolling in a lump, some sixteen feet below me, in the chasm of the ice-foot. The drift was such that at first I could not see

them. The roaring of the tide and the subdued wail of the dogs made me fear for the worst. I had to walk through the broken ice, which rose in toppling spires over my head, for nearly fifty yards, before I found an opening to the ice-face, by which I was able to climb down to them. A few cuts of a sheath-knife released them, although the caresses of the dear brutes had like to have been fatal to me, for I had to straddle with one foot on the fast ice and the other on loose piled rubbish. But I got a line attached to the cross-pieces of the sledge-runners, flung it up on the ice-foot, and then piloted my dogs out of their slough. In about ten minutes, we were sweating along at eight miles an hour."

Every thing looked promising, and we were only waiting for intelligence that our advance party had deposited its provisions in safety to begin our transit of the bay. Except a few sledge-lashings and some trifling accoutrements to finish, all was ready.

We were at work cheerfully, sewing away at the skins of some moccasins by the blaze of our lamps, when, toward midnight, we heard the noise of steps above, and the next minute Sontag, Ohlsen, and Petersen came down into the cabin. Their manner startled me even more than their unexpected appearance on board. They were swollen and haggard, and hardly able to speak.

Their story was a fearful one. They had left their companions in the ice, risking their own lives to bring

us the news: Brooks, Baker, Wilson, and Pierre were all lying frozen and disabled. Where? They could not tell: somewhere in among the hummocks to the north and east; it was drifting heavily round them when they parted. Irish Tom had stayed by to feed and care for the others; but the chances were sorely against them. It was in vain to question them further. They had evidently travelled a great distance, for they were sinking with fatigue and hunger, and could hardly be rallied enough to tell us the direction in which they had come.

THE RESCUE PARTY.

My first impulse was to move on the instant with an unencumbered party: a rescue, to be effective or even hopeful, could not be too prompt. What pressed on my mind most was, where the sufferers were to be looked for among the drifts. Ohlsen seemed to have his faculties rather more at command than his associates, and I thought that he might assist us as a guide; but he was sinking with exhaustion, and if he went with us we must carry him.

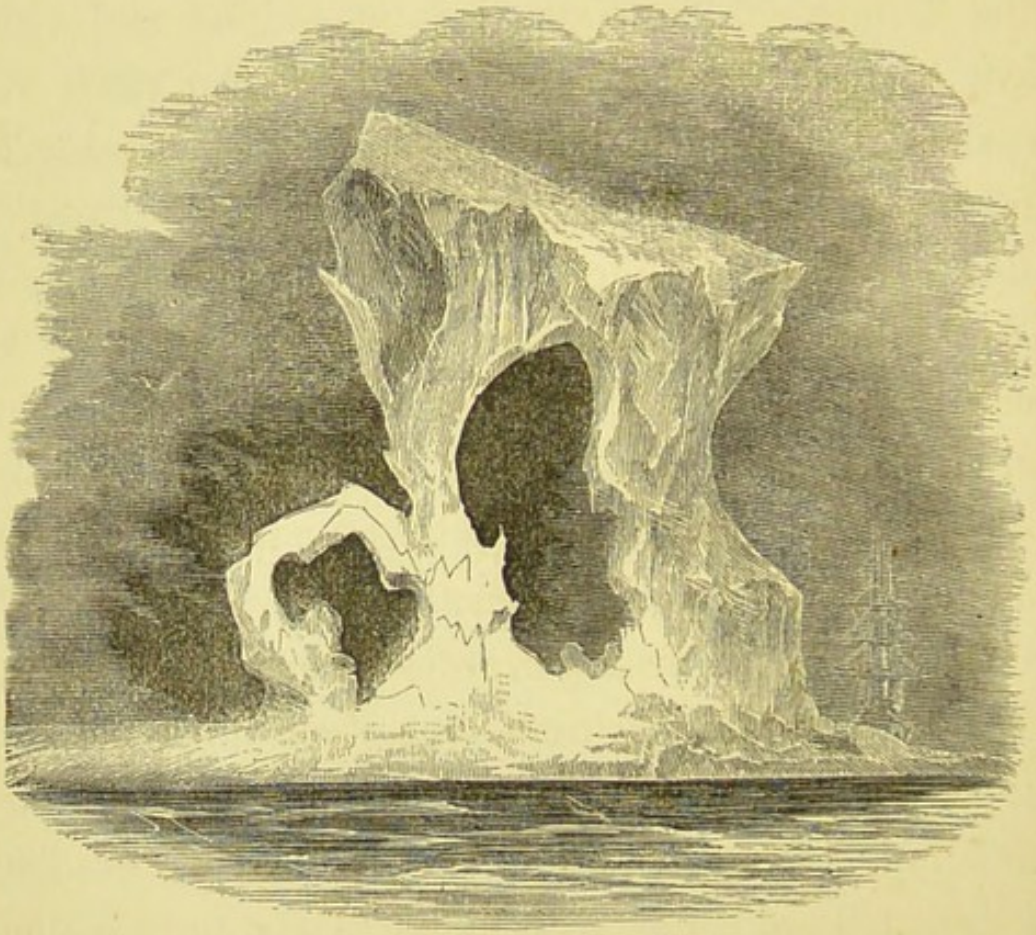
There was not a moment to be lost. While some were still busy with the new-comers and getting ready a hasty meal, others were rigging out the "Little Willie" with a buffalo-cover, a small tent, and a package of pemmican; and, as soon as we could hurry through our arrangements, Ohlsen was strapped on in a fur bag, his legs wrapped in dog-skins and eider-down, and we were off upon the ice. Our party consisted of nine men and myself. We carried only the clothes on our backs. The thermometer stood at —46°, seventy-eight degrees below the freezing-point.

A well-known peculiar tower of ice, called by the men the "Pinnacly Berg," served as our first landmark: other icebergs of colossal size, which stretched in long beaded lines across the bay, helped to guide us afterward; and it was not until we had travelled for sixteen hours that we began to lose our way.

We knew that our lost companions must be somewhere in the area before us, within a radius of forty miles. Mr. Ohlsen, who had been for fifty hours without rest, fell asleep as soon as we began to move, and awoke now with unequivocal signs of mental disturbance. It became evident that he had lost the bearing of the icebergs, which in form and color endlessly repeated themselves; and the uniformity of the vast field of snow utterly forbade the hope of local landmarks.

Pushing ahead of the party, and clambering over some rugged ice-piles, I came to a long level floe, which I thought might probably have attracted the eyes of weary men in circumstances like our own. It was a

light conjecture; but it was enough to turn the scale, for there was no other to balance it. I gave orders to abandon the sledge, and disperse in search of foot-marks. We raised our tent, placed our pemmican in *cache*, except a small allowance for each man to carry



PINNACLY BERG.

on his person; and poor Ohlsen, now just able to keep his legs, was liberated from his bag. The thermometer had fallen by this time to —49°.3, and the wind was setting in sharply from the northwest. It was out of the question to halt: it required brisk exercise to keep us from freezing. I could not even melt ice for water; and, at these temperatures, any resort to snow for the

purpose of allaying thirst was followed by bloody lips and tongue: it burnt like caustic.

It was indispensable then that we should move on, looking out for traces as we went. Yet when the men were ordered to spread themselves, so as to multiply the chances, though they all obeyed heartily, some painful impress of solitary danger, or perhaps it may have been the varying configuration of the ice-field, kept them closing up continually into a single group. The strange manner in which some of us were affected I now attribute as much to shattered nerves as to the direct influence of the cold. Men like McGary and Bonsall, who had stood out our severest marches, were seized with trembling-fits and short breath; and, in spite of all my efforts to keep up an example of sound bearing, I fainted twice on the snow.

We had been nearly eighteen hours out without water or food, when a new hope cheered us. I think it was Hans, our Esquimaux hunter, who thought he saw a broad sledge-track. The drift had nearly effaced it, and we were some of us doubtful at first whether it was not one of those accidental rifts which the gales make in the surface-snow. But, as we traced it on to the deep snow among the hummocks, we were led to footsteps; and, following these with religious care, we at last came in sight of a small American flag fluttering from a hummock, and lower down a little Masonic banner hanging from a tent-pole hardly above the drift. It was the camp of our disabled comrades: we reached it after an unbroken march of twenty-one hours.

The little tent was nearly covered. I was not among the first to come up; but, when I reached the tent-curtain, the men were standing in silent file on each side of it. With more kindness and delicacy of feeling than is often supposed to belong to sailors, but which is almost characteristic, they intimated their wish that I should go in alone. As I crawled in, and, coming upon the darkness, heard before me the burst of welcome gladness that came from the four poor fellows stretched on their backs, and then for the first time the cheer outside, my weakness and my gratitude together almost overcame me. "They had expected me: they were sure I would come!"

We were now fifteen souls; the thermometer seventy-five degrees below the freezing-point; and our sole accommodation a tent barely able to contain eight persons: more than half our party were obliged to keep from freezing by walking outside while the others slept. We could not halt long. Each of us took a turn of two hours' sleep; and we prepared for our homeward march.

We took with us nothing but the tent, furs to protect the rescued party, and food for a journey of fifty hours. Every thing else was abandoned. Two large buffalo-bags, each made of four skins, were doubled up, so as to form a sort of sack, lined on each side by fur, closed at the bottom but opened at the top. This was laid on the sledge; the tent, smoothly folded, serving as a floor. The sick, with their limbs sewed up carefully in reindeer-skins, were placed upon the bed of buffalo-

robes, in a half-reclining posture; other skins and blanket-bags were thrown above them; and the whole litter was lashed together so as to allow but a single opening opposite the mouth for breathing.

This necessary work cost us a great deal of time and effort; but it was essential to the lives of the sufferers. It took us no less than four hours to strip and refresh them, and then to embale them in the manner I have described. Few of us escaped without frost-bitten fingers: the thermometer was at 55°.6 below zero, and a slight wind added to the severity of the cold.

It was completed at last, however; all hands stood round; and, after repeating a short prayer, we set out on our retreat. It was fortunate indeed that we were not inexperienced in sledging over the ice. A great part of our track lay among a succession of hummocks; some of them extending in long lines, fifteen and twenty feet high, and so uniformly steep that we had to turn them by a considerable deviation from our direct course; others that we forced our way through, far above our heads in height, lying in parallel ridges, with the space between too narrow for the sledge to be lowered into it safely, and yet not wide enough for the runners to cross without the aid of ropes to stay them. These spaces too were generally choked with light snow, hiding the openings between the ice-fragments. They were fearful traps to disengage a limb from, for every man knew that a fracture or a sprain even would cost him his life. Besides all this, the sledge was top-heavy with its load: the maimed men could not bear

to be lashed down tight enough to secure them against falling off. Notwithstanding our caution in rejecting every superfluous burden, the weight, including bags and tent, was eleven hundred pounds.

And yet our march for the first six hours was very cheering. We made by vigorous pulls and lifts nearly a mile an hour, and reached the new floes before we were absolutely weary. Our sledge sustained the trial admirably. Ohlsen, restored by hope, walked steadily at the leading belt of the sledge-lines; and I began to feel certain of reaching our halfway station of the day before, where we had left our tent. But we were still nine miles from it, when, almost without premonition, we all became aware of an alarming failure of our energies.

I was of course familiar with the benumbed and almost lethargic sensation of extreme cold; and once, when exposed for some hours in the midwinter of Baffin's Bay, I had experienced symptoms which I compared to the diffused paralysis of the electro-galvanic shock. But I had treated the *sleepy comfort* of freezing as something like the embellishment of romance. I had evidence now to the contrary.

Bonsall and Morton, two of our stoutest men, came to me, begging permission to sleep: "they were not cold: the wind did not enter them now: a little sleep was all they wanted." Presently Hans was found nearly stiff under a drift; and Thomas, bolt upright, had his eyes closed, and could hardly articulate. At last, John Blake threw himself on the snow, and re-

fused to rise. They did not complain of feeling cold; but it was in vain that I wrestled, boxed, ran, argued, jeered, or reprimanded: an immediate halt could not be avoided.

We pitched our tent with much difficulty. Our hands were too powerless to strike a fire: we were obliged to do without water or food. Even the spirits (whisky) had frozen at the men's feet, under all the coverings. We put Bonsall, Ohlsen, Thomas, and Hans, with the other sick men, well inside the tent, and crowded in as many others as we could. Then, leaving the party in charge of Mr. McGary, with orders to come on after four hours' rest, I pushed ahead with William Godfrey, who volunteered to be my companion. My aim was to reach the halfway tent, and thaw some ice and pemmican before the others arrived.

The floe was of level ice, and the walking excellent. I cannot tell how long it took us to make the nine miles; for we were in a strange sort of stupor, and had little apprehension of time. It was probably about four hours. We kept ourselves awake by imposing on each other a continued articulation of words; they must have been incoherent enough. I recall these hours as among the most wretched I have ever gone through: we were neither of us in our right senses, and retained a very confused recollection of what preceded our arrival at the tent. We both of us, however, remember a bear, who walked leisurely before us and tore up as he went a jumper that Mr. McGary had improvidently thrown off the day before. He tore it

into shreds and rolled it into a ball, but never offered to interfere with our progress. I remember this, and with it a confused sentiment that our tent and buffalo-robes might probably share the same fate. Godfrey, with whom the memory of this day's work may atone for many faults of a later time, had a better eye than myself; and, looking some miles ahead, he could see that our tent was undergoing the same unceremonious treatment. I thought I saw it too, but we were so drunken with cold that we strode on steadily, and, for aught I know, without quickening our pace.

Probably our approach saved the contents of the tent; for when we reached it the tent was uninjured, though the bear had overturned it, tossing the buffalo-robes and pemmican into the snow; we missed only a couple of blanket-bags. What we recollect, however, and perhaps all we recollect, is, that we had great difficulty in raising it. We crawled into our reindeer sleeping-bags, without speaking, and for the next three hours slept on in a dreamy but intense slumber. When I awoke, my long beard was a mass of ice, frozen fast to the buffalo-skin: Godfrey had to cut me out with his jack-knife. Four days after our escape, I found my woollen comfortable with a goodly share of my beard still adhering to it.

We were able to melt water and get some soup cooked before the rest of our party arrived: it took them but five hours to walk the nine miles. They were doing well, and, considering the circumstances, in wonderful spirits. The day was most providentially

windless, with a clear sun. All enjoyed the refreshment we had got ready: the crippled were repacked in their robes; and we sped briskly toward the hummock-ridges which lay between us and the Pinnacly Berg.

The hummocks we had now to meet came properly under the designation of squeezed ice. A great chain of bergs stretching from northwest to southeast, moving with the tides, had compressed the surface-floes; and, rearing them up on their edges, produced an area more like the volcanic pedragal of the basin of Mexico than any thing else I can compare it to.

It required desperate efforts to work our way over it,—literally desperate, for our strength failed us anew, and we began to lose our self-control. We could not abstain any longer from eating snow: our mouths swelled, and some of us became speechless. Happily the day was warmed by a clear sunshine, and the thermometer rose to —4° in the shade: otherwise we must have frozen.

Our halts multiplied, and we fell half-sleeping on the snow. I could not prevent it. Strange to say, it refreshed us. I ventured upon the experiment myself, making Riley wake me at the end of three minutes; and I felt so much benefited by it that I timed the men in the same way. They sat on the runners of the sledge, fell asleep instantly, and were forced to wakefulness when their three minutes were out.

By eight in the evening we emerged from the floes. The sight of the Pinnacly Berg revived us. Brandy, an invaluable resource in emergency, had already been

served out in tablespoonful doses. We now took a longer rest, and a last but stouter dram, and reached the brig at 1 P.M., we believe without a halt.

I say *we believe;* and here perhaps is the most decided proof of our sufferings: we were quite delirious, and had ceased to entertain a sane apprehension of the circumstances about us. We moved on like men in a dream. Our footmarks seen afterward showed that we had steered a bee-line for the brig. It must have been by a sort of instinct, for it left no impress on the memory. Bonsall was sent staggering ahead, and reached the brig, God knows how, for he had fallen repeatedly at the track-lines; but he delivered with punctilious accuracy the messages I had sent by him to Dr. Hayes. I thought myself the soundest of all, for I went through all the formula of sanity, and can recall the muttering delirium of my comrades when we got back into the cabin of our brig. Yet I have been told since of some speeches and some orders too of mine, which I should have remembered for their absurdity if my mind had retained its balance.

Petersen and Whipple came out to meet us about two miles from the brig. They brought my dog-team, with the restoratives I had sent for by Bonsall. I do not remember their coming. Dr. Hayes entered with judicious energy upon the treatment our condition called for, administering morphine freely, after the usual frictions. He reported none of our brain-symptoms as serious, referring them properly to the class of those indications of exhausted power which yield to

generous diet and rest. Mr. Ohlsen suffered some time from strabismus and blindness: two others underwent amputation of parts of the foot, without unpleasant consequences; and two died in spite of all our efforts. This rescue party had been out for seventy-two hours. We had halted in all eight hours, half of our number sleeping at a time. We travelled between eighty and ninety miles, most of the way dragging a heavy sledge. The mean temperature of the whole time, including the warmest hours of three days, was at minus 41°.2. We had no water except at our two halts, and were at no time able to intermit vigorous exercise without freezing.

"April 4, Tuesday.—Four days have passed, and I am again at my record of failures, sound but aching still in every joint. The rescued men are not out of danger, but their gratitude is very touching. Pray God that they may live!"

INSIDE OF TENT.

CHAPTER XVII.

BAKER'S DEATH — A VISIT — THE ESQUIMAUX — A NEGOTIATION — THEIR EQUIPMENT — THEIR DEPORTMENT — A TREATY — THE FAREWELL — THE SEQUEL — MYOUK — HIS ESCAPE — SCHUBERT'S ILLNESS.

THE week that followed has left me nothing to remember but anxieties and sorrow. Nearly all our party, as well the rescuers as the rescued, were tossing in their sick-bunks, some frozen, others undergoing amputations, several with dreadful premonitions of tetanus. I was myself among the first to be about: the necessities of the others claimed it of me.

Early in the morning of the 7th I was awakened by a sound from Baker's throat, one of those the most frightful and ominous that ever startle a physician's ear. The lock-jaw had seized him,—that dark visitant whose foreshadowings were on so many of us. His symptoms marched rapidly to their result: he died on the 8th of April. We placed him the next day in his coffin, and, forming a rude but heartfull procession, bore him over the broken ice and up the steep side of the ice-foot to Butler Island; then, passing along the

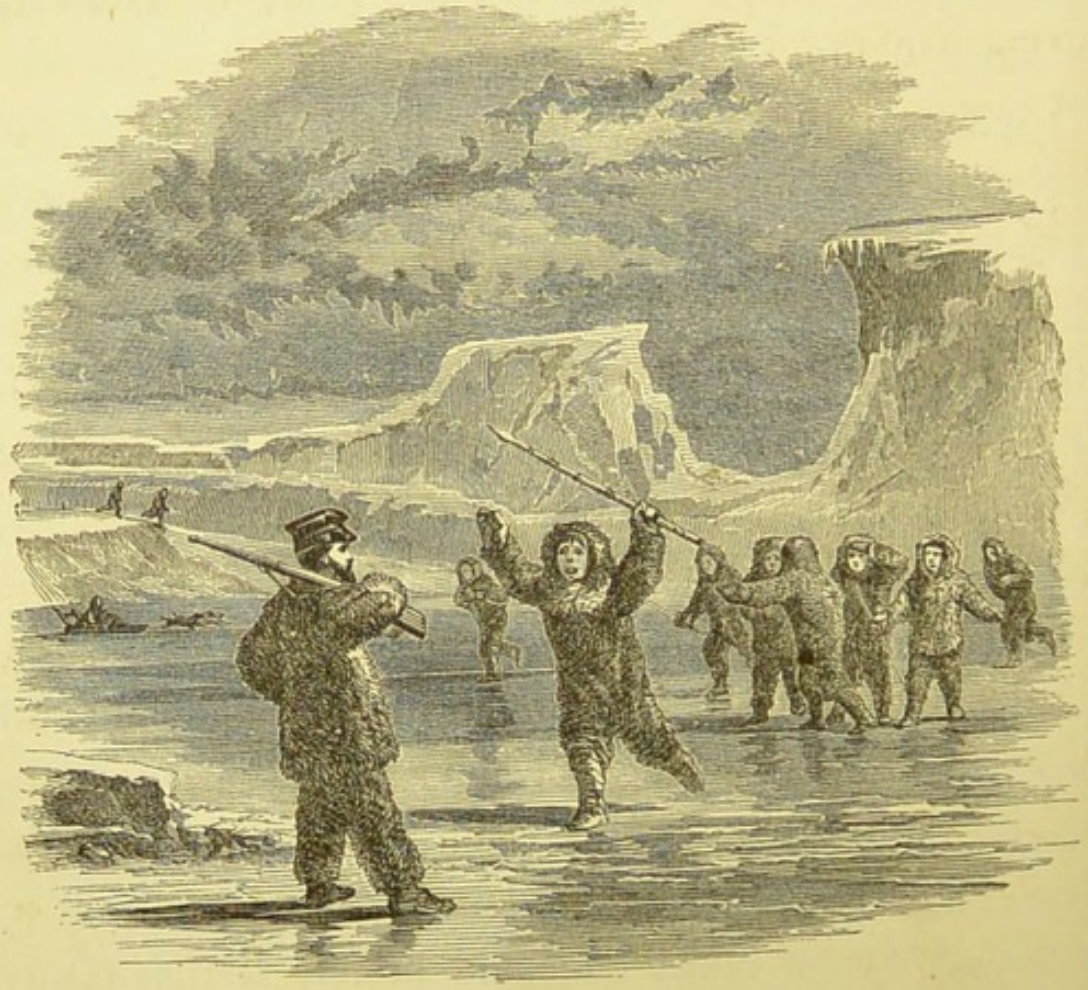
snow-level to Fern Rock, and, climbing the slope of the Observatory, we deposited his corpse upon the pedestals which had served to support our transit-instrument and theodolite. We read the service for the burial of the dead, sprinkling over him snow for dust, and repeated the Lord's Prayer; and then, icing up again the opening in the walls we had made to admit the coffin, left him in his narrow house.

Jefferson Baker was a man of kind heart and true principles. I knew him when we were both younger. I passed two happy seasons at a little cottage adjoining his father's farm. He thought it a privilege to join this expedition, as in those green summer days when I had allowed him to take a gun with me on some shooting-party. He relied on me with the affectionate confidence of boyhood, and I never gave him a harsh word or a hard thought.

We were watching in the morning at Baker's death-bed, when one of our deck-watch, who had been cutting ice for the melter, came hurrying down into the cabin with the report, "People halloing ashore!" I went up, followed by as many as could mount the gangway; and there they were, on all sides of our rocky harbor, dotting the snow-shores and emerging from the blackness of the cliffs,—wild and uncouth, but evidently human beings.

As we gathered on the deck, they rose upon the more elevated fragments of the land-ice, standing singly and conspicuously like the figures in a tableau of the opera, and distributing themselves around almost in a

half-circle. They were vociferating as if to attract our attention, or perhaps only to give vent to their surprise; but I could make nothing out of their cries, except "Hoah, ha, ha!" and "Ka, kăāh! ka, kăāh!" repeated over and over again.



MEETING THE ESQUIMAUX.

There was light enough for me to see that they brandished no weapons, and were only tossing their heads and arms about in violent gesticulations. A more unexcited inspection showed us, too, that their numbers were not as great nor their size as Pata-

gonian as some of us had been disposed to fancy at first. In a word, I was satisfied that they were natives of the country; and, calling Petersen from his bunk to be my interpreter, I proceeded, unarmed and waving my open hands, toward a stout figure who made himself conspicuous and seemed to have a greater number near him than the rest. He evidently understood the movement, for he at once, like a brave fellow, leaped down upon the floe and advanced to meet me fully half-way.

He was nearly a head taller than myself, extremely powerful and well-built, with swarthy complexion and piercing black eyes. His dress was a hooded *capôte* or jumper of mixed white and blue fox-pelts, arranged with something of fancy, and booted trousers of white bear-skin, which at the end of the foot were made to terminate with the claws of the animal.

I soon came to an understanding with this gallant diplomatist. Almost as soon as we commenced our parley, his companions, probably receiving signals from him, flocked in and surrounded us; but we had no difficulty in making them know positively that they must remain where they were, while Metek went with me on board the ship. This gave me the advantage of negotiating, with an important hostage.

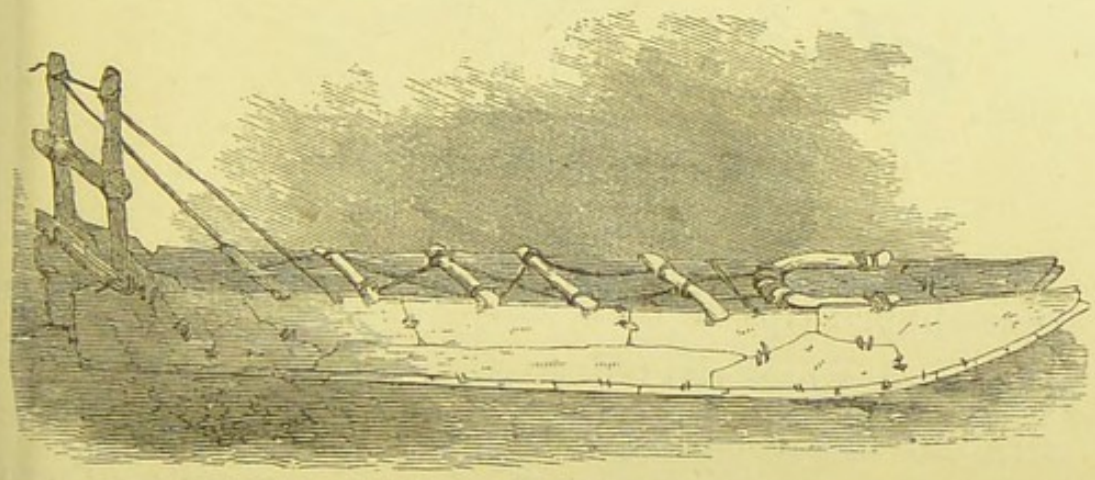
Although this was the first time he had ever seen a white man, he went with me fearlessly; his companions staying behind on the ice. Hickey took them out what he esteemed our greatest delicacies,—slices of good wheat bread, and corned pork, with exorbitant

lumps of white sugar; but they refused to touch them. They had evidently no apprehension of open violence from us. I found afterward that several among them were singly a match for the white bear and the walrus, and that they thought us a very pale-faced crew.

METEK.

Being satisfied with my interview in the cabin, I sent out word that the rest might be admitted to the ship; and, although they, of course, could not know how their chief had been dealt with, some nine or ten of them followed with boisterous readiness upon the bidding. Others in the mean time, as if disposed to

give us their company for the full time of a visit, brought up from behind the land-ice as many as fifty-six fine dogs, with their sledges, and secured them within two hundred feet of the brig, driving their lances into the ice, and picketing the dogs to them by the seal-skin traces. The animals understood the operation perfectly, and lay down as soon as it commenced. The sledges were made up of small frag-

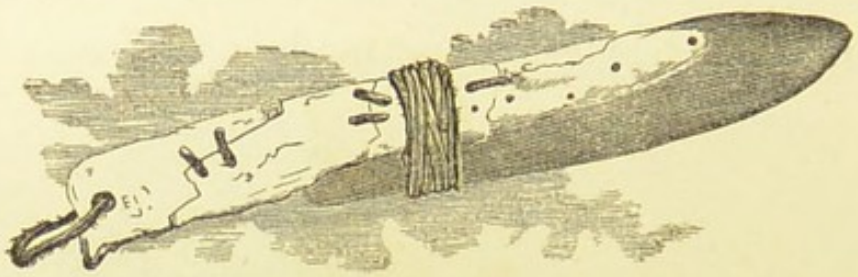


NATIVE SLEDGE, (KOOMETIK,)—CELLULAR BONE OF WHALE.

ments of porous bone, admirably knit together by thongs of hide; the runners, which glistened like burnished steel, were of highly-polished ivory, obtained from the tusks of the walrus.

The only arms they carried were knives, concealed in their boots; but their lances, which were lashed to the sledges, were quite a formidable weapon. The staff was of the horn of the narwhal, or else of the thigh-bones of the bear, two lashed together, or sometimes the mirabilis of the walrus, three or four of them

united. This last was a favorite material also for the cross-bars of their sledges. They had no wood. A single rusty hoop from a current-drifted cask might have furnished all the knives of the party; but the



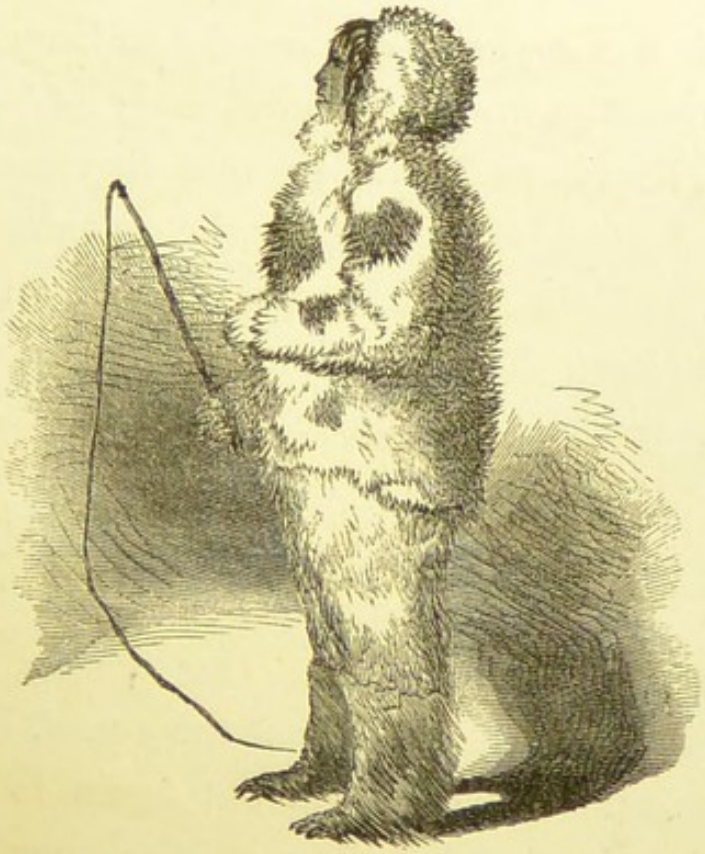
HOOP-IRON KNIFE, (SEVIK.)

fleam-shaped tips of their lances were of unmistakable steel, and were riveted to the tapering bony point with no mean skill. I learned afterward that the metal was obtained in traffic from the more southern tribes.

WALRUS LANCE.

I give drawings of the lance-head, and of the knives which the party carried. They were clad much as I have described Metek, in jumpers, boots, and white bear-skin breeches, with their feet decorated like his,

en griffe. A strip of knotted leather worn round the neck, very greasy and dirty-looking, which no one could be persuaded to part with for an instant, was mistaken at first for an ornament by the crew: it was not until mutual hardships had made us better acquainted that we learned its mysterious uses.



NESSARK, (JUMPER-HOOD,) IN HIS TRAVELLING DRESS.

When they were first allowed to come on board, they were very rude and difficult to manage. They spoke three or four at a time, to each other and to us, laughing heartily at our ignorance in not understanding them, and then talking away as before. They were incessantly in motion, going everywhere, trying doors, and squeezing themselves through dark passages,

round casks and boxes, and out into the light again, anxious to touch and handle every thing they saw, and asking for, or else endeavoring to steal, every thing they touched. It was the more difficult to restrain them, as I did not wish them to suppose that we were at all intimidated. But there were some signs of our disabled condition which it was important they should not see: it was especially necessary to keep them out of the forecastle, where the dead body of poor Baker was lying: and, as it was in vain to reason or persuade, we had at last to employ the "gentle laying-on of hands," which, I believe, the laws of all countries tolerate, to keep them in order.

Our whole force was mustered and kept constantly on the alert; but, though there may have been something of discourtesy in the occasional shoulderings and hustlings that enforced the police of the ship, things went on good-humouredly. Our guests continued running in and out and about the vessel, bringing in provisions, and carrying them out again to their dogs on the ice, in fact, stealing all the time, until the afternoon; when, like tired children, they threw themselves down to sleep. I ordered them to be made comfortable in the hold; and Morton spread a large buffalo-robe for them, not far from a coal-fire in the galley-stove.

They were lost in barbarous amaze at the new fuel, —too hard for blubber, too soft for firestone;—but they were content to believe it might cook as well as seals'-fat. They borrowed from us an iron pot and some

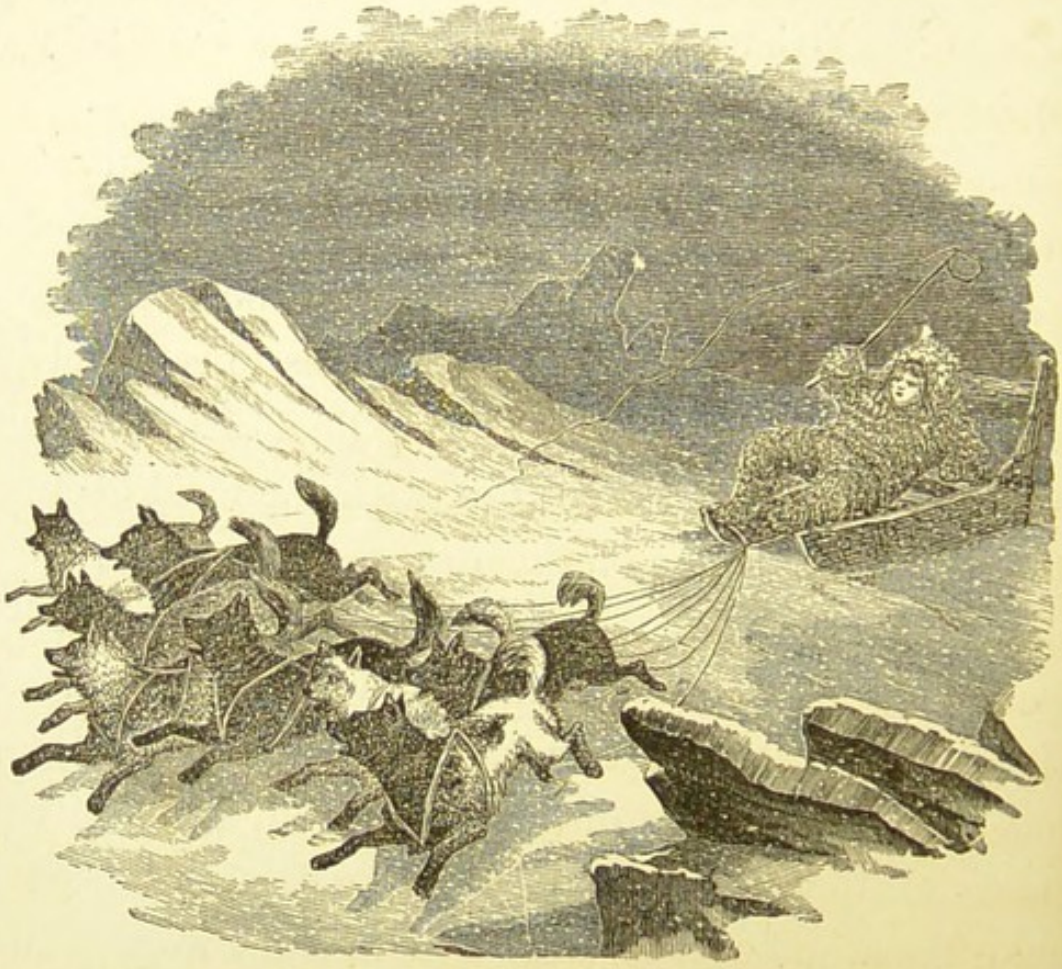
melted water, and parboiled a couple of pieces of walrus-meat; but the real *pièce de resistance*, some five pounds a head, they preferred to eat raw. Yet there was something of the *gourmet* in their mode of assorting their mouthfuls of beef and blubber. Slices of each, or rather strips, passed between the lips, either together or in strict alternation, and with a regularity of sequence that kept the molars well to their work.

They did not eat all at once, but each man when and as often as the impulse prompted. Each slept after eating, his raw chunk lying beside him on the buffalo-skin; and, as he woke, the first act was to eat, and the next to sleep again. They did not lie down, but slumbered away in a sitting posture, with the head declined upon the breast, some of them snoring famously.

In the morning they were anxious to go; but I had given orders to detain them for a parting interview with myself. It resulted in a treaty, brief in its terms, that it might be certainly remembered, and mutually beneficial, that it might possibly be kept. I tried to make them understand what a powerful Prospero they had had for a host, and how beneficent he would prove himself so long as they did his bidding. And, as an earnest of my favor, I bought all the walrus-meat they had to spare, and four of their dogs, enriching them in return with needles and beads and a treasure of old cask-staves.

In the fulness of their gratitude, they pledged themselves emphatically to return in a few days with more meat, and to allow me to use their dogs and sledges for

my excursions to the north. I then gave them leave to go. They yoked in their dogs in less than two minutes, got on their sledges, cracked their two-fathom-and-a-half-long seal-skin whips, and were off down the ice to the southwest at a rate of seven knots an hour.



WILD DOG TEAM.

They did not return: I had read enough of treaty-makings not to expect them too confidently. But the next day came a party of five, on foot; two old men, one of middle age, and a couple of gawky boys. We had missed a number of articles soon after the first party left us, an axe, a saw, and some knives. We found afterward that our storehouse at Butler Island had been entered: we were too short-handed to guard

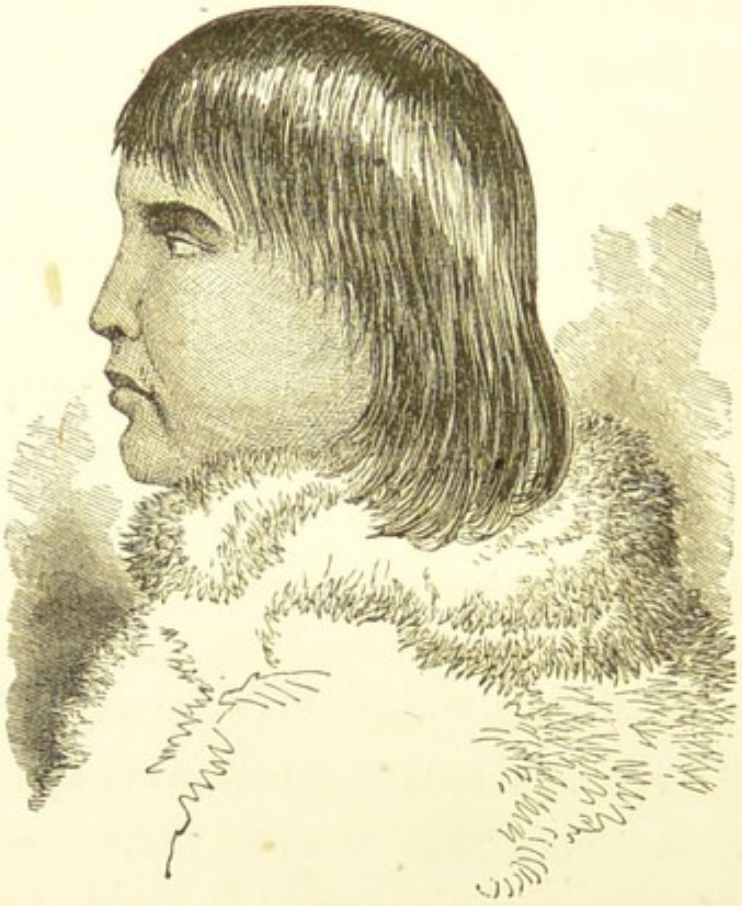
it by a special watch. Besides all this, reconnoitring stealthily beyond Sylvia Head, we discovered a train of sledges drawn up behind the hummocks.

There was cause for apprehension in all this; but I felt that I could not afford to break with the rogues. They had it in their power to molest us seriously in our sledge-travel; they could make our hunts around the harbor dangerous; and my best chance of obtaining an abundant supply of fresh meat, our great desideratum, was by their agency. I treated the new party with marked kindness, and gave them many presents; but took care to make them aware that, until all the missing articles were restored, no member of the tribe would be admitted again as a guest on board the brig. They went off with many pantomimic protestations of innocence; but McGary, nevertheless, caught the incorrigible scamps stealing a coal-barrel as they passed Butler Island, and expedited their journey homeward by firing among them a charge of small shot.

Still, one peculiar worthy—we thought it must have been the venerable of the party, whom I knew afterward as a stanch friend, old Shung-hu—managed to work round in a westerly direction, and to cut to pieces my India-rubber boat, which had been left on the floe since Mr. Brooks's disaster, and to carry off every particle of the wood.

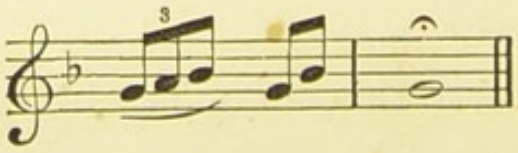
A few days after this, an agile, elfin youth drove up to our floe in open day. He was sprightly and good-looking, and had quite a neat turn-out of sledge and

dogs. He told his name with frankness, "*Myouk*, I am,"—and where he lived. We asked him about the boat; but he denied all knowledge of it, and refused either to confess or repent. He was surprised when I ordered him to be confined to the hold. At first he refused to eat, and sat down in the deepest



MYOUK.

grief; but after a while he began to sing, and then to talk and cry, and then to sing again; and so he kept on rehearsing his limited *solfeggio*,—



and crying and talking by turns, till a late hour of the

night. When I turned in, he was still noisily disconsolate.

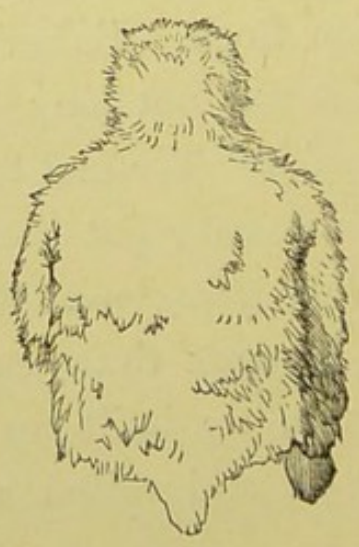
There was a simplicity and *bonhommie* about this boy that interested me much; and I confess that when I made my appearance next morning—I could hardly conceal it from the gentleman on duty, whom I affected to censure—I was glad my bird had flown. Some time during the morning-watch, he had succeeded in throwing off the hatch and escaping. We suspected that he had confederates ashore, for his dogs had escaped with as much address as himself. I was convinced, however, that I had the truth from him, where he lived and how many lived with him; my cross-examination on these points having been very complete and satisfactory.

It was a sad business for some time after these Esquimaux left us, to go on making and registering our observations at Fern Rock. Baker's corpse still lay in the vestibule, and it was not long before another was placed by the side of it. We had to pass the bodies as often as we went in or out; but the men, grown feeble and nervous, disliked going near them in the night-time. When the summer thaw came and we could gather stones enough, we built up a grave on a depression of the rocks, and raised a substantial cairn above it.

"April 19, Wednesday.—I have been out on the floe again, breaking in my dogs. My reinforcement from the Esquimaux makes a noble team for me. For the last five days I have been striving with them, just

as often and as long as my strength allowed me; and to-day I have my victory. The Society for Preventing Cruelty to Animals would have put me in custody, if they had been near enough; but, thanks to a merciless whip freely administered, I have been dashing along twelve miles in the last hour, and am back again; harness, sledge, and bones all unbroken. I am ready for another journey.

"April 22, Saturday.—Schubert has increasing symptoms of erysipelas around his amputated stump; and every one on board is depressed and silent except himself. He is singing in his bunk, as joyously as ever, 'Aux gens atrabilaires,' &c. Poor fellow! I am alarmed about him: it is a hard duty which compels me to take the field while my presence might cheer his last moments."



THE KAPETAH, OR JUMPER.

CHAPTER XVIII.

AN EXPLORATION — EQUIPMENT — OUTFIT — DEPARTURE — RESULTS — FEATURES OF COAST — ARCHITECTURAL ROCKS — THREE BROTHER TURRETS — TENNYSON'S MONUMENT — THE GREAT GLACIER OF HUMBOLDT.

THE month of April was about to close, and the short season available for Arctic search was upon us. The condition of things on board the brig was not such as I could have wished for; but there was nothing to exact my presence, and it seemed to me clear that the time had come for pressing on the work of the expedition. The arrangements for our renewed exploration had not been intermitted, and were soon complete. I leave to my journal its own story.

"April 25, Tuesday.—A journey on the carpet; and the crew busy with the little details of their outfit: the officers the same.

"I have made a log-line for sledge-travel, with a contrivance for fastening it to the ice and liberating it at pleasure. It will give me my dead reckoning quite as well as on the water. I have a team now of seven dogs, four that I bought of the Esquimaux, and three

of my old stock. They go together quite respectably. Godfrey and myself will go with them on foot, following the first sledge on Thursday.

"April 26, Wednesday.—McGary went yesterday with the leading sledge; and, as Brooks is still on his back in consequence of the amputation, I leave Ohlsen in charge of the brig. He has my instructions in full: among them I have dwelt largely upon the treatment of the natives.

"These Esquimaux must be watched carefully, at the same time that they are to be dealt with kindly, though with a strict enforcement of our police-regulations and some caution as to the freedom with which they may come on board. No punishments must be permitted, either of them or in their presence, and no resort to fire-arms unless to repel a serious attack. I have given orders, however, that if the contingency does occur there shall be no firing over head. The *prestige* of the gun with a savage is in his notion of its infallibility. You may spare bloodshed by killing a dog or even wounding him; but in no event should you throw away your ball. It is neither politic nor humane.

"Our stowage-precautions are all arranged, to meet the chance of the ice breaking up while I am away; and a boat is placed ashore with stores, as the brig may be forced from her moorings.

"The worst thought I have now in setting out is, that of the entire crew I can leave but two behind in able condition, and the doctor and Bonsall are the only

two officers who can help Ohlsen. This is our force, four able-bodied and six disabled to keep the brig: the commander and seven men, scarcely better upon the average, out upon the ice. Eighteen souls, thank God! certainly not eighteen bodies!——

"I am going this time to follow the ice-belt (Eis-fod) to the Great Glacier of Humboldt, and there load up with pemmican from our cache of last October. From this point I expect to stretch along the face of the glacier inclining to the west of north, and make an attempt to cross the ice to the American side. Once on smooth ice, near this shore, I may pass to the west, and enter the large indentation whose existence I can infer with nearly positive certainty. In this I may find an outlet, and determine the state of things beyond the ice-clogged area of this bay.

"I take with me pemmican and bread and tea, a canvas tent, five feet by six, and two sleeping-bags of reindeer-skin. The sledge has been built on board by Mr. Ohlsen. It is very light, of hickory, and but nine feet long. Our kitchen is a soup-kettle for melting snow and making tea, arranged so as to boil with either lard or spirits."

The pattern of the tent was suggested by our experience during the fall journeys. The greatest discomfort of the Arctic traveller when camping out is from the congealed moisture of the breath forming long feathers of frost against the low shelving roof of the tent within a few inches of his face. The remedy which I adopted was to run the tent-poles through

grummet-holes in the canvas about eighteen inches above the floor, and allow the lower part of the sides to hang down vertically like a valance, before forming the floor-cloth. This arrangement gave ample room for breathing; it prevented the ice forming above the

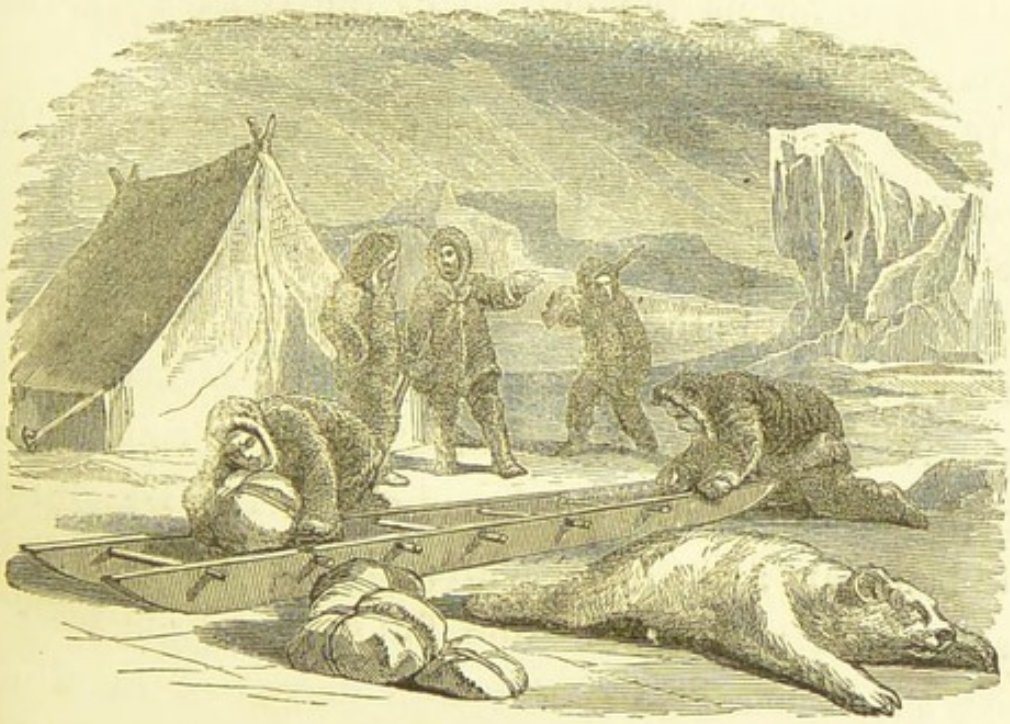
THE TENT.

sleeper's head, and the melted rime from trickling down upon it.

"For instruments I have a fine Gambey sextant, in addition to my ordinary pocket-instrument, an artificial horizon, and a Barrow's dip-circle. These occupy little room upon the sledge. My telescope and chronometer I carry on my person.

"McGary has taken the 'Faith.' He carries few

stores, intending to replenish at the cache of Bonsall Point, and to lay in pemmican at McGary Island. Most of his cargo consists of bread, which we find it hard to dispense with in eating cooked food. It has a good effect in absorbing the fat of the pemmican, which is apt to disagree with the stomach."



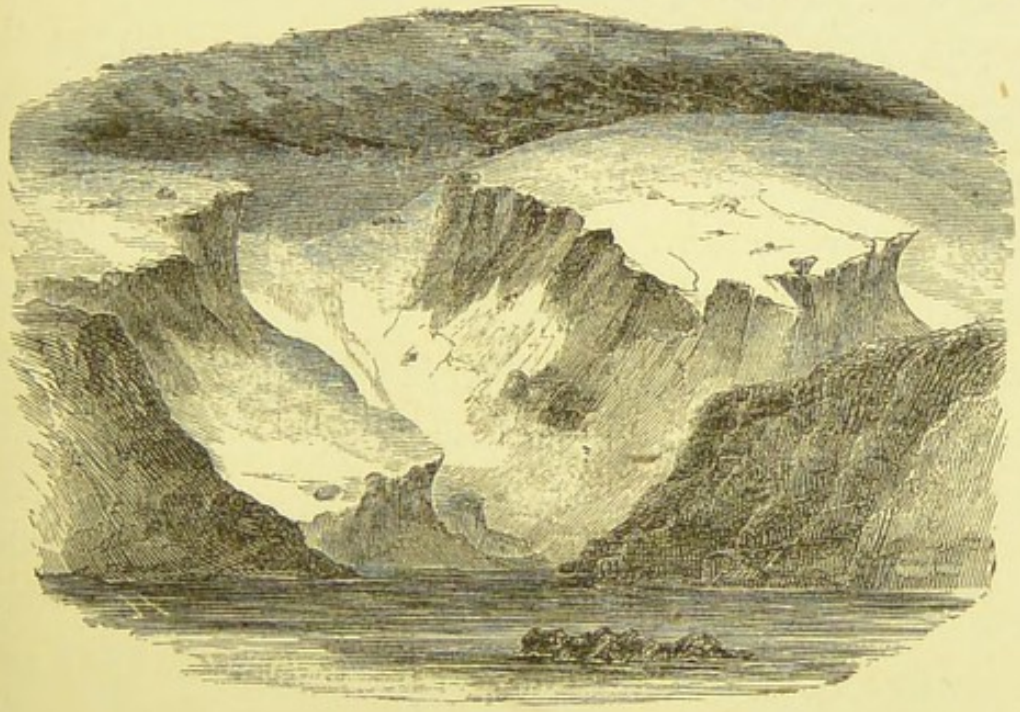
THE FAITH.

Godfrey and myself followed on the 27th, as I had intended. The journey was an arduous one to be undertaken, even under the most favoring circumstances and by unbroken men. It was to be the crowning expedition of the campaign, to attain the Ultima Thule of the Greenland shore, measure the waste that lay between it and the unknown West, and seek round

the farthest circle of the ice for an outlet to the mysterious channels beyond. The scheme could not be carried out in its details. Yet it was prosecuted far enough to indicate what must be our future fields of labour, and to determine many points of geographical interest. Our observations were in general confirmatory of those which had been made by Mr. Bonsall; and they accorded so well with our subsequent surveys as to trace for us the outline of the coast with great certainty.

If the reader has had the patience to follow the pathway of our little brig, he has perceived that at Refuge Harbor, our first asylum, a marked change takes place in the line of direction of the coast. From Cape Alexander, which may be regarded as the westernmost cape of Greenland, the shore runs nearly north and south, like the broad channel of which it is the boundary; but on reaching Refuge Inlet it bends nearly at a right angle, and follows on from west to east till it has passed the 65th degree of longitude. Between Cape Alexander and the inlet it is broken by two indentations, the first of them near the Etah settlement, which was visited in 1855 by the Rescue Expedition under Lieutenant Hartstene, and which bears on my charts the name of that noble-spirited commander; the other remembered by us as Lifeboat Cove. In both of these the glaciers descend to the water-line, from an interior of lofty rock-clad hills. My sketches give but a rude idea of their picturesque sublimity.

The coast-line is diversified, however, by numerous water-worn headlands, which on reaching Cape Hatherton decline into rolling hills, their margins studded with islands, which are the favorite breeding-places of the eider, the glaucous gull, and the tern.



ETAH, AND MY BROTHER JOHN'S GLACIER.

Cape Hatherton rises boldly above these, a mass of porphyritic rock.

After leaving Refuge Harbor, the features of the coast undergo a change. There are no deep bays or discharging glaciers; and it is only as we approach Rensselaer Harbor, where the shore-line begins to incline once more to the north, that the deep recesses and ice-lined fiords make their appearance again.

The geological structure changes also, and the

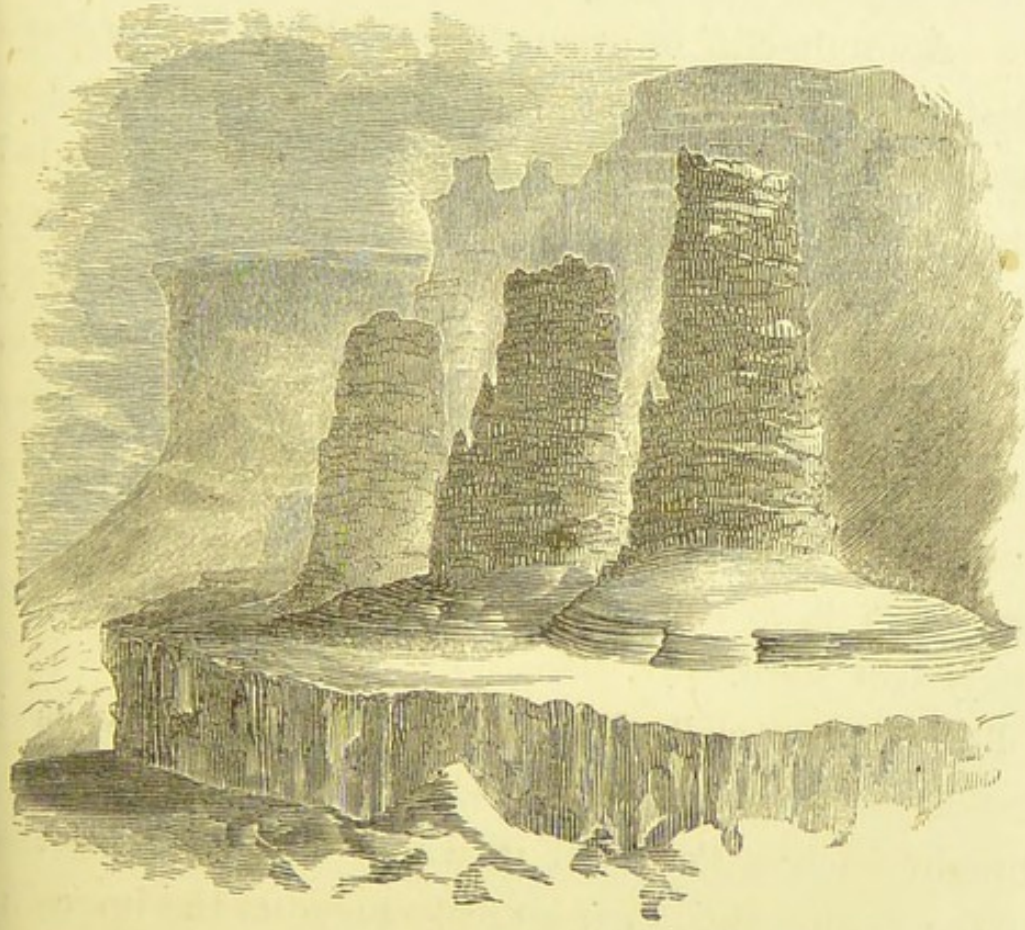
cliffs begin to assume a series of varied and picturesque outlines along the coast, that scarcely require the aid of imagination to trace in them the ruins of architectural structure. They come down boldly to the shore-line, their summits rising sometimes more than a thousand feet above the eye, and the long cones of rubbish at their base mingling themselves with the ice-foot.

The coast retains the same character as far as the Great Glacier. It is indented by four great bays, all of them communicating with deep gorges, which are watered by streams from the interior ice-fields; yet none of them exhibit glaciers of any magnitude at the water-line. Dallas Bay shows a similar formation, and the archipelago beyond Cape Hunter retains it almost without change.

The mean height of the table-land till it reaches the bed of the Great Glacier may be stated in round numbers at nine hundred feet, its tallest summit near the water at thirteen hundred, and the rise of the background above the general level at six hundred more. The face of this stupendous ice-mass, as it defined the coast, was everywhere an abrupt and threatening precipice, only broken by clefts and deep ravines, giving breadth and interest to its wild expression.

The most picturesque portion of the North Greenland coast is to be found after leaving Cape George Russell and approaching Dallas Bay. The red sandstones contrast most favorably with the blank whiteness, associating the cold tints of the dreary Arctic landscape

with the warm coloring of more southern lands. The seasons have acted on the different layers of the cliff so as to give them the appearance of jointed masonry, and the narrow line of greenstone at the top caps them with well-simulated battlements.



THREE BROTHER TURRETS.

One of these interesting freaks of nature became known to us as the "Three Brother Turrets."

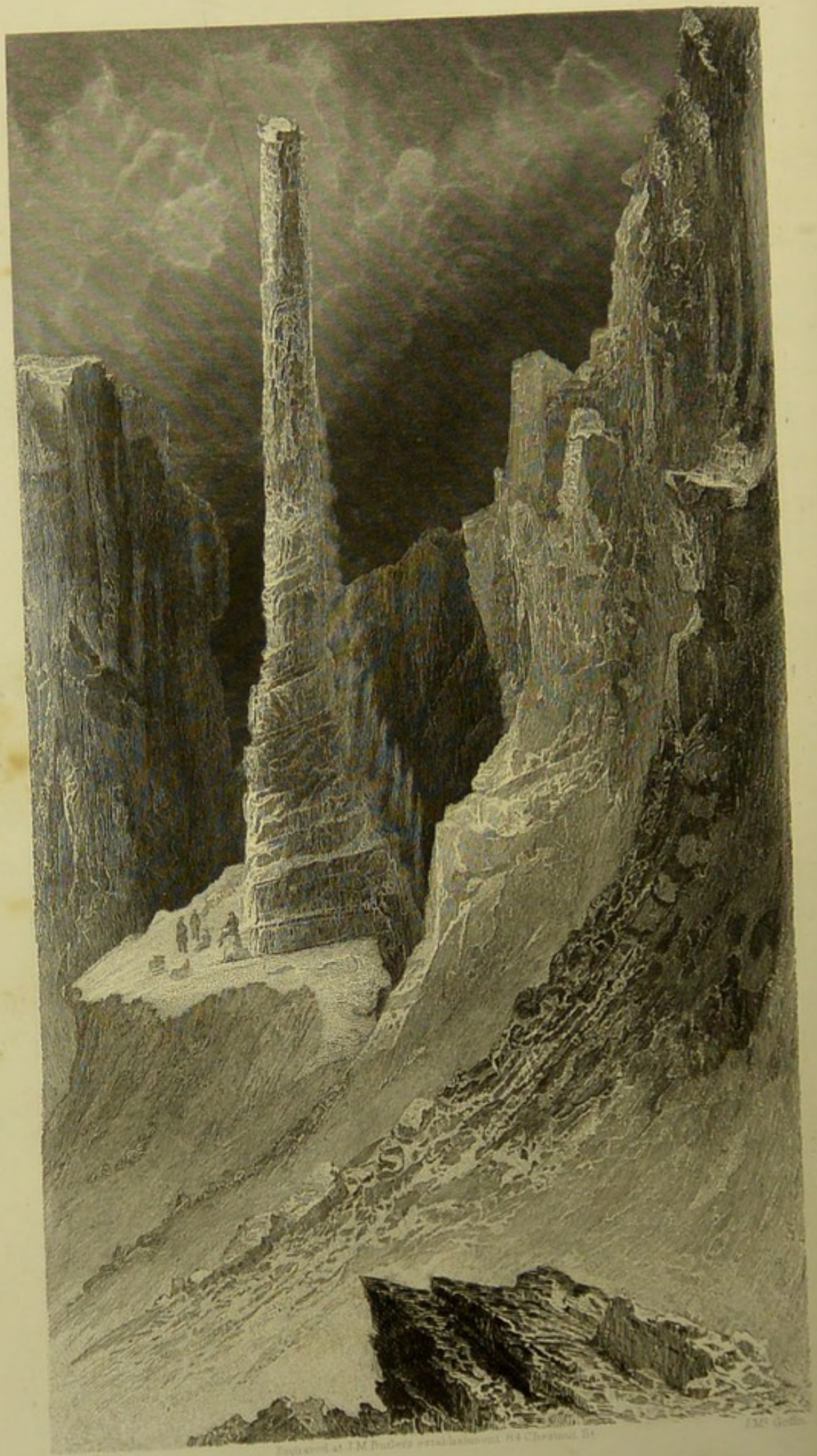
The sloping rubbish at the foot of the coast-wall led up, like an artificial causeway, to a gorge that was streaming at noonday with the southern sun; while everywhere else the rock stood out in the blackest shadow. Just at the edge of this bright opening rose

the dreamy semblance of a castle, flanked with triple towers, completely isolated and defined. These were the "Three Brother Turrets."

I was still more struck with another of the same sort, in the immediate neighborhood of my halting-ground beyond Sunny Gorge, to the north of latitude 79°. A single cliff of greenstone, marked by the slaty limestone that once encased it, rears itself from a crumbled base of sandstones, like the boldly-chiselled rampart of an ancient city. At its northern extremity, on the brink of a deep ravine which has worn its way among the ruins, there stands a solitary column or minaret-tower, as sharply finished as if it had been cast for the Place Vendôme. Yet the length of the shaft alone is four hundred and eighty feet; and it rises on a plinth or pedestal itself two hundred and eighty feet high.

I remember well the emotions of my party as it first broke upon our view. Cold and sick as I was, I brought back a sketch of it, which may have interest for the reader, though it scarcely suggests the imposing dignity of this magnificent landmark. Those who are happily familiar with the writings of Tennyson, and have communed with his spirit in the solitudes of a wilderness, will apprehend the impulse that inscribed the scene with his name.

Still beyond this, comes the archipelago which bears the name of our brig, studded with the names of those on board of her who adhered to all the fortunes of the expedition; and at its eastern cape spreads out the

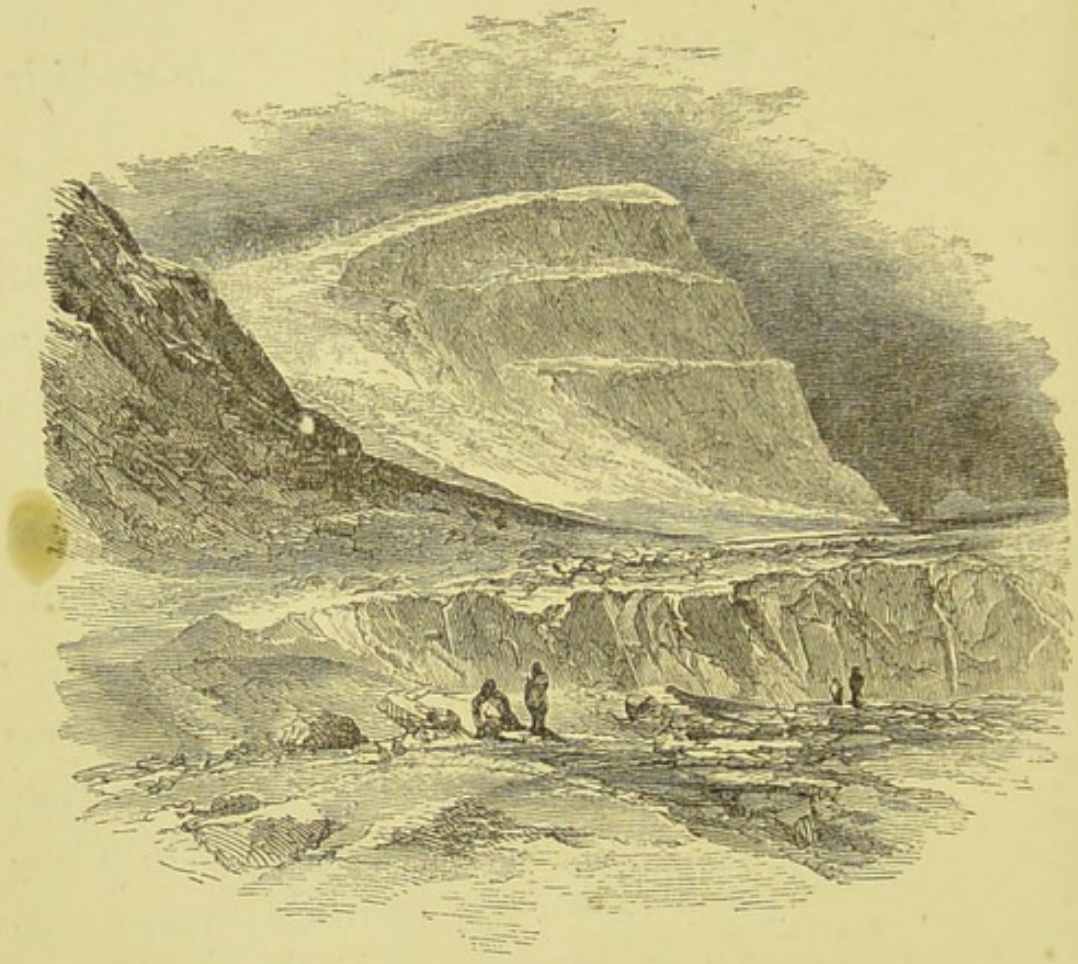


Great Glacier of Humboldt. My recollections of this glacier are very distinct. The day was beautifully clear on which I first saw it; and I have a number of sketches made as we drove along in view of its magnificent face. They disappoint me, giving too much white surface and badly-fading distances, the grandeur of the few bold and simple lines of nature being almost entirely lost.

I will not attempt to do better by florid description. Men only rhapsodize about Niagara and the ocean. My notes speak simply of the "long ever-shining line of cliff diminished to a well-pointed wedge in the perspective;" and again, of "the face of glistening ice, sweeping in a long curve from the low interior, the facets in front intensely illuminated by the sun." But this line of cliff rose in solid glassy wall three hundred feet above the water-level, with an unknown unfathomable depth below it; and its curved face, sixty miles in length from Cape Agassiz to Cape Forbes, vanished into unknown space at not more than a single day's railroad-travel from the Pole. The interior with which it communicated, and from which it issued, was an unsurveyed *mer de glace*, an ice-ocean, to the eye of boundless dimensions.

It was in full sight—the mighty crystal bridge which connects the two continents of America and Greenland. I say continents; for Greenland, however insulated it may ultimately prove to be, is in mass strictly continental. Its least possible axis, measured from Cape Farewell to the line of this glacier, in the

neighborhood of the 80th parallel, gives a length of more than twelve hundred miles, not materially less than that of Australia from its northern to its southern cape.



GREAT GLACIER.

Imagine, now, the centre of such a continent, occupied through nearly its whole extent by a deep unbroken sea of ice, that gathers perennial increase from the water-shed of vast snow-covered mountains and all the precipitations of the atmosphere upon its own surface. Imagine this, moving onward like a great glacial river, seeking outlets at every fiord and valley, rolling

icy cataracts into the Atlantic and Greenland seas; and, having at last reached the northern limit of the land that has borne it up, pouring out a mighty frozen torrent into unknown Arctic space.

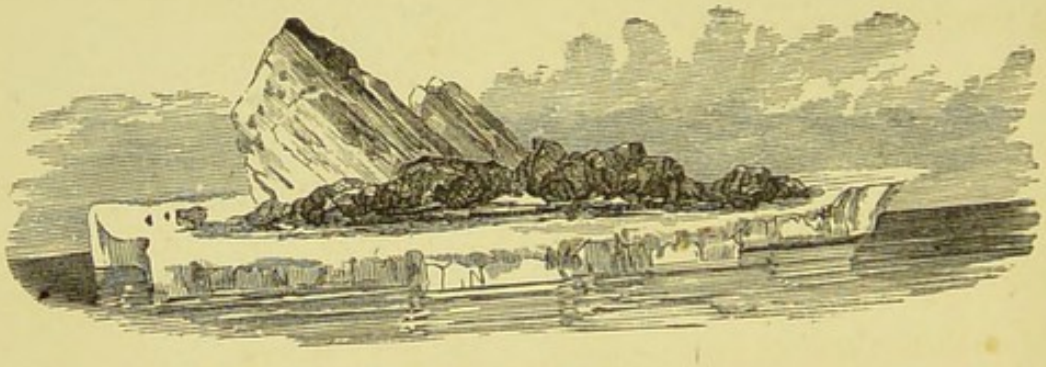
It is thus, and only thus, that we must form a just conception of a phenomenon like this Great Glacier. I had looked in my own mind for such an appearance,

GLACIER PROTRUDING AT CACHE ISLAND.

should I ever be fortunate enough to reach the northern coast of Greenland. But now that it was before me, I could hardly realize it. I had recognised, in my quiet library at home, the beautiful analogies which Forbes and Studer have developed between the glacier and the river. But I could not comprehend at first this complete substitution of ice for water.

It was slowly that the conviction dawned on me,

that I was looking upon the counterpart of the great river-system of Arctic Asia and America. Yet here were no water-feeders from the south. Every particle of moisture had its origin within the Polar circle, and had been converted into ice. There were no vast alluvions, no forest or animal traces borne down by liquid torrents. Here was a plastic, moving, semi-solid mass, obliterating life, swallowing rocks and islands, and ploughing its way with irresistible march through the crust of an investing sea.



CHAPTER XIX.

PROGRESS OF THE PARTY — PROSTRATION — DALLAS BAY — DEATH OF SCHUBERT — THE BRIG IN MAY — PROGRESS OF SPRING — McGARY'S RETURN — DR. HAYES'S PARTY — EQUIPMENT — SCHUBERT'S FUNERAL.

"It is now the 20th of May, and for the first time I am able, propped up by pillows and surrounded by sick messmates, to note the fact that we have failed again to force the passage to the north.

"Godfrey and myself overtook the advance party under McGary two days after leaving the brig. Our dogs were in fair travelling condition, and, except snow-blindness, there seemed to be no drawback to our efficiency. In crossing Marshall Bay, we found the snow so accumulated in drifts, that, with all our efforts to pick out a track, we became involved: we could not force our sledges through. We were forced to unload and carry forward the cargo on our backs, beating a path for the dogs to follow in. In this way we plodded on to the opposite headland, Cape William Wood, where the waters of Mary Minturn River, which had delayed the freezing of the ice, gave us a

long reach of level travel. We then made a better rate; and our days' marches were such as to carry us by the 4th of May nearly to the glacier.

"This progress, however, was dearly earned. As early as the 3d of May, the winter's scurvy reappeared painfully among our party. As we struggled through the snow along the Greenland coast we sank up to our middle, and the dogs, floundering about, were so buried as to preclude any attempts at hauling. This excessive snow-deposit seemed to be due to the precipitation of cold condensing wind suddenly wafted from the neighboring glacier; for at Rensselaer Harbor we had only four inches of general snow depth. It obliged us to unload our sledges again, and carry their cargo, a labor which resulted in dropsical swellings with painful prostration. Here three of the party were taken with snow-blindness, and George Stephenson had to be condemned as unfit for travel altogether, on account of chest-symptoms accompanying his scorbutic troubles. On the 4th, Thomas Hickey also gave in, although not quite disabled for labor at the track-lines.

"Perhaps we would still have got on; but, to crown all, we found that the bears had effected an entrance into our pemmican-casks, and destroyed our chances of reinforcing our provisions at the several caches. This great calamity was certainly inevitable; for it is simple justice to the officers under whose charge the provision-depôts were constructed, to say that no means in their power could have prevented the result. The pemmican

was covered with blocks of stone which it had required the labor of three men to adjust; but the extraordinary strength of the bear had enabled him to force aside the heaviest rocks, and his pawing had broken the iron casks which held our pemmican literally into chips. Our alcohol-cask, which it had cost me a separate and special journey in the late fall to deposit, was so completely destroyed that we could not find a stave of it.

APPROACHING DALLAS BAY.

"Off Cape James Kent, about eight miles from 'Sunny Gorge,' while taking an observation for latitude, I was myself seized with a sudden pain and fainted. My limbs became rigid, and certain obscure tetanoid symptoms of our late winter's enemy disclosed themselves. In this condition I was unable to make more than nine miles a day. I was strapped upon the sledge, and the march continued as usual; but my powers diminished so rapidly that I could not resist even the otherwise comfortable temperature of 5° below zero. My left foot becoming frozen up to the metatarsal joint, caused a

vexatious delay; and the same night it became evident that the immovability of my limbs was due to dropsical effusion.

"On the 5th, becoming delirious, and fainting every time that I was taken from the tent to the sleidge, I succumbed entirely. The report of our surgeon, made upon my return, exhibits the diseased condition of myself and party, and explains, in stronger terms than I can allow myself to use, the extent of my efforts to contend against it.

"My comrades would kindly persuade me that, even had I continued sound, we could not have proceeded on our journey. The snows were very heavy, and increasing as we went; some of the drifts perfectly impassable, and the level floes often four feet deep in yielding snow. The scurvy had already broken out among the men, with symptoms like my own; and Morton, our strongest man, was beginning to give way. It is the reverse of comfort to me that they shared my weakness. All that I should remember with pleasurable feeling is, that to five brave men, Morton, Riley, Hickey, Stephenson, and Hans, themselves scarcely able to travel, I owe my preservation. They carried me back by forced marches, after cacheing our stores and India-rubber boat near Dallas Bay, in lat. 79°.5, lon. 66°.

"I was taken into the brig on the 14th. Since then, fluctuating between life and death, I have by the blessing of God reached the present date, and see feebly in prospect my recovery. Dr. Hayes regards my attack

as one of scurvy, complicated by typhoid fever. George Stephenson is similarly affected. Our worst symptoms are dropsical effusion and night-sweats.

"May 22, Monday.—Let me, if I can, make up my record for the time I have been away or on my back.

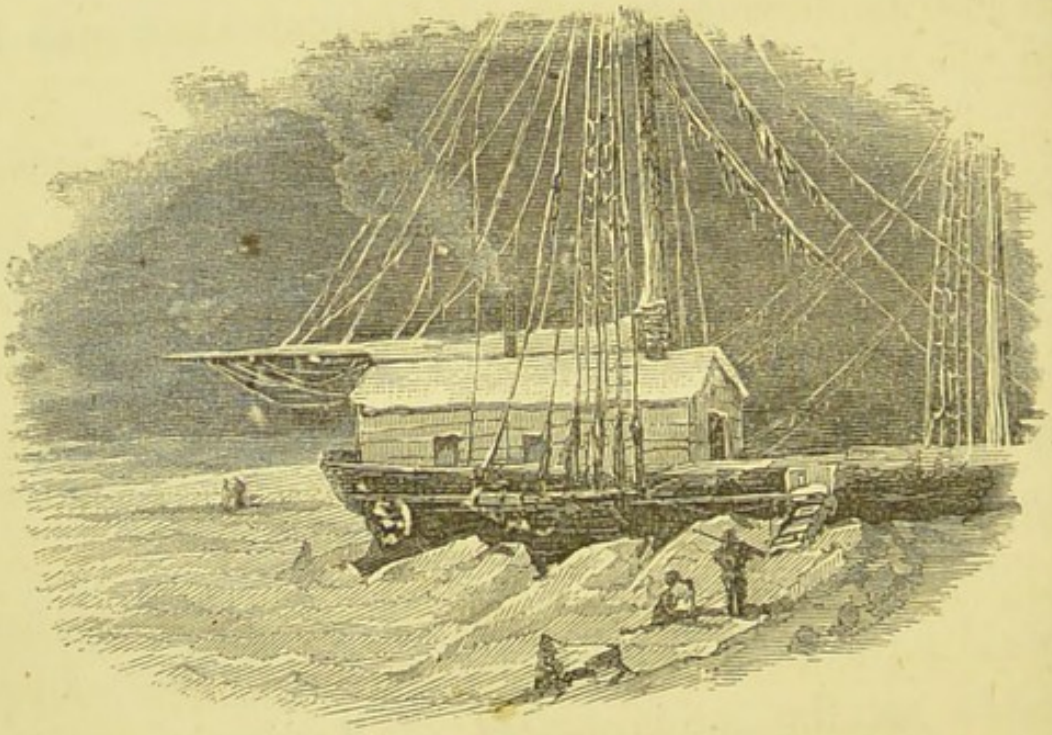
"Poor Schubert is gone. Our gallant merry-hearted companion left us some ten days ago, for, I trust, a more genial world. It is sad, in this dreary little homestead of ours, to miss his contented face and the joyous troll of his ballads.

"The health of the rest has, if any thing, improved. Their complexions show the influence of sunlight, and I think several have a firmer and more elastic step. Stephenson and Thomas are the only two beside myself who are likely to suffer permanently from the effects of our break-down. Bad scurvy both: symptoms still serious.

"Before setting out a month ago, on a journey that should have extended into the middle of June, I had broken up the establishment of Butler Island, and placed all the stores around the brig upon the heavy ice. My object in this was a double one. First, to remove from the Esquimaux the temptation and ability to pilfer. Second, to deposit our cargo where it could be re-stowed by very few men, if any unforeseen change in the ice made it necessary. Mr. Ohlsen, to whose charge the brig was committed, had orders to stow the hold slowly, remove the forward housing, and fit up the forecastle for the men to inhabit it again.

"All of these he carried out with judgment and

energy. I find upon my return the brig so stowed and refitted that four days would prepare us for sea. The quarter-deck alone is now boarded in; and here all the officers and sick are sojourning. The wind makes this wooden shanty a somewhat airy retreat; but, for the



THE BRIG IN MAY.

health of our maimed scorbutic men, it is infinitely preferable to the less-ventilated quarters below. Some of the crew, with one stove, are still in the forecastle; but the old cabin is deserted.

"I left Hans as hunter. I gave him a regular exemption from all other labor, and a promised present to his lady-love on reaching Fiskernaes. He signalized his

promotion by shooting two deer, *Tukkuk*, the first yet shot. We have now on hand one hundred and forty-five pounds of fine venison, a very gift of grace to our diseased crew. But, indeed, we are not likely to want for wholesome food, now that the night is gone, which made our need of it so pressing. On the first of May, those charming little migrants the snow-birds, *ultima cœlicolum*, which only left us on the 4th of November, returned to our ice-crusted rocks, whence they seem to 'fill the sea and air with their sweet jargoning.' Seal literally abound too. I have learned to prefer this flesh to the reindeer's, at least that of the female seal, which has not the fetor of her mate's.

"By the 12th, the sides of the Advance were free from snow, and her rigging clean and dry. The floe is rapidly undergoing its wonderful processes of decay; and the level ice measures but six feet in thickness. To-day they report a burgomaster gull seen: one of the earliest but surest indications of returning open water. It is not strange, ice-leaguered exiles as we are, that we observe and exult in these things. They are the pledges of renewed life, the olive-branch of this dreary waste: we feel the spring in all our pulses.

"The first thing I did after my return was to send McGary to Life-boat Cove, to see that our boat and its buried provisions were secure. He made the journey by dog-sledge in four days, and has returned reporting that all is safe: an important help for us, should this heavy ice of our more northern prison refuse to release us.

"But the pleasantest feature of his journey was the disclosure of open water, extending up in a sort of tongue, with a trend of north by east to within two miles of Refuge Harbor, and there widening as it expanded to the south and west.

"Indeed, some circumstances which he reports seem to point to the existence of a north water all the year round; and the frequent water-skies, fogs, &c., that we have seen to the southwest during the winter, go to confirm the fact. The breaking up of the Smith Strait's ice commences much earlier than this; but as yet it has not extended farther than Littleton Island, where I should have wintered if my fall journey had not pointed to the policy of remaining here. The open water undoubtedly has been the cause of the retreat of the Esquimaux. Their sledge-tracks have been seen all along the land-foot; but, except a snow house at Esquimaux Point, we have met nothing which to the uninitiated traveller would indicate that they had rested upon this desert coast.

"As soon as I had recovered enough to be aware of my failure, I began to devise means for remedying it. But I found the resources of the party shattered. Pierre had died but a week before, and his death exerted an unfavorable influence. There were only three men able to do duty. Of the officers, Wilson, Brooks, Sontag, and Petersen were knocked up. There was no one except Sontag, Hayes, or myself, who was qualified to conduct a survey; and, of us three, Dr. Hayes was the only one on his feet.

"The quarter to which our remaining observations were to be directed lay to the north and east of the Cape Sabine of Captain Inglefield. The interruption our progress along the coast of Greenland had met from the Great Glacier, and the destruction of our provision-caches by the bears, left a blank for us of the entire northern coast-line. It was necessary to ascertain whether the farthermost expansion of Smith's Strait did not find an outlet in still more remote channels; and this became our duty the more plainly, since our theodolite had shown us that the northern coast trended off to the eastward, and not toward the west, as our predecessor had supposed. The angular difference of sixty degrees between its bearings on his charts and our own left me completely in the dark as to what might be the condition of this unknown area.

"I determined to trust almost entirely to the dogs for our travel in the future, and to send our parties of exploration, one after the other, as rapidly as the strength and refreshing of our team would permit.

"Dr. Hayes was selected for that purpose; and I satisfied myself that, with a little assistance from my comrades, I could be carried round to the cots of the sick, and so avail myself of his services in the field.

"He was a perfectly fresh man, not having yet undertaken a journey. I gave him a team and my best driver, William Godfrey. He is to cross Smith's Straits above the inlet, and make as near as may be a straight course for Cape Sabine. My opinion is that by keeping well south he will find the ice less clogged and

easier sledging. Our experience proves, I think, that the transit of this broken area must be most impeded as we approach the glacier. The immense discharge of icebergs cannot fail to break it up seriously for travel.

"I gave him the small sledge which was built by Mr. Ohlsen. The snow was sufficiently thawed to make it almost unnecessary to use fire as a means of obtaining water: they could therefore dispense with tallow or

THE TEAM.

alcohol, and were able to carry pemmican in larger quantities. Their sleeping-bags were a very neat article of a light reindeer-skin. The dogs were in excellent condition too, no longer foot-sore, but well rested and completely broken, including the four from the Esquimaux, animals of great power and size. Two of these, the stylish leaders of the team, a span of thoroughly wolfish iron-grays, have the most powerful and wild-beast-like bound that I have seen in animals of their kind.

"I made up the orders of the party on the 19th, the first day that I was able to mature a plan; and with commendable zeal they left the brig on the 20th.

"May 23, Tuesday.—They have had superb weather, thank heaven!—a profusion of the most genial sunshine, bringing out the seals in crowds to bask around their breathing-holes. A ptarmigan was killed to-day, a male, with but two brown feathers on the back of his little neck to indicate the return of his summer-plumage.

"The winter is gone! The Andromeda has been found on shore under the snow, with tops vegetating and green! I have a shoot of it in my hand.

"May 25, Thursday.—Bands of soft mist hide the tops of the hills: the unbroken transparency of last month's atmosphere has disappeared, and the sky has all the ashen or pearly obscurity of the Arctic summer.

"May 26, Friday.—I get little done; but I have too much to attend to in my weak state to journalize. Thermometer above freezing-point, without the sun to-day.

"May 27, Saturday.—Every thing showing that the summer changes have commenced. The ice is rapidly losing its integrity, and a melting snow has fallen for the last two days,—one of those comforting home-snows that we have not seen for so long.

"May 28, Sunday.—Our day of rest and devotion. It was a fortnight ago last Friday since our poor friend Pierre died. For nearly two months he had been struggling against the enemy with a resolute will

and mirthful spirit, that seemed sure of victory. But he sunk in spite of them.

"The last offices were rendered to him with the same careful ceremonial that we observed at Baker's funeral. There were fewer to walk in the procession; but the body was encased in a decent pine coffin and carried to Observatory Island, where it was placed side-by-side with that of his messmate. Neither could yet be buried; but it is hardly necessary to say that the frost has embalmed their remains. Dr. Hayes read the chapter from Job which has consigned so many to their last resting-place, and a little snow was sprinkled upon the face of the coffin. Pierre was a volunteer not only of our general expedition, but of the party with which he met his death-blow. He was a gallant man, a universal favorite on board, always singing some Béranger ballad or other, and so elastic in his merriment that even in his last sickness he cheered all that were about him."

CHAPTER XX.

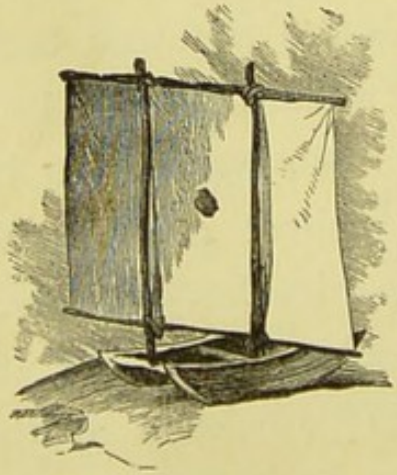
SEAL-HUNTING—SIR JOHN FRANKLIN—RESOURCES—ACCLIMATIZATION—THE HOPE—DR. HAYES'S RETURN—HIS JOURNEY—SNOW-BLINDNESS—CAPE HAYES—THE DOGS TANGLED—MENDING THE HARNESS—CAPES LEIDY AND FRAZER—DOBBIN BAY—FLETCHER WEBSTER HEADLAND—PETER FORCE BAY—NEW PARTIES—THEIR ORDERS—PROGRESS OF SEASON—THE SEAL—THE NETSIK AND USUK—A BEAR—OUR ENCOUNTER—CHANGE IN THE FLOE.

"MAY 30, Tuesday.—We are gleaning fresh water from the rocks, and the icebergs begin to show commencing streamlets. The great floe is no longer a Sahara, if still a desert. The floes are wet, and their snows dissolve readily under the warmth of the foot, and the old floe begins to shed fresh water into its hollows. Puddles of salt water collect around the ice-foot. It is now hardly recognizable,—rounded, sunken, broken up with water-pools overflowing its base. Its diminished crusts are so percolated by the saline tides, that neither tables nor broken fragments unite any longer by freezing. It is lessening so rapidly that we do not fear it any longer as an enemy to

the brig. The berg indeed vanished long before the sun-thermometers indicated a noon-temperature above 32°.

"The changes of this ice at temperatures far below the freezing-point confirm the views I formed upon my last cruise as to the limited influence of direct thaw. I am convinced that the expansion of the ice after the contraction of low temperatures, and the infiltrative or endosmometric changes thus induced,—the differing temperatures of sea-water and ice, and their chemical relations,—the mechanical action of pressure, collapse, fracture, and disruption,—the effects of sun-heated snow-surfaces, falls of warm snow, currents, wind, drifts, and wave-action,—all these leave the great mass of the Polar ice-surfaces so broken, disintegrated, and reduced, when the extreme cold abates, and so changed in structure and molecular character, that the few weeks of summer thaw have but a subsidiary office to perform in completing their destruction.

"Seal of the Hispid variety, the Netsik of the Esquimaux and Danes, grow still more numerous on the level floes, lying cautiously in the sun beside their *atluks*. By means of the Esquimaux stratagem of a white screen pushed forward on a sledge until the concealed hunter comes within range, Hans has shot four of them. We have more fresh meat than we can eat.



SEAL-SCREEN.

For the past three weeks we have been living on ptarmigan, rabbits, two reindeer, and seal.

SHOOTING SEAL

"They are fast curing our scurvy. With all these resources,—coming to our relief so suddenly too,—how can my thoughts turn despairingly to poor Franklin and his crew?

" . . . . Can they have survived? No man can answer with certainty; but no man without presumption can answer in the negative.

"If, four months ago,—surrounded by darkness and bowed down by disease,—I had been asked the question, I would have turned toward the black hills and the frozen sea, and responded in sympathy with them, 'No.' But with the return of light a savage people come down upon us, destitute of any but the rudest

appliances of the chase, who were fattening on the most wholesome diet of the region, only forty miles from our anchorage, while I was denouncing its scarcity.

"For Franklin, every thing depends upon locality: but, from what I can see of Arctic exploration thus far, it would be hard to find a circle of fifty miles' diameter entirely destitute of animal resources. The most solid winter-ice is open here and there in pools and patches worn by currents and tides. Such were the open spaces that Parry found in Wellington Channel; such are the stream-holes (stromhols) of the Greenland coast, the polynia of the Russians; and such we have ourselves found in the most rigorous cold of all.

"To these spots, the seal, walrus, and the early birds crowd in numbers. One which kept open, as we find from the Esquimaux, at Littleton Island, only forty miles from us, sustained three families last winter until the opening of the north water. Now, if we have been entirely supported for the past three weeks by the hunting of a single man,—seal-meat alone being plentiful enough to subsist us till we turn homeward,—certainly a party of tolerably skilful hunters might lay up an abundant stock for the winter. As it is, we are making caches of meat under the snow, to prevent its spoiling on our hands, in the very spot which a few days ago I described as a Sahara. And, indeed, it was so for nine whole months, when this flood of animal life burst upon us like foun-

tains of water and pastures and date-trees in a southern desert.

"I have undergone one change in opinion. It is of the ability of Europeans or Americans to inure themselves to an ultra-Arctic climate. God forbid, indeed, that civilized man should be exposed for successive years to this blighting darkness! But around the Arctic circle, even as high as 72°, where cold and cold only is to be encountered, men may be acclimatized, for there is light enough for out-door labor.

"Of the one hundred and thirty-six picked men of Sir John Franklin in 1846, Northern Orkney men, Greenland whalers, so many young and hardy constitutions, with so much intelligent experience to guide them, I cannot realize that some may not yet be alive; that some small squad or squads, aided or not aided by the Esquimaux of the expedition, may not have found a hunting-ground, and laid up from summer to summer enough of fuel and food and seal-skins to brave three or even four more winters in succession.

"I speak of the miracle of this bountiful fair season. I could hardly have been much more surprised if these black rocks, instead of sending out upon our solitude the late inroad of yelling Esquimaux, had sent us naturalized Saxons. Two of our party at first fancied they were such.

"The mysterious compensations by which we adapt ourselves to climate are more striking here than in the tropics. In the Polar zone the assault is immediate and sudden, and, unlike the insidious fatality of hot

countries, produces its results rapidly. It requires hardly a single winter to tell who are to be the heat-making and acclimatized men. Petersen, for instance, who has resided for two years at Upernavik, seldom enters a room with a fire. Another of our party, George Riley, with a vigorous constitution, established habits of free exposure, and active cheerful temperament, has so inured himself to the cold, that he sleeps on our sledge-journeys without a blanket or any other covering than his walking-suit, while the outside temperature is 30° below zero. The half-breeds of the coast rival the Esquimaux in their powers of endurance.

"There must be many such men with Franklin. The North British sailors of the Greenland seal and whale fisheries I look upon as inferior to none in capacity to resist the Arctic climates.

"My mind never realizes the complete catastrophe, the destruction of all Franklin's crews. I picture them to myself broken into detachments, and my mind fixes itself on one little group of some thirty, who have found the open spot of some tidal eddy, and under the teachings of an Esquimaux or perhaps one of their own Greenland whalers, have set bravely to work, and trapped the fox, speared the bear, and killed the seal and walrus and whale. I think of them ever with hope. I sicken not to be able to reach them.

"It is a year ago to-day since we left New York. I am not as sanguine as I was then: time and experience have chastened me. There is every thing about me to check enthusiasm and moderate hope. I am here in

forced inaction, a broken-down man, oppressed by cares, with many dangers before me, and still under the shadow of a hard wearing winter, which has crushed two of my best associates. Here on the spot, after two unavailing expeditions of search, I hold my opinions unchanged; and I record them as a matter of duty upon a manuscript which may speak the truth when I can do so no longer.

"June 1, Thursday.—At ten o'clock this morning the wail of the dogs outside announced the return of Dr. Hayes and William Godfrey. Both of them were completely snow-blind, and the doctor had to be led to my bedside to make his report. In fact, so exhausted was he, that in spite of my anxiety I forbore to question him until he had rested. I venture to say, that both he and his companion well remember their astonishing performance over stewed apples and seal-meat.

"The dogs were not so foot-sore as might have been expected; but two of them, including poor little 'Jenny,' were completely knocked up. All attention was bestowed upon these indispensable essentials of Arctic search, and soon they were more happy than their masters."

Dr. Hayes's Journey.

Dr. Hayes made a due north line on leaving the brig; but, encountering the "squeezed ices" of my own party in March, he wisely worked to the eastward. I had advised him to descend to Smith's Sound, under a conviction that the icebergs there would be less numerous,

and that the diminished distance from land to land would make his transit more easy. But he managed to effect the object by a less circuitous route than I had anticipated; for, although he made but fifteen miles on the 20th, he emerged the next day from the heavy ice, and made at least fifty. On this day his meridian observation gave the latitude of 79° 8′ 6″, and from a large berg he sighted many points of the coast.

On the 22d, he encountered a wall of hummocks, exceeding twenty feet in height, and extending in a long line to the northeast.

After vain attempts to force them, becoming embarrassed in fragmentary ice, worn, to use his own words, into "deep pits and valleys," he was obliged to camp, surrounded by masses of the wildest character, some of them thirty feet in height.

The next three days were spent in struggles through this broken plain; fogs sometimes embarrassed them, but at intervals land could be seen to the northwest. On the 27th, they reached the north side of the bay, passing over but few miles of new and unbroken floe.

The excessively broken and rugged character of this ice they had encountered must be due to the discharges from the Great Glacier of Humboldt, which arrest the floes and make them liable to excessive disruption under the influence of winds and currents.

Dr. Hayes told me, that in many places they could not have advanced a step but for the dogs. Deep cavities filled with snow intervened between lines of ice-barricades, making their travel as slow and tedious

as the same obstructions had done to the party of poor Brooks before their eventful rescue last March.

Their course was now extremely tortuous; for, although from the headlands of Rensselaer Harbor to the point which they first reached on the northern coast

DOGS AMONG BERGS.

was not more than ninety miles as the crow flies, yet by the dead reckoning of the party they must have had an actual travel of two hundred and seventy.

I omit the interesting details of this passage as reported to me by Dr. Hayes. His gravest and most insurmountable difficulty was snow-blindness, which so affected him that for some time he was not

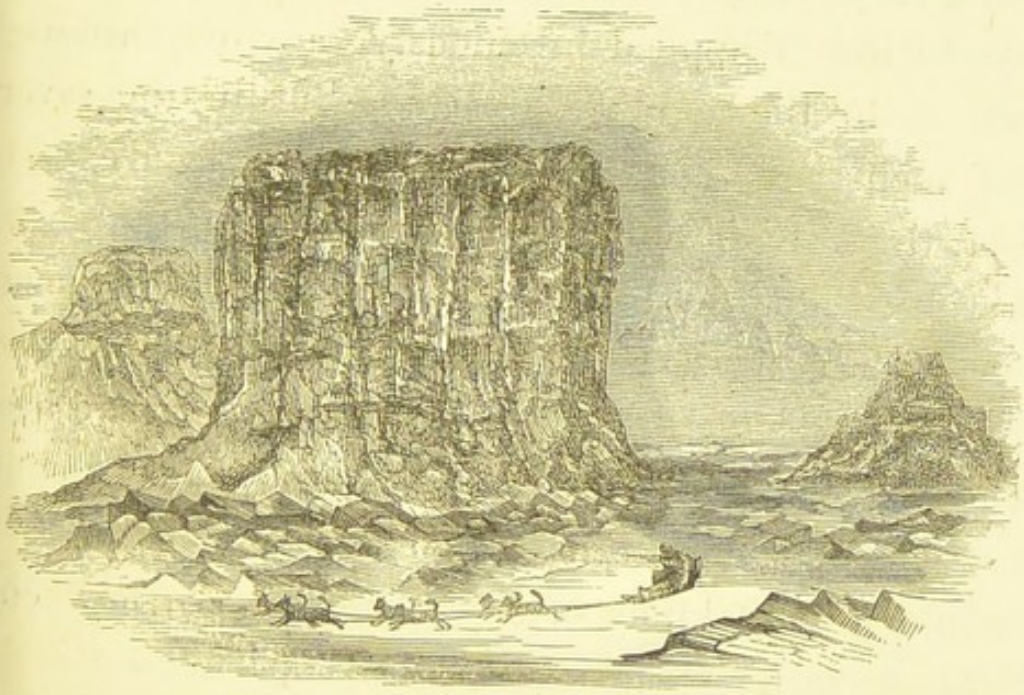
able to use the sextant. His journal-entry referring to the 23d, while tangled in the ice, says, "I was so snow-blind that I could not see; and as riding, owing to the jaded condition of the dogs, was seldom possible, we were obliged to lay to."

It was not until the 25th that their eyesight was sufficiently restored to enable them to push on. In these devious and untrodden ice-fields, even the instinct of the dogs would have been of little avail to direct their course. It was well for the party that during this compulsory halt the temperatures were mild and endurable. From their station of the 25th, they obtained reliable sights of the coast, trending to the northward and eastward, and a reliable determination of latitude, in 79° 24′ 4″. A fine headland, bearing nearly due northwest, I named Cape Hayes, in commemoration of the gentleman who discovered it.

Instead, however, of making for the land, which could not have aided their survey, they followed the outer ice, at the same time edging in toward a lofty bluff whose position they had determined by intersection. They hoped here to effect a landing, but encountered a fresh zone of broken ice in the attempt. The hummocks could not be turned. The sledge had to be lifted over them by main strength, and it required the most painful efforts of the whole party to liberate it from the snow between them.

On the 26th, disasters accumulated. William Godfrey, one of the sturdiest travellers, broke down; and

the dogs, the indispensable reliance of the party, were in bad working trim. The rude harness, always apt to become tangled and broken, had been mended so often and with such imperfect means as to be scarcely serviceable.



CAPE HAYES.

This evil would seem the annoyance of an hour to the travellers in a stage-coach, but to a sledge-party on the ice-waste it is the gravest that can be conceived. The Esquimaux dog, as I before mentioned, is driven by a single trace, a long thin thong of seal or walrus-hide, which passes from his chest over his haunches to the sledge. The team is always driven abreast, and the traces are of course tangling and

twisting themselves up incessantly, as the half-wild or terrified brutes bound right or left from their prescribed positions. The consequence is, that the seven or nine or fourteen lines have a marvellous aptitude at knotting themselves up beyond the reach of skill and patience. If the weather is warm enough to thaw the snow, they become utterly soft and flaccid, and the naked hand, if applied ingeniously, may dispense with a resort to the Gordian process. But in the severe cold, such as I experienced in my winter journeys of 1854, the knife is often the only appliance; an unsafe one if invoked too often, for every new attachment shortens your harness, and you may end by drawing your dogs so close that they cannot pull. I have been obliged to halt and camp on the open floe, till I could renew enough of warmth and energy and patience to disentangle the knots of my harness. Oh, how charitably have I remembered Doctor Slop!

It was only after appropriating an undue share of his seal-skin breeches that the leader of the party succeeded in patching up his mutilated dog-lines. He was rewarded, however, for he shortly after found an old floe, over which his sledge passed happily to the north coast. It was the first time that any of our parties had succeeded in penetrating the area to the north. The ice had baffled three organized foot-parties. It could certainly never have been traversed without the aid of dogs; but it is equally certain that the effort must again have failed, even with their aid, but for the energy and determination of Dr. Hayes,

and the endurance of his partner, William Godfrey. The latitude by observation was 79° 45′ N., the longitude 69° 12′ W. The coast here trended more to the westward than it had done. It was sighted for thirty miles to the northward and eastward. This was the culminating point of his survey, beyond which his observations did not extend. Two large headlands, Capes Joseph Leidy and John Frazer, indicate it.

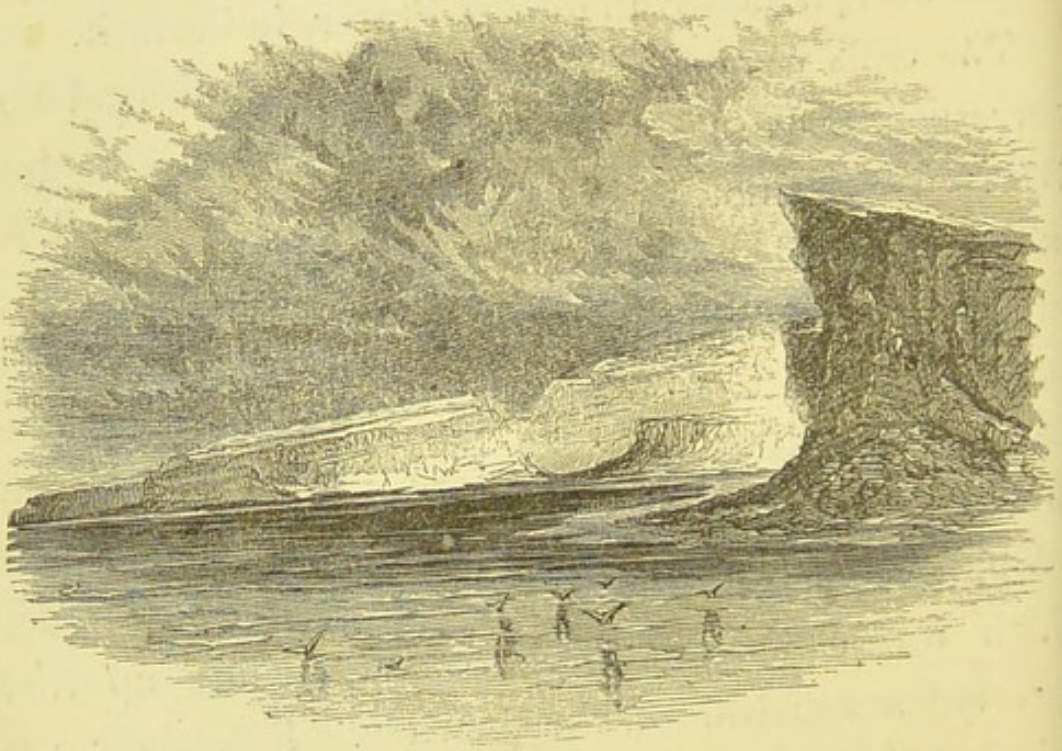
The cliffs were of mingled limestone and sandstone, corresponding to those on the southern side of Peabody Bay. To the north they exceeded two thousand feet in height, while to the southward they diminished to twelve hundred. The ice-foot varied from fifty to one hundred and fifty feet in width, and stood out against the dark debris thrown down by the cliffs in a clean naked shelf of dazzling white.

The party spent the 28th in mending the sledge, which was completely broken, and feeding up their dogs for a renewal of the journey. But, their provisions being limited, Dr. Hayes did not deem himself justified in continuing to the north. He determined to follow and survey the coast toward Cape Sabine.

His pemmican was reduced to eighteen pounds; there was apparently no hope of deriving resources from the hunt; and the coasts were even more covered with snow than those he had left on the southern side. His return was a thing of necessity.

The course of the party to the westward along the land-ice was interrupted by a large indentation, which

they had seen and charted while approaching the coast. It is the same which I surveyed in April, 1855, and which now bears the name of the Secretary of the Navy, Mr. Dobbin. A sketch which I made of it gives an idea of the appearance of the bay and

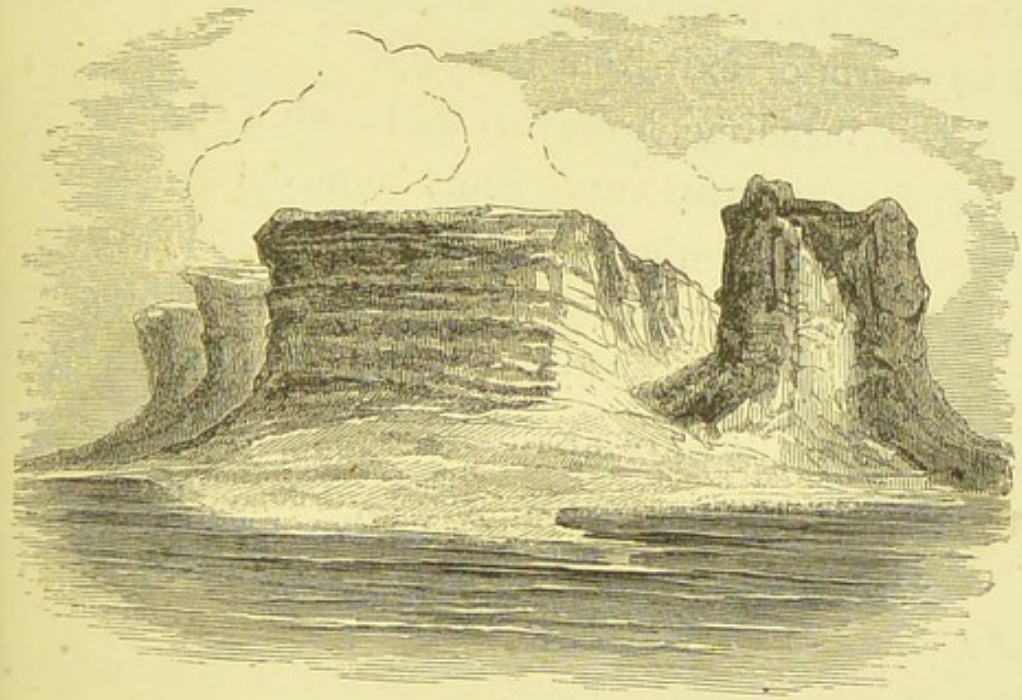


DOBBIN BAY.

of two islands which Dr. Hayes discovered near its entrance. He saw also on its southwestern side a lofty pyramid, truncated at its summit, which corresponded both in its bearings and position with the survey of my April journey. I append a sketch of this interesting landmark.*

The latter portion of Dr. Hayes's journey was ful

of incident. The land-ice was travelled for a while at the rate of five or six miles an hour; but, after crossing Dobbin Bay, the snows were an unexpected impediment, and the ice-foot was so clogged that they made but fifteen miles from camp to camp on the floes. After



FLETCHER WEBSTER HEADLAND.

fixing the position of Cape Sabine, and connecting it with the newly-discovered coast-line to the north and east, he prepared to cross the bay farther to the south.

Most providentially they found this passage free from bergs; but their provisions were nearly gone, and their dogs were exhausted. They threw away their sleeping-bags, which were of reindeer-skin and weighed

about twelve pounds each, and abandoned besides clothing enough to make up a reduction in weight of nearly fifty pounds. With their load so lightened, they were enabled to make good the crossing of the bay. They landed at Peter Force Bay, and reached the brig on the 1st of June.

This journey connected the northern coast with the survey of my predecessor; but it disclosed no channel or any form of exit from this bay.

It convinced me, however, that such a channel must exist; for this great curve could be no cul-de-sac. Even were my observations since my first fall journey of September, 1853, not decisive on this head, the general movement of the icebergs, the character of the tides, and the equally sure analogies of physical geography, would point unmistakably to such a conclusion.

To verify it, I at once commenced the organization of a double party. This, which is called in my Report the Northeast Party, was to be assisted by dogs, but was to be subsisted as far as the Great Glacier by provisions carried by a foot-party in advance.

For the continuation of my plans I again refer to my journal.

"June 2, Friday.—There is still this hundred miles wanting to the northwest to complete our entire circuit of this frozen water. This is to be the field for our next party. I am at some loss how to organize it; for myself, I am down with scurvy. Dr. Hayes is just from the field, worn out and snow-blind. His health roll makes a sorry parade. It runs thus:—

Officers.

MR. BROOKS.....Unhealed stump.
MR. WILSON ..... do.
MR. SONTAG.....Down with scurvy.
MR. BONSALL.....Scurvy knee, but mending.
MR. PETERSEN ....General scurvy.
MR. GOODFELLOW.....Scurvy.
MR. OHLSEN.....Well.
MR McGARY.....Well.

Crew.

WILLIAM MORTON .....Nearly recovered.
THOMAS HICKEY.....Well.
GEORGE WHIPPLE.....Scurvy.
JOHN BLAKE.....Scurvy.
HANS CHRISTIAN.....Well.
GEORGE RILEY ....Sound.
GEORGE STEPHENSON.....Scurvy from last journey.
WILLIAM GODFREY.....Snow-blind.

"June 3, Saturday.—McGary, Bonsall, Hickey, and Riley were detailed for the first section of the new parties: they will be accompanied by Morton, who has orders to keep himself as fresh as possible, so as to enter on his own line of search to the greatest possible advantage. I keep Hans a while to recruit the dogs, and do the hunting and locomotion generally for the rest of us; but I shall soon let him follow, unless things grow so much worse on board as to make it impossible.

"They start light, with a large thirteen-feet sledge, arranged with broad runners on account of the snow, and are to pursue my own last track, feeding at the caches which I deposited, and aiming directly for the glacier-barrier on the Greenland side. Here, sustained

as I hope by the remnants of the great cache of last fall, they will survey and attempt to scale the ice, to look into the interior of the great *mer de glace*.

"My notion is, that the drift to the southward both of berg and floe, not being reinforced from the glacier, may leave an interval of smooth frozen ice; but, if this route should fail, there ought still to be a chance by sheering to the southward and westward and looking out for openings among the hummocks.

"I am intensely anxious that this party should succeed: it is my last throw. They have all my views, and I believe they will carry them out unless overruled by a higher Power.

"Their orders are, to carry the sledge forward as far as the base of the Great Glacier, and fill up their provisions from the cache of my own party of last May. Hans will then join them with the dogs; and, while McGary and three men attempt to scale and survey the glacier, Morton and Hans will push to the north across the bay with the dog-sledge, and advance along the more distant coast. Both divisions are provided with clampers, to steady them and their sledges on the irregular ice-surfaces; but I am not without apprehensions that, with all their efforts, the glacier cannot be surmounted.

"In this event, the main reliance must be on Mr. Morton: he takes with him a sextant, artificial horizon, and pocket chronometer, and has intelligence, courage, and the spirit of endurance, in full measure. He is withal a long-tried and trustworthy follower.

"June 5, Monday.—The last party are off: they left yesterday at 2 P. M. I can do nothing more but await the ice-changes that are to determine for us our liberation or continued imprisonment.

"The sun is shining bravely, and the temperature feels like a home summer.

"A *Sanderling*, the second migratory land-bird we have seen, came to our brig to-day,—and is now a specimen.

"June 6, Tuesday.—We are a parcel of sick men, affecting to keep ship till our comrades get back. Except Mr. Ohlsen and George Whipple, there is not a sound man among us. Thus wearily in our Castle of Indolence, for 'labor dire it was, and weary woe,' we have been watching the changing days, and noting bird and insect and vegetable, as it tells us of the coming summer. One fly buzzed around William Godfrey's head to-day,—he could not tell what the species was; and Mr. Petersen brought in a cocoon from which the grub had eaten its way to liberty. Hans gives us a seal almost daily, and for a passing luxury we have ptarmigan and hare. The little snow-birds have crowded to Butler Island, and their songs penetrate the cracks of our rude housing. Another snipe too was mercilessly shot the very day of his arrival.

"The andromeda shows green under its rusty winter-dried stems; the willows are sappy and puffing, their catskins of last year dropping off. Draba, lichens, and stellaria, can be detected by an eye accustomed to this dormant vegetation, and the stonecrops are really

green and juicy in their centres: all this under the snow. So we have assurance that summer is coming; though our tide-hole freezes every night alongside, and the ice-floe seems to be as fast as ever.

"June 8, Thursday.—Hans brings us in to-day a couple of seal: all of them as yet are of the Rough or Hispid species. The flesh of this seal is eaten universally by the Danes of Greenland, and is almost the staple diet of the Esquimaux. When raw, it has a flabby look, more like coagulated blood than muscular fibre: cooking gives it a dark soot-color. It is close-grained, but soft and tender, with a flavor of lamp-oil—a mere *soupçon*, however, for the blubber, when fresh, is at this season sweet and delicious.

"The seal are shot lying by their *atluk* or breathing-holes. As the season draws near midsummer, they are more approachable; their eyes being so congested by the glare of the sun that they are sometimes nearly blind. Strange to say, a few hours' exposure of a recently-killed animal to the sun blisters and destroys the hide; or, as the sealers say, cooks it. We have lost several skins in this way. Each seal yields a liberal supply of oil, the average thus far being five gallons each."

Besides the Hispid seal, the only species which visited Rensselaer Harbor was the *Phoca barbata*, the large bearded seal, or *usuk* of the Esquimaux. I have measured these ten feet in length and eight in circumference, of such unwieldy bulk as not unfrequently to be mistaken for the walrus.

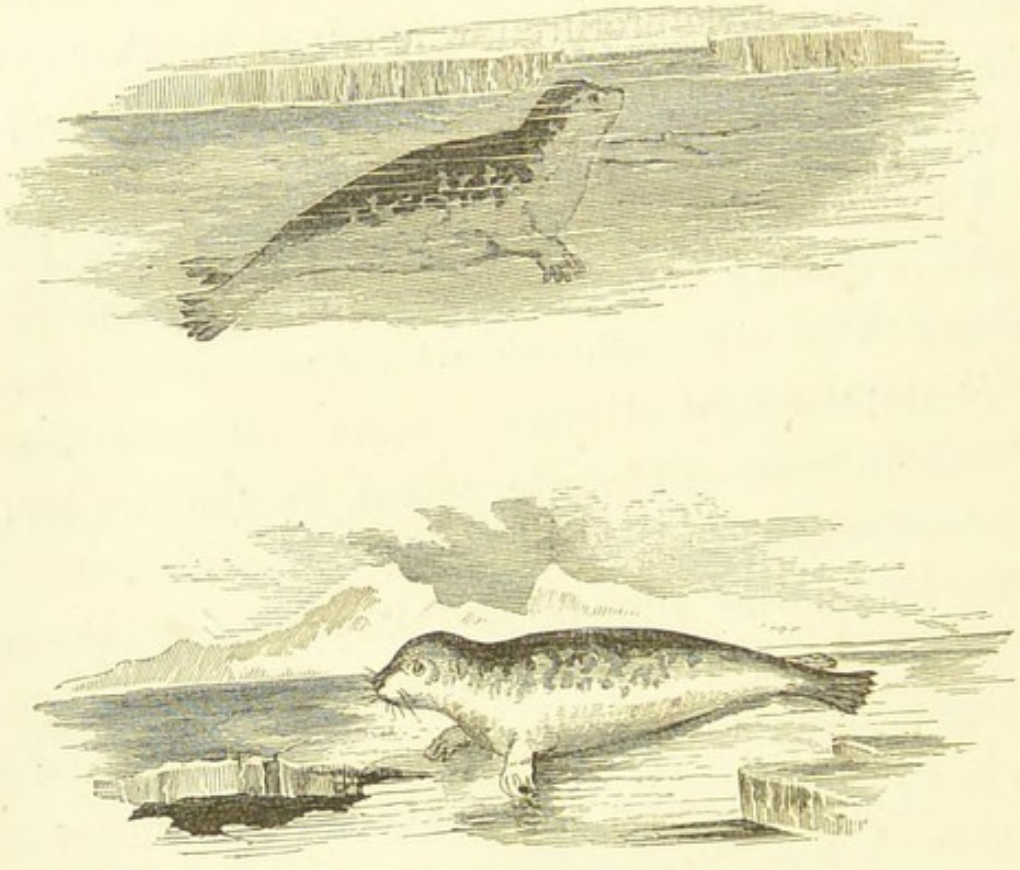
The Netsik will not perforate ice of more than one season's growth, and are looked for, therefore, where there was open water the previous year. But the bearded seals have no *atluk*. They depend for respiration upon the accidental chasms in the ice, and are found wherever the bergs or floes have been in motion. They are thus more diffused in their range than their sun-basking little brethren, who crowd together in communities, and in some places absolutely throng the level ices.

The *Usuk* appears a little later than the *Netsik*, and his coming is looked for anxiously by the Esquimaux. The lines, *atlunak*, which are made from his skin, are the lightest and strongest and most durable of any in use. They are prized by the hunters in their contests with the walrus.

To obtain the atlunak in full perfection, the animal is skinned in a spiral, so as to give a continuous coil from head to tail. This is carefully chewed by the teeth of the matrons, and, after being well greased with the burnt oil of their lamps, is hung up in their huts to season. At the time referred to in my journal, Anoatok was completely festooned with them.

On one occasion, while working my way toward the Esquimaux huts, I saw a large *Usuk* basking asleep upon the ice. Taking off my shoes, I commenced a somewhat refrigerating process of stalking, lying upon my belly, and crawling along step by step behind the little knobs of floe. At last, when I was within long rifle-shot, the animal gave a sluggish roll to one side,

and suddenly lifted his head. The movement was evidently independent of me, for he strained his neck in nearly the opposite direction. Then, for the first time, I found that I had a rival seal-hunter in a large bear, who was, on his belly like myself, waiting with



THE ATLUK, OR SEAL-HOLE.

commendable patience and cold feet for a chance of nearer approach.

What should I do?—the bear was doubtless worth more to me than the seal: but the seal was now within shot, and the bear "a bird in the bush." Besides, my bullet once invested in the seal would leave me defenceless. I might be giving a dinner to the bear

and saving myself for his dessert. These meditations were soon brought to a close; for a second movement of the seal so aroused my hunter's instincts that I pulled the trigger. My cap alone exploded. Instantly, with a floundering splash, the seal descended into the deep, and the bear, with three or four rapid leaps, stood disconsolately by the place of his descent. For a single moment we stared each other in the face, and then, with that discretion which is the better part of valor, the bear ran off in one direction, and I followed his example in the other.

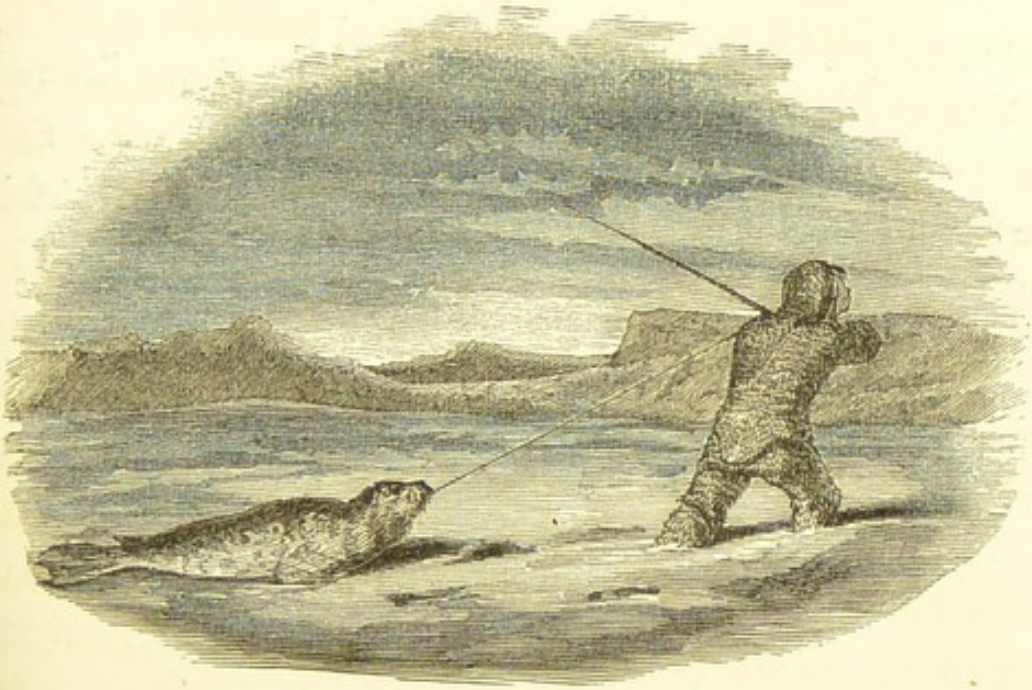
The generally-received idea of the Polar bear battling with the walrus meets little favor among the Esquimaux of Smith's Straits. My own experience is directly adverse to the truth of the story. The walrus is never out of reach of water, and, in his peculiar element, is without a rival. I have seen the bear follow the ussuk by diving; but the tough hide and great power of the walrus forbid such an attack.

"June 9, Friday.—To-day I was able to walk out upon the floe for the first time. My steps were turned to the observatory, where, close beside the coffins of Baker and Schubert, Sontag was at work with the unifilar, correcting the winter disturbances. Our local deviation seems to have corrected itself: the iron in our comfortless little cell seems to have been so distributed that our results were not affected by it.

"I was very much struck by the condition of the

floe-ice. Hitherto I have been dependent upon the accounts of my messmates, and believed that the work of thaw was going on with extreme rapidity. They are mistaken: we have a late season. The ice-foot has not materially changed either in breadth or level, and its base has been hardly affected at all, except by the overflow of the tides. The floe, though undergoing the ordinary molecular changes which accompany elevation of temperature, shows less surface-change than the Lancaster Sound ices in early May. All this, but especially the condition of the ice-foot, warns me to prepare for the contingency of not escaping. It is a momentous warning. We have no coal for a second winter here; our stock of fresh provisions is utterly exhausted; and our sick need change, as essential to their recovery.

"The willows are tolerably forward on Butler Island. Poor, stunted crawlers, they show their expanded leaflets against the gray rocks. Among these was the Bear berry, (*S. uva ursi:*) knowing its reputation with the Esquimaux to the south as a remedy for scurvy, I gleaned leaves enough for a few scanty mouthfuls. The lichens are very conspicuous; but the mosses and grasses and heaths have not yet made their appearance in the little valley between the rocks."



DRAGGING SEAL

CHAPTER XXI.

PROGRESS OF SEASON — PLANTS IN WINTER — BIRDS RETURNING — COCHLEARIA — THE PLANTS.

"JUNE 10, Saturday.—Hans was ordered yesterday to hunt in the direction of the Esquimaux huts, in the hope of determining the position of the open water. He did not return last night; but Dr. Hayes and Mr. Ohlsen, who were sent after him this morning with the dog-sledge, found the hardy savage fast asleep not

five miles from the brig. Alongside of him was a large usuk or bearded seal, (*P. barbata*,) shot, as usual, in the head. He had dragged it for seven hours over the ice-foot. The dogs having now recruited, he started light to join Morton at the glacier.

"June 11, Sunday.—Another walk on shore showed me the andromeda in flower, and the saxifrages and carices green under the dried tufts of last year. This rapidly-maturing vegetation is of curious interest. The andromeda tetragona had advanced rapidly toward fructification without a corresponding development of either stalk or leaflet. In fact, all the heaths—and there were three species around our harbor—had a thoroughly moorland and stunted aspect. Instead of the graceful growth which should characterize them, they showed only a low scrubby sod or turf, yet studded with flowers. The spots from which I gathered them were well infiltrated with melted snows, and the rocks enclosed them so as to aid the solar heat by reverberation. Here, too, silene and cerastium, as well as the characteristic flower-growths of the later summer, the poppy, and sorrel, and saxifrages, were already recognisable.

"Few of us at home can realize the protecting value of this warm coverlet of snow. No eider-down in the cradle of an infant is tucked in more kindly than the sleeping-dress of winter about this feeble flower-life. The first warm snows of August and September falling on a thickly-pleached carpet of grasses, heaths, and willows, enshrine the flowery growths which nestle

round them in a non-conducting air-chamber; and, as each successive snow increases the thickness of the cover, we have, before the intense cold of winter sets in, a light cellular bed covered by drift, six, eight, or ten feet deep, in which the plant retains its vitality. The frozen subsoil does not encroach upon this narrow zone of vegetation. I have found in midwinter, in this high latitude of 78° 50′, the surface so nearly moist as to be friable to the touch; and upon the ice-floes, commencing with a surface-temperature of —30°, I found at two feet deep a temperature of —8°, at four feet +2°, and at eight feet +26°. This was on the largest of a range of east and west hummock-drifts in the open way off Cape Stafford. The glacier which we became so familiar with afterward at Etah yields an uninterrupted stream throughout the year.

"My experiments prove that the conducting power of the snow is proportioned to its compression by winds, rains, drifts, and congelation. The early spring and late fall and summer snows are more cellular and less condensed than the nearly impalpable powder of winter. The drifts, therefore, that accumulate during nine months of the year, are dispersed in well-defined layers of differing density. We have first the warm cellular snows of fall which surround the plant, next the fine impacted snow-dust of winter, and above these the later humid deposits of the spring.

"It is interesting to observe the effects of this disposition of layers upon the safety of the vegetable growths below them. These, at least in the earlier summer,

occupy the inclined slopes that face the sun, and the several strata of snow take of course the same inclination. The consequence is that as the upper snow is dissipated by the early thawings, and sinks upon the more compact layer below, it is to a great extent arrested, and runs off like rain from a slope of clay. The plant reposes thus in its cellular bed, guarded from the rush of waters, and protected too from the nightly frosts by the icy roof above it.

"June 16, Friday.—Two long-tailed ducks (*Harelda glacialis*) visited us, evidently seeking their breeding-grounds. They are beautiful birds, either at rest or on the wing. We now have the snow-birds, the snipe, the burgomaster gull, and the long-tailed duck, enlivening our solitude; but the snow-birds are the only ones in numbers, crowding our rocky islands, and making our sunny night-time musical with home-remembered songs. Of each of the others we have but a solitary pair, who seem to have left their fellows for this far northern mating-ground in order to live unmolested. I long for specimens; but they shall not be fired at.

The ptarmigan show a singular backwardness in assuming the summer feathering. The male is still entirely white; except, in some specimens, a few brown feathers on the crown of the head. The female has made more progress, and is now well coated with her new plumage, the coverts and quill-feathers still remaining white. At Upernavik, in lat. 73°, they are already in full summer costume.

"June 18, Sunday.—Another pair of long-tailed

ducks passed over our bay, bound for farther breeding-grounds; we saw also an ivory-gull and two great northern divers, (*Colymbus glacialis*,) the most imposing birds of their tribe. These last flew very high, emitting at regular intervals their reed-like 'kawk.'

"Mr. Ohlsen and Dr. Hayes are off on an overland tramp. I sent them to inspect the open water to the southward. The immovable state of the ice-foot gives me anxiety: last year, a large bay above us was closed all summer; and the land-ice, as we find it here, is as perennial as the glacier.

"June 20, Tuesday.—This morning, to my great surprise, Petersen brought me quite a handful of scurvy-grass, (*C. fenestrata.*) In my fall list of the stinted flora here, it had quite escaped my notice. I felt grateful to him for his kindness, and, without the affectation of offering it to any one else, ate it at once. Each plant stood about one inch high, the miniature leaves expanding throughout a little radius of hardly one inch more. Yet, dwarfed as it was, the fructifying process was nearly perfected; the buds already expanding and nearly ready to burst. We found cochlearia afterward at Littleton Island, but never in any quantity north of Cape Alexander. Although the melted snows distil freely over the darker rocks, (porphyries and greenstones,) it is a rare exception to note any vegetable discoloration of the surface beneath. There are few signs of those confervaceous growths which are universal as high as Upernavik. The nature of this narrative does not permit me to indulge in matters unconnected with my

story: I cite these in passing as among the indications of our high northern latitude.

"June 21, Wednesday.—A snow, moist and flaky, melting upon our decks, and cleaning up the dingy surface of the great ice-plain with a new garment. We are at the summer solstice, the day of greatest solar light! Would that the traditionally-verified but meteorologically-disproved equinoctial storm could break upon us, to destroy the tenacious floes!

"June 22, Thursday.—The ice changes slowly, but the progress of vegetation is excessively rapid. The growth on the rocky group near our brig is surprising.

"June 23, Friday.—The eiders have come back: a pair were seen in the morning, soon followed by four ducks and drakes. The poor things seemed to be seeking breeding-grounds, but the ice must have scared them. They were flying southward.

"June 25, Sunday.—Walked on shore and watched the changes: andromeda in flower, poppy and ranunculus the same: saw two snipe and some tern.

"Mr. Ohlsen returned from a walk with Mr. Petersen. They saw reindeer, and brought back a noble specimen of the king duck. It was a solitary male, resplendent with the orange, black, and green of his head and neck.

"Stephenson is better; and I think that a marked improvement, although a slow one, shows itself in all of us. I work the men lightly, and allow plenty of basking in the sun. In the afternoon we walk on shore, to eat such succulent plants as we can find ami

the snow. The pyrola I have not found, nor the cochlearia, save in one spot, and then dwarfed. But we have the lychnis, the young sorrel, the andromeda, the draba, and the willow-bark; this last an excellent tonic, and, in common with all the Arctic vegetable astringents, I think, powerfully antiscorbutic."

CHAPTER XXII.

MR. BONSALL'S RETURN — HIS STORY — THE BEAR IN CAMP — HIS FATE — BEARS AT SPORT — THE THAWS.

"June 27, Tuesday.—McGary and Bonsall are back with Hickey and Riley. They arrived last evening: all well, except that the snow has affected their eyesight badly, owing to the scorbutic condition of their systems. Mr. McGary is entirely blind, and I fear will be found slow to cure. They have done admirably. They bring back a continued series of observations, perfectly well kept up, for the further authentication of our survey. They had a good chronometer, artificial horizon, and sextant, and their results correspond entirely with those of Mr. Sontag and myself. They are connected too with the station at Chimney Rock, Cape Thackeray, which we have established by theodolite. I may be satisfied now with our projection of the Greenland coast. The different localities to the south have been referred to the position of our winter

harbor, and this has been definitely fixed by the labors of Mr. Sontag, our astronomer. We have therefore not only a reliable base, but a set of primary triangulations which, though limited, may support the minor field-work of our sextants.

Journey of Messrs. McGary and Bonsall.

"They left the brig on the 3d, and reached the Great Glacier on the 15th, after only twelve days of travel. They showed great judgment in passing the bays; and, although impeded by the heavy snows, would have been able to remain much longer in the field, but for the destruction of our provision-depôts by the bears.

"I am convinced, however, that no efforts of theirs could have scaled the Great Glacier; so that the loss of our provisions, though certainly a very serious mishap, cannot be said to have caused their failure. They were well provided with pointed staves, foot-clampers, and other apparatus for climbing ice; but, from all they tell me, any attempt to scale this stupendous glacial mass would have been madness, and I am truly glad that they desisted from it before fatal accident befell them.

"Mr. Bonsall is making out his report of the daily operations of this party. It seems that the same heavy snow which had so much interfered with my travel in April and May still proved their greatest drawback. It was accumulated particularly between the headlands

of the bays; and, as it was already affected by the warm sun, it called for great care in crossing it. They encountered drifts which were altogether impenetrable, and in such cases could only advance by long circuits, after reconnoitring from the top of icebergs.

"I have tried in vain to find out some good general rule, when traversing the ice near the coast, to avoid the accumulation of snows and hummock-ridges. It appears that the direct line between headland and headland or cape and cape is nearly always obstructed by broken ice; while in the deep recesses the grounded ice is even worse. I prefer a track across the middle of the bay, outside of the grounded ices and inside of the hummock-ridges; unless, as sometimes happens, the late fall-ice is to be found extending in level flats outside.

"This is evidently the season when the bears are in most abundance. Their tracks were everywhere, both on shore and upon the floes. One of them had the audacity to attempt intruding itself upon the party during one of their halts upon the ice; and Bonsall tells a good story of the manner in which they received and returned his salutations. It was about half an hour after midnight, and they were all sleeping away a long day's fatigue, when McGary either heard or felt, he could hardly tell which, something that was scratching at the snow immediately by his head. It waked him just enough to allow him to recognise a huge animal actively engaged in reconnoitring the circuit of the tent. His startled outcry aroused his companion-

inmates, but without in any degree disturbing the unwelcome visitor; specially unwelcome at that time and place, for all the guns had been left on the sledge, a little distance off, and there was not so much as a walking-pole inside. There was of course something

THE BEAR IN CAMP.

of natural confusion in the little council of war. The first impulse was to make a rush for the arms; but this was soon decided to be very doubtfully practicable, if at all, for the bear, having satisfied himself with his observations of the exterior, now presented himself at the tent-opening. Sundry volleys of lucifer matches and some impromptu torches of newspaper were fired

without alarming him, and, after a little while, he planted himself at the doorway and began making his supper upon the carcass of a seal which had been shot the day before.

"Tom Hickey was the first to bethink him of the military device of a sortie from the postern, and, cutting a hole with his knife, crawled out at the rear of the tent. Here he extricated a boat-hook, that formed one of the supporters of the ridge-pole, and made it the instrument of a right valorous attack. A blow well administered on the nose caused the animal to retreat for the moment a few paces beyond the sledge, and Tom, calculating his distance nicely, sprang forward, seized a rifle, and fell back in safety upon his comrades. In a few seconds more, Mr. Bonsall had sent a ball through and through the body of his enemy. I was assured that after this adventure the party adhered to the custom I had enjoined, of keeping at all times a watch and fire-arms inside the camping-tent.

"The final cache, which I relied so much upon, was entirely destroyed. It had been built with extreme care, of rocks which had been assembled by very heavy labor, and adjusted with much aid often from capstan-bars as levers. The entire construction was, so far as our means permitted, most effective and resisting. Yet these tigers of the ice seemed to have scarcely encountered an obstacle. Not a morsel of pemmican remained except in the iron cases, which, being round with conical ends, defied both claws and teeth. They had rolled and pawed them in every direction, tossing

them about like footballs, although over eighty pounds in weight. An alcohol-case, strongly iron-bound, was dashed into small fragments, and a tin can of liquor mashed and twisted almost into a ball. The claws of

THE CACHE DESTROYED.

the beast had perforated the metal, and torn it up as with a cold chisel.

"They were too dainty for salt meats: ground coffee they had an evident relish for: old canvas was a favorite for some reason or other; even our flag, which had been reared 'to take possession' of the waste, was gnawed down to the very staff. They had made a regular frolic of it; rolling our bread-barrels over the

ice-foot and into the broken outside ice; and, unable to masticate our heavy India-rubber cloth, they had tied it up in unimaginable hard knots.

"McGary describes the whole area around the cache as marked by the well-worn paths of these animals; and an adjacent slope of ice-covered rock, with an angle of 45°, was so worn and covered with their hair, as to suggest the idea that they had been amusing themselves by sliding down it on their haunches. A performance, by-the-way, in which I afterward caught them myself.

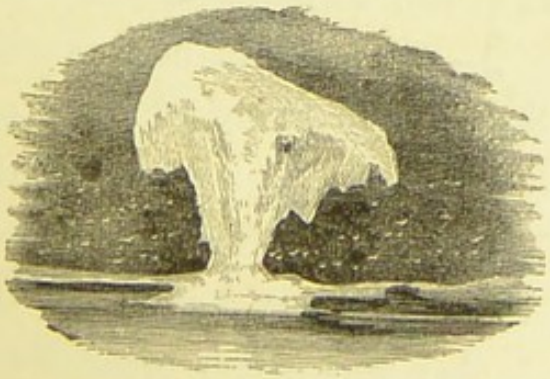
"June 28, Wednesday.—Hans came up with the party on the 17th. Morton and he are still out. They took a day's rest; and then, 'following the old tracks,' as McGary reports, 'till they were clear of the cracks near the islands, pushed northward at double-quick time. When last seen, they were both of them walking, for the snow was too soft and deep for them to ride with their heavy load.' Fine weather, but the ice yields reluctantly."

While thus watching the indications of advancing summer, my mind turned anxiously to the continued absence of Morton and Hans. We were already beyond the season when travel upon the ice was considered practicable by our English predecessors in Wellington Channel, and, in spite of the continued solidity around us, it was unsafe to presume too much upon our high northern position.

The ice, although seemingly as unbroken as ever, was no longer fit for dog-travel; the floes were covered

with water-pools, many of which could not be forded by our team; and, as these multiplied with the rapidly-advancing thaws, they united one with another, chequering the level waste with an interminable repetition of confluent lakes. These were both embarrassing and dangerous. Our little brig was already so thawed out where her sides came in contact with her icy cradle as to make it dangerous to descend without a gangway, and our hunting parties came back wet to the skin.

It was, therefore, with no slight joy that on the evening of the 10th, while walking with Mr. Bonsall, a distant sound of dogs caught my ear. These faithful servants generally bayed their full-mouthed welcome from afar off, but they always dashed in with a wild speed which made their outcry a direct precursor of their arrival. Not so these well-worn travellers. Hans and Morton staggered beside the limping dogs, and poor Jenny was riding as a passenger upon the sledge. It was many hours before they shared the rest and comfort of our ship.



CHAPTER XXIII.

MORTON'S RETURN — HIS NARRATIVE — PEABODY BAY — THROUGH THE BERGS — BRIDGING THE CHASMS — THE WEST LAND — THE DOGS IN FRIGHT — OPEN WATER — THE ICE-FOOT — THE POLAR TIDES — CAPES JACKSON AND MORRIS — THE CHANNEL — FREE OF ICE — BIRDS AND PLANTS — BEAR AND CUB — THE HUNT — THE DEATH — FRANKLIN AND LAFAYETTE — THE ANTARCTIC FLAG — COURSE OF TIDES — MOUNT PARRY — VICTORIA AND ALBERT MOUNTAINS — RESUMÉ — THE BIRDS APPEAR — THE VEGETATION — THE PETREL — CAPE CONSTITUTION — THEORIES OF AN OPEN SEA — ILLUSORY DISCOVERIES — CHANGES OF CLIMATE — A SUGGESTION.

Mr. Morton left the brig with the relief party of McGary on the 4th of June. He took his place at the track-lines like the others; but he was ordered to avoid all extra labor, so as to husband his strength for the final passage of the ice.

On the 15th he reached the base of the Great Glacier, and on the 16th was joined by Hans with the dogs. A single day was given to feed and refresh the animals, and on the 18th the two companies parted. Morton's account I have not felt myself at liberty to

alter. I give it as nearly as possible in his own words, without affecting any modification of his style.

Morton's Journey.

The party left Cache Island at 12.35 A. M., crossing the land-ices by portage, and going south for about a mile to avoid a couple of bad seams caused by the breakage of the glacier. Here Morton and Hans separated from the land-party, and went northward, keeping parallel with the glacier, and from five to seven miles distant. The ice was free from hummocks, but heavily covered with snow, through which they walked knee deep. They camped about eight miles from the glacier, at 7.45, travelling that night about twenty-eight miles. Here a crack allowed them to measure the thickness of the ice: it was seven feet five inches. The thermometer at 6 A. M. gave +28° for the temperature of the air; 29.2 for the water.

They started again at half-past nine. The ice, at first, was very heavy, and they were frequently over their knees in the dry snow; but, after crossing certain drifts, it became hard enough to bear the sledge, and the dogs made four miles an hour until twenty minutes past four, when they reached the middle of Peabody Bay. They then found themselves among the bergs which on former occasions had prevented other parties from getting through. These were generally very high, evidently newly separated from the glacier. Their surfaces were fresh and glassy, and not like

those generally met with in Baffin's Bay,—less worn, and bluer, and looking in all respects like the face of the Grand Glacier. Many were rectangular, some of them regular squares, a quarter of a mile each way; others, more than a mile long.

They could not see more than a ship's-length ahead, the icebergs were so unusually close together. Old icebergs bulge and tongue out below, and are thus prevented from uniting; but these showed that they were lately launched, for they approached each other so nearly that the party were sometimes forced to squeeze through places less than four feet wide, through which the dogs could just draw the sledge. Sometimes they could find no passage between two bergs, the ice being so crunched up between them that they could not force their way. Under these circumstances, they would either haul the sledge over the low tongues of the berg, or retrace their steps, searching through the drift for a practicable road.

This they were not always fortunate in finding, and it was at best a tedious and in some cases a dangerous alternative, for oftentimes they could not cross them; and, when they tried to double, the compass, their only guide, confused them by its variation.

It took them a long while to get through into smoother ice. A tolerably wide passage would appear between two bergs, which they would gladly follow; then a narrower one; then no opening in front, but one to the side. Following that a little distance, a blank ice-cliff would close the way altogether, and they

were forced to retrace their steps and begin again. Constantly baffled, but, like true fellows, determined to "go ahead," they at last found a lane some six miles to the west, which led upon their right course. But they were from eight o'clock at night till two or three of the next morning, puzzling their way out of the maze, like a blind man in the streets of a strange city.

June 19, Monday.—At 8.45 A. M. they encamped. Morton then climbed a berg, in order to select their best road. Beyond some bergs he caught glimpses of a great white plain, which proved to be the glacier seen far into the interior; for, on getting up another berg farther on, he saw its face as it fronted on the bay. This was near its northern end. It looked full of stones and earth, while large rocks projected out from it and rose above it here and there.

They rested till half-past ten, having walked áll the time to spare the dogs. After starting, they went on for ten miles, but were then arrested by wide seams in the ice, bergs, and much broken ice. So they turned about, and reached their last camp by twelve, midnight. They then went westward, and, after several trials, made a way, the dogs running well. It took them but two hours to reach the better ice, for the bergs were in a narrow belt.

The chasms between them were sometimes four feet wide, with water at the bottom. These they bridged in our usual manner; that is to say, they attacked the nearest large hummocks with their axes, and, chopping them down, rolled the heaviest pieces they could move

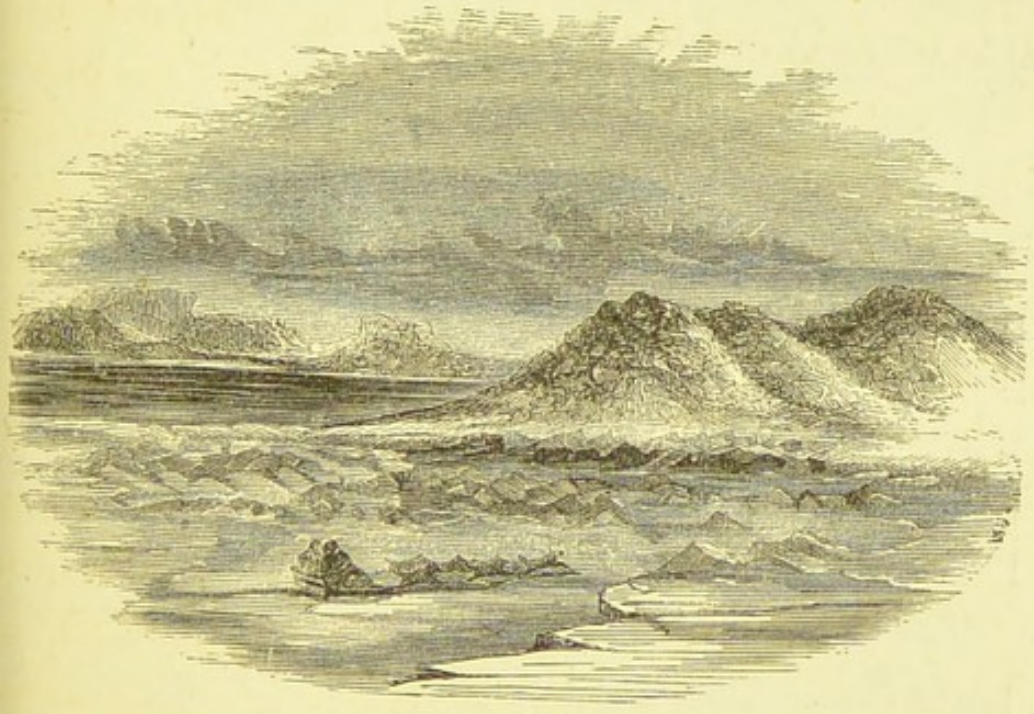
into the fissure, so that they wedged each other in. They then filled up the spaces between the blocks with smaller lumps of ice as well as they could, and so contrived a rough sort of bridge to coax the dogs over. Such a seam would take about an hour and a half to fill up well and cross.

On quitting the berg-field, they saw two dovekies in a crack, and shot one. The other flew to the northeast. Here they sighted the northern shore, ("West Land,") mountainous, rolling, but very distant, perhaps fifty or sixty miles off. They drove on over the best ice they had met due north. After passing about twelve miles of glacier, and seeing thirty of opposite shore, they camped at 7.20 A. M.

They were now nearly abreast of the termination of the Great Glacier. It was mixed with earth and rocks. The snow sloped from the land to the ice, and the two seemed to be mingled together for eight or ten miles to the north, when the land became solid, and the glacier was lost. The height of this land seemed about four hundred feet, and the glacier lower.

June 21, Wednesday.—They stood to the north at 11.30 P. M., and made for what Morton thought a cape, seeing a vacancy between it and the West Land. The ice was good, even, and free from bergs, only two or three being in sight. The atmosphere became thick and misty, and the west shore, which they saw faintly on Tuesday, was not visible. They could only see the cape for which they steered. The cold was sensibly felt, a very cutting wind blowing N.E. by N. They

reached the opening seen to the westward of the cape by Thursday, 7 A.M. It proved to be a channel; for, as they moved on in the misty weather, a sudden lifting of the fog showed them the cape and the western shore.



ENTERING THE CHANNEL—CAPES ANDREW JACKSON AND JOHN BARROW.

The ice was weak and rotten, and the dogs began to tremble. Proceeding at a brisk rate, they had got upon unsafe ice before they were aware of it. Their course was at the time nearly up the middle of the channel; but, as soon as possible, they turned, and, by a backward circuit, reached the shore. The dogs, as their fashion is, at first lay down and refused to

proceed, trembling violently. The only way to induce the terrified, obstinate brutes to get on was for Hans to go to a white-looking spot where the ice was thicker, the soft stuff looking dark; then, calling the dogs coaxingly by name, they would crawl to him on their bellies. So they retreated from place to place, until they reached the firm ice they had quitted. A half-mile brought them to comparatively safe ice, a mile more to good ice again.

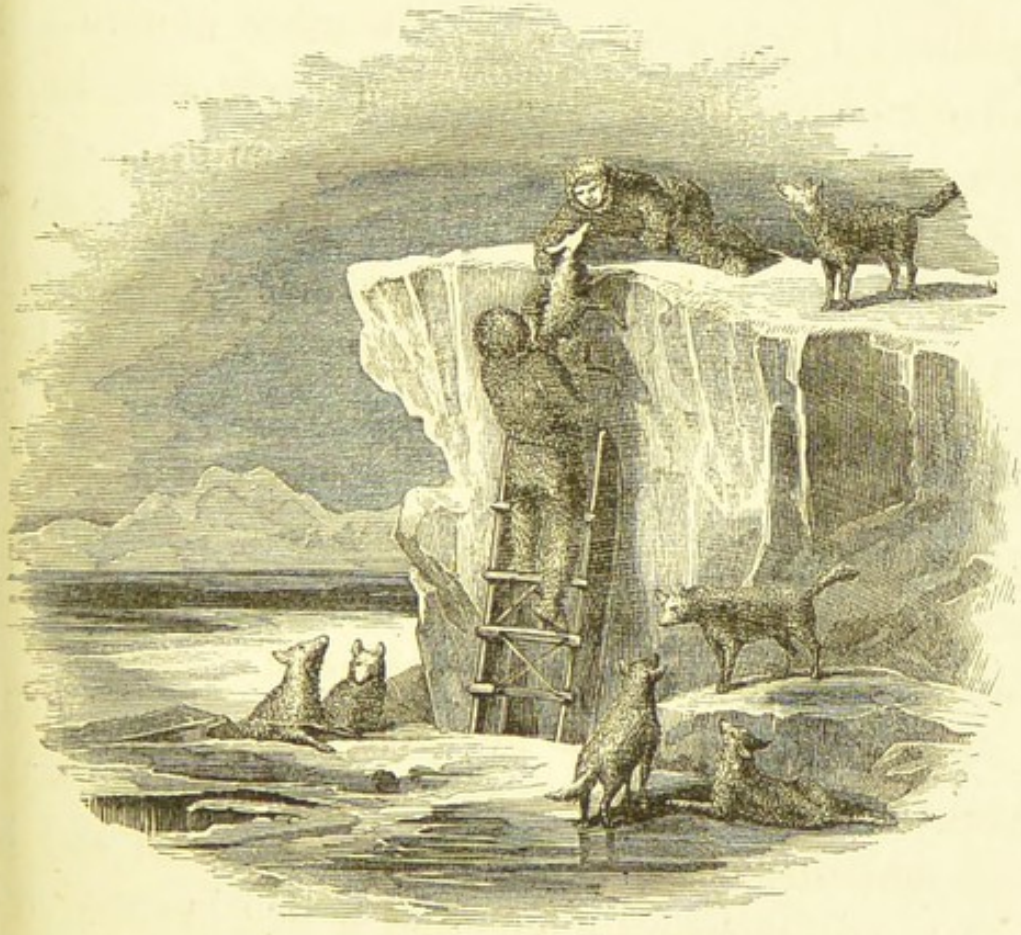
In the midst of this danger they had during the liftings of the fog sighted open water, and they now saw it plainly. There was no wind stirring, and its face was perfectly smooth. It was two miles farther up the channel than the firm ice to which they had retreated. Hans could hardly believe it. But for the birds that were seen in great numbers, Morton says he would not have believed it himself.

The ice covered the mouth of the channel like a horseshoe. One end lapped into the west side a considerable distance up the channel, the other covered the cape for about a mile and a half, so that they could not land opposite their camp, which was about a mile and a half from the cape.

That night they succeeded in climbing on to the level by the floe-pieces, and walked around the turn of the cape for some distance, leaving their dogs behind. They found a good ice-foot, very wide, which extended as far as the cape. They saw a good many birds on the water, both eider-ducks and dovekies, and the rock on shore were full of sea-swallows. There was no ice

A fog coming on, they turned back to where the dogs had been left.

They started again at 11.30 A.M. of the 21st. On reaching the land-ice they unloaded, and threw each package of provision from the floe up to the ice-foot,



MAKING THE LAND-ICE, (CLIMBING.)

which was eight or nine feet above them. Morton then climbed up with the aid of the sledge, which they converted into a ladder for the occasion. He then pulled the dogs up by the lines fastened round their bodies, Hans lending a helping hand and then climbing up himself. They then drew up the sledge. The water was very deep, a stone the size of Morton's head

taking twenty-eight seconds to reach the bottom, which was seen very clearly.

As they had noticed the night before, the ice-foot lost its good character on reaching the cape, becoming a mere narrow ledge hugging the cliffs, and looking as if it might crumble off altogether into the water at any moment. Morton was greatly afraid there would be no land-ice there at all when they came back. Hans and he thought they might pass on by climbing along the face of the crag; in fact they tried a path about fifty feet high, but it grew so narrow that they saw they could not get the dogs past with their sledge-load of provisions. He therefore thought it safest to leave some food, that they might not starve on the return in case the ice-foot should disappear. He accordingly cached enough provision to last them back, with four days' dog-meat.

At the pitch of the cape the ice-ledge was hardly three feet wide; and they were obliged to unloose the dogs and drive them forward alone. Hans and he then tilted the sledge up, and succeeded in carrying it past the narrowest place. The ice-foot was firm under their tread, though it crumbled on the verge.

The tide was running very fast. The pieces of heaviest draught floated by nearly as fast as the ordinary walk of a man, and the surface-pieces passed them much faster, at least four knots. On their examination the night before, the tide was from the north, running southward, carrying very little ice. The ice which was now moving so fast to northward

seemed to be the broken land-ice around the cape, and the loose edge of the south ice. The thermometer in the water gave +36°, seven degrees above the freezing-point of sea-water at Rensselaer Harbor.

They now yoked in the dogs, and set forward over the worst sort of mashed ice for three-quarters of a mile. After passing the cape, they looked ahead, and saw nothing but open water. The land to the westward seemed to overlap the land on which they stood, a long distance ahead: all the space between was open water. After turning the cape,—that which is marked on the chart as Cape Andrew Jackson,—they found a good smooth ice-foot in the entering curve of a bay, since named after the great financier of the American Revolution, Robert Morris. It was glassy ice, and the dogs ran on it full speed. Here the sledge made at least six miles an hour. It was the best day's travel they made on the journey.

After passing four bluffs at the bottom and sides of the bay, the land grew lower; and presently a long low country opened on the land-ice, a wide plain between large headlands, with rolling hills through it. A flock of Brent geese were coming down the valley of this low land, and ducks were seen in crowds upon the open water. When they saw the geese first, they were apparently coming from the eastward; they made a curve out to seaward, and then, turning, flew far ahead over the plain, until they were lost to view, showing that their destination was inland. The general line of flight of the flock was to the northeast. Eiders and dove-

kies were also seen; and tern were very numerous, hundreds of them squealing and screeching in flocks. They were so tame that they came within a few yards of the party. Flying high overhead, their notes echoing from the rocks, were large white birds, which they took for burgomasters. Ivory gulls and mollemokes were seen farther on. They did not lose sight of the birds after this, as far as they went. The ivory gulls flew very high, but the mollemokes alit, and fed on the water, flying over it well out to sea, as we had seen them do in Baffin's Bay. Separate from these flew a dingy bird unknown to Morton. Never had they seen the birds so numerous: the water was actually black with dovekies, and the rocks crowded.

The part of the channel they were now coasting was narrower, but as they proceeded it seemed to widen again. There was some ice arrested by a bend of the channel on the eastern shore; and, on reaching a low gravel point, they saw that a projection of land shut them in just ahead to the north. Upon this ice numerous seal were basking, both the netsik and ussuk.

To the left of this, toward the West Land, the great channel (Kennedy Channel) of open water continued. There was broken ice floating in it, but with passages fifteen miles in width and perfectly clear. The end of the point—"Gravel Point," as Morton called it—was covered with hummocks and broken ice for about two miles from the water. This ice was worn and full of gravel. Six miles inland, the point was flanked by mountains.

A little higher up, they noticed that the pieces of ice in the middle of the channel were moving up, while the lumps near shore were floating down. The channel was completely broken up, and there would have been no difficulty in a frigate standing anywhere. The little

APPEARANCE OF CHANNEL.

brig, or "a fleet of her like," could have beat easily to the northward.

The wind blew strong from the north, and continued to do so for three days, sometimes blowing a gale, and very damp, the tops of the hills becoming fixed with dark foggy clouds. The damp falling mist prevented their seeing any distance. Yet they saw no ice borne

down from the northward during all this time; and, what was more curious, they found, on their return south, that no ice had been sent down during the gale. On the contrary, they then found the channel perfectly clear from shore to shore.

June 22, Thursday.—They camped at 8.30 A. M., on a ledge of low rock, having made in the day's journey forty-eight miles in a straight line. Morton thought they were at least forty miles up the channel. The ice was here moving to the southward with the tide. The channel runs northwardly, and is about thirty-five miles wide. The opposite coast appears straight, but still sloping, its head being a little to the west of north. This shore is high, with lofty mountains of sugar-loaf shape at the tops, which, set together in ranges, looked like piles of stacked cannon-balls. It was too cloudy for observations when they camped, but they obtained several higher up. The eider were in such numbers here that Hans fired into the flocks, and killed two birds with one shot.

June 23, Friday.—In consequence of the gale of wind, they did not start till 12.30 midnight. They made about eight miles, and were arrested by the broken ice of the shore. Their utmost efforts could not pass the sledge over this; so they tied the dogs to it, and went ahead to see how things looked. They found the land-ice growing worse and worse, until at last it ceased, and the water broke directly against the steep cliffs.

They continued their course overland until they

came to the entrance of a bay, whence they could see a cape and an island to the northward. They then turned back, seeing numbers of birds on their way, and, leaving the dogs to await their return, prepared to proceed on foot.

This spot was the greenest that they had seen since leaving the headlands of the channel. Snow patched the valleys, and water was trickling from the rocks. Early as it was, Hans was able to recognise some of the flower-life. He eat of the young shoots of the lychnis, and brought home to me the dried pod (*siliqua*) of a hesperis, which had survived the wear and tear of winter. Morton was struck with the abundance of little stone-crops "about the size of a pea." He furnished me with a scanty list of recognized but not collected plants.

June 23, 24, Friday, Saturday.—At 3 A.M. they started again, carrying eight pounds of pemmican and two of bread, besides the artificial horizon, sextant, and compass, a rifle, and the boat-hook. After two hours' walking the travel improved, and, on nearing a plain about nine miles from where they had left the sledge, they were rejoiced to see a she-bear and her cub. They had tied the dogs securely, as they thought; but Toodla and four others had broken loose and followed them, making their appearance within an hour. They were thus able to attack the bear at once.

Hans, who to the simplicity of an Esquimaux united the shrewd observation of a hunter, describes the contest which followed so graphically that I try to engraft some of the quaintness of his description upon Mr.

Morton's report. The bear fled; but the little one being unable either to keep ahead of the dogs or to keep pace with her, she turned back, and, putting her head under its haunches, threw it some distance ahead The cub safe for the moment, she would wheel round and face the dogs, so as to give it a chance to run away; but it always stopped just as it alighted, till she came up and threw it ahead again: it seemed to expect her aid, and would not go on without it. Sometimes the mother would run a few yards ahead, as if to coax the young one up to her, and when the dogs came up she would turn on them and drive them back; then, as they dodged her blows, she would rejoin the cub and push it on, sometimes putting her head under it, sometimes catching it in her mouth by the nape of the neck.

For a time she managed her retreat with great celerity, leaving the two men far in the rear. They had engaged her on the land-ice; but she led the dogs in-shore, up a small stony valley which opened into the interior. But, after she had gone a mile and a half, her pace slackened, and, the little one being jaded, she soon came to a halt.

The men were then only half a mile behind; and, running at full speed, they soon came up to where the dogs were holding her at bay. The fight was now a desperate one. The mother never went more than two yards ahead, constantly looking at the cub. When the dogs came near her, she would sit upon her haunches and take the little one between her hind legs, fighting

the dogs with her paws, and roaring so that she could have been heard a mile off. "Never," said Morton, "was an animal more distressed." She would stretch her neck and snap at the nearest dog with her shining teeth, whirling her paws like the arms of a windmill. If she missed her aim, not daring to pursue one dog lest the others should harm the cub, she would give a great roar of baffled rage, and go on pawing, and snapping, and facing the ring, grinning at them with her mouth stretched wide.

When the men came up, the little one was perhaps rested, for it was able to turn round with her dam, no matter how quick she moved, so as to keep always in front of her belly. The five dogs were all the time frisking about her actively, tormenting her like so many gad-flies; indeed, they made it difficult to draw a bead on at her without killing them. But Hans, lying on his elbow, took a quiet aim and shot her through the head. She dropped and rolled over dead without moving a muscle.

The dogs sprang toward her at once; but the cub jumped upon her body and reared up, for the first time growling hoarsely. They seemed quite afraid of the little creature, she fought so actively and made so much noise; and, while tearing mouthfuls of hair from the dead mother, they would spring aside the minute the cub turned toward them. The men drove the dogs off for a time, but were obliged to shoot the cub at last, as she would not quit the body.

Hans fired into her head. It did not reach the

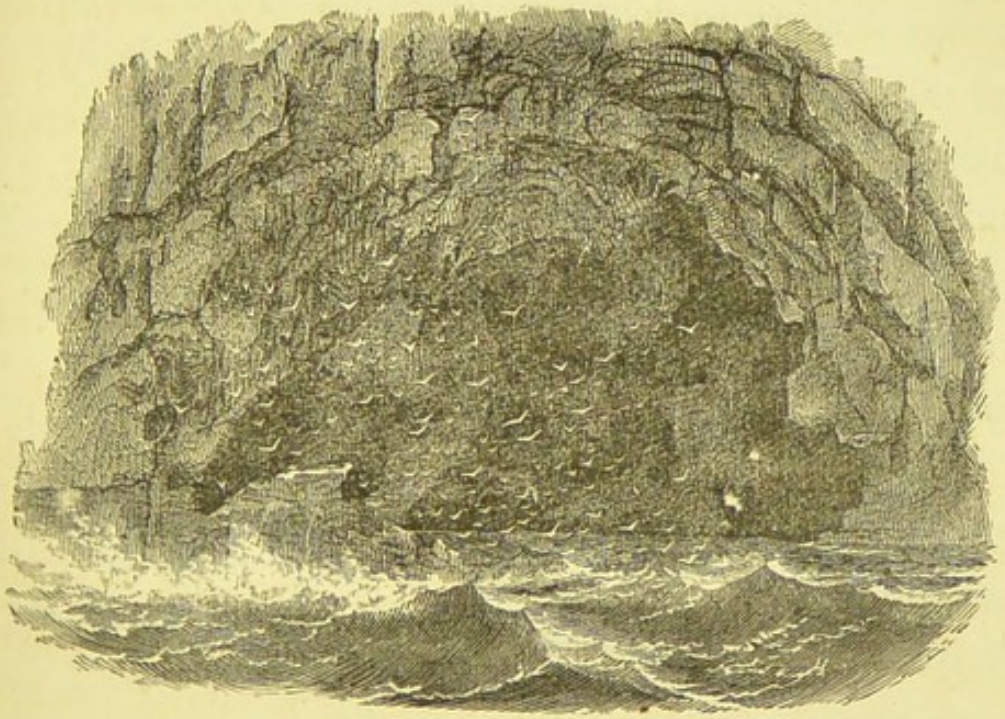
brain, though it knocked her down; but she was still able to climb on her mother's body and try to defend it still, "her mouth bleeding like a gutter-spout." They were obliged to despatch her with stones.

After skinning the old one they gashed its body, and the dogs fed upon it ravenously. The little one they cached for themselves on the return; and, with difficulty taking the dogs off, pushed on, crossing a small bay which extended from the level ground and had still some broken ice upon it. Hans was tired out, and was sent on shore to follow the curve of the bay, where the road was easier.

The ice over the shallow bay which Morton crossed was hummocked, with rents through it, making very hard travel. He walked on over this, and saw an opening not quite eight miles across, separating the two islands, which I have named after Sir John Franklin and his comrade Captain Crozier. He had seen them before from the entrance of the larger bay,—Lafayette Bay,—but had taken them for a single island, the channel between them not being then in sight. As he neared the northern land, at the east shore which led to the cape, (Cape Constitution,) which terminated his labors, he found only a very small ice-foot, under the lee of the headland and crushed up against the side of the rock. He went on; but the strip of land-ice broke more and more, until about a mile from the cape it terminated altogether, the waves breaking with a cross sea directly against the cape. The wind had moderated, but was still from the north,

and the current ran up very fast, four or five knots perhaps.

The cliffs were here very high: at a short distance they seemed about two thousand feet; but the crags were so overhanging that Morton could not see the tops as



A SKETCH.

he drew closer. The echoes were confusing, and the clamor of half a dozen ivory gulls, who were frightened from their sheltered nooks, was multiplied a hundred-fold. The mollemokes were still numerous; but he now saw no ducks.

He tried to pass round the cape. It was in vain: there was no ice-foot; and, trying his best to ascend the

cliffs, he could get up but a few hundred feet. Here he fastened to his walking-pole the Grinnell flag of the *Antarctic*—a well-cherished little relic, which had now followed me on two Polar voyages. This flag had been saved from the wreck of the United States sloop-of-war Peacock, when she stranded off the Columbia River; it had accompanied Commodore Wilkes in his far-southern discovery of an Antarctic continent. It was now its strange destiny to float over the highest northern land, not only of America but of our globe. Side by side with this were our Masonic emblems of the compass and the square. He let them fly for an hour and a half from the black cliff over the dark rock-shadowed waters, which rolled up and broke in white caps at its base.

He was bitterly disappointed that he could not get round the cape, to see whether there was any land beyond; but it was impossible. Rejoining Hans, they supped off their bread and pemmican, and, after a good nap, started on their return on Sunday, the 25th, at 1.30 P.M. From Thursday night, the 22d, up to Sunday at noon, the wind had been blowing steadily from the north, and for thirty-six hours of the time it blew a gale. But as he returned, he remarked that the more southern ice toward Kennedy Channel was less than it had been when he passed up. At the mouth of the channel it was more broken than when he saw it before, but the passage above was clear. About half-way between the farthest point which he reached and the channel, the few small lumps of ice which he ob-

served floating—they were not more than half a dozen —were standing with the wind to the southward, while the shore-current or tide was driving north.

His journal of Monday, 26th, says, "As far as I could see, the open passages were fifteen miles or more wide, with sometimes mashed ice separating them. But it is all small ice, and I think it either drives out to the open space to the north, or rots and sinks,* as I could see none ahead to the far north."

The coast after passing the cape, he thought, must trend to the eastward, as he could at no time when below it see any land beyond. But the west coast still opened to the north: he traced it for about fifty miles. The day was very clear, and he was able to follow the range of mountains which crowns it much farther. They were very high, rounded at their summits, not peaked like those immediately abreast of him; though, as he remarked, this apparent change of their character might be referred to distance, for their undulations lost themselves like a wedge in the northern horizon.

His highest station of outlook at the point where his progress was arrested he supposed to be about three hundred feet above the sea. From this point, some six degrees to the west of north, he remarked in the farthest distance a peak truncated at its top like the cliffs of Magdalena Bay. It was bare at its summit, but striated vertically with protruding ridges. Our

* As I quote his own words, I do not think it advisable to comment upon his view. Ice never sinks in a liquid of the same density as that in which it formed.

united estimate assigned to it an elevation of from twenty-five hundred to three thousand feet. This peak, the most remote northern land known upon our globe, takes its name from the great pioneer of Arctic travel, Sir Edward Parry.

MOUNT PARRY AND VICTORIA RANGE, (ROUGH SKETCH BY MORTON.)

The range with which it was connected was much higher, Mr. Morton thought, than any we had seen on the southern or Greenland side of the bay. The summits were generally rounded, resembling, to use his own expression, a succession of sugar-loaves and stacked cannon-balls declining slowly in the perspective. I have named these mountains after the name of the lady

sovereign under whose orders Sir John Franklin sailed, and the prince her consort. They are similar in their features to those of Spitzbergen; and, though I am aware how easy it is to be deceived in our judgment of distant heights, I am satisfied from the estimate of Mr. Morton, as well as from our measurements of the same range farther to the south, that they equal them in elevation, 2500 feet.

Two large indentations broke in upon the uniform margin of the coast. Everywhere else the spinal ridge seemed unbroken. Mr. Morton saw no ice.

It appears from an examination of Mr. Morton's "field notes," as well as by an analysis of the results which I have here rendered nearly in the very words of Mr. Morton, that, after travelling due north over a solid area choked with bergs and frozen fields, he was startled by the growing weakness of the ice: its surface became rotten, and the snow wet and pulpy. His dogs, seized with terror, refused to advance. Then for the first time the fact broke upon him, that a long dark band seen to the north beyond a protruding cape —Cape Andrew Jackson—was water. With danger and difficulty he retraced his steps, and, reaching sound ice, made good his landing on a new coast.

The journeys which I had made myself, and those of my different parties, had shown that an unbroken surface of ice covered the entire sea to the east, west, and south. From the southernmost ice, seen by Dr Hayes only a few weeks before, to the region of this

mysterious water, was, as the crow flies, one hundred and six miles. But for the unusual sight of birds and the unmistakable giving way of the ice beneath them, they would not have believed in the evidence of eye-sight. Neither Hans nor Morton was prepared for it.

Landing on the cape, and continuing their exploration, new phenomena broke upon them. They were on the shores of a channel, so open that a frigate, or a fleet of frigates, might have sailed up it. The ice, already broken and decayed, formed a sort of horse-shoe-shaped beach, against which the waves broke in surf. As they travelled north, this channel expanded into an iceless area; "for four or five small pieces"—lumps—were all that could be seen over the entire surface of its white-capped waters. Viewed from the cliffs, and taking thirty-six miles as the mean radius open to reliable survey, this sea had a justly-estimated extent of more than four thousand square miles.

Animal life, which had so long been a stranger to us to the south, now burst upon them. At Rensselaer Harbor, except the Netsik seal or a rarely-encountered Harelda, we had no life available for the hunt. But here the Brent goose, (*Anas bernicla,*) the eider, and the king duck, were so crowded together that our Esquimaux killed two at a shot with a single rifle-ball.

The Brent goose had not been seen before since entering Smith's Straits. It is well known to the Polar traveller as a migratory bird of the American continent. Like the others of the same family, it feeds upon vegetable matter, generally on marine

plants with their adherent molluscous life. It is rarely or never seen in the interior, and from its habits may be regarded as singularly indicative of open water. The flocks of this bird, easily distinguished by their wedge-shaped line of flight, now crossed the water obliquely, and disappeared over the land to the north and east. I had shot these birds on the coast of Wellington Channel in latitude 74° 50′, nearly six degrees to the south: they were then flying in the same direction.

The rocks on shore were crowded with sea-swallows, (*Sterna Arctica,*) birds whose habits require open water, and they were already breeding.

It may interest others besides the naturalist to state, that all of these birds occupied the southern limits of the channel for the first few miles after reaching open water, but, as the party continued their progress to the north, they disappeared, and marine birds took their place. The gulls were now represented by no less than four species. The kittiwakes (*Larus tridactylis*)—reminding Morton of "old times in Baffin's Bay"—were again stealing fish from the water, probably the small whiting, (*Merlangus Polaris,*) and their grim cousins, the burgomasters, enjoying the dinner thus provided at so little cost to themselves. It was a picture of life all round.

Of the flora and its indications I can say but little; still less can I feel justified in drawing from them any thermal inferences. The season was too early for a display of Arctic vegetation; and, in the absence of

specimens, I am unwilling to adopt the observations of Mr. Morton, who was no botanist. It seems clear, however, that many flowering plants, at least as developed as those of Rensselaer Harbor, had already made themselves recognisable; and, strange to say, the only specimen brought back was a crucifer, (*Hesperis pygmæa*—Durand,) the *siliquæ* of which, still containing seed, had thus survived the winter, to give evidence of its perfected growth. This plant I have traced to the Great Glacier, thus extending its range from the South Greenland zone. It has not, I believe, been described at Upernavik.

It is another remarkable fact that, as they continued their journey, the land-ice and snow, which had served as a sort of pathway for their dogs, crumbled and melted, and at last ceased altogether; so that, during the final stages of their progress, the sledge was rendered useless, and Morton found himself at last toiling over rocks and along the beach of a sea, which, like the familiar waters of the south, dashed in waves at his feet.

Here for the first time he noticed the Arctic Petrel, (*Procellaria glacialis*,) a fact which shows the accuracy of his observation, though he was then unaware of its importance. This bird had not been met with since we left the North Water of the English whalers, more than two hundred miles south of the position on which he stood. Its food is essentially marine, the acalephæ, &c. &c.; and it is seldom seen in numbers, except in the highways of open water frequented by the whale and

the larger representatives of ocean life. They were in numbers, flitting and hovering over the crests of the waves, like their relatives of kinder climates, the Cape of Good Hope Pigeons, Mother Carey's Chickens, and the petrels everywhere else.

As Morton, leaving Hans and his dogs, passed between Sir John Franklin Island and the narrow beach-line, the coast became more wall-like, and dark masses of porphyritic rock abutted into the sea. With growing difficulty, he managed to climb from rock to rock, in hopes of doubling the promontory and sighting the coasts beyond, but the water kept encroaching more and more on his track.

It must have been an imposing sight, as he stood at this termination of his journey, looking out upon the great waste of waters before him. Not a "speck of ice," to use his own words, could be seen. There, from a height of five hundred and eighty feet, which commanded a horizon of almost forty miles, his ears were gladdened with the novel music of dashing waves; and a surf, breaking in among the rocks at his feet, stayed his farther progress.

Beyond this cape all is surmise. The high ridges to the northwest dwindled off into low blue knobs, which blended finally with the air. Morton called the cape, which baffled his labors, after his commander; but I have given it the more enduring name of Cape Constitution.

The homeward journey, as it was devoted to the completion of his survey and developed no new facts,

I need not give. But I am reluctant to close my notice of this discovery of an open sea, without adding that the details of Mr. Morton's narrative harmonized with the observations of all our party. I do not propose to discuss here the causes or conditions of this phenomenon. How far it may extend,—whether it exists simply as a feature of the immediate region, or as part of a great and unexplored area communicating with a Polar basin,—and what may be the argument in favor of one or the other hypothesis, or the explanation which reconciles it with established laws,—may be questions for men skilled in scientific deductions. Mine has been the more humble duty of recording what we saw. Coming as it did, a mysterious fluidity in the midst of vast plains of solid ice, it was well calculated to arouse emotions of the highest order; and I do not believe there was a man among us who did not long for the means of embarking upon its bright and lonely waters. But he who may be content to follow our story for the next few months will feel, as we did, that a controlling necessity made the desire a fruitless one.

An open sea near the Pole, or even an open Polar basin, has been a topic of theory for a long time, and has been shadowed forth to some extent by actual or supposed discoveries. As far back as the days of Barentz, in 1596, without referring to the earlier and more uncertain chronicles, water was seen to the eastward of the northernmost cape of Novaia Zemlia; and, until its limited extent was defined by direct observa-

Engraved at J.M.Butlers establishment 84 Chesnut St.

THE OPEN WATER FROM CAPE JEFFERSON.

tion, it was assumed to be the sea itself. The Dutch fishermen above and around Spitzbergen pushed their adventurous cruises through the ice into open spaces varying in size and form with the season and the winds; and Dr. Scoresby, a venerated authority, alludes to such vacancies in the floe as pointing in argument to a freedom of movement from the north, inducing open water in the neighborhood of the Pole. Baron Wrangell, when forty miles from the coast of Arctic Asia, saw, as he thought, a "vast, illimitable ocean," forgetting for the moment how narrow are the limits of human vision on a sphere. So, still more recently, Captain Penny proclaimed a sea in Wellington Sound, on the very spot where Sir Edward Belcher has since left his frozen ships; and my predecessor Captain Inglefield, from the mast-head of his little vessel, announced an "open Polar basin," but fifteen miles off from the ice which arrested our progress the next year.

All these illusory discoveries were no doubt chronicled with perfect integrity; and it may seem to others, as since I have left the field it sometimes does to myself, that my own, though on a larger scale, may one day pass within the same category. Unlike the others, however, that which I have ventured to call an open sea has been travelled for many miles along its coast, and was viewed from an elevation of five hundred and eighty feet, still without a limit, moved by a heavy swell, free of ice, and dashing in surf against a rock-bound shore.

It is impossible, in reviewing the facts which con-

nect themselves with this discovery,—the melted snow upon the rocks, the crowds of marine birds, the limited but still advancing vegetable life, the rise of the thermometer in the water,—not to be struck with their bearing on the question of a milder climate near the Pole. To refer them all to the modification of temperature induced by the proximity of open water is only to change the form of the question; for it leaves the inquiry unsatisfied—What is the cause of the open water?

This, however, is not the place to enter upon such a discussion. There is no doubt on my mind, that at a time within historical and even recent limits, the climate of this region was milder than it is now. I might base this opinion on the fact, abundantly developed by our expedition, of a secular elevation of the coast-line. But, independently of the ancient beaches and terraces and other geological marks which show that the shore has risen, the stone huts of the natives are found scattered along the line of the bay in spots now so fenced in by ice as to preclude all possibility of the hunt, and of course of habitation by men who rely on it for subsistence.

Tradition points to these as once favorite hunting-grounds near open water. At Rensselaer Harbor, called by the natives *Aunatok*, or the Thawing-Place, we met with huts in quite tolerable preservation, with the stone pedestals still standing which used to sustain the carcases of the captured seals and walrus. Sunny Gorge, and a large indentation in Dallas Bay which bears the Esquimaux name of the Inhabited Place,

showed us the remains of a village, surrounded by the bones of seals, walrus, and whales—all now cased in ice. In impressive connection with the same facts, showing not only the former extension of the Esquimaux race to the higher north, but the climatic changes which may perhaps be still in progress there, is the sledge-runner which Mr. Morton saw on the shores of Morris Bay, in latitude 81°. It was made of the bone of a whale, and worked out with skilful labor.

In this recapitulation of facts, I am not entering upon the question of a warmer climate impressed upon this region in virtue of a physical law which extends the isotherms toward the Pole. Still less am I disposed to express an opinion as to the influence which ocean-currents may exert on the temperature of these far-northern regions: there is at least one man, an officer in the same service with myself, and whose scientific investigations do it honor, with whom I am content to leave that discussion. But I would respectfully suggest to those whose opportunities facilitate the inquiry, whether it may not be that the Gulf Stream, traced already to the coast of Novaia Zemlia, is deflected by that peninsula into the space around the Pole. It would require a change in the mean summer temperature of only a few degrees to develop the periodical recurrence of open water. The conditions which define the line of perpetual snow and the limits of the glacier formation may have certainly a proximate application to the problem of such water-spaces near the Pole.

CHAPTER XXIV.

PROSPECTS — SPECULATIONS — THE ARGUMENT — THE CONCLUSION — THE RECONNOISSANCE — THE SCHEME — EQUIPMENT OF BOAT-PARTY — EIDER ISLAND — HANS ISLAND — THE CORMORANT GULL — SENTIMENT — OUR CHARTS — CAPTAIN INGLEFIELD — DISCREPANCIES — A GALE — FAST TO A FLOE.

Attempt to reach Beechy Island.

All the sledge-parties were now once more aboard ship, and the season of Arctic travel had ended. For more than ten months we had been imprisoned in ice, and throughout all that period, except during the enforced holiday of the midwinter darkness or while repairing from actual disaster, had been constantly in the field. The summer was wearing on, but still the ice did not break up as it should. As far as we could see, it remained inflexibly solid between us and the North Water of Baffin's Bay. The questions and speculations of those around me began to show that they too had anxious thoughts for the coming year. There was reason for all our apprehensions, as some of my notes may show.

"July 8, Saturday.—Penny saw water to the southward in Barrow's Straits as early as June; and by the 1st of July the leads were within a mile of his harbor in Wellington Channel. Dr. Sutherland says he could have cut his way out by the 15th. Austin was not liberated till the 10th of August; but the water had worked up to within three miles and a half of him as early as the 1st, having advanced twenty miles in the preceding month. If, now, we might assume that the ice between us and the nearest water would give way as rapidly as it did in these two cases,—an assumption, by-the-way, which the difference of the localities is all against,—the mouth of our harbor should be reached in fifty days, or by the last day of August; and after that, several days or perhaps weeks must go by before the inside ice yields around our brig.

"I know by experience how soon the ice breaks up after it once begins to go, and I hardly think that it can continue advancing so slowly much longer. Indeed, I look for it to open, if it opens at all, about the beginning of September at farthest, somewhere near the date of Sir James Ross's liberation at Leopold. But then I have to remember that I am much farther to the north than my predecessors, and that by the 28th of last August I had already, after twenty days of unremitting labor, forced the brig nearly forty miles through the pack, and that the pack began to close on us only six days later, and that on the 7th of September we were fairly frozen in. Yet last summer was a

most favorable one for ice-melting. Putting all this together, it looks as if the winter must catch us before we can get halfway through the pack, even though we should begin warping to the south at the earliest moment that we can hope for water.

"It is not a pleasant conclusion of the argument; for there never was, and I trust never will be, a party worse armed for the encounter of a second Arctic winter. We have neither health, fuel, nor provisions. Dr. Hayes, and indeed all I have consulted about it indirectly, despond at the thought; and when I look round upon our diseased and disabled men, and think of the fearful work of the last long night, I am tempted to feel as they do.

"The alternative of abandoning the vessel at this early stage of our absence, even were it possible, would, I feel, be dishonoring; but, revolving the question as one of practicability alone, I would not undertake it. In the first place, how are we to get along with our sick and newly-amputated men? It is a dreary distance at the best to Upernavik or Beechy Island, our only seats of refuge, and a precarious traverse if we were all of us fit for moving; but we are hardly one-half in efficiency of what we count in number. Besides, how can I desert the brig while there is still a chance of saving her? There is no use of noting *pros* and *cons:* my mind is made up; I will not do it.

"But I must examine this ice-field for myself. I have been maturing through the last fortnight a

scheme of relief, based upon a communication with the English squadron to the south, and to-morrow I set out to reconnoitre. Hans will go with me. We will fit out our poor travel-worn dogs with canvas shoes, and cross the floes to the true water-edge, or at least be satisfied that it is impossible. 'He sees best who uses his own eyes.' After that I have my course resolved on.

"July 11, Tuesday.—We got back last night: a sixty miles' journey,—comfortless enough, with only three hours' sleep on the ice. For thirty-five miles south the straits are absolutely tight. Off Refuge Inlet and Esquimaux Point we found driving leads; but between these points and the brig, not a crack. I pushed the dogs over the drift-ice, and, after a fair number of mischances, found the North Water. It was flowing and free; but since McGary saw it last May it has not advanced more than four miles. It would be absurd at this season of the year to attempt escaping in open boats with this ice between us and water. All that can be done is to reinforce our energies as we may, and look the worst in the face.

"In view of these contingencies, I have determined to attempt in person to communicate with Beechy Island, or at least make the effort. If I can reach Sir Edward Belcher's squadron, I am sure of all I want. I will take a light whaleboat, and pick my companions for a journey to the south and west. I may find perhaps the stores of the North Star at the Wostenholm Islands, or by great good luck come

across some passing vessel of the squadron, and make known our whereabouts and wants; or, failing these, we will try and coast it along to Wellington Channel.

"A depôt of provisions and a seaworthy craft large enough to carry us,—if I had these, every thing would be right. Even Sir John Ross's launch, the Little Mary, that he left at Union Bay, would serve our purpose. If I had her, I could make a southern passage after the fall tides. The great enemy of that season is the young shore-ice, that would cut through our frail boats like a saw. Or, if we can only renew our stock of provisions for the winter, we may await the chances of next year.

"I know it is a hazardous venture, but it is a necessary one, and under the circumstances an incumbent duty. I should have been glad, for some reasons, if the command of such an attempt could have been delegated to a subordinate; but I feel that I have no right to devolve this risk upon another, and I am, besides, the only one possessed of the necessary local knowledge of Lancaster Sound and its ice-movements.

"As a prelude to this solemn undertaking, I met my officers in the evening, and showed them my ice-charts; explaining, what I found needed little explanation, the prospect immediately before us. I then discussed the probable changes, and, giving them my personal opinion that the brig might after all be liberated at a late date, I announced my project. I will not say how gratified I was with the manner in which they received it. It struck me that there was a sense of personal

relief experienced everywhere. I told them that I did not choose to call a council or connect any of them with the responsibilities of the measure, for it involved only the personal safety of those who chose to share the risk. Full instructions were then left for their guidance during my absence.

"It was the pleasantest interview I ever had with my associates. I believe every man on board would have volunteered, but I confined myself to five active men: James McGary, William Morton, George Riley, Hans Christian, and Thomas Hickey, make up my party."

Our equipment had been getting ready for some time, though without its object being understood or announced. The boat was our old "Forlorn Hope," mended up and revised for her new destinies. She was twenty-three feet long, had six-feet-and-a-half beam, and was two feet six inches deep. Her build was the characteristic one of the American whaleboats, too flat-bottomed for ordinary use, but much improved by a false keel, which Ohlsen had given her throughout her entire length. After all, she was a mere cockle-shell.

Her great fault was her knife-like bow, which cut into the short seas most cruelly. To remedy this in some degree, and to make up for her want of height, I devised a sort of half-deck of canvas and gum-elastic cloth, extending back beyond the foremast, and continued along the gunwale; a sort of weather-cloth, which might possibly add to her safety, and would certainly make her more comfortable in heavy weather.

I left her rig altogether to McGary. She carried what any one but a New London whaler would call an inordinate spread of canvas, a light cotton foresail of twelve-feet lift, a stouter mainsail of fourteen-feet lift with a spreet eighteen feet long, and a snug little jib. Her masts were of course selected very carefully, for we could not carry extra sticks: and we trusted to the good old-fashioned steering-oar rather than a rudder.

Morton, who was in my confidence from the first, had all our stores ready. We had no game, and no meat but pork, of which we took some hundred and fifty pounds. I wanted pemmican, and sent the men out in search of the cases which were left on the floe by the frozen depôt-party during the rescue of last March; but they could not find a trace of them, or indeed of any thing else we abandoned at that time: a proof, if we wanted one, how blurred all our faculties must have been by suffering, for we marked them as we thought with marvellous care.

We lifted our boat over the side in the afternoon, and floated her to the crack at the Observatory Island; mounted her there on our large sledge "The Faith," by an arrangement of cradles of Mr. Ohlsen's devising; stowed in every thing but the provisions, and carried her on to the bluff of Sylvia Headland: and the next morning a party consisting of all but the sick was detailed to transport her to open water; while McGary, Hans and myself followed with our St. John's sledge, carrying our stores.

The surface of the ice was very irregular and covered

with water-pools. Our sledge broke down with repeated strainings, and we had a fatiguing walk of thirty-six miles to get another. We passed the first night wet and supperless on the rocks; a bad beginning, for the next day found us stiff and out of sorts.

The ice continued troublesome, the land-ices swaying hither and thither with the tide. The second day's progress, little as it was, cost us very hard labor. But another night of repose on the rocks refreshed us; so that, the day after, we were able to make about seven miles along the ice-belt. Two days more, and we had carried the boat across twenty miles of heavy ice-floe, and launched her in open water. It was not far from the hut on Esquimaux Point.

The straits were much clogged with drift, but I followed the coast southward without difficulty. We travelled at night, resting when the sun was hottest. I had every reason to be pleased with the performance of the whaleboat, and the men kept up their spirits well. We landed at the point where we left our life-boat a year ago, and to our great joy found it untouched: the cove and inlet were still fast in ice.

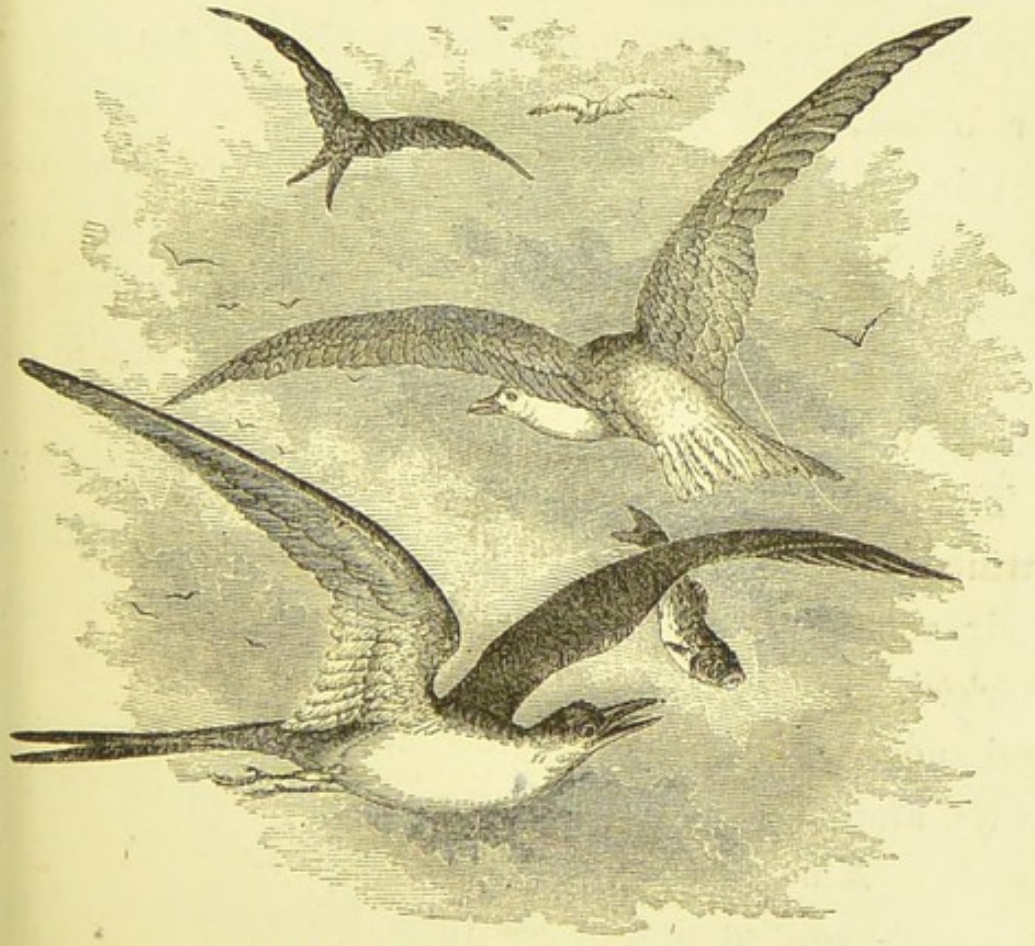
We now neared the Littleton Island of Captain Inglefield, where a piece of good fortune awaited us. We saw a number of ducks, both eiders and hareldas; and it occurred to me that by tracking their flight we should reach their breeding-grounds. There was no trouble in doing so, for they flew in a bee-line to a group of rocky islets, above which the whole horizon was studded with birds. A rugged little ledge, which I

named Eider Island, was so thickly colonized that we could hardly walk without treading on a nest. We killed with guns and stones over two hundred birds in a few hours.

EIDER ISLAND.

It was near the close of the breeding-season. The nests were still occupied by the mother-birds, but many of the young had burst the shell, and were nestling under the wing, or taking their first lessons in the water-pools. Some, more advanced, were already in the ice-sheltered channels, greedily waiting for the shell-fish and sea-urchins, which the old bird busied herself in procuring for them.

Near by was a low and isolated rock-ledge, which we called Hans Island. The glaucous gulls, those cormorants of the Arctic seas, had made it their peculiar homestead. Their progeny, already full-fledged and voracious, crowded the guano-whitened rocks; and the



GLAUCOUS AND TRIDACTYL GULLS.

mothers, with long necks and gaping yellow bills, swooped above the peaceful shallows of the eiders, carrying off the young birds, seemingly just as their wants required. A more domineering and insatiable rapacity I have never witnessed. The gull would gobble up and swallow a young eider in less time than

it takes me to describe the act. For a moment you would see the paddling feet of the poor little wretch protruding from the mouth; then came a distension of the neck as it descended into the stomach; a few moments more, and the young gulls were feeding on the ejected morsel.

The mother-duck, of course nearly distracted, battles, and battles well; but she cannot always reassemble her brood; and in her efforts to defend one, uncovering the others, I have seen her left as destitute as Niobe. Hans tells me that in such cases she adopts a new progeny; and, as he is well versed in the habits of the bird, I see no reason to doubt his assertion.

The glaucous is not the only predatory gull of Smith's Strait. In fact, all the Arctic species, without including their cousins the jagers, have the propensity strongly marked. I have seen the ivory gull, the most beautiful and snowy St. Agnes of the ice-fields, seize our wounded awks, and, after a sharp battle, carry them off in her talons. A novel use of a palmated foot.

I could sentimentalize on these bereavements of the ducks and their companions in diet: it would be only the every-day sermonizing of the world. But while the gulls were fattening their young on the eiders, the eiders were fattening theirs on the lesser life of the sea, and we were as busily engaged upon both in true predatory sympathy. The squab-gull of Hans Island has a well-earned reputation in South Greenland for its delicious juices, and the eggs of Eider Island can well

afford to suffer from the occasional visits of gulls and other bipeds; for a locust-swarm of foragers might fatten without stint on their surplus abundance.

We camped at this nursery of wild-fowl, and laid in four large India-rubber bags full, cleaned and rudely boned. Our boat was hauled up and refitted; and, the trial having shown us that she was too heavily laden for safety, I made a general reduction of our stores, and cached the surplus under the rocks.

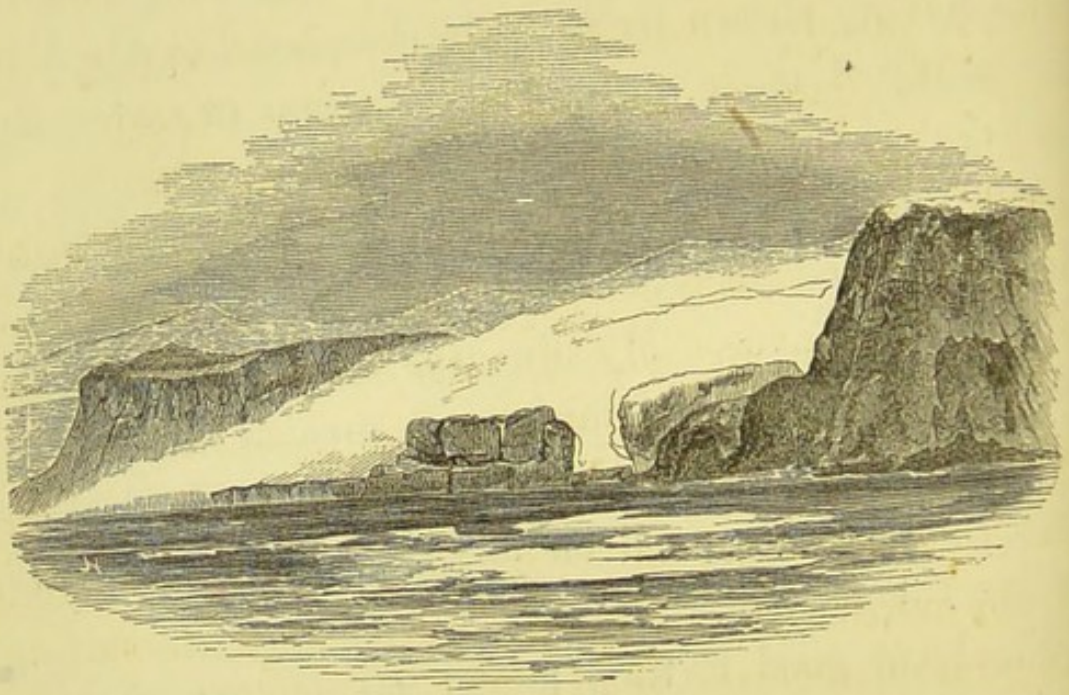
On Wednesday, the 19th, we left Flagstaff Point, where we fixed our beacon last year; and stood W. 10° S. under full canvas. My aim was to take the channel obliquely at Littleton Island; and, making the drift-ice or the land to the southwest in the neighborhood of Cape Combermere, push on for Kent Island and leave a cairn there.

I had the good fortune to get satisfactory meridian observations, as well as angular bearings between Cape Alexander and Flagstaff Point, and found, as our operations by theodolite had already indicated, that the entire coast-line upon the Admiralty Charts of my predecessor would have to be altered.

Cape Isabella, the western headland of the strait, whose discovery, by-the-way, is due rather to old Baffin than his follower Sir John Ross, bears W. 22° N. (solar) from Cape Alexander; its former location being some 20° to the south of west. The narrowest part of Smith's Straits is not, as has been considered, between these two capes, but upon the parallel of 78° 24′, where Cape Isabella bears due west of Littleton Island, and

the diameter of the channel is reduced to thirty-seven miles.

The difference between our projection of this coast and Captain Inglefield's, refers itself naturally to the



CAPE ISABELLA.

differing circumstances under which the two were framed. The sluggishness of the compass, and the eccentricities of refraction in the Arctic seas, are well fitted to embarrass and mislead a navigator. I might hesitate to assert the greater certainty for our results, had not the position of our observatory at Fern Rock, to which our survey is referred, been determined by a careful series of astronomical observations.

Captain Inglefield gives the mean trend of the east coast about 20° too much to the north; in consequence

of which the capes and indentations sighted by him are too high in latitude.

Cape Frederick VII., his highest northern point, is placed in lat. 79° 30′, while no land—the glacier not being considered as such—is found on that coast beyond 79° 13′. The same cape as laid down in the Admiralty Chart of 1852 is about eighty miles from the farthest position reached by Captain Inglefield. To see land upon the horizon at this distance, even from a mast-head eighty feet high, would require it to be a mountain whose altitude exceeded three thousand five hundred feet. An island similar in position to that designated by Captain Inglefield as Louis Napoleon does not exist. The land sighted in that direction may have been the top of a high mountain on the north side of Franklin Pierce Bay, though this supposition requires us to assume an error in the bearing; for, as given in the chart, no land could be within the range of sight. In deference to Captain Inglefield, I have continued for this promontory the name which he had impressed upon it as an island.

Toward night the wind freshened from the northward, and we passed beyond the protection of the straits into the open seaway. My journal gives no picture of the life we now entered on. The oldest sailor, who treads the deck of his ship with the familiar confidence of a man at home, has a distrust of open-boat navigation which a landsman hardly shares. The feeling grew upon us as we lost the land. McGary

was an old Behring's Straits whaler, and there is no better boatman in the world than he; but I know that he shared my doubts, as the boat buried herself again and again in the trough of a short chopping sea, which it taxed all his dexterity in steering to meet.

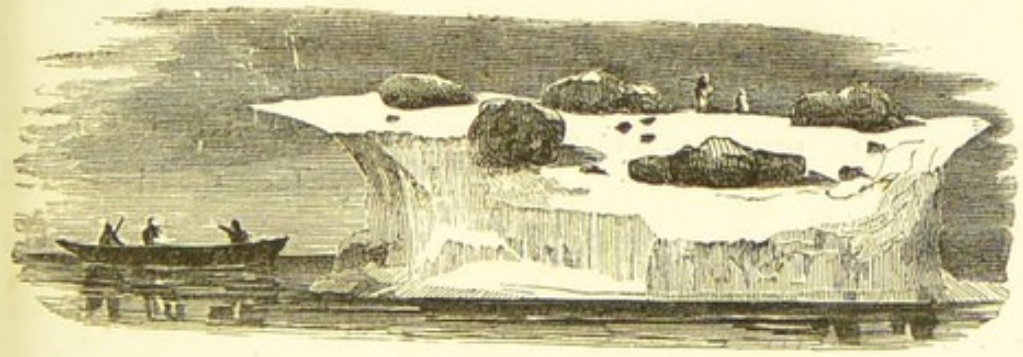
Baffin passed around this gulf in 1616 with two small vessels; but they were giants beside ours. I thought of them as we crossed his track steering for Cape Combermere, then about sixty miles distant, with every prospect of a heavy gale.

We were in the centre of this large area of open water when the gale broke upon us from the north. We were near foundering. Our false bow of India-rubber cloth was beaten in, and our frail weather-boarding soon followed it. With the utmost exertion we could hardly keep our boat from broaching to: a broken oar or an accidental twitch would have been fatal to us at any time. But McGary handled that whaler's marvel, the long steering-oar, with admirable skill. None of us could pretend to take his place. For twenty-two unbroken hours he stuck to his post without relaxing his attention or his efforts.

I was not prepared for such a storm. I do not think I have seen a worse sea raised by the northers of the Gulf of Mexico. At last the wind hauled to the eastward, and we were glad to drive before it for the in-shore floes. We had passed several bergs; but the sea dashed against their sides so furiously as to

negative all hope of protection at their base: the pack or floe, so much feared before, was now looked to for a refuge.

I remember well our anxiety as we entered the loose streams of drift after four hours' scudding, and our relief when we felt their influence upon the sea. We fastened to an old floe, not fifty yards in diameter, and, with the weather-surf breaking over our heads, rode out the storm under a warp and grapnel.



CHAPTER XXV.

WORKING ON—A BOAT NIP—ICE-BARRIER—THE BARRIER PACK—PROGRESS HOPELESS—NORTHUMBERLAND ISLAND—NORTHUMBERLAND GLACIER—ICE-CASCADES—NEVE.

THE obstacle we had now to encounter was the pack that stretched between us and the south.

When the storm abated, we commenced boring into it,—slow work at the best of times; but my companions encountered it with a persevering activity quite as admirable as their fortitude in danger. It had its own hazards too; and more than once it looked as if we were permanently beset. I myself knew that we might rely on the southerly wind to liberate us from such an imprisonment; but I saw that the men thought otherwise, as the ice-fields closed around us and the horizon showed an unchanging circle of ice.

We were still laboring on, hardly past the middle of the bay, when the floes began to relax. On Sunday, the 23d of July, the whole aspect around us changed. The sun came out cheeringly, the leads opened more and more, and, as we pulled through them to the

south, each ice-tongue that we doubled brought us nearer to the Greenland shore. A slackening of the ice to the east enabled us after a while to lay our course for Hakluyt Island. We spread our canvas again, and reached the in-shore fields by one in the afternoon. We made our camp, dried our buffalo-skins, and sunned and slept away our fatigue.

We renewed our labors in the morning. Keeping inside the pack, we coasted along for the Cary Islands, encountering now and then a projecting floe, and either boring or passing around it, but making a satisfactory progress on the whole toward Lancaster Sound. But at the south point of Northumberland Island the pack arrested us once more. The seam by which we had come east lay between Whale Sound and Murchison Inlet, and the ice-drift from the southern of these had now piled itself in our way.

I was confident that I should find the "Eastern Water" if I could only reach Cape Parry, and that this would give me a free track to Cary Islands. I therefore looked anxiously for a fissure in the pack, and pressed our little craft into the first one that seemed at all practicable.

For the next three days we worked painfully through the half-open leads, making in all some fifteen miles to the south. We had very seldom room enough to row; but, as we tracked along, it was not difficult to escape nippings, by hauling up the boat on the ice. Still she received some hard knocks, and a twist or two that did not help her sea-worthiness; for she began to leak; and

this, with the rain which fell heavily, forced us to bale her out every other hour. Of course, we could not sleep, and one of our little party fell sick with the unmitigated fatigue.

On the twenty-ninth, it came on to blow, the wind

SOUTH POINT OF NORTHUMBERLAND ISLAND.

still keeping from the southwest, but cold and almost rising to a gale. We had had another wet and sleepless night, for the floes still baffled us by their capricious movements. But at three in the afternoon we had the sun again, and the ice opened just enough to tempt

us. It was uncomfortable toil. We pushed forward our little weather-worn craft, her gunwales touching on both sides, till the toppling ice began to break down on us, and sometimes, critically suspended, met above our heads.

One of these passages I am sure we all of us remember. We were in an alley of pounded ice-masses, such as the receding floes leave when they have crushed the tables that were between them, and had pushed our way far enough to make retreat impossible, when the fields began to close in. There was no escaping a nip, for every thing was loose and rolling around us, and the floes broke into hummock-ridges as they came together. They met just ahead of us, and gradually swayed in toward our boat. The fragments were already splitting off and spinning over us, when we found ourselves borne up by the accumulating rubbish, like the Advance in her winter drift; and, after resting for twenty minutes high out of water, quietly lowered again as the fields relaxed their pressure.

Generally, however, the ice-fields came together directly, and so gradually as to enable us to anticipate their contact. In such cases, as we were short-handed and our boat heavily laden, we were glad to avail ourselves of the motion of the floes to assist in lifting her upon them. We threw her across the lead by a small pull of the steering-oar, and let her meet the approaching ice upon her bow. The effect, as we found in every instance, was to press her down forward as the floe advanced against her, and to raise her stern above the

level of the other field. We held ourselves ready for the spring as she began to rise.

It was a time of almost unbroken excitement; yet I am not surprised, as I turn over the notes of my meagre diary, to find how little of stirring incident it records. The story of one day's strife with the ice-floes might almost serve for those which followed it: I remember that we were four times nipped before we succeeded in releasing ourselves, and that we were glad to haul upon the floes as often as a dozen times a day. We attempted to drag forward on the occasional fields; but we had to give it up, for it strained the boat so much that she was barely sea-worthy: it kept one man busy the last six days baling her out.

On the 31st, at the distance of ten miles from Cape Parry, we came to a dead halt. A solid mass lay directly across our path, extending onward to our farthest horizon. There were bergs in sight to the westward, and by walking for some four miles over the moving floe in that direction, McGary and myself succeeded in reaching one. We climbed it to the height of a hundred and twenty feet, and, looking out from it with my excellent spy-glass to the south and west, we saw that all within a radius of thirty miles was a motionless, unbroken, and impenetrable sea.

I had not counted on this. Captain Inglefield found open water two years before at this very point. I myself met no ice here only seven days later in 1853. Yet it was plain, that from Cape Combermere on the west side, and an unnamed bay immediately to the

north of it, across to Hackluyt Island, there extended a continuous barrier of ice. We had scarcely penetrated beyond its margin.

We had, in fact, reached the dividing pack of the two great open waters of Baffin's Bay. The experience of the whalers and of the expedition-ships that have traversed this region have made all of us familiar with that great expanse of open sea, to the north of Cape Dudley Diggs, which has received the name of the North Water. Combining the observations of Baffin, Ross, and Inglefield, we know that this sometimes extends as far north as Littleton Island, embracing an area of ninety thousand square miles. The voyagers I have named could not, of course, be aware of the interesting fact that this water is divided, at least occasionally, into two distinct bodies; the one comprehended between Lancaster and Jones's Sounds, the other extending from the point we had now reached to the upper pack of Smith's Straits. But it was evident to all of our party that the barrier which now arrested us was made up of the ices which Jones's Sound on the west and Murchison's on the east had discharged and driven together.

I may mention, as bearing on the physical geography of the region, that south of Cape Isabella the western shore is invested by a zone of unbroken ice. We encountered it when we were about twenty miles from the land. It followed the curves of three great indentations, whose bases were lined with glaciers rivalling those of Melville Bay. The bergs from them

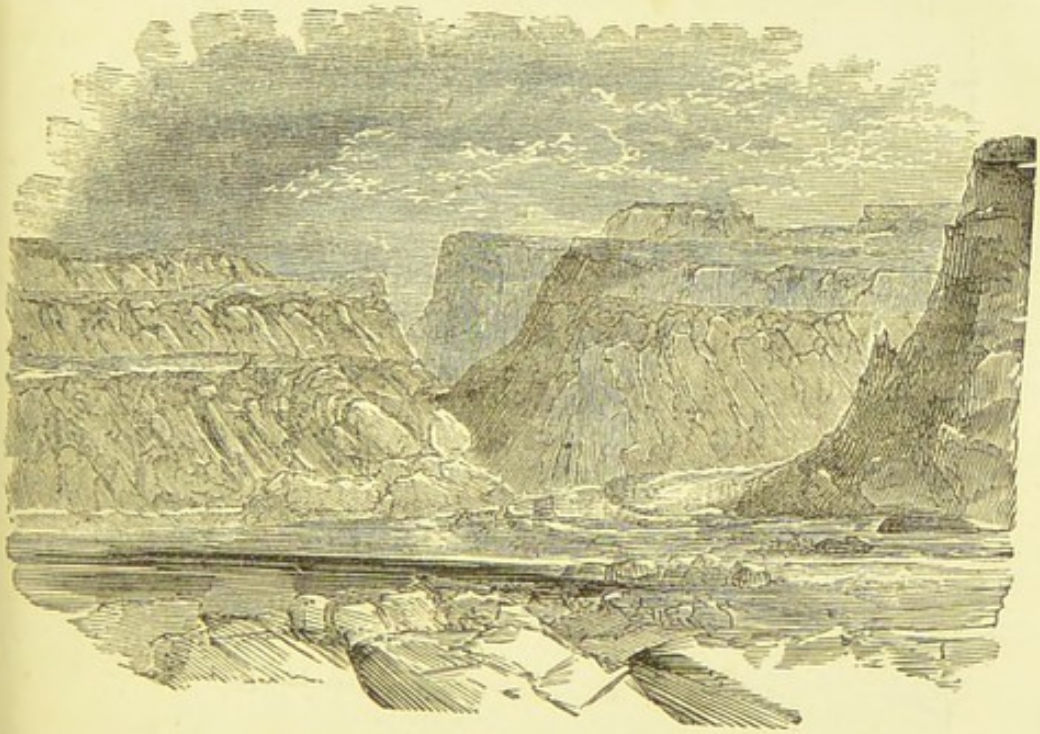
were numerous and large, entangling the floating floes, and contributing as much as the currents to the ice-clad character of this most dreary coast. The currents alone would not explain it. Yet when we recur to the observations of Graah, who describes a similar belt on the eastern coast of Greenland, and to the observations of the same character that have been made on the coasts of Arctic America to the southeast, it is not easy to escape the thought that this accumulation of ice on the western shores must be due, in part at least, to the rotary movements of the earth, whose increasing radius as we recede from the Pole gives increased velocity to the southern ice-pack.

To return to our narrative. It was obvious that a further attempt to penetrate to the south must be hopeless till the ice-barrier before us should undergo a change. I had observed, when passing Northumberland Island, that some of its glacier-slopes were margined with verdure, an almost unfailing indication of animal life; and, as my men were much wasted by diarrhœa, and our supplies of food had become scanty, I resolved to work my way to the island and recruit there for another effort.

Tracking and sometimes rowing through a heavy rain, we traversed the leads for two days, working eastward; and on the morning of the third gained the open water near the shore. Here a breeze came to our aid, and in a couple of hours more we passed with now unwonted facility to the southern face of the island. We met several flocks of little auks as we approached

it, and found on landing that it was one enormous homestead of the auks, dovekies, and gulls.

We encamped on the 31st, on a low beach at the foot of a moraine that came down between precipitous cliffs of surpassing wildness. It had evidently been selected by the Esquimaux for a winter settlement: five well-

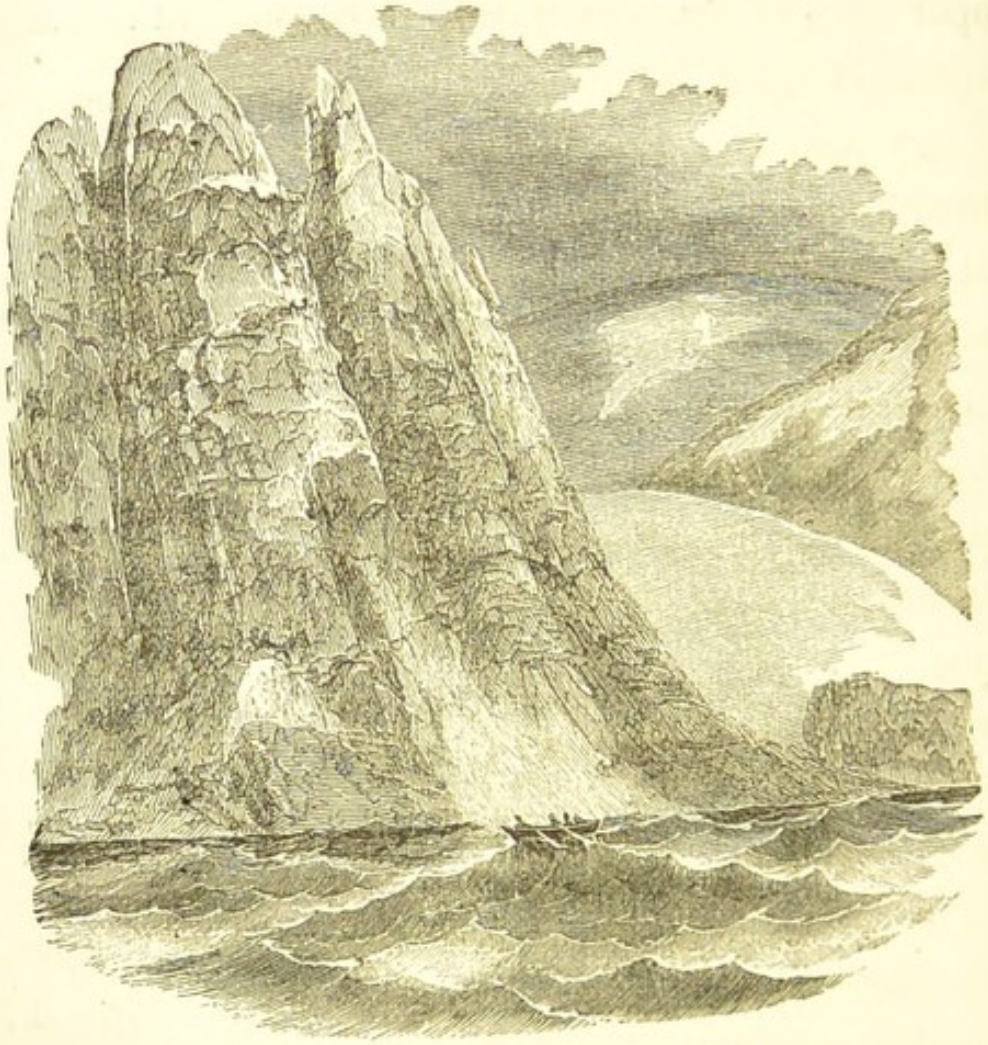


NORTHUMBERLAND ISLAND.

built huts of stone attested this. Three of them were still tolerably perfect, and bore marks of recent habitation. The droppings of the birds had fertilized the soil, and it abounded in grasses, sorrel, and cochlearia, to the water's edge. The foxes were about in great numbers, attracted, of course, by the abundance of birds. They were all of them of the lead-colored variety, without a white one among them. The young

ones, as yet lean and seemingly unskilled in hospitable courtesies, barked at us as we walked about.

I was greatly interested by a glacier that occupied the head of the moraine. It came down abruptly from



GLACIER OF NORTHUMBERLAND ISLAND.

the central plateau of the island, with an angle of descent of more than seventy degrees. I have never seen one that illustrated more beautifully the viscous or semi-solid movement of these masses. Like a well-known glacier of the Alps, it had two planes of descent; the upper nearly precipitous for about four hundred

feet from the summit; the lower of about the same height, but with an angle of some fifty degrees; the two communicating by a slightly-inclined platform perhaps half a mile long. This ice was unbroken through its entire extent. It came down from the level of the upper country, a vast icicle, with the folds or waves impressed upon it by its onward motion undisturbed by any apparent fracture or crevasse. Thus it rolled onward over the rugged and contracting platform below, and thence poured its semi-solid mass down upon the plain. Where it encountered occasional knobs of rock it passed round them, bearing still the distinctive marks of an imperfect fluid obstructed in its descent; and its lower fall described a dome, or, to use the more accurate simile of Forbes, a great outspread clam-shell of ice.

It seemed as if an interior ice-lake was rising above the brink of the cliffs that confined it. In many places it could be seen exuding or forcing its way over the very crest of the rocks, and hanging down in huge icy stalactites seventy and a hundred feet long. These were still lengthening out by the continuous overflow, some of them breaking off as their weight became too great for their tenacity, others swelling by constant supplies from the interior, but spitting off fragmentary masses with an unremitting clamor. The plain below these cataractine glaciers was piling up with the debris, while torrents of the melted rubbish found their way, foaming and muddy, to the sea, carrying gravel and rocks along with them.

These ice-cascades, as we called them, kept up their din the whole night, sometimes startling us with a heavy booming sound, as the larger masses fell, but more generally rattling away like the random fires of a militia parade. On examining the ice of which they were made up, I found grains of *neve* larger than a walnut; so large, indeed, that it was hard to realize that they could be formed by the ordinary granulating processes of the winter snows. My impression is, that the surface of the plateau-ice, the *mer de glace* of the island, is made up of these agglomerated nodules, and that they are forced out and discarded by the advance of the more compact ice from higher levels.

CHAPTER XXVI.

THE ICE-FOOT IN AUGUST—THE PACK IN AUGUST—ICE-BLASTING —FOX-TRAP POINT—WARPING—THE PROSPECT—APPROACHING CLIMAX—SIGNAL CAIRN—THE RECORD—PROJECTED WITHDRAWAL —THE QUESTION—THE DETERMINATION—THE RESULT.

It was with mingled feelings that we neared the brig. Our little party had grown fat and strong upon the auks and eiders and scurvy-grass; and surmises were rife among us as to the condition of our comrades and the prospects of our ice-bound little ship.

The tide-leads, which one year ago had afforded a precarious passage to the vessel, now barely admitted our whaleboat; and, as we forced her through the broken ice, she showed such signs of hard usage, that I had her hauled up upon the land-belt and housed under the cliffs at Six-mile Ravine. We crossed the rocks on foot, aided by our jumping-poles, and startled our shipmates by our sudden appearance.

In the midst of the greeting which always met our returning parties, and which gave to our little vessel the endearing associations of a homestead, our thoughts reverted to the feeble chances of our liberation, and

the failure of our recent effort to secure the means of a retreat.

The brig had been imprisoned by closely-cementing ice for eleven months, during which period she had not budged an inch from her icy cradle. My journal will show the efforts and the hopes which engrossed our few remaining days of uncertainty and suspense:—

"August 8, Tuesday.—This morning two saw-lines were passed from the open-water pools at the sides of our sternpost, and the ice was bored for blasting. In the course of our operations the brig surged and righted, rising two and a half feet. We are now trying to warp her a few yards toward Butler Island, where we again go to work with our powder-canisters.

"August 11, Friday.—Returned yesterday from an inspection of the ice toward the Esquimaux settlements; but, absorbing as was my errand, I managed to take geognostical sections and profiles of the coast as far south as Peter Force Bay, beyond which the ice was impenetrable.

"I have often referred to the massive character of the ice in that neighborhood. The ice-foot, by our winter measurement twenty-seven feet in mean thickness by forty yards in width, is now of dimensions still more formidable. Large masses, released like land-slides by the action of torrents from the coast, form here and there a belt or reef, which clogs the shoal water near the shore and prevents a passage. Such ice I have seen thirty-six feet in height; and when subjected, as it often is, to hummock-squeezing, sixty and seventy

feet. It requires experience to distinguish it from the true iceberg.

"When I passed up the Sound on the 6th of August, after my long southern journey, I found the ice-foot comparatively unbroken, and a fine interval of open water between it and the large floes of the pack. Since then, this pack has been broken up, and the comminuted fragments, forming a great drift, move with tides and currents in such a way as to obliterate the 'land-water' at high tide, and under some circumstances at other times. This broken rubbish occasionally expands enough to permit a boat to pass through; but, as we found it, a passage could only be effected by heavy labor, and at great expense to our boat, nearly unseaworthy now from her former trials. We hauled her up near Bedevilled Headland, and returned to the brig on foot.

"As I travelled back along the coast, I observed the wonderful changes brought about by the disruption of the pack. It was my hope to have extricated the brig, if she was ever to be liberated, before the drift had choked the land-leads; but now they are closely jammed with stupendous ice-fragments, records of inconceivable pressures. The bergs, released from their winter cement, have driven down in crowds, grounding on the shallows, and extending in reefs or chains out to seaward, where they have caught and retained the floating ices. The prospect was really desolation itself. One floe measured nine feet in mean elevation above the water-level; thus implying a tabular thickness by

direct congelation of sixty-three feet. It had so closed in with the shore, too, as to rear up a barricade of crushed ice which it was futile to attempt to pass. All prospect of forcing a passage ceased north of Six-mile Ravine.

APPROACH TO OBSERVATORY.

"On reaching the brig, I found that the blasting had succeeded: one canister cracked and uplifted two hundred square yards of ice with but five pounds of powder. A prospect showed itself of getting inside the island at high-water; and I determined to attempt it at the highest spring-tide, which takes place on the 12th.

"August 12, Saturday.—The brig bore the strain of

her new position very well. The tide fell fifteen feet, leaving her high and dry; but, as the water rose, every thing was replaced, and the deck put in order for warping again. Every one in the little vessel turned to; and after much excitement, at the very top of the tide, she passed 'by the skin of her teeth.' She was then warped into a bight of the floe, near Fox-Trap Point, and there she now lies.

"We congratulate ourselves upon effecting this crossing. Had we failed, we should have had to remain fast probably for the high tides a fortnight hence. The young ice is already making, and our hopes rest mainly upon the gales of late August and September.

"August 13, Sunday.—Still fast to the old floe near Fox-Trap Point, waiting a heavy wind as our only means of liberation. The land-trash is cemented by young ice, which is already an inch and a half thick. The thermometer has been as low as 29°; but the fog and mist which prevail to-day are in our favor. The perfect clearness of the past five days hastened the growth of young ice, and it has been forming without intermission.

"I took a long walk to inspect the ice toward Six-mile Ravine. This ice has never been moved either by wind or water since its formation. I found that it lined the entire shore with long ridges of detached fragments: a discouraging obstacle, if it should remain, in the way of our future liberation. It is in direct contact with the big floe that we are now fast to, and is the remnant of the triple lines of 'land-ices' which I

have described already. I attribute its permanency to the almost constant shadow of the mountains near it.

"August 15, Tuesday.—To-day I made another ice-inspection to the N.E. The floe on which I have trudged so often, the big bay-floe of our former mooring, is nearly the same as when we left it. I recognised the holes and cracks, through the fog, by a sort of instinct. McGary and myself had little difficulty in reaching the Fiord Water by our jumping-poles.

"I have my eye on this water; for it may connect with the Northeast Headland and hereafter give us a passage.

"The season travels on: the young ice grows thicker, and my messmates' faces grow longer, every day. I have again to play buffoon to keep up the spirits of the party.

"A raven! The snow-birds begin to fly to the south in groups, coming at night to our brig to hover on the rigging. Winter is hurrying upon us. The poppies are quite wilted.

"Examined ice with Mr. Bonsall, and determined to enter the broken land-ices by warping; not that there is the slightest probability of getting through, but it affords moral aid and comfort to the men and officers: it looks as if we were doing something.

"August 17, Thursday.—Warped about one hundred yards into the trash, and, after a long day of labor, have turned in, hoping to recommence at 5 A.M. to-morrow.

"In five days the spring-tides come back: should

we fail in passing with them, I think our fortunes are fixed. The young ice bore a man this morning: it had a bad look, this man-supporting August ice! The temperature never falls below 28°; but it is cold o' nights with no fire.

"August 18, Friday.—Reduced our allowance of wood to six pounds a meal. This, among eighteen mouths, is one-third of a pound of fuel for each. It allows us coffee twice a day, and soup once. Our fare besides this is cold pork boiled in quantity and eaten as required. This sort of thing works badly; but I must save coal for other emergencies. I see 'darkness ahead.'

"I inspected the ice again to-day. Bad! bad!—I must look another winter in the face. I do not shrink from the thought; but, while we have a chance ahead, it is my first duty to have all things in readiness to meet it. It is *horrible*—yes, that is the word—to look forward to another year of disease and darkness to be met without fresh food and without fuel. I should meet it with a more tempered sadness if I had no comrades to think for and protect.

"August 20, Sunday.—Rest for all hands. The daily prayer is no longer 'Lord, accept our gratitude and bless our undertaking,' but 'Lord, accept our gratitude and restore us to our homes.' The ice shows no change: after a boat and foot journey around the entire southeastern curve of the bay, no signs!

"I was out in the Red Eric with Bonsall, McGary, Hans, Riley, and John. We tracked her over the ice

to the Burgomaster Cove, the flanking cape of Charlotte Wood Fiord and its river. Here we launched her, and went all round the long canal which the running waters have eaten into the otherwise unchanged ice. Charlotte Wood Fiord is a commanding sheet of water, nearly as wide as the Delaware: in the midst of the extreme solidity around us, it looked deceitfully gladdening. After getting to the other side, near Little Willie's Monument, we ascended a high bluff, and saw every thing weary and discouraging beyond. Our party returned quite crestfallen."

My attempt to reach Beechy Island had disclosed, as I thought it would, the impossibility of reaching the settlements of Greenland. Between the American and the opposite side of the bay was one continuous pack of ice, which, after I had travelled on it for many miles to the south, was still of undefined extent before me. The birds had left their colonies. The water-streams from the bergs and of the shore were freezing up rapidly. The young ice made the water-surface impassable even to a whaleboat. It was clear to me that without an absolute change of circumstances, such as it was vain to look for any longer, to leave the ship would be to enter upon a wilderness destitute of resources, and from which it would be difficult, if not impracticable, to return.

Every thing before us was involved in gloomy doubt. Hopeful as I had been, it was impossible not to feel that we were near the climax of the expedition.

I determined to place upon Observatory Island a

Drawn by Hamilton after a Sketch by O'KEEFFE. Engraved by Sutton

large signal-beacon or cairn, and to bury under it documents which, in case of disaster to our party, would convey to any who might seek us intelligence of our proceedings and our fate. The memory of the first winter quarters of Sir John Franklin, and the painful feelings with which, while standing by the graves of his dead, I had four years before sought for written signs pointing to the fate of the living, made me careful to avoid a similar neglect.

A conspicuous spot was selected upon a cliff looking out upon the icy desert, and on a broad face of rock the words

ADVANCE,

A. D. 1853–54,

were painted in letters which could be read at a distance. A pyramid of heavy stones, perched above it, was marked with the Christian symbol of the cross. It was not without a holier sentiment than that of mere utility that I placed under this the coffins of our two poor comrades. It was our beacon and their gravestone.

Near this a hole was worked into the rock, and a paper, enclosed in glass, sealed in with melted lead. It read as follows:—

"Brig Advance, August 14, 1854.

"E. K. Kane, with his comrades Henry Brooks, John Wall Wilson, James McGary, I. I. Hayes, Christian Ohlsen, Amos Bonsall, Henry Goodfellow, August Sontag, William Morton, J. Carl Petersen, George

Stephenson, Jefferson Temple Baker, George Riley, Peter Schubert, George Whipple, John Blake, Thomas Hickey, William Godfrey, and Hans Christian, members of the Second Grinnell Expedition in search of Sir John Franklin and the missing crews of the Erebus and Terror, were forced into this harbor while endeavoring to bore the ice to the north and east.

"They were frozen in on the 8th of September, 1853, and liberated ———

"During this period the labors of the expedition have delineated nine hundred and sixty miles of coast-line, without developing any traces of the missing ships or the slightest information bearing upon their fate. The amount of travel to effect this exploration exceeded two thousand miles, all of which was upon foot or by the aid of dogs.

"Greenland has been traced to its northern face, whence it is connected with the farther north of the opposite coast by a great glacier. This coast has been charted as high as lat. 82° 27′. Smith's Sound expands into a capacious bay: it has been surveyed throughout its entire extent. From its northern and eastern corner, in lat. 80° 10′, long. 66°, a channel has been discovered and followed until farther progress was checked by water free from ice. This channel trended nearly due north, and expanded into an apparently open sea, whicb abounded with birds and bears and marine life.

"The death of the dogs during the winter threw the travel essential to the above discoveries upon th

personal efforts of the officers and men. The summer finds them much broken in health and strength.

"Jefferson Temple Baker and Peter Schubert died from injuries received from cold while in manly performance of their duty. Their remains are deposited under a cairn at the north point of Observatory Island.

"The site of the observatory is seventy-six English feet from the northernmost salient point of this island, in a direction S. 14° E. Its position is in lat. 78° 37′ 10″, long. 70° 40′. The mean tidal level is twenty-nine feet below the highest point upon this island. Both of these sites are further designated by copper bolts sealed with melted lead into holes upon the rocks.

"On the 12th of August, 1854, the brig warped from her position, and, after passing inside the group of islands, fastened to the outer floe about a mile to the northwest, where she is now awaiting further changes in the ice.

"Signed, "E. K. KANE,

"Commanding Expedition.

"FOX-TRAP POINT, August 14, 1854."

Some hours later, the following note was added.

"The young ice having formed between the brig and this island, and prospects of a gale showing themselves, the date of departure is left unfilled. If possible, a second visit will be made to insert our dates, our final escape being still dependent upon the course of the season.

E. K. KANE."

And now came the question of the second winter: how to look our enemy in the face, and how to meet him. Any thing was better than inaction; and, in spite of the uncertainty which yet attended our plans, a host of expedients were to be resorted to, and much Robinson Crusoe labor ahead. Moss was to be gathered for eking out our winter fuel, and willow-stems and stonecrops and sorrel, as antiscorbutics, collected and buried in the snow. But while all these were in progress came other and graver questions.

Some of my party had entertained the idea that an escape to the south was still practicable; and this opinion was supported by Mr. Petersen, our Danish interpreter, who had accompanied the Searching Expedition of Captain Penny, and had a matured experience in the changes of Arctic ice. They even thought that the safety of all would be promoted by a withdrawal from the brig.

"August 21, Monday.—The question of detaching a party was in my mind some time ago; but the more I thought it over, the more I was convinced that it would be neither right in itself nor practically safe. For myself personally, it is a simple duty of honor to remain by the brig: I could not think of leaving her till I had proved the effect of the later tides; and after that, as I have known all along, it would be too late.—Come what may, I share her fortunes.

"But it is a different question with my associates. I cannot expect them to adopt my impulses, and I am by no means sure that I ought to hold the

bound by my conclusions. Have I the *moral right?* for, as to nautical rules, they do not fit the circumstances: among the whalers, when a ship is hopelessly beset, the master's authority gives way, and the crew take counsel for themselves whether to go or stay by her. My party is subordinate and well disposed; but if the restlessness of suffering makes some of them anxious to brave the chances, they may certainly plead that a second winter in the ice was no part of the cruise they bargained for.

"But what presses on me is of another character. I cannot disguise it from myself that we are wretchedly prepared for another winter on board. We are a set of scurvy-riddled, broken-down men; our provisions are sorely reduced in quantity, and are altogether unsuited to our condition. My only hope of maintaining or restoring such a degree of health among us as is indispensable to our escape in the spring has been and must be in a wholesome elastic tone of feeling among the men: a reluctant, brooding, disheartened spirit would sweep our decks like a pestilence. I fear the bane of depressing example.

"I know all this as a medical man and an officer; and I feel that we might be wearing away the hearts and energies, if not the lives of all, by forcing those who were reluctant to remain. With half a dozen confiding resolute men, I have no fears of ultimate safety.

"I will make a thorough inspection of the ice to-morrow, and decide finally the prospects of our liberation.

"August 23, Wednesday.—The brig cannot escape I got an eligible position with my sledge to review the floes, and returned this morning at two o'clock. There is no possibility of our release, unless by some extreme intervention of the coming tides. I doubt whether a boat could be forced as far as the Southern Water. When I think of the extraordinary way in which the ice was impacted last winter, how very little it has yielded through the summer, and how early another winter is making its onset upon us, I am very doubtful, indeed, whether our brig can get away at all. It would be inexpedient to attempt leaving her now in boats; the water-streams closing, the pack nearly fast again, and the young ice almost impenetrable.

"I shall call the officers and crew together, and make known to them very fully how things look, and what hazards must attend such an effort as has been proposed among them. They shall have my views unequivocally expressed. I will then give them twenty-four hours to deliberate; and at the end of that time all who determine to go shall say so in writing, with a full exposition of the circumstances of the case. They shall have the best outfit I can give, an abundant share of our remaining stores, and my good-bye blessing.

"August 24, Thursday.—At noon to-day I had all hands called, and explained to them frankly the considerations which have determined me to remain where we are. I endeavored to show them that an escape to open water could not succeed, and that the effort must be exceedingly hazardous: I alluded to our

duties to the ship: in a word, I advised them strenuously to forego the project. I then told them that I should freely give my permission to such as were desirous of making the attempt, but that I should require them to place themselves under the command of officers selected by them before setting out, and to renounce in writing all claims upon myself and the rest who were resolved to stay by the vessel. Having done this, I directed the roll to be called, and each man to answer for himself."

In the result, eight out of the seventeen survivors of my party resolved to stand by the brig. It is just that I should record their names. They were Henry Brooks, James McGary, J. W. Wilson, Henry Goodfellow, William Morton, Christian Ohlsen, Thomas Hickey, Hans Christian.

I divided to the others their portion of our resources justly and even liberally; and they left us on Monday, the 28th, with every appliance our narrow circumstances could furnish to speed and guard them. One of them, George Riley, returned a few days afterward; but weary months went by before we saw the rest again. They carried with them a written assurance of a brother's welcome should they be driven back; and this assurance was redeemed when hard trials had prepared them to share again our fortunes.

CHAPTER XXVII.

DISCIPLINE — BUILDING IGLOË — TOSSUT — MOSSING — AFTER SEAL — ON THE YOUNG ICE — GOING TOO FAR — SEALS AT HOME — IN THE WATER — IN SAFETY — DEATH OF TIGER.

The party moved off with the elastic step of men confident in their purpose, and were out of sight in a few hours. As we lost them among the hummocks, the stern realities of our condition pressed themselves upon us anew. The reduced numbers of our party, the helplessness of many, the waning efficiency of all, the impending winter with its cold, dark night, our penury of resources, the dreary sense of increased isolation,— these made the staple of our thoughts. For a time, Sir John Franklin and his party, our daily topic through so many months, gave place to the question of our own fortunes,—how we were to escape, how to live. The summer had gone, the harvest was ended, and—— We did not care to finish the sentence.

Following close on this gloomy train, and in fact blending with it, came the more important discussion of our duties. We were like men driven to the wall, quickened, not depressed. Our plans were formed at

once: there is nothing like emergency to speed, if not to instruct, the energies.

It was my first definite resolve that, come what might, our organization and its routine of observances should be adhered to strictly. It is the experience of every man who has either combated difficulties himself or attempted to guide others through them, that the controlling law shall be systematic action. Nothing depresses and demoralizes so much as a surrender of the approved and habitual forms of life. I resolved that every thing should go on as it had done. The arrangement of hours, the distribution and details of duty, the religious exercises, the ceremonials of the table, the fires, the lights, the watch, even the labors of the observatory and the notation of the tides and the sky,—nothing should be intermitted that had contributed to make up the day.

My next was to practise on the lessons we had learned from the Esquimaux. I had studied them carefully, and determined that their form of habitations and their peculiarities of diet, without their unthrift and filth, were the safest and best to which the necessity of our circumstances invited us.

My journal tells how these resolves were carried out:—

"September 6, Wednesday.—We are at it, all hands, sick and well, each man according to his measure, working at our winter's home. We are none of us in condition to brave the frost, and our fuel is nearly

out. I have determined to borrow a lesson from our Esquimaux neighbors, and am turning the brig into an *igloë*.

"The sledge is to bring us moss and turf from wherever the men can scrape it. This is an excellent non-conductor; and when we get the quarter-deck

GATHERING MOSS.

well padded with it we shall have a nearly cold-proof covering. Down below we will enclose a space some eighteen feet square, and pack it from floor to ceiling with inner walls of the same material. The floor itself we are calking carefully with plaster of Paris and common paste, and will cover it when we have done with Manilla oakum a couple of inches deep, and a

canvas carpet. The entrance is to be from the hold, by a low moss-lined tunnel, the *tossut* of the native huts, with as many doors and curtains to close it up as our ingenuity can devise. This is to be our apartment of all uses,—not a very large one; but we are only ten to stow away, and the closer the warmer.

"September 9, Saturday.—All hands but the carpenter and Morton are out 'mossing.' This mossing, though it has a very May-day sound, is a frightfully wintry operation. The mixed turf of willows, heaths, grasses, and moss, is frozen solid. We cannot cut it out from the beds of the snow-streams any longer, and are obliged to seek for it on the ledges of the rocks, quarrying it with crowbars and carrying it to the ship like so much stone. I would escape this labor if I could, for our party have all of them more or less scurvy in their systems, and the thermometer is often below zero. But there is no help for it. I have some eight sledge-loads more to collect before our little home can be called wind-proof: and then, if we only have snow enough to bank up against the brig's sides, I shall have no fear either for height or uniformity of temperature.

"September 10, Sunday.—'The work goes bravely on.' We have got moss enough for our roof, and something to spare for below. To-morrow we begin to strip off the outer-deck planking of the brig, and to stack it for firewood. It is cold work, hatches open and no fires going; but we saved time enough for our Sunday's exercises, though we forego its rest.

"It is twelve months to-day since I returned from

the weary foot-tramp that determined me to try the winter search. Things have changed since then, and the prospect ahead is less cheery. But I close my pilgrim-experience of the year with devout gratitude for the blessings it has registered, and an earnest faith in the support it pledges for the times to come.

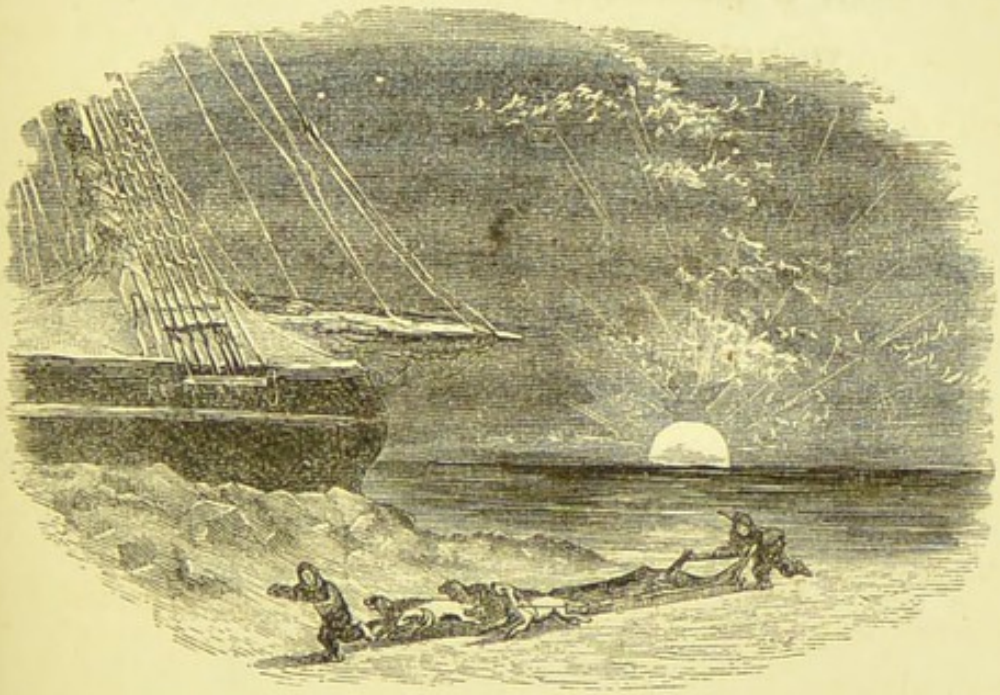
"September 11, Monday.—Our stock of game is down to a mere mouthful,—six long-tailed ducks not larger than a partridge, and three ptarmigan. The rabbits have not yet come to us, and the foxes seem tired of touching our trap-baits.

"I determined last Saturday to try a novel expedient for catching seal. Not more than ten miles to seaward the icebergs keep up a rude stream of broken ice and water, and the seals resort there in scanty numbers to breathe. I drove out with my dogs, taking Hans along; but we found the spot so hemmed in by loose and fragile ice that there was no approaching it. The thermometer was 8°, and a light breeze increased my difficulties.

"*Deo volente*, I will be more lucky to-morrow. I am going to take my long Kentucky rifle, the kayack, an Esquimaux harpoon with its attached line and bladder, *naligeit* and *awahtok*, and a pair of large snow-shoes to boot. My plan this time is to kneel where the ice is unsafe, resting my weight on the broad surface of the snow-shoes, Hans following astride of his kayack, as a sort of life-preserver in case of breaking in. If I am fortunate enough to stalk within gun-range, Hans will take to the water and secure the game before it sinks.

We will be gone for some days probably, tenting it in the open air; but our sick men—that is to say, all of us—are languishing for fresh meat."

I started with Hans and five dogs, all we could muster from our disabled pack, and reached the "Pinnacly Berg" in a single hour's run. But where was the water? where were the seal? The floes had closed,

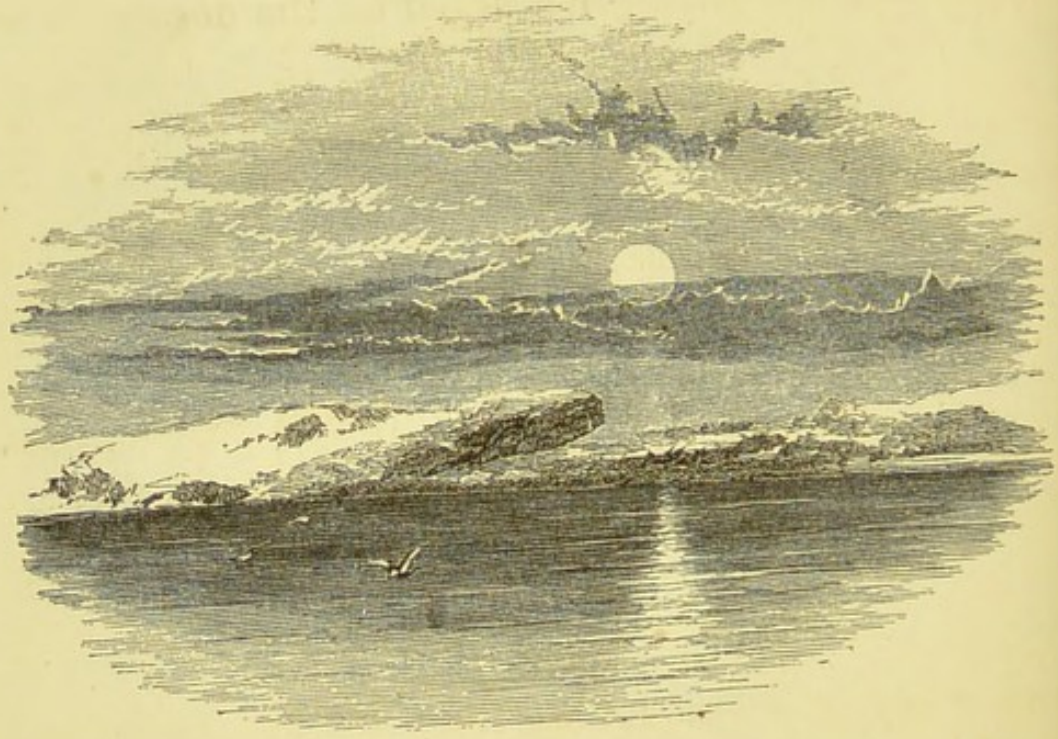


STARTING TO HUNT.

and the crushed ice was all that told of our intended hunting-ground.

Ascending a berg, however, we could see to the north and west the dark cloud-stratus which betokens water. It ran through our old battle-ground, the "Bergy Belt,"—the labyrinth of our wanderings after the frozen party of last winter. I had not been over it since, and the feeling it gave me was any thing but joyous.

But in a couple of hours we emerged upon a plain unlimited to the eye and smooth as a billiard-table. Feathers of young frosting gave a plush-like nap to its surface, and toward the horizon dark columns of frost-smoke pointed clearly to the open water. This ice was firm enough: our experience satisfied us that it was not a very recent freezing. We pushed on without



THE ICE-PLAIN.

hesitation, cheering ourselves with the expectation of coming every minute to the seals. We passed a second ice-growth: it was not so strong as the one we had just come over, but still safe for a party like ours. On we went, at a brisker gallop, maybe for another mile, when Hans sang out, at the top of his voice, "Pusey! puseymut! seal, seal!" At the same instant the dogs bounded forward, and, as I looked up, I saw

crowds of gray netsik, the rough or hispid seal of the whalers, disporting in an open sea of water.

I had hardly welcomed the spectacle when I saw that we had passed upon a new belt of ice that was obviously unsafe. To the right and left and front was one great expanse of snow-flowered ice. The nearest solid floe was a mere lump, which stood like an island in the white level. To turn was impossible: we had to keep up our gait. We urged on the dogs with whip

SEALS SPORTING.

and voice, the ice rolling like leather beneath the sledge-runners: it was more than a mile to the lump of solid ice. Fear gave to the poor beasts their utmost speed, and our voices were soon hushed to silence.

The suspense, unrelieved by action or effort, was intolerable: we knew that there was no remedy but to reach the floe, and that every thing depended upon our dogs, and our dogs alone. A moment's check would plunge the whole concern into the rapid tideway: no presence of mind or resource bodily or mental could avail us. The seals—for we were now near

enough to see their expressive faces—were looking at us with that strange curiosity which seems to be their characteristic expression: we must have passed some fifty of them, breast-high out of water, mocking us by their self-complacency.

This desperate race against fate could not last: the rolling of the tough salt-water ice terrified our dogs; and when within fifty paces from the floe they paused. The left-hand runner went through: our leader "Toodlamick" followed, and in one second the entire left of the sledge was submerged. My first thought was to liberate the dogs. I leaned forward to cut poor Tood's traces, and the next minute was swimming in a little circle of pasty ice and water alongside him. Hans, dear good fellow, drew near to help me, uttering piteous expressions in broken English; but I ordered him to throw himself on his belly, with his hands and legs extended, and to make for the island by cogging himself forward with his jack-knife. In the mean time—a mere instant—I was floundering about with sledge, dogs, and lines, in confused puddle around me.

I succeeded in cutting poor Tood's lines and letting him scramble to the ice, for the poor fellow was drowning me with his piteous caresses, and made my way for the sledge; but I found that it would not buoy me, and that I had no resource but to try the circumference of the hole. Around this I paddled faithfully, the miserable ice always yielding when my hopes of a lodgement were greatest. During this process I enlarged

my circle of operations to a very uncomfortable diameter, and was beginning to feel weaker after every effort. Hans meanwhile had reached the firm ice, and was on his knees, like a good Moravian, praying incoherently in English and Esquimaux; at every fresh crushing-in of the ice he would ejaculate "God!" and when I recommenced my paddling he recommenced his prayers.

I was nearly gone. My knife had been lost in cutting out the dogs; and a spare one which I carried in my trousers-pocket was so enveloped in the wet skins that I could not reach it. I owed my extrication at last to a newly-broken team-dog, who was still fast to the sledge and in struggling carried one of the runners chock against the edge of the circle. All my previous attempts to use the sledge as a bridge had failed, for it broke through, to the much greater injury of the ice. I felt that it was a last chance. I threw myself on my back, so as to lessen as much as possible my weight, and placed the nape of my neck against the rim or edge of the ice; then with caution slowly bent my leg, and, placing the ball of my moccasined foot against the sledge, I pressed steadily against the runner, listening to the half-yielding crunch of the ice beneath.

Presently I felt that my head was pillowed by the ice, and that my wet fur jumper was sliding up the surface. Next came my shoulders; they were fairly on. One more decided push, and I was launched up on the ice and safe. I reached the ice-floe, and was frictioned

by Hans with frightful zeal. We saved all the dogs; but the sledge, kayack, tent, guns, snow-shoes, and every thing besides, were left behind. The thermometer at 8° will keep them frozen fast in the sledge till we can come and cut them out.

On reaching the ship, after a twelve-mile trot, I found so much of comfort and warm welcome that I forgot my failure. The fire was lit up, and one of our few birds slaughtered forthwith. It is with real gratitude that I look back upon my escape, and bless the great presiding Goodness for the very many resources which remain to us.

"September 14, Thursday.—Tiger, our best remaining dog, the partner of poor Bruiser, was seized with a fit, ominously resembling the last winter's curse. In the delirium which followed his seizure, he ran into the water and drowned himself, like a sailor with the horrors. The other dogs are all doing well."

CHAPTER XXVIII.

THE ESQUIMAUX — LARCENY — THE ARREST — THE PUNISHMENT — THE TREATY — "UNBROKEN FAITH" — MY BROTHER — RETURN FROM A HUNT — OUR LIFE — ANOATOK — A WELCOME — TREATY CONFIRMED.

It is, I suppose, the fortune of every one who affects to register the story of an active life, that his record becomes briefer and more imperfect in proportion as the incidents press upon each other more rapidly and with increased excitement. The narrative is arrested as soon as the faculties are claimed for action, and the memory brings back reluctantly afterward those details which, though interesting at the moment, have not reflected themselves in the result. I find that my journal is exceedingly meagre for the period of our anxious preparations to meet the winter, and that I have omitted to mention the course of circumstances which led us step by step into familiar communication with the Esquimaux.

My last notice of this strange people, whose fortunes became afterward so closely connected with our own, was at the time of Myouk's escape from imprison-

ment on board the brig. Although during my absence on the attempted visit to Beechy Island, the men I had left behind had frequent and unrestrained intercourse with them, I myself saw no natives in Rensselaer Bay till immediately after the departure of Petersen and his companions. Just then, by a coincidence which convinced me how closely we had been under surveillance, a party of three made their appearance, as if to note for themselves our condition and resources.

Times had indeed altered with us. We had parted with half our provisions, half our boats and sledges, and more than half our able-bodied men. It looked very much as if we were to lie ensconced in our ice-battered citadel, rarely venturing to sally out for exploration or supplies. We feared nothing of course but the want of fresh meat, and it was much less important that our neighbors should fear us than that we should secure from them offices of kindness. They were overbearing sometimes, and needed the instruction of rebuke; but I treated them with carefully-regulated hospitality.

When the three visitors came to us near the end of August, I established them in a tent below deck, with a copper lamp, a cooking-basin, and a liberal supply of slush for fuel. I left them under guard when I went to bed at two in the morning, contentedly eating and cooking and eating again without the promise of an intermission. An American or a European would have slept after such a debauch till the recognised hour for hock and seltzer-water. But our guests manage

to elude the officer of the deck and escape unsearched. They repaid my liberality by stealing not only the lamp, boiler, and cooking-pot they had used for the feast, but Nannook also, my best dog. If the rest of my team had not been worn down by over-travel, no doubt they would have taken them all. Besides this, we discovered the next morning that they had found the buffalo-robes and India-rubber cloth which McGary had left a few days before on the ice-foot near Six-mile Ravine, and had added the whole to the spoils of their visit.

The theft of these articles embarrassed me. I was indisposed to take it as an act of hostility. Their pilferings before this had been conducted with such a superb simplicity, the detection followed by such honest explosions of laughter, that I could not help thinking they had some law of general appropriation, less removed from the Lycurgan than the Mosaic code. But it was plain at least that we were now too few to watch our property as we had done, and that our gentleness was to some extent misunderstood.

I was puzzled how to inflict punishment, but saw that I must act vigorously, even at a venture. I despatched my two best walkers, Morton and Riley, as soon as I heard of the theft of the stores, with orders to make all speed to Anoatok, and overtake the thieves, who, I thought, would probably halt there to rest. They found young Myouk making himself quite comfortable in the hut, in company with Sievu, the wife of Metek, and Aningna, the wife of Marsinga, and my

buffalo-robes already tailored into kapetahs on their backs.

A continued search of the premises recovered the cooking-utensils, and a number of other things of

ANINGNA.

greater or less value that we had not missed from the brig. With the prompt ceremonial which outraged law delights in among the officials of the police everywhere, the women were stripped and tied; and then, laden with their stolen goods and as much walrus-beef besides

from their own stores as would pay for their board, they were marched on the instant back to the brig.

The thirty miles was a hard walk for them; but they did not complain, nor did their constabulary guardians, who had marched thirty miles already to apprehend them. It was hardly twenty-four hours since they left the brig with their booty before they were prisoners in the hold, with a dreadful white man for keeper, who never addressed to them a word that had not all the terrors of an unintelligible reproof, and whose scowl, I flatter myself, exhibited a well-arranged variety of menacing and demoniacal expressions.

They had not even the companionship of Myouk. Him I had despatched to Metek, "head-man of Etah, and others," with the message of a melo-dramatic tyrant, to negotiate for their ransom. For five long days the women had to sigh and sing and cry in solitary converse,—their appetite continuing excellent, it should be remarked, though mourning the while a rightfully-impending doom. At last the great Metek arrived. He brought with him Ootuniah, another man of elevated social position, and quite a sledge-load of knives, tin cups, and other stolen goods, refuse of wood and scraps of iron, the sinful prizes of many coveting.

I may pass over our peace conferences and the indirect advantages which I of course derived from having the opposing powers represented in my own capital. But the splendors of our Arctic centre of civilization, with its wonders of art and science,—our "fire-death"

ordnance included,—could not all of them impress Metek so much as the intimations he had received of our superior physical endowments. Nomads as they are, these people know better than all the world besides what endurance and energy it requires to brave the moving ice and snow-drifts. Metek thought, no doubt, that our strength was gone with the with-drawing party: but the fact that within ten hours after the loss of our buffalo-skins we had marched to their hut, seized three of their culprits, and marched them back to the brig as prisoners,—such a sixty miles' achievement as this they thoroughly understood. It confirmed them in the faith that the whites are and of right ought to be everywhere the dominant tribe.

The protocol was arranged without difficulty, though not without the accustomed number of adjournments for festivity and repose. It abounded in protestations of power, fearlessness, and good-will by each of the contracting parties, which meant as much as such pro-testations usually do on both sides the Arctic circle. I could give a summary of it without invading the privacy of a diplomatic bureau, for I have notes of it that were taken by a subordinate; but I prefer passing at once to the reciprocal engagements in which it resulted.

On the part of the *Inuit*, the Esquimaux, they were after this fashion:—

"We promise that we will not steal. We promise we will bring you fresh meat. We promise we will sell or lend you dogs. We will keep you company

whenever you want us, and show you where to find the game."

On the part of the *Kablunah*, the white men, the stipulation was of this ample equivalent:—

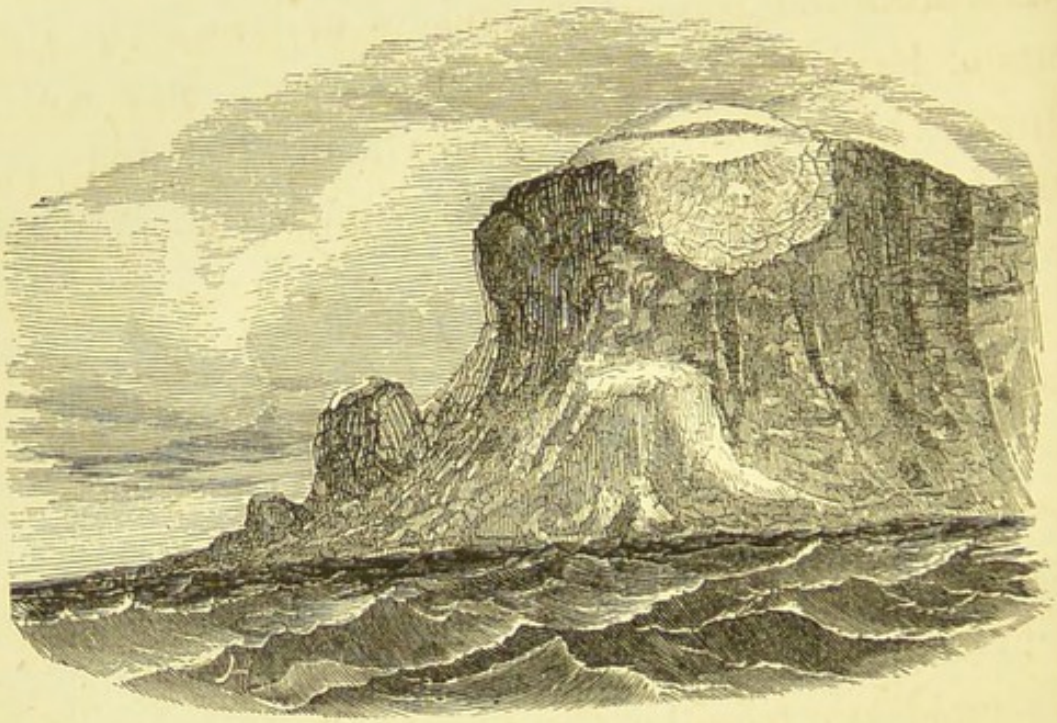
"We promise that we will not visit you with death or sorcery, nor do you any hurt or mischief whatsoever. We will shoot for you on our hunts. You shall be made welcome aboard ship. We will give you presents of needles, pins, two kinds of knife, a hoop, three bits of hard wood, some fat, an awl, and some sewing-thread; and we will trade with you of these and every thing else you want for walrus and seal-meat of the first quality."

And the closing formula might have read, if the Esquimaux political system had included reading among its qualifications for diplomacy, in this time-consecrated and, in civilized regions, veracious assurance:—

"We, the high contracting parties, pledge ourselves now and forever brothers and friends."

This treaty—which, though I have spoken of it jocosely, was really an affair of much interest to us—was ratified, with Hans and Morton as my accredited representatives, by a full assembly of the people at Etah. All our future intercourse was conducted under it. It was not solemnized by an oath; but it was never broken. We went to and fro between the villages and the brig, paid our visits of courtesy and necessity on both sides, met each other in hunting parties on the floe and the ice-foot, organized a general

community of interests, and really, I believe, established some personal attachments deserving of the name. As long as we remained prisoners of the ice, we were indebted to them for invaluable counsel in relation to our hunting expeditions; and in the joint hunt we shared alike, according to their own laws.



HANGING GLACIER.

Our dogs were in one sense common property; and often have they robbed themselves to offer supplies of food to our starving teams. They gave us supplies of meat at critical periods: we were able to do as much for them. They learned to look on us only as benefactors; and, I know, mourned our departure bitterly. The greeting which they gave my brother John, when he came out after me to Etah with the

Rescue Expedition, should be of itself enough to satisfy me of this. I should be glad to borrow from his ingenuous narrative the story of his meeting with Myouk and Metek and Ootuniah, and of the almost affectionate confidence with which the maimed and sick invited his professional succor, as the representative of the elder "Docto Kayen."

"September 16, Saturday.—Back last night from a walrus-hunt. I brought in the spoil with my dogs, leaving Hans and Ohlsen to follow afoot. This Marston rifle is an admirable substitute for the primitive lance-head. It killed at the first fire. Five nights' camping out in the snow, with hard-working days between, have made me ache a little in the joints; but, strange to say, I feel better than when I left the vessel. This climate exacts heavy feeding, but it invites to muscular energy. McGary and Morton are off at Anoatok. From what I gathered on the hunt, they will find the council very willing to ratify our alliance. But they should have been at home before this.

"September 17, Sunday.—Writing by this miserable flicker of my pork-fat lamp, I can hardly steady pen, paper, or thought. All hands have rested after a heavy week's work, which has advanced us nobly in our arrangements for the winter. The season is by our ables at least three weeks earlier than the last, and very thing indicates a severe ordeal ahead of us.

"Just as we were finishing our chapter this morning n the 'Book of Ruth,' McGary and Morton came in riumphantly, pretty well worn down by their fifty

miles' travel, but with good news, and a flipper of walrus that must weigh some forty pounds. Ohlsen and Hans are in too. They arrived as we were sitting down to celebrate the Anoatok ratification of our treaty of the 6th.

"It is a strange life we are leading. We are absolutely nomads, so far as there can be any thing of pastoral life in this region; and our wild encounter with the elements seems to agree with us all. Our table-talk at supper was as merry as a marriage-bell. One party was just in from a seventy-four miles' trip with the dogs; another from a foot-journey of a hundred and sixty, with five nights on the floe. Each had his story to tell; and while the story was telling some at least were projecting new expeditions. I have one myself in my mind's eye, that may peradventure cover some lines of my journal before the winter ends.

"McGary and Morton sledged it along the ice-foot completely round the Reach, and made the huts by ten o'clock the night after they left us. They found only three men, Ootuniah, our elfish rogue Myouk, and a stranger who has not been with us that we know of. It looked at first a little doubtful whether the visit was not to be misunderstood. Myouk particularly was an awkward party to negotiate with. He had been our prisoner for stealing only a little while before, and at this very moment is an escaped hostage. He was in pawn to us for a lot of walrus-beef, as indemnity for our boat. He thought naturally enough that the visit might have something more than a representative

bearing on his interests. Both our men had been his jailers on board the brig, and he was the first person they met as they came upon the village.

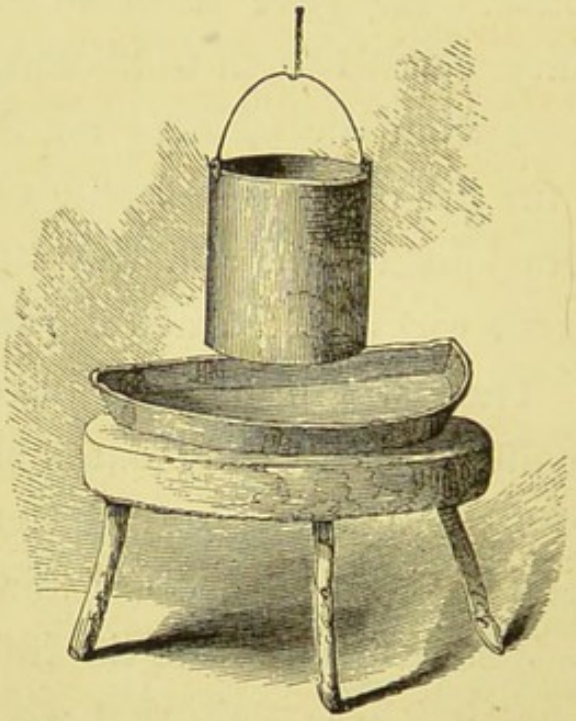
"But when he found, by McGary's expressive pantomime, that the visit was not specially to him, and that the first appeal was to his hospitality and his fellows', his entire demeanor underwent a change. He seemed to take a new character, as if, said Morton, he had dropped a mask. He gave them welcome with unmixed cordiality, carried them to his hut, cleared away the end farthest from the opening for their reception, and filled up the fire of moss and blubber.

"The others joined him, and the attention of the whole settlement was directed at once to the wants of the visitors. Their wet boots were turned toward the fire, their woollen socks wrung out and placed on a heated stone, dry grass was padded round their feet, and the choicest cuts of walrus-liver were put into the cooking-pot. Whatever might be the infirmity of their notions of honesty, it was plain that we had no lessons to give them in the virtues of hospitable welcome. Indeed, there was a frankness and cordiality in the mode of receiving their guests, that explained the unreserve and conscious security which they showed when they first visited us.

"I could hardly guess at that time, when we saw them practising antics and grimaces among the rocks, what was the meaning of their harlequin gestures, and how they could venture afterward so fearlessly on board. I have understood the riddle since. It was a

display of their powers of entertainment, intended to solicit from us a reception; and the invitation once given, all their experience and impulses assured them of safety.

"Every thing they had, cooking-utensils, snow-melting stone, scanty weapons of the chase, personal service, pledges of grateful welcome,—they gave them all.



KOTLIK, WITH OUR OWN KOLUP SOOT.

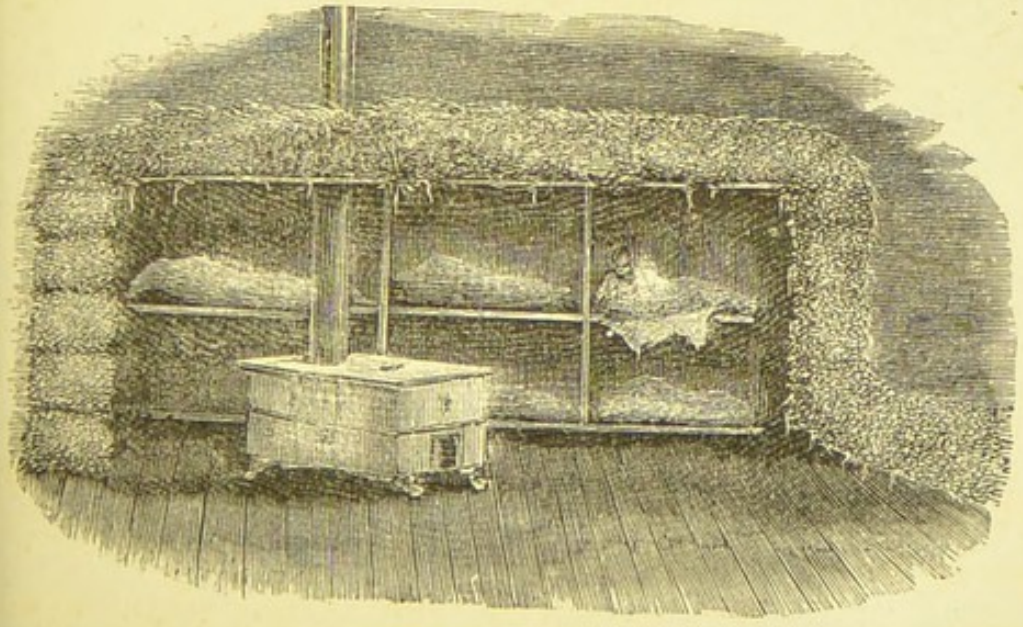
They confirmed all Metek's engagements, as if the whole favor was for them; and when our party was coming away they placed on the sledge, seemingly as a matter of course, all the meat that was left.

"September 20, Wednesday.—The natives are really acting up to contract. They are on board to-day, and I have been off with a party of them on a hunt inland. We had no great luck; the weather was against us,

and there are signs of a gale. The thermometer has been two degrees below zero for the entire twenty-four hours. This is September with a vengeance!

"September 22, Friday.—I am off for the walrus-grounds with our wild allies. It will be my sixth trip. I know the country and its landmarks now as well as any of them, and can name every rock and chasm and watercourse, in night or fog, just as I could the familiar spots about the dear Old Mills where I passed my childhood.

"The weather does not promise well; but the state of our larder makes the jaunt necessary."



SECTION OF WINTER APARTMENT.

CHAPTER XXIX.

WALRUS-GROUNDS — LOST ON THE ICE — A BREAK UP — IGLOË OF ANOATOK — ITS GARNITURE — CREATURE COMFORTS — ESQUIMAUX MUSIC — USAGES OF THE TABLE — NEW LONDON AVENUE — SCANT DIET LIST — BEAR AND CUB — A HUNT — CLOSE QUARTERS — BEAR-FIGHTING — BEAR-HABITS — BEAR'S LIVER — RATS — THE TERRIER FOX — THE ARCTIC HARE — THE ICE-FOOT CANOPY — A WOLF — DOGS AND WOLVES — BEAR AND FOX — THE NATIVES AND OURSELVES — WINTER QUARTERS — MORTON'S RETURN — THE LIGHT.

"SEPTEMBER 29, Friday.—I returned last night from Anoatok, after a journey of much risk and exposure, that I should have avoided but for the insuperable obstinacy of our savage friends.

"I set out for the walrus-grounds at noon, by the track of the 'Wind Point' of Anoatok, known to us as Esquimaux Point. I took the light sledge, and, in addition to the five of my available team, harnessed in two animals belonging to the Esquimaux. Ootuniah, Myouk, and the dark stranger accompanied me, with Morton and Hans.

"Our sledge was overladen: I could not persuade the Esquimaux to reduce its weight; and the consequence was that we failed to reach Force Bay in time

for a daylight crossing. To follow the indentations of the land was to make the travel long and dangerous. We trusted to the tracks of our former journeys, and pushed out on the ice. But the darkness came on us rapidly, and the snow began to drift before a heavy north wind.

"At about 10 P.M. we had lost the land, and, while driving the dogs rapidly, all of us running alongside of them, we took a wrong direction, and travelled out toward the floating ice of the Sound. There was no guide to the points of the compass; our Esquimaux were completely at fault; and the alarm of the dogs, which became every moment more manifest, extended itself to our party. The instinct of a sledge-dog makes him perfectly aware of unsafe ice, and I know nothing more subduing to a man than the warnings of an unseen peril conveyed by the instinctive fears of the lower animals.

"We had to keep moving, for we could not camp in the gale, that blew around us so fiercely that we could scarcely hold down the sledge. But we moved with caution, feeling our way with the tent-poles, which I distributed among the party for the purpose. A murmur had reached my ear for some time in the cadences of the storm, steadier and deeper, I thought, than the tone of the wind: on a sudden it struck me that I heard the noise of waves, and that we must be coming close on the open water. I had hardly time for the hurried order, 'Turn the dogs,' before a wreath of wet frost-smoke swept over us, and the sea showed itself,

with a great fringe of foam, hardly a quarter of a mile ahead. We could now guess our position and its dangers. The ice was breaking up before the storm, and it was not certain that even a direct retreat in the face of the gale would extricate us. I determined to run to the south for Godsend Island. The floes were heavy in that direction, and less likely to give way in a northerly gale. It was at best a dreary venture.

"The surf-line kept encroaching on us till we could feel the ice undulating under our feet. Very soon it began to give way. Lines of hummocks rose before us, and we had to run the gauntlet between them as they closed. Escaping these, we toiled over the crushed fragments that lay between them and the shore, stumbling over the projecting crags, or sinking in the water that rose among them. It was too dark to see the island which we were steering for; but the black loom of a lofty cape broke the line of the horizon and served as a landmark. The dogs, relieved from the burden of carrying us, moved with more spirit. We began to draw near the shore, the ice-storm still raging behind us. But our difficulties were only reaching their climax. We knew as icemen that the access to the land-ice from the floe was, under the most favoring circumstances, both toilsome and dangerous. The rise and fall of the tides always breaks up the ice at the margin of the ice-belt in a tangle of irregular, half-floating masses; and these were now surging under the energies of the gale. It was pitchy dark. I per-

suaded Ootuniah, the eldest of the Esquimaux, to have a tent-pole lashed horizontally across his shoulders. I gave him the end of a line, which I had fastened at the other end round my waist. The rest of the party followed him.

"As I moved ahead, feeling round me for a practicable way, Ootuniah followed; and when a table of ice was found large enough, the others would urge forward the dogs, pushing the sledge themselves, or clinging to it, as the moment prompted. We had accidents of course, some of them menacing for the time, but none to be remembered for their consequences; and at last one after another succeeded in clambering after me upon the ice-foot, driving the dogs before them.

"Providence had been our guide. The shore on which we landed was Anoatok, not four hundred yards from the familiar Esquimaux homestead. With a shout of joy, each man in his own dialect, we hastened to the 'wind-loved spot;' and in less than an hour, our lamps burning cheerfully, we were discussing a famous stew of walrus-steaks, none the less relished for an unbroken ice-walk of forty-eight miles and twenty halt-less hours.

"When I reached the hut, our stranger Esquimaux, whose name we found to be Awahtok, or 'Seal-bladder float,' was striking a fire from two stones, one a plain piece of angular milky quartz, held in the right hand, the other apparently an oxide of iron. He struck them together after the true tinder-box fashion, throw-

ing a scanty supply of sparks on a tinder composed of the silky down of the willow-catkins, (*S. lanata,*) which he held on a lump of dried moss.

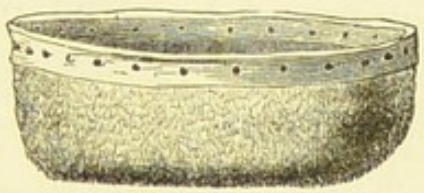
"The hut or igloë at Anoatok was a single rude elliptical apartment, built not unskilfully of stone, the outside lined with sods. At its farther end a rude platform, also of stone, was lifted about a foot above the entering floor. The roof formed something of a curve: it was composed of flat stones, remarkably large and heavy, arranged so as to overlap each other, but apparently without any intelligent application of the principle of the arch. The height of this cave-like abode barely permitted one to sit upright. Its length was eight feet, its breadth seven feet, and an expansion of the tunnelled entrance made an appendage of perhaps two feet more.

"The true winter entrance is called the *tossut.* It is a walled tunnel, ten feet long, and so narrow that a man can hardly crawl along it. It opens outside below the level of the igloë, into which it leads by a gradual ascent.

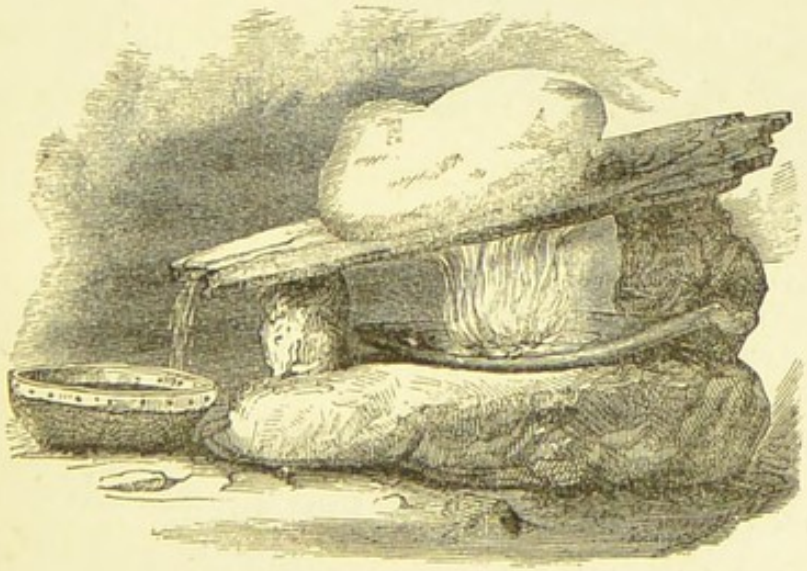
"Time had done its work on the igloë of Anoatok, as among the palatial structures of more southern deserts. The entire front of the dome had fallen in, closing up the tossut, and forcing us to enter at the solitary window above it. The breach was large enough to admit a sledge-team; but our Arctic comrades showed no anxiety to close it up. Their clothes saturated with the freezing water of the floes, these iron men gathered themselves round the blubber-fire and steamed away

in apparent comfort. The only departure from their practised routine, which the bleak night and open roof seemed to suggest to them, was that they did not strip themselves naked before coming into the hut, and hang up their vestments in the air to dry, like a votive offering to the god of the sea.

"Their kitchen-implements were even more simple than our own. A rude saucer-shaped cup of seal-skin, to gather and hold water in, was the solitary utensil that could be dignified as table-furniture. A flat stone, a fixture of the hut, supported by other stones just above the shoulder-blade of a wal-



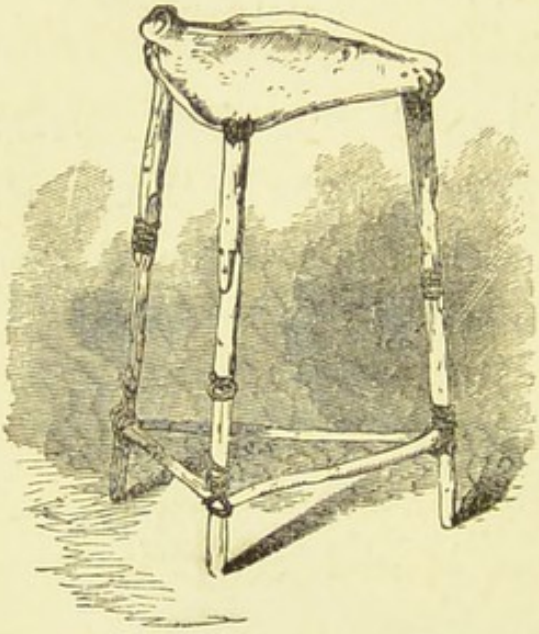
SEAL-SKIN CUP.



SNOW-MELTER, ANOATOK.

rus,—the stone slightly inclined, the cavity of the bone large enough to hold a moss-wick and some blubber;—a square block of snow was placed on the stone, and,

as the hot smoke circled round it, the seal-skin saucer caught the water that dripped from the edge. They had no vessel for boiling; what they did not eat raw they baked upon a hot stone. A solitary coil of walrus-line, fastened to a movable lance-head, (noon-ghak,) with the well-worn and well-soaked clothes on their backs, completed the inventory of their effects.



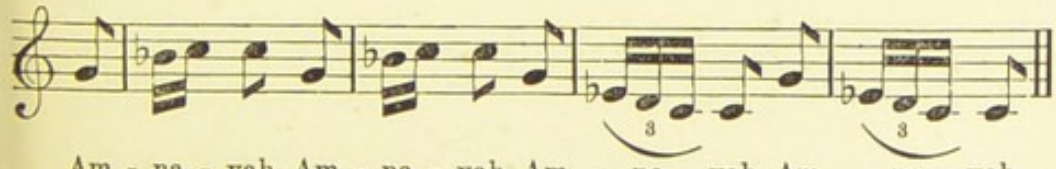
STAND OF WALRUS-BONES.

"We felt that we were more civilized than our poor cousins, as we fell to work making ourselves comfortable after our own fashion. The dais was scraped, and its accumulated filth of years removed; a canvas tent was folded double over the dry, frozen stones, our buffalo-bag spread over this, and dry socks and moccasins were drawn from under our wet overclothes. My copper lamp, a true Berzelius Argand, invaluable for

short journeys, soon flamed with a cheerful fire. The soup-pot, the walrus-steak, and the hot coffee were the next things to be thought of; and, while these were getting ready, an India-rubber floor-cloth was fastened over the gaping entrance of the cave.

"During our long march and its series of ice-fights we had taken care to manifest no weariness, and had, indeed, borne both Ootuniah and Myouk at times upon our shoulders. We showed no signs either of cold; so that all this preparation and rich store of appliances could not be attributed by the Esquimaux to effeminacy or inferior power. I could see that they were profoundly impressed with a conviction of our superiority, the last feeling which the egotistical self-conceit of savage life admits.

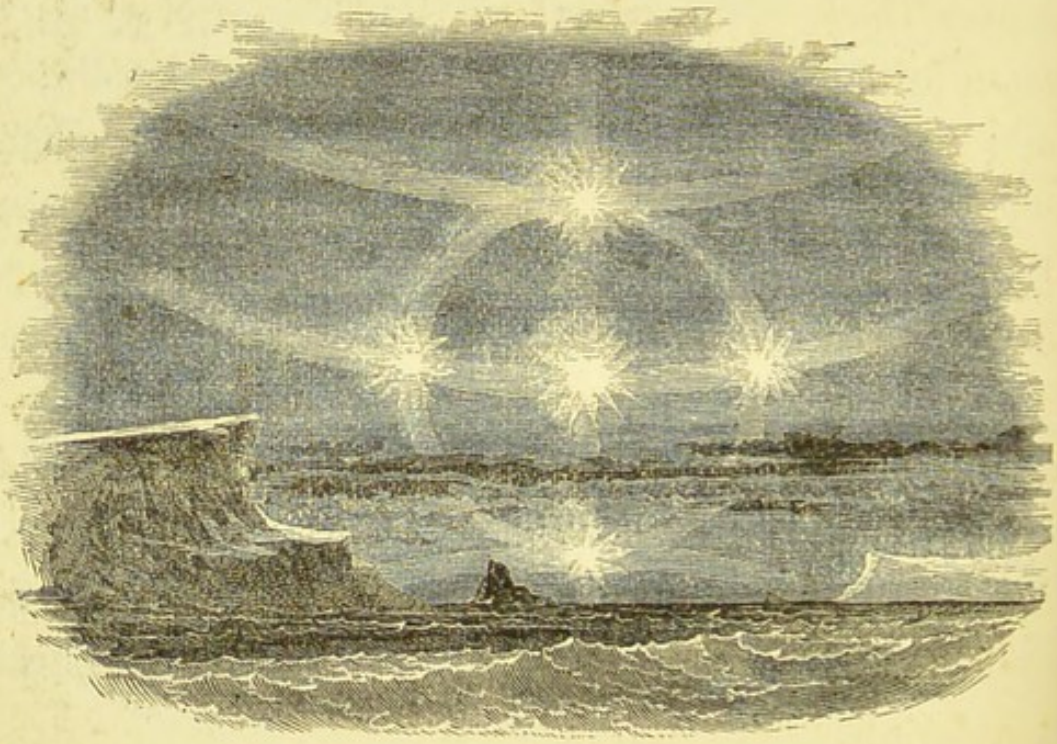
"I felt sure now that they were our more than sworn friends. They sang 'Amna Ayah' for us, their rude, monotonous song, till our ears cracked with the discord; and improvised a special eulogistic chant,



which they repeated over and over again with laughable gravity of utterance, subsiding always into the *refrain* of '*Nalegak! nalegak! nalegak-soak!*' 'Captain! captain! great captain!' They nicknamed and adopted all of us as members of their fraternity, with grave and abundant form; reminding me through all their

mummery, solemn and ludicrous at once, of the analogous ceremonies of our North American Indians.

"The chant and the feed and the ceremony all completed, Hans, Morton, and myself crawled feet-foremost into our buffalo-bag, and Ootuniah, Awahtok, and



PARHELIA, DRAWN BY MR. SONTAG.

Myouk flung themselves outside the skin between us. The last I heard of them or any thing else was the renewed chorus of 'Nalegak! nalegak! nalegak-soak!' mingling itself sleepily in my dreams with school-boy memories of Aristophanes and The Frogs. I slept eleven hours.

"They were up long before us, and had breakfasted

on raw meat cut from a large joint, which lay, without regard to cleanliness, among the deposits on the floor of the igloë. Their mode of eating was ingeniously active. They cut the meat in long strips, introduced one end into the mouth, swallowed it as far as the powers of deglutition would allow, and then, cutting off the protruding portion close to the lips, prepared themselves for a second mouthful. It was really a feat of address: those of us who tried it failed awkwardly; and yet I have seen infants in the mother's hood, not two years old, who managed to perform it without accident."

I pass over the story of the hunt that followed. It had nothing to distinguish it from many others, and I find in my journal of a few days later the fresh narrative of Morton, after he had seen one for the first time.

My next extracts show the progress of our winter arrangements.

"September 30, Saturday.—We have been clearing up on the ice. Our system for the winter has not the dignity of a year ago. We have no Butler Storehouse, no Medary, no Fern Rock, with their appliances. We are ten men in a casemate, with all our energies concentrated against the enemy outside.

"Our beef-house is now a pile of barrels holding our water-soaked beef and pork. Flour, beans, and dried apples make a quadrangular blockhouse on the floe: from one corner of it rises our flagstaff, lighting up the dusky gray with its red and white ensign, only on

Sunday giving place to the Henry Grinnell flag, of happy memories.

"From this, along an avenue that opens abeam of the brig,—New London Avenue, named after McGary's town at home,—are our boats and square cordage. Outside of all these is a magnificent hut of barrel-frames and snow, to accommodate our Esquimaux visitors; the only thing about it exposed to hazard being the tempting woodwork. What remains to complete our camp-plot is the rope barrier that is to mark out our little curtilage around the vessel: this, when finished, is to be the dividing-line between us and the rest of mankind.

"There is something in the simplicity of all this, 'simplex munditiis,' which might commend itself to the most rigorous taste. Nothing is wasted on ornament.

"October 4, Wednesday.—I sent Hans and Hickey two days ago out to the hunting-ice, to see if the natives have had any luck with the walrus. They are back to night with bad news,—no meat, no Esquimaux. These strange children of the snow have made a mysterious flitting. Where or how, it is hard to guess, for they have no sledges. They cannot have travelled very far; and yet they have such unquiet impulses, that, once on the track, no civilized man can say where they will bring up.

"Ohlsen had just completed a sledge, fashioned like the Smith Sound *kommetik*, with an improved curvature of the runners. It weighs only twenty-four

Engraved at J.M.Butler's establishment 84 Chestnut St.

pounds, and, though I think it too short for light draught, it is just the article our Etah neighbors would delight in for their land-portages. I intended it for them, as a great price for a great stock of walrus-meat: but the other parties to the bargain have flown.

"October 5, Thursday.—We are nearly out of fresh meat again, one rabbit and three ducks being our sum total. We have been on short allowance for several days. What vegetables we have—the dried apples and peaches, and pickled cabbage—have lost much of their anti-scorbutic virtue by constant use. Our spices are all gone. Except four small bottles of horse-radish, our carte is comprised in three lines—bread, beef, pork.

"I must be off after these Esquimaux. They certainly have meat, and wherever they have gone we can follow. Once upon their trail, our hungry instincts will not risk being baffled. I will stay only long enough to complete my latest root-beer brewage. Its basis is the big crawling willow, the miniature giant of our Arctic forests, of which we laid in a stock some weeks ago. It is quite pleasantly bitter, and I hope to get it fermenting in the deck-house without extra fuel, by heat from below.

"October 7, Saturday.—Lively sensation, as they say in the land of olives and champagne. 'Nannook, nannook!'—'A bear, a bear!'—Hans and Morton in a breath!

"To the scandal of our domestic regulations, the guns were all impracticable. While the men were loading and capping anew, I seized my pillow-com-

panion six-shooter, and ran on deck. A medium-sized bear, with a four months' cub, was in active warfare with our dogs. They were hanging on her skirts, and she with wonderful alertness was picking out one victim after another, snatching him by the nape of the neck, and flinging him many feet or rather yards, by a barely perceptible movement of her head.

"Tudla, our master dog, was already *hors de combat:* he had been tossed twice. Jenny, just as I emerged from the hatch, was making an extraordinary somerset of some eight fathoms, and alighted senseless. Old Whitey, stanch but not bear-wise, had been the first in the battle: he was yelping in helplessness on the snow.

"It seemed as if the controversy was adjourned: and Nannook evidently thought so; for she turned off to our beef-barrels, and began in the most unconcerned manner to turn them over and nose out their fatness. She was apparently as devoid of fear as any of the bears in the stories of old Barentz and the Spitzbergen voyagers.

"I lodged a pistol-ball in the side of the cub. At once the mother placed her little one between her hind-legs, and, shoving it along, made her way behind the beef-house. Mr. Ohlsen wounded her as she went with my Webster rifle; but she scarcely noticed it. She tore down by single efforts of her forearms the barrels of frozen beef which made the triple walls of the storehouse, mounted the rubbish, and, snatching up a half-barrel of herrings, carried it down by her

teeth, and was making off. It was time to close, I thought. Going up within half pistol-range, I gave her six buckshot. She dropped, but instantly rose, and, getting her cub into its former position, moved off once more.

"This time she would really have escaped but for the admirable tactics of our new recruits from the Esquimaux. The dogs of Smith's Sound are educated more thoroughly than any of their more southern brethren. Next to the walrus, the bear is the staple of diet to the north, and, except the fox, supplies the most important element of the wardrobe. Unlike the dogs we had brought with us from Baffin's Bay, these were trained not to attack, but to embarrass. They ran in circles round the bear, and when pursued would keep ahead with regulated gait, their comrades effecting a diversion at the critical moment by a nip at her hind-quarters. This was done so systematically and with so little seeming excitement as to strike every one on board. I have seen bear-dogs elsewhere that had been drilled to relieve each other in the *melée* and avoid the direct assault; but here, two dogs without even a demonstration of attack would put themselves before the path of the animal, and, retreating right and left, lead him into a profitless pursuit that checked his advance completely.

"The poor animal was still backing out, yet still fighting, carrying along her wounded cub, embarrassed by the dogs yet gaining distance from the brig, when Hans and myself threw in the odds in the shape of a

couple of rifle-balls. She staggered in front of her young one, faced us in deathlike defiance, and only sank when pierced by six more bullets.

"We found nine balls in skinning her body. She was of medium size, very lean, and without a particle of food in her stomach. Hunger must have caused her boldness. The net weight of the cleansed carcass was three hundred pounds; that of the entire animal, six hundred and fifty; her length, but seven feet eight inches.

"Bears in this lean condition are much the most palatable food. The impregnation of fatty oil through the cellular tissue makes a well-fed bear nearly uneatable. The flesh of a famished beast, although less nutritious as a fuel diet, is rather sweet and tender than otherwise.

"The little cub is larger than the adjective implies. She was taller than a dog, and weighs one hundred and fourteen pounds. Like Morton's bear in Kennedy's Channel, she sprang upon the corpse of her mother, and raised a woful lamentation over her wounds. She repelled my efforts to noose her with great ferocity; but at last, completely muzzled with a line fastened by a running knot between her jaws and the back of her head, she moved off to the brig amid the clamor of the dogs. We have her now chained alongside, but snarling and snapping constantly, evidently suffering from her wound.

"Of the eight dogs who took part in this passage of arms, only one—'Sneak,' as the men call him, 'Young

Whitey,' as he figures in this journal—lost a flower from his chaplet. But two of the rest escaped without a grip.

"Strange to say, in spite of the powerful flings which they were subjected to in the fight, not a dog suffers seriously. I expected, from my knowledge of the hugging propensity of the plantigrades, that the animal would rear, or at least use her forearm; but she invariably seized the dogs with her teeth, and, after disposing of them for the time, abstained from following up the advantage. The Esquimaux assert that this is the habit of the hunted bear. One of our Smith Sound dogs, 'Jack,' made no struggle when he was seized, but was flung, with all his muscles relaxed, I hardly dare to say how far: the next instant he rose and renewed the attack. The Esquimaux both of Proven and of this country say that the dogs soon learn this 'possum-playing' habit. Jack was an old bear-dog.

"The bear seems to be more ferocious as he increases his latitude, or more probably as he recedes from the hunting-fields.

"At Oominak, last winter, (1852,) an Esquimaux and his son were nearly killed by a bear that had housed himself in an iceberg. They attacked him with the lance, but he turned on them and worsted them badly before making his escape.

"But the continued pursuit of man seems to have exerted already a modifying influence upon the ursine character in South Greenland; at all events, the bears

there never attack, and even in self-defence seldom inflict injury upon the hunter. Many instances have occurred where they have defended themselves and even charged after being wounded, but in none of them was life lost. I have myself shot as many as a dozen bears near at hand, and never but once received a charge in return.

"I heard another adventure from the Danes as occurring in 1834 :—

"A stout Esquimaux, an assistant to the cooper of Upernavik,—not a Christian, but a stout, manly savage,—fired at a she-bear, and the animal closed on the instant of receiving the ball. The man flung himself on the ground, putting forward his arm to protect his head, but lying afterward perfectly motionless. The beast was taken in. She gave the arm a bite or two, but, finding her enemy did not move, she retired a few paces and sat upon her haunches to watch. But she did not watch as carefully as she should have done, for the hunter adroitly reloaded his rifle and killed her with the second shot.

"October 8, Sunday.—When I was out in the Advance, with Captain De Haven, I satisfied myself that it was a vulgar prejudice to regard the liver of the bear as poisonous. I ate of it freely myself, and succeeded in making it a favorite dish with the mess. But I find to my cost that it may sometimes be more savory than safe. The cub's liver was my supper last night, and to-day I have the symptoms of poison in full measure—vertigo, diarrhœa, and their concomitants."

I may mention, in connection with the fact which I have given from my journal, that I repeated the experiment several times afterward, and sometimes, but not always, with the same result. I remember once, near the Great Glacier, all our party sickened after feeding on the liver of a bear that we had killed; and a few weeks afterward, when we were tempted into a similar indulgence, we were forced to undergo the same penance. The animal in both cases was old and fat. The dogs ate to repletion, without injury.

Another article of diet, less inviting at first, but which I found more innocuous, was the rat. We had failed to exterminate this animal by our varied and perilous efforts of the year before, and a well-justified fear forbade our renewing the crusade. It was marvellous, in a region apparently so unfavorable to reproduction, what a perfect warren we soon had on board. Their impudence and address increased with their numbers. It became impossible to stow any thing below decks. Furs, woollens, shoes, specimens of natural history, every thing we disliked to lose, however little valuable to them, was gnawed into and destroyed. They harbored among the men's bedding in the forecastle, and showed such boldness in fight and such dexterity in dodging missiles that they were tolerated at last as inevitable nuisances. Before the winter ended, I avenged our griefs by decimating them for my private table. I find in my journal of the 10th of October an anecdote that illustrates their boldness:—

"We have moved every thing movable out upon the

ice, and, besides our dividing moss wall between our sanctum and the forecastle, we have built up a rude barrier of our iron sheathing to prevent these abominable rats from gnawing through. It is all in vain. They are everywhere already, under the stove, in the steward's lockers, in our cushions, about our beds. If I was asked what, after darkness and cold and scurvy, are the three besetting curses of our Arctic sojourn, I should say, RATS, RATS, RATS. A mother-rat bit my finger to the bone last Friday, as I was intruding my hand into a bear-skin mitten which she had chosen as a homestead for her little family. I withdrew it of course with instinctive courtesy; but among them they carried off the mitten before I could suck the finger.

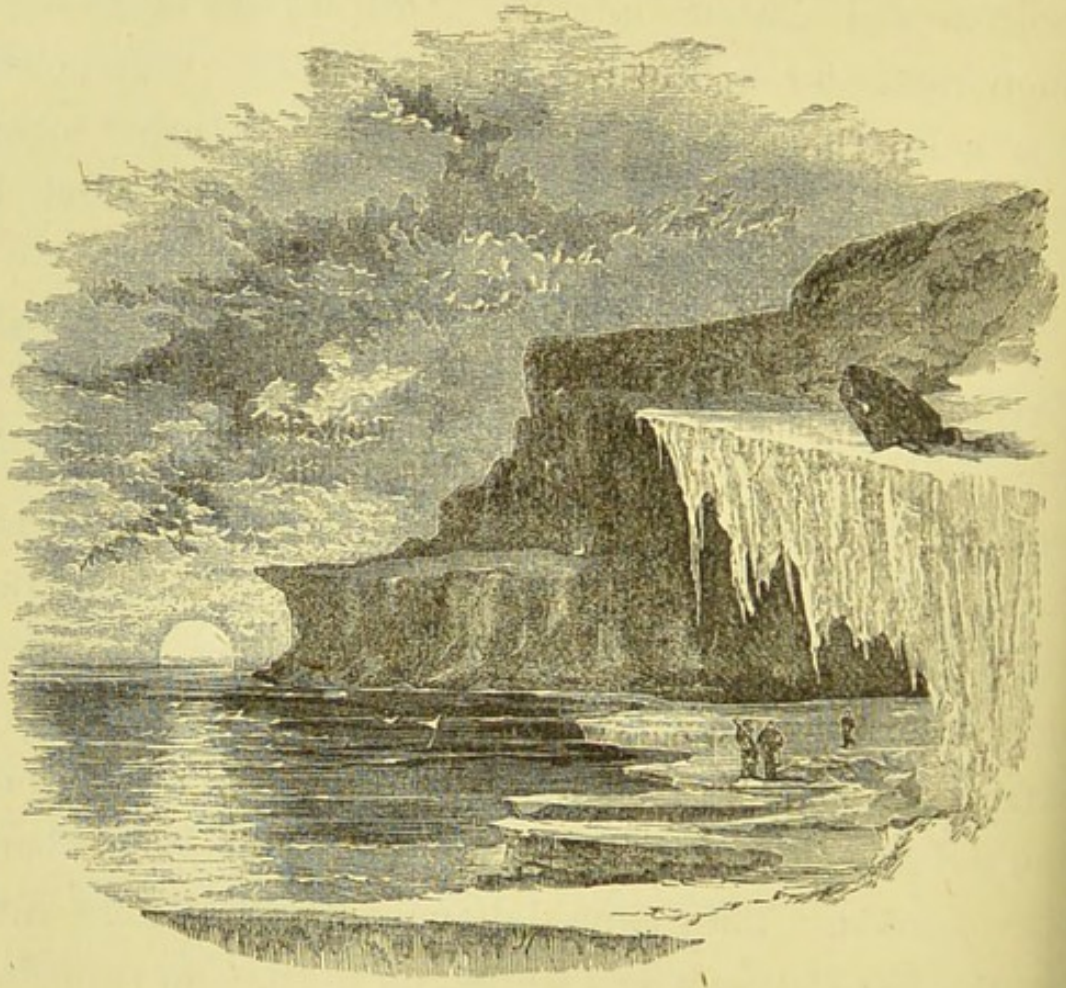
"Last week, I sent down Rhina, the most intelligent dog of our whole pack, to bivouac in their citadel forward: I thought she might at least be able to defend herself against them, for she had distinguished herself in the bear-hunt. She slept very well for a couple of hours on a bed she had chosen for herself on the top of some iron spikes. But the rats could not or would not forego the horny skin about her paws; and they gnawed her feet and nails so ferociously that we drew her up yelping and vanquished."

Before I pass from these intrepid and pertinacious visitors, let me add that on the whole I am personally much their debtor. Through the long winter night, Hans used to beguile his lonely hours of watch by shooting them with the bow and arrow. The repugnance of my associates to share with me the table

luxury of "such small deer" gave me the frequent advantage of a fresh-meat soup, which contributed no doubt to my comparative immunity from scurvy. I had only one competitor in the dispensation of this *entremet*, or rather one companion; for there was an abundance for both. It was a fox:—we caught and domesticated him late in the winter; but the scantiness of our resources, and of course his own, soon instructed him in all the antipathies of a terrier. He had only one fault as a rat-catcher: he would never catch a second till he had eaten the first.

At the date of these entries the Arctic hares had not ceased to be numerous about our harbor. They were very beautiful, as white as swans' down, with a crescent of black marking the ear-tips. They feed on the bark and catkins of the willow, and affect the stony sides of the worn-down rocks, where they find protection from the wind and snow-drifts. They do not burrow like our hares at home, but squat in crevices or under large stones. Their average weight is about nine pounds. They would have entered largely into our diet-list but for our Esquimaux dogs, who regarded them with relishing appetite. Parry found the hare at Melville Island, in latitude 75°; but we have traced it from Littleton Island as far north as 79° 08′, and its range probably extends still farther toward the Pole. Its structure and habits enable it to penetrate the snow-crusts, and obtain food where the reindeer and the musk-ox perish in consequence of the glazed covering of their feeding-grounds.

"October 11, Wednesday.—There is no need of looking at the thermometer and comparing registers, to show how far this season has advanced beyond its fellow of last year. The ice-foot is more easily read and quite as certain.



THE ICE-FOOT CANOPY.

"The under part of it is covered now with long stalactitic columns of ice, unlike the ordinary icicle in shape, for they have the characteristic bulge of the carbonate-of-lime stalactite. They look like the fantastic columns hanging from the roof of a frozen temple, the dark recess behind them giving all the

effect of a grotto. There is one that brings back to me saddened memories of Elephanta and the merry friends that bore me company under its rock-chiselled portico. The fig-trees and the palms, and the gallant major's curries and his old India ale, are wanting in the picture. Sometimes again it is a canopy fringed with gems in the moonlight. Nothing can be purer or more beautiful.

"The ice has begun to fasten on our brig: I have called a consultation of officers to determine how she may be best secured.

"October 13, Friday.—The Esquimaux have not been near us, and it is a puzzle of some interest where they have retreated to. Wherever they are, there must be our hunting-grounds, for they certainly have not changed their quarters to a more destitute region. I have sent Morton and Hans to-day to track them out if they can. They carry a hand-sledge with them, Ohlsen's last manufacture, ride with the dog-sledge as far as Anoatok, and leave the old dogs of our team there. From that point they are to try a device of my own. We have a couple of dogs that we got from these same Esquimaux, who are at least as instinctive as their former masters. One of these they are to let run, holding the other by a long leash. I feel confident that the free dog will find the camping-ground, and I think it probable the other will follow. I thought of tying the two together; but it would embarrass their movements, and give them something to occupy their minds besides the leading object of their mission.

"October 14, Saturday.—Mr. Wilson and Hickey reported last night a wolf at the meat-house. Now, the meat-house is a thing of too much worth to be left to casualty, and a wolf might incidentally add some freshness of flavor to its contents. So I went out in all haste with the Marston rifle, but without my mittens and with only a single cartridge. The metal burnt my hands, as metal is apt to do at fifty degrees below the point of freezing; but I got a somewhat rapid shot. I hit—— one of our dogs, a truant from Morton's team; luckily a flesh-wound only, for he is too good a beast to lose. I could have sworn he was a wolf."

There is so much of identical character between our Arctic dogs and wolves, that I am inclined to agree with Mr. Broderip, who in the "Zoological Recreations" assigns to them a family origin. The oblique position of the wolf's eye is not uncommon among the dogs of my team. I have a slut, one of the tamest and most affectionate of the whole of them, who has the long legs, and compact body, and drooping tail, and wild, scared expression of the eye, which some naturalists have supposed to characterize the wolf alone. When domesticated early,—and it is easy to domesticate him,—the wolf follows and loves you like a dog. That they are fond of a loose foot proves nothing: many of our pack will run away for weeks into the wilderness of ice; yet they cannot be persuaded when they come back to inhabit the kennel we have built for them only a hundred yards off. They

crouch around for the companionship of men. Both animals howl in unison alike: the bell at the settlements of South Greenland always starts them. Their footprint is the same, at least in Smith's Sound. Dr. Richardson's remark to the contrary made me observe the fact that our northern dogs leave the same "spread track" of the toes when running, though not perhaps as well marked as the wolf's.

The old proverb, and the circumstance of the wolf having sometimes carried off an Esquimaux dog, has been alluded to by the editors of the "Diffusion of Knowledge Library." But this too is inconclusive, for the proverb is false. It is not quite a month ago since I found five of our dogs gluttonizing on the carcasses of their dead companions who had been thrown out on a rubbish-heap; and I have seen pups only two months old risk an indigestion by overfeeding on their twin brethren who had preceded them in a like imprudence.

Nor is there any thing in the supposed difference of strength. The Esquimaux dog of Smith's Sound encounters the wolf fearlessly and with success. The wolves of Northern America never venture near the huts; but it is well known that when they have been chasing the deer or the moose, the dogs have come up as rivals in the hunt, beaten them off, and appropriated the prey to themselves.

"October 16, Monday.—I have been wearied and vexed for half a day by a vain chase after some

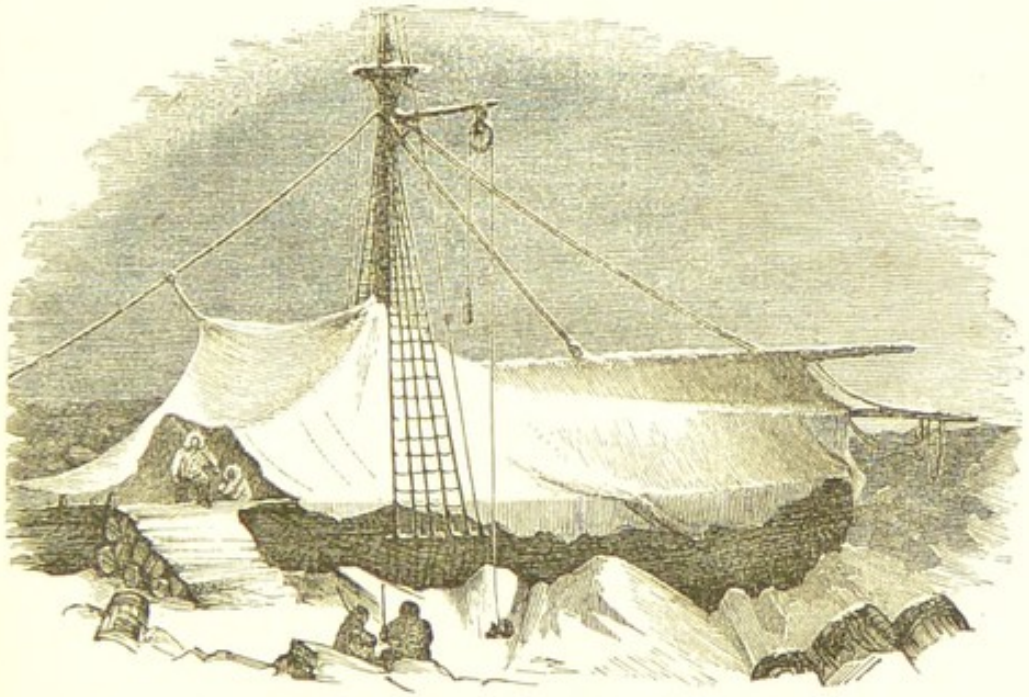
bear-tracks. There was a fox evidently following them, (*C. lagopus.*)"

There are fables about the relation between these two animals which I once thought my observations had confirmed. They are very often found together: the bear striding on ahead with his prey; the fox behind gathering in the crumbs as they fall; and I have often seen the parasite licking at the traces of a wounded seal which his champion had borne off over the snow. The story is that the two hunt in couples. I doubt this now, though it is certain that the inferior animal rejoices in his association with the superior, at least for the profits, if not the sympathy it brings to him. I once wounded a bear when I was out with Morton during our former voyage, and followed him for twelve miles over the ice. A miserable little fox travelled close behind his patron, and licked up the blood wherever he lay down. The bear at last made the water; and, as we returned from our fruitless chase, we saw the fox running at full speed along the edge of the thin ice, as if to rejoin him. It is a mistake to suppose he cannot swim: he does, and that boldly.

"October 19, Thursday.—Our black dog Erebus has come back to the brig. Morton has perhaps released him, but he has more probably broken loose.

"I have no doubt Morton is making the best of his way after the Esquimaux. These trips are valuable to us, even when they fail of their immediate object. They keep the natives in wholesome respect for us.

We are careful to impress them with our physical prowess, and avoid showing either fatigue or cold when we are travelling together. I could not help being amused some ten days ago with the complacent manner of Myouk, as he hooked himself to me for support after I had been walking for thirty miles ahead of the sledge. The fellow was worth four of me; but he let me carry him almost as far as the land-ice.



THE BRIG IN HER SECOND WINTER.

"We have been completing our arrangements for raising the brig. The heavy masses of ice that adhere to her in the winter make her condition dangerous at seasons of low tide. Her frame could not sustain the pressure of such a weight. Our object, therefore, has been to lift her mechanically above her line of flotation, and let her freeze in on a sort of ice-dock; so that the

ice around her as it sinks may take the bottom and hold her up clear of the danger. We have detached four of the massive beams that were intended to resist the lateral pressure of nips, and have placed them as shores, two on each side of the vessel, opposite the channels. Brooks has rigged a crab or capstan on the floe, and has passed the chain cable under the keel at four bearing-points. As these are hauled in by the crab and the vessel rises, the shores are made to take hold under heavy cleats spiked below the bulwarks, and in this manner to sustain her weight.

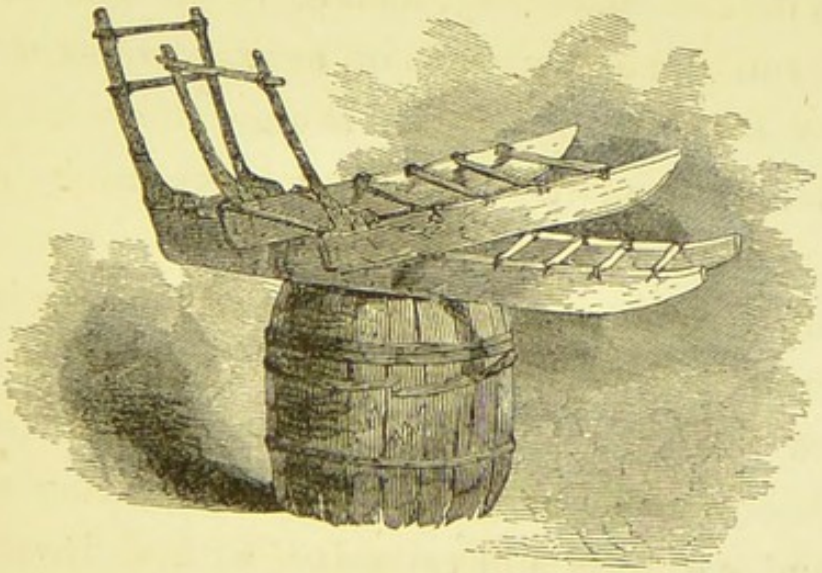
"We made our first trial of the apparatus to-day. The chains held perfectly, and had raised the brig nearly three feet, when away went one of our chain-slings, and she fell back of course to her more familiar bearings. We will repeat the experiment to-morrow, using six chains, two at each line of stress.

"October 21, Saturday.—Hard at it still, slinging chains and planting shores. The thermometer is too near zero for work like this. We swaddle our feet in old cloth, and guard our hands with fur mits; but the cold iron bites through them all.

"6.30 P.M.—Morton and Hans are in, after tracking the Esquimaux to the lower settlement of Etah. I cannot give their report to-night: the poor fellows are completely knocked up by the hardships of their march. Hans, who is always careless of powder and fire-arms,—a trait which I have observed among both the American and the Oriental savages,—exploded his powder-flask while attempting to kindle a tinder-fire. The

explosion has risked his hand. I have dressed it, extracting several pieces of foreign matter and poulticing it in yeast and charcoal. Morton has frostbitten both his heels; I hope not too severely, for the indurated skin of the heel makes it a bad region for suppuration. But they bring us two hundred and seventy pounds of walrus-meat and a couple of foxes. This supply, with what we have remaining of our two bears, must last us till the return of daylight allows us to join the natives in their hunts.

"The light is fast leaving us. The sun has ceased to reach the vessel. The northeastern headlands or their southern faces up the fiords have still a warm yellow tint, and the pinnacles of the icebergs far out on the floes are lighted up at noonday: but all else is dark shadow."



OUR GREENLAND SLEDGES.

CHAPTER XXX.

JOURNEY OF MORTON AND HANS — RECEPTION — THE HUT — THE WALRUS — WALRUS-HUNT — THE CONTEST — HABITS OF WALRUS — FEROCITY OF THE WALRUS — THE VICTORY — THE JUBILEE — A SIPAK.

Journey of Morton and Hans.

MORTON reached the huts beyond Anoatok upon the fourth day after leaving the brig.

The little settlement is inside the northeastern islands of Hartstene Bay, about five miles from Gray's Fiord, and some sixty-five or seventy from our brig. The slope on which it stands fronts the southwest, and is protected from the north and northeast by a rocky island and the hills of the mainland.

There were four huts; but two of them are in ruins. They were all of them the homes of families only four winters ago. Of the two which are still habitable, Myouk, his father, mother, brother, and sister occupied one; and Awahtok and Ootuniah, with their wives and three young ones, the other. The little community had lost two of its members by death since the spring.

They received Morton and his companion with

much kindness, giving them water to drink, rubbing their feet, drying their moccasins, and the like. The women, who did this with something of the good-wife's air of prerogative, seemed to have toned down much of

PORTRAIT OF OOTUNIAH.

the rudeness which characterized the bachelor settlement at Anoatok. The lamps were cheerful and smokeless, and the huts much less filthy. Each had its two lamp-fires constantly burning, with a framework of bone hooks and walrus-line above them for drying the wet clothes of the household. Except a few dog-skins,

which are used as a support to the small of the back, the dais was destitute of sleeping-accommodations altogether: a single walrus-hide was spread out for Morton and Hans. The hut had the usual tossut, at least twelve feet long,—very low, straight, and level, until it reached the inner part of the chamber, when it rose abruptly by a small hole, through which with

ETAH, AWAHTOK'S HUT.

some squeezing was the entrance into the true apartment. Over this entrance was the rude window, with its scraped seal-intestine instead of glass, heavily coated with frost of course; but a small eye-hole commanding the bay enabled the in-dwellers to peep out and speak or call to any who were outside. A smoke-hole passed through the roof.

When all the family, with Morton and Hans, were gathered together, the two lamps in full blaze and the

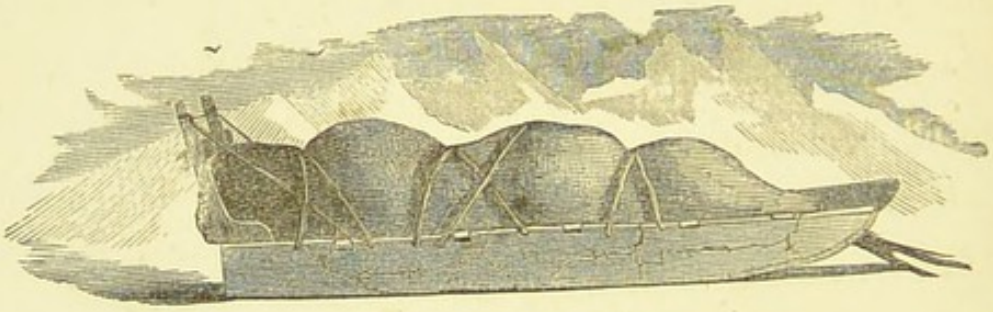
narrow hole of entrance covered by a flat stone, the heat became insupportable. Outside, the thermometer stood at 30° below zero; within, 90° above: a difference of one hundred and twenty degrees.

The vermin were not as troublesome as in the Anoatok dormitory, the natives hanging their clothing over the lamp-frames, and lying down to sleep perfectly naked, with the exception of a sort of T bandage, as surgeons call it, of seal-skin, three inches wide, worn by the women as a badge of their sex, and supported by a mere strip around the hips.

After sharing the supper of their hosts,—that is to say, after disposing of six frozen auks apiece,—the visitors stretched themselves out and passed the night in unbroken perspiration and slumber. It was evident from the meagreness of the larder that the hunters of the family had work to do; and from some signs, which did not escape the sagacity of Morton, it was plain that Myouk and his father had determined to seek their next dinner upon the floes. They were going upon a walrus-hunt; and Morton, true to the mission with which I had charged him, invited himself and Hans to be of the party.

I have not yet described one of these exciting incidents of Esquimaux life. Morton was full of the one he witnessed; and his account of it when he came back was so graphic that I should be glad to escape from the egotism of personal narrative by giving it in his own words. Let me first, however, endeavor to describe the animal.

His portrait on a neighboring page is truer to nature than any I have seen in the books: the specimens in the museums of collectors are imperfect, on account of the drying of the skin of the face against the skull. The head of the walrus has not the characteristic oval of the seal: on the contrary, the frontal bone is so covered as to present a steep descent to the eyes and a square, blocked-out aspect to the upper face. The muzzle is less protruding than the seal's, and the cheeks and lips are completely masked by the heavy quill-like

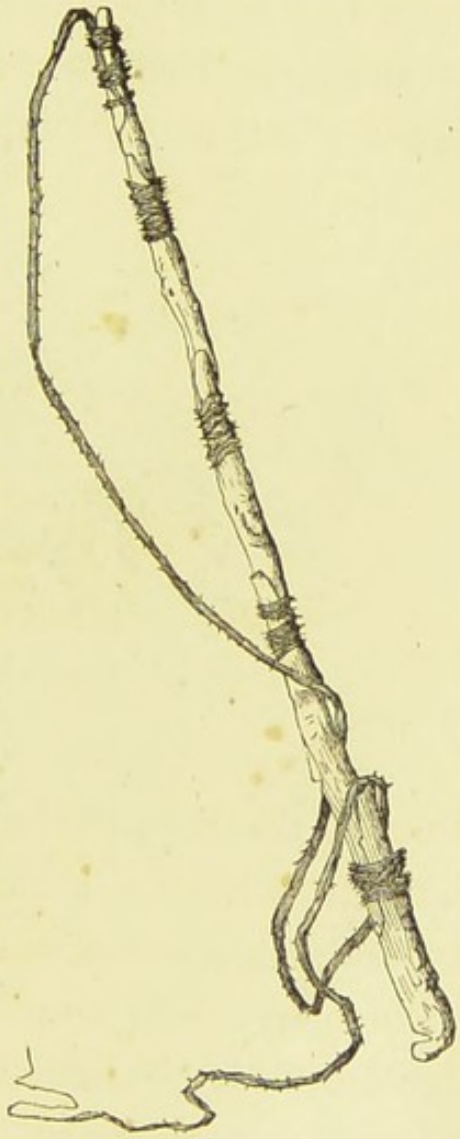


ESQUIMAUX SLEDGE.

bristles. Add to this the tusks as a garniture to the lower face; and you have for the walrus a grim, ferocious aspect peculiarly his own. I have seen him with tusks nearly thirty inches long; his body not less than eighteen feet. When of this size he certainly reminds you of the elephant more than any other living monster.

The resemblance of the walrus to man has been greatly overrated. The notion occurs in our systematic treatises, accompanied with the suggestion that this animal may have represented the merman and mer-

maid. The square, blocked-out head which I have noticed, effectually destroys the resemblance to humanity when distant, and the colossal size does the same when near. Some of the seals deserve the distinction much more: the size of the head, the regularity of the facial oval, the droop of the shoulders, even the movements of this animal, whether singly or in group, remind you strikingly of man.



ESQUIMAUX WHIP, WOOD AND BONE PIECED.

The party which Morton attended upon their walrus-hunt had three sledges. One was to be taken to a cache in the neighborhood; the other two dragged at a quick run toward the open water, about ten miles off to the southwest. They had but nine dogs to these two sledges, one man only riding, the others running by turns. As they neared the new ice, and where the black wastes of mingled cloud and water betokened the open sea, they would from time to time remove their hoods and listen intently for the animal's voice.

After a while Myouk became convinced, from signs

or sounds, or both,—for they were inappreciable by Morton,—that the walrus were waiting for him in a small space of recently-open water that was glazed over with a few days' growth of ice; and, moving gently on, they soon heard the characteristic bellow of a bull awuk. The walrus, like some of the higher order of beings to which he has been compared, is fond of his own music, and will lie for hours listening to himself. His vocalization is something between the mooing of a

WATCHING AT THE WALRUS-HOLE.

cow and the deepest baying of a mastiff: very round and full, with its barks or detached notes repeated rather quickly seven to nine times in succession.

The party now formed in single file, following in each other's steps; and, guided by an admirable knowledge of ice-topography, wound behind hummocks and ridges in a serpentine approach toward a group of pond-like discolorations, recently-frozen ice-spots, but surrounded by firmer and older ice.

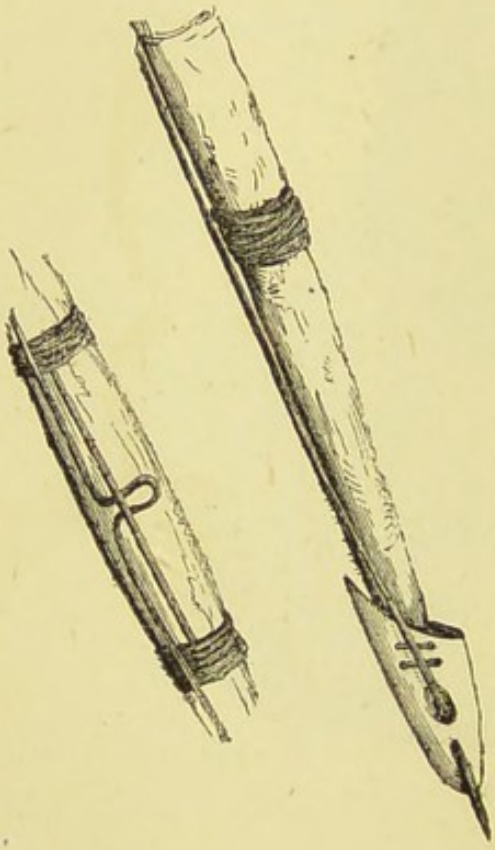
When within half a mile of these, the line broke, and each man crawled toward a separate pool; Morton

on his hands and knees following Myouk. In a few minutes the walrus were in sight. They were five in number, rising at intervals through the ice in a body, and breaking it up with an explosive puff that might have been heard for miles. Two large grim-looking males were conspicuous as the leaders of the group.

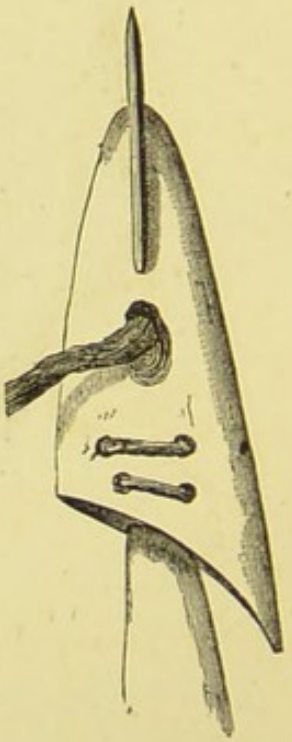
MYOUK.

Now for the marvel of the craft. When the walrus above water, the hunter is flat and motionless; as he gins to sink, alert and ready for a spring. The ani-al's head is hardly below the water-line before every an is in a rapid run; and again, as if by instinct, fore the beast returns, all are motionless behind pro-cting knolls of ice. They seem to know beforehand

not only the time he will be absent, but the very spot at which he will reappear. In this way, hiding and advancing by turns, Myouk, with Morton at his heels, has reached a plate of thin ice, hardly strong enough to bear them, at the very brink of the water-pool the walrus are curvetting in.



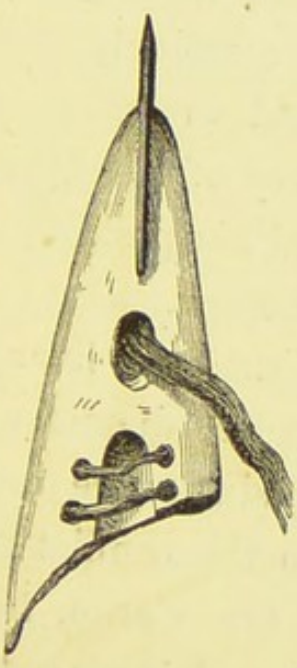
WALRUS-HARPOON.



HARPOON-HEAD.

Myouk, till now phlegmatic, seems to waken wit excitement. His coil of walrus-hide, a well-trimme line of many fathoms' length, is lying at his side. H fixes one end of it in an iron barb, and fastens th loosely by a socket upon a shaft of unicorn's horn: th other end is already looped, or, as sailors would sa

"doubled in a bight." It is the work of a moment. He has grasped the harpoon: the water is in motion. Puffing with pent-up respiration, the walrus is within a couple of fathoms, close before him. Myouk rises slowly; his right arm thrown back, the left flat at his side. The walrus looks about him, shaking the water from his crest: Myouk throws up his left arm;



NOZZLE OF HARPOON-HEAD.

HARPOON-HEAD, FREE.

and the animal, rising breast-high, fixes one look before he plunges. It has cost him all that curiosity can cost: the harpoon is buried under his left flipper.

Though the awuk is down in a moment, Myouk is running at desperate speed from the scene of his victory, paying off his coil freely, but clutching the end by its loop. He seizes as he runs a small stick of bone, rudely pointed with iron, and by a sudden

movement drives it into the ice: to this he secures his line, pressing it down close to the ice-surface with his feet.

Now comes the struggle. The hole is dashed in mad commotion with the struggles of the wounded beast; the line is drawn tight at one moment, the next relaxed: the hunter has not left his station. There is a crash of the ice; and rearing up through it are two walruses, not many yards from where he stands. One of them, the male, is excited and seemingly terrified: the other, the female, collected and vengeful. Down they go again, after one grim survey of the field; and on the instant Myouk has changed his position, carrying his coil with him and fixing it anew.

He has hardly fixed it before the pair have again risen, breaking up an area of ten feet diameter about the very spot he left. As they sink once more he again changes his place. And so the conflict goes on between address and force, till the victim, half exhausted, receives a second wound, and is played like a trout by the angler's reel.

The instinct of attack which characterizes the walrus is interesting to the naturalist, as it is characteristic also of the land animals, the pachyderms, with which he is classed. When wounded, he rises high out of the water, plunges heavily against the ice, and strives to raise himself with his fore-flippers upon its surface. As it breaks under his weight, his countenance assumes a still more vindictive expression, his bark changes to

a roar, and the foam pours out from his jaws till it froths his beard.

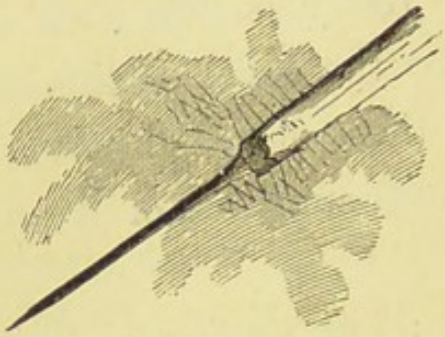
Even when not excited, he manages his tusks bravely. They are so strong that he uses them to grapple the rocks with, and climbs steeps of ice and land which would be inaccessible to him without their aid. He ascends in this way rocky islands that are sixty and a hundred feet above the level of the sea; and I have myself seen him in these elevated positions basking with his young in the cool sunshine of August and September.

He can strike a fearful blow; but prefers charging with his tusks in a soldierly manner. I do not doubt the old stories of the Spitzbergen fisheries and Cherie Island, where the walrus put to flight the crowds of European boats. Awuk is the lion of the Danish Esquimaux, and they always speak of him with the highest respect.

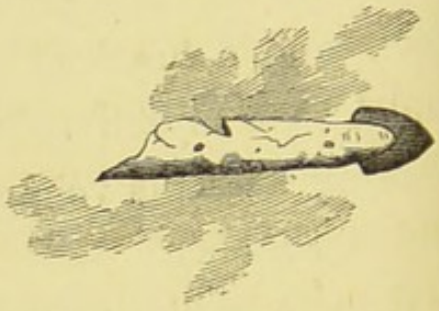
I have heard of oomiaks being detained for days at a time at the crossings of straits and passages which he infested. Governor Flaischer told me that, in 1830, a brown walrus, which, according to the Esquimaux, is the fiercest, after being lanced and maimed near Upernavik, routed his numerous assailants, and drove them in fear to seek for help from the settlement. His movements were so violent as to jerk out the harpoons that were stuck into him. The governor slew him with great difficulty after several rifle-shots and lance-wounds from his whaleboat.

On another occasion, a young and adventurous Inuit

plunged his nalegeit into a brown walrus; but, startled by the savage demeanor of the beast, called for help before using the lance. The older men in vain cautioned him to desist. "It is a brown walrus," said they: "*Aúvek-Kaiok!*" "Hold back!" Finding the cau-

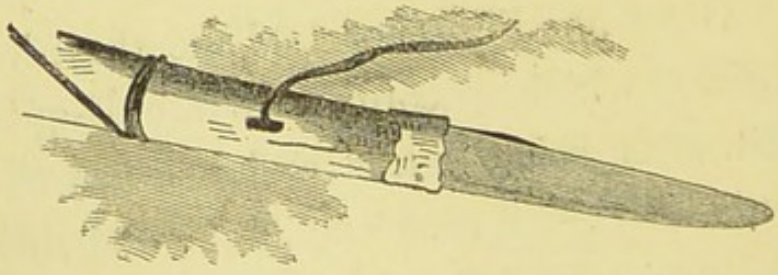


LANCE-HEAD, FROM MARSHALL BAY.



LANCE-HEAD, FROM SUNNY GORGE.

tion disregarded, his only brother rowed forward and plunged the second harpoon. Almost in an instant the animal charged upon the kayacker, ripping him up, as the description went, after the fashion of his sylvan



ESQUIMAUX LANCE-HEAD, "AKBAH."

brother, the wild boar. The story was told to me with much animation; how the brother remaining rescued the corpse of the brother dead; and how, as they hauled it up on the ice-floes, the ferocious beast plunged

in foaming circles, seeking fresh victims in that part of the sea which was discolored by his blood.

Some idea may be formed of the ferocity of the walrus, from the fact that the battle which Morton witnessed, not without sharing some of its danger, lasted four hours; during which the animal rushed continually at the Esquimaux as they approached, tearing off great tables of ice with his tusks, and showing no indications of fear whatever. He received upward of seventy lance-wounds,—Morton counted over sixty; and even then he remained hooked by his tusks to the margin of the ice, unable or unwilling to retire. His female fought in the same manner, but fled on receiving a lance-wound.

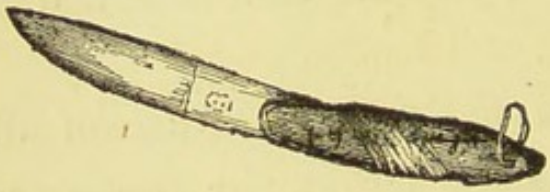
The Esquimaux seemed to be fully aware of the danger of venturing too near; for at the first onset of the walrus they jumped back far enough to be clear of the broken ice. Morton described the last three hours as wearing, on both sides, the aspect of an unbroken and seemingly doubtful combat.

The method of landing the beast upon the ice, too, showed a great deal of clever contrivance. They made two pair of incisions in the neck, where the hide is very thick, about six inches apart and parallel to each other, so as to form a couple of bands. A line of cut hide, about a quarter of an inch in diameter, was passed under one of these bands and carried up on the ice to a firm stick well secured in the floe, where it went through a loop, and was then taken back to the animal, made to pass under the second band, and led off to the

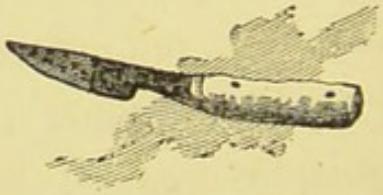
Esquimaux. This formed a sort of "double purchase," the blubber so lubricating the cord as to admit of a free movement. By this contrivance the beast, weighing some seven hundred pounds, was hauled up and butchered at leisure.

The two sledges now journeyed homeward, carrying the more valued parts of their prize. The intestines and a large share of the carcass were buried up in the cavities of a berg: Lucullus himself could not have dreamed of a grander icehouse.

As they doubled the little island which stood in



SOUTHERN KNIFE, "AWAYU."



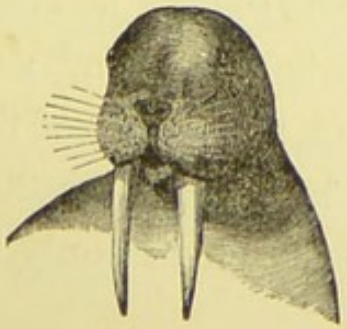
FROM GRAVE, BUSHNALL ISLAND.

front of their settlement, the women ran down the rocks to meet them. A long hail carried the good news; and, as the party alighted on the beach, knives were quickly at work, the allotment of the meat being determined by well-understood hunter laws. The Esquimaux, however gluttonously they may eat, evidently bear hunger with as little difficulty as excess. None of the morning party had breakfasted; yet it was after ten o'clock at night before they sat down to dinner. "Sat down to dinner!" This is the only expression of our own gastrology which is applicable to an Esquimaux feast. They truly sit down, man,

woman, and child, knife in hand, squatting cross-legged around a formidable joint,—say forty pounds,—and, without waiting for the tardy coction of the lamp, falling to like college commoners after grace. I have seen many such feeds. Hans's account, however, of the glutton-festival at Etah is too characteristic to be omitted.

"Why, Cappen Ken, sir, even the children ate all night:—you know the little two-year-old that Awiu carried in her hood—the one that bit you, when you tickled it?—yes. Well, Cappen Ken, sir, that baby cut for herself, with a knife made out of an iron hoop and so heavy that it could barely lift it, and cut and ate, and ate and cut, as long as I looked at it."

"Well, Hans, try now and think; for I want an accurate answer: how much as to weight or quantity would you say that child ate?" Hans is an exact and truthful man: he pondered a little and said that he could not answer my question. "But I know this, sir, that it ate a *sipak*"—the Esquimaux name for the lump which is cut off close to the lips—"as large as its own head; and three hours afterward, when I went to bed, it was cutting off another lump and eating still."—A sipak, like the Dutch governor's foot, is, however, a varying unit of weight.



CHAPTER XXXI.

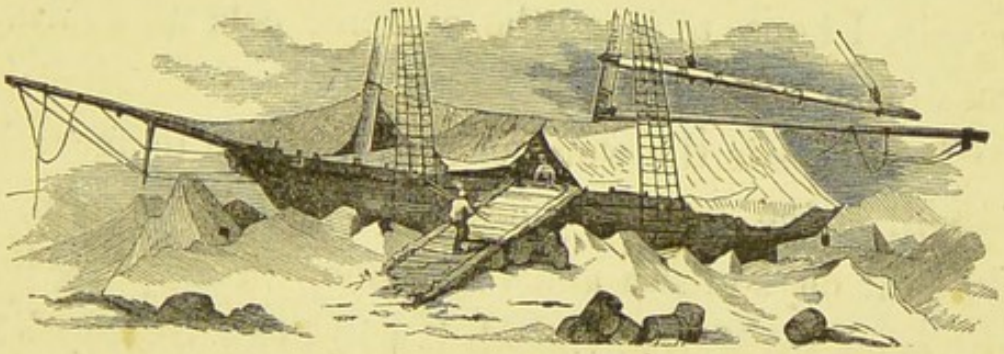
AN AURORA—WOOD-CUTTING—FUEL ESTIMATE—THE STOVE-PIPES—THE ARCTIC FIRMAMENT—ESQUIMAUX ASTRONOMY—HEATING APPARATUS—METEORIC SHOWER—A BEAR—HASTY RETREAT—THE CABIN BY NIGHT—SICKNESS INCREASING—CUTTING INTO THE BRIG—THE NIGHT-WATCH.

"OCTOBER 24, Tuesday.—We are at work that makes us realize how short-handed we are. The brig was lifted for the third time to day, with double chains passed under her at low tide, both astern and amidships. Her bows were already raised three feet above the water, and nothing seemed wanting to our complete success, when at the critical moment one of the after-shores parted, and she fell over about five streaks to starboard. The slings were hove to by the crab, and luckily held her from going farther, so that she now stands about three feet above her flotation-line, drawing four feet forward, but four and a half aft. She has righted a little with the return of tide, and now awaits the freezing-in of her winter cradle. She is well out of water; and, if the chains only hold, we shall have

the spectacle of a brig, high and dry, spending an Arctic winter over an Arctic ice-bed.

"We shall be engaged now at the hold and with the housing on deck. From our lodge-room to the forward timbers every thing is clear already. We have moved the carpenter's bench into our little dormitorium: everywhere else it is too cold for handling tools.

"9 P. M.—A true and unbroken auroral arch: the first we have seen in Smith's Sound. It was colorless, but



THE BRIG CRADLED.

extremely bright. There was no pendant from the lower curve of the arc; but from its outer, an active wavy movement, dissipating itself into barely-perceptible cirrhus, was broken here and there by rays nearly perpendicular, with a slight inclination to the east. The atmosphere was beautifully clear.

"October 26, Thursday.—The thermometer at 34° below zero, but fortunately no wind blowing. We go on with the out-door work. The gangway of ice is finished, and we have passed wooden steam-tubes through the deck-house to carry off the vapors of our

cooking-stove and the lighter impurities of the crowded cabin.

"We burn but seventy pounds of fuel a day, most of it in the galley; the fire being allowed to go out between meals. We go without fire altogether for four hours of the night; yet such is the excellence of our moss walls, and the air-proof of our tossut, that the thermometer in-doors never indicates less than 45° above zero, with the outside air at 30° below. When our housing is arranged and the main hatch secured with a proper weather-tight screen of canvas, we shall be able, I hope, to meet the extreme cold of February and March without fear.

"Darkness is the worst enemy we have to face; but we will strive against the scurvy in spite of him, till the light days of sun and vegetation. The spring hunt will open in March, though it will avail us very little till late in April.

"Wilson and Brooks are my principal subjects of anxiety; for, although Morton and Hans are on their backs, making four of our ten, I can see strength of system in their cheerfulness of heart. The best prophylactic is a hopeful, sanguine temperament; the best cure, moral resistance, that spirit of combat against every trial which is alone true bravery.

"October 27, Friday.—The work is going on: we are ripping off the extra planking of our deck for fuel during the winter. The cold increases fast, verging now upon 40° below zero; and in spite of all my efforts we will have to burn largely into the brig. I prepared

for this two months ago, and satisfied myself, after a consultation with the carpenter, that we may cut away some seven or eight tons of fuel without absolutely destroying her sea-worthiness. Ohlsen's report marked out the order in which her timbers should be appropriated to uses of necessity:—1, The monkey-rail; 2, the bulwarks; 3, the upper ceiling of the deck; 4, eight extra cross-beams; 5, the flooring and remaining woodwork of the forecastle; 6, the square girders of the forepeak; 7, the main topsail-yard and topmast; 8, the outside trebling or oak sheathing.

"We had then but thirty buckets of coal remaining, and had already burnt up the bulkheads. Since then we have made some additional inroads on our stock; but, unless there is an error in the estimate, we can go on at the rate of seventy pounds a day. Close housekeeping this; but we cannot do better. We must remodel our heating-arrangements. The scurvy exacts a comfortable temperature and a drying one. Our mean thus far has been 47°,—decidedly too low; and by the clogging of our worn-out pipe it is now reduced to 42°.

"The ice-belt, sorry chronicler of winter progress, has begun to widen with the rise and fall of the sludgy water.

"October 31, Tuesday.—We have had a scene on board. We play many parts on this Arctic stage of ours, and can hardly be expected to be at home in all of them.

"To-day was appropriated to the reformation of the

stoves, and there was demand, of course, for all our ingenuity both as tinkers and chimney-sweeps. Of my company of nine, Hans had the good luck to be out on the hunt, and Brooks, Morton, Wilson, and Goodfellow were scurvy-ridden in their bunks. The other four and the commanding officer made up the detail of duty. First, we were to give the smoke-tubes of the stove a thorough cleansing, the first they have had for now seventeen months; next, to reduce our effete snow-melter to its elements of imperfect pipes and pans; and, last, to combine the practicable remains of the two into one efficient system for warming and melting.

"Of these, the first has been executed most gallantly. 'Glory enough for one day!' The work with the scrapers on the heated pipes—for the accumulation inside of them was as hard as the iron itself till we melted it down—was decidedly unpleasant to our gentle senses; and we were glad when it had advanced far enough to authorize a resort to the good old-fashioned country custom of firing. But we had not calculated the quantity of the gases, combustible and incombustible, which this process was to evolve, with duly scientific reference to the size of their outlet. In a word, they were smothering us, and, in a fit of desperation, we threw open our apartment to the atmosphere outside. This made short work of the smoky flocculi; the dormitory decked itself on the instant with a frosty forest of feathers, and it now rejoices in a drapery as gray as a cygnet's breast.

"It was cold work reorganizing the stove for the nonce; but we have got it going again, as red as a cherry, and my well-worn dog-skin suit is drying before it. The blackened water is just beginning to drip, drip, drop, from the walls and ceiling, and the bed-clothes and the table on which I write."

My narrative has reached a period at which every thing like progress was suspended. The increasing cold and brightening stars, the labors and anxieties and sickness that pressed upon us,—these almost engross the pages of my journal. Now and then I find some marvel of Petersen's about the fox's dexterity as a hunter; and Hans tells me of domestic life in South Greenland, or of a seal-hunt and a wrecked kayack; or perhaps McGary repeats his thrice-told tale of humor; but the night has closed down upon us, and we are hibernating through it.

Yet some of these were topics of interest. The intense beauty of the Arctic firmament can hardly be imagined. It looked close above our heads, with its stars magnified in glory and the very planets twinkling so much as to baffle the observations of our astronomer. I am afraid to speak of some of these night-scenes. I have trodden the deck and the floes, when the life of earth seemed suspended, its movements, its sounds, its coloring, its companionships; and as I looked on the radiant hemisphere, circling above me as if rendering worship to the unseen Centre of light, I have ejaculated in humility of spirit, "Lord, what is man that

thou art mindful of him?" And then I have thought of the kindly world we had left, with its revolving sunshine and shadow, and the other stars that gladden it in their changes, and the hearts that warmed to us there; till I lost myself in memories of those who are not;—and they bore me back to the stars again.

The Esquimaux, like other nomads, are careful observers of the heavenly bodies. An illustration of the confidence with which they avail themselves of this knowledge occurred while Petersen's party were at Tessieusak. I copy it from my journal of November 6.

"A number of Esquimaux sought sleeping-quarters in the hut, much to the annoyance of the earlier visitors. The night was clear; and Petersen, anxious to hasten their departure, pointed to the horizon, saying it would soon be daylight. 'No,' said the savage; 'when that star there gets round to that point,' indicating the quarter of the heavens, 'and is no higher than this star,' naming it, 'will be the time to harness up my dogs.' Petersen was astounded; but he went out the next morning and verified the sidereal fact.

"I have been shooting a hare to-day up the ravine pointed out by Ootuniah. It has been quite a pleasant incident. I can hardly say how valuable the advice of our Esquimaux friends has been to us upon our hunts. This desert homestead of theirs is as thoroughly travelled over as a sheepwalk. Every movement of the ice or wind or season is noted; and they predict its influence upon the course of the birds of passage

with the same sagacity that has taught them the habits of the resident animals.

"They foretold to me the exact range of the water off Cape Alexander during September, October, November and December, and anticipated the excessive fall of snow which has taken place this winter, by reference to this mysterious water.

"In the darkest weather of October, when every thing around is apparently congealed and solid, they discover water by means as inscrutable as the divining-rod. I was once journeying to Anoatok, and completely enveloped in darkness among the rolled-ice off Godsend Island. My dogs were suffering for water. September was half gone, and the water-streams both on shore and on the bergs had been solid for nearly a fortnight. Myouk, my companion, began climbing the dune-like summits of the ice-hills, tapping with his ice-pole and occasionally applying his ear to parts of the surface He did so to three hills without any result, but at the fourth he called out, 'Water!' I examined the spot by hand and tongue, for it was too dark to see; but I could detect no liquid. Lying down and listening, I first perceived the metallic tinkle of a rivulet. A few minutes' digging brought us down to a scanty infiltration of drinkable water.

"November 8, Wednesday.—Still tinkering at our stove and ice-melter; at last successful. Old iron pipes, and tin kettles, and all the refuse kitchen-ware of the brig figure now in picturesque association and rejoice in the title of our heating-apparatus. It is a great

result. We have burnt from 6 A. M. to 10 P. M. but seventy-five pounds, and will finish the twenty-four hours with fifteen pounds more. It has been a mild day, the thermometer keeping some tenths above 13° below zero; but then we have maintained a temperature inside of 55° above. With our old contrivances we could never get higher than 47°, and that without any certainty, though it cost us a hundred and fifty-four pounds a day. A vast increase of comfort, and still greater saving of fuel. This last is a most important consideration. Not a stick of wood comes below without my eyes following it through the scales to the wood-stack. I weigh it to the very ounce.

"The tide-register, with its new wheel-and-axle arrangements, has given us out-door work for the day. Inside, after rigging the stove, we have been busy chopping wood. The ice is already three feet thick at our tide-hole.

"November 15, Wednesday.—The last forty-eight hours should have given us the annual meteoric shower. We were fully prepared to observe it; but it would not come off. It would have been a godsend variety. In eight hours that I helped to watch, from nine of last night until five this morning, there were only fifty-one shooting stars. I have seen as many between the same hours in December and February of last winter.

"Our traps have been empty for ten days past: but for the pittance of excitement which the visit to them gives, we might as well be without them.

"The men are getting nervous and depressed. Mc-

Gary paced the deck all last Sunday in a fit of home-sickness. without eating a meal. I do my best to cheer them; but it is hard work to hide one's own trials for the sake of others who have not as many. I am glad of my professional drill and its companion influence over the sick and toil-worn. I could not get along at all unless I combined the offices of physician and commander. You cannot punish sick men.

"November 20, Monday.—I was out to-day looking over the empty traps with Hans, and when about two miles off the brig—luckily not more—I heard what I thought was the bellow of a walrus on the floe-ice. 'Hark there, Hans!' The words were scarcely uttered before we had a second roar, altogether unmistakable. No walrus at all: a bear, a bear! We had jumped to the ice-foot already. The day was just thirty minutes past the hour of noon; but, practised as we all are to see through the darkness, it was impossible to make out an object two hundred yards off. What to do?—we had no arms.

"We were both of us afraid to run, for we knew that the sight of a runner would be the signal for a chase; and, besides, it went to our hearts to lose such a providential accession to our means of life. A second roar, well pitched and abundant in volume, assured us that the game was coming nearer, and that he was large and of no doubt corresponding flavor. 'Run for the brig, Hans,'—he is a noble runner,—'and I will play decoy.' Off went Hans like a deer. Another roar; but he was already out of sight.

"I may confess it to these well-worn pages: there was something not altogether pleasant in the silent communings of the next few minutes; but they were silent ones.

"I had no stimulus to loquacity, and the bear had ceased to be communicative. The floe was about three-quarters of a tide; some ten feet it may be, lower than the ice-foot on which I lay. The bear was of course below my horizon. I began after a while to think over the reality of what I had heard, and to doubt whether it might not be after all a creature of the brain. It was very cold on that ice-foot. I resolved to crawl to the edge of it and peer under my hands into the dark shadow of the hummock-ridges.

"I did so. One look: nothing. A second: no bear after all. A third: what is that long rounded shade? Stained ice? Yes: stained ice. The stained ice gave a gross menagerie roar, and charged on the instant for my position. I had not even a knife, and did not wait to think what would have been appropriate if I had had one. I ran,—ran as I never expect these scurvy-stiffened knees to run again,—throwing off first one mitten and then its fellow to avoid pursuit. I gained the brig, and the bear my mittens. I got back one of them an hour afterward, but the other was carried off as a trophy in spite of all the rifles we could bring to the rescue.

"November 24, Friday.—The weather still mild. I attempted to work to-day at charting. I placed a large board on our stove, and pasted my paper to it.

My lamp reposed on the lid of the coffee-kettle, my instruments in the slush-boiler, my feet in the ash-pan; and thus I drew the first coast-line of Grinnell Land. The stove, by close watching and niggard feeding, has burnt only sixty-five pounds in the last twenty-four hours. Of course, working by night I work without fire. In the daytime our little company take every man his share of duty as he is able. Poor Wilson, just able to stump about after his late attack of scurvy, helps to wash the dishes. Morton and Brooks sew at sledge-clothing, while Riley, McGary, and Ohlsen, our only really able-bodied men, cut the ice and firewood.

"December 1, Friday.—I am writing at midnight. I have the watch from eight to two. It is day in the moonlight on deck, the thermometer getting up again to 36° below zero. As I come down to the cabin—for so we still call this little moss-lined igloë of ours—every one is asleep, snoring, gritting his teeth, or talking in his dreams. This is pathognomonic; it tells of Arctic winter and its companion scurvy. Tom Hickey, our good-humored, blundering cabin-boy, decorated since poor Schubert's death with the dignities of cook, is in that little dirty cot on the starboard side; the rest are bedded in rows, Mr. Brooks and myself chock aft. Our bunks are close against the frozen moss wall, where we can take in the entire family at a glance. The apartment measures twenty feet by eighteen; its height six feet four inches at one place, but diversified elsewhere by beams crossing at

different distances from the floor. The avenue by which it is approached is barely to be seen in the moss wall forward:—twenty feet of air-tight space make misty distance, for the puff of outside-temperature that came in with me has filled our atmosphere with vesicles of vapor. The avenue—Ben-Djerback is our poetic name for it—closes on the inside with a door well patched with flannel, from which, stooping upon all-fours, you back down a descent of four feet in twelve through a tunnel three feet high and two feet six inches broad. It would have been a tight squeeze for a man like Mr. Brooks when he was better fed and fatter. Arrived at the bottom, you straighten yourself, and a second door admits you into the dark and sorrowing hold, empty of stores and stripped to its naked ceiling for firewood. From this we grope our way to the main hatch, and mount by a rude stairway of boxes into the open air.

"December 2, Saturday.—Had to put Mr. McGary and Riley under active treatment for scurvy. Gums retracted, ankles swollen, and bad lumbago. Mr. Wilson's case, a still worse one, has been brought under. Morton's is a saddening one: I cannot afford to lose him. He is not only one of my most intelligent men, but he is daring, cool, and everyway trustworthy. His tendon Achilles has been completely perforated, and the surface of the heel-bone exposed. An operation in cold, darkness, and privation, would probably bring on locked-jaw. Brooks grows discouraged: the poor fellow has scurvy in his stump, and his leg is

drawn up by the contraction of the flexors at the knee-joint. This is the third case on board,—the fourth if I include my own,—of contracted tendons.

"December 3, Sunday.—I have now on hand twenty-four hundred pounds of chopped wood, a store collected with great difficulty; and yet how inadequate a provision for the sickness and accident we must look for through the rest of the dark days! It requires the most vigorous effort of what we call a healthy man to tear from the oak ribs of our stout little vessel a single day's firewood. We have but three left who can manage even this; and we cannot spare more than one for the daily duty. Two thousand pounds will barely carry us to the end of January, and the two severest months of the Arctic year, February and March, will still be ahead of us.

"To carry us over these, our days of greatest anticipated trial, we have the outside oak sheathing,—or trebling, as the carpenters call it,—a sort of extra skin to protect the brig against the shocks of the ice. Although nearly three inches thick, it is only spiked to her sides, and carpenter Ohlsen is sure that its removal will not interfere with her sea-worthiness. Cut the trebling only to the water-line, and it will give me at least two and a half tons; and with this—God willing—I may get through this awful winter, *and save the brig besides!*

"December 4, Monday.—That stove is smoking so that three of our party are down with acute inflammation of the eyes. I fear I must increase the diameter

of our smoke-pipes, for the pitch-pine which we burn, to save up our oak for the greater cold, is redundantly charged with turpentine. Yet we do not want an increased draught to consume our seventy pounds; the fiat 'No more wood' comes soon enough.

"Then for the night-watch. I have generally something on hand to occupy me, and can volunteer for the hours before my regular term. Every thing is closed tight; I muffle myself in furs, and write; or, if the cold denies me that pleasure, I read, or at least think. Thank heaven, even an Arctic temperature leaves the mind unchilled. But in truth, though our hourly observations in the air range between —46° and —30°, we seldom register less than +36° below.

"December 5, Tuesday.—McGary is no better, but happily has no notion how bad he is. I have to give him a grating of our treasured potatoes. He and Brooks will doubtless finish the two I have got out, and then there will be left twelve. They are now three years old, poor old frozen memorials of the dear land they grew in. They are worth more than their weight in gold."

CHAPTER XXXII.

ESQUIMAUX SLEDGES—BONSALL'S RETURN—RESULTS OF THE HUNT—RETURN OF WITHDRAWING PARTY—THEIR RECEPTION—THE ESQUIMAUX ESCORT—CONFERENCE—CONCILIATION—ON FIRE—CASUALTY—CHRISTMAS—OLE BEN—A JOURNEY AHEAD—SETTING OUT—A DREARY NIGHT—STRIKING A LIGHT—END OF 1854.

I WAS asleep in the forenoon of the 7th, after the fatigue of an extra night-watch, when I was called to the deck by the report of "Esquimaux sledges." They came on rapidly, five sledges, with teams of six dogs each, most of the drivers strangers to us; and in a few minutes were at the brig. Their errand was of charity: they were bringing back to us Bonsall and Petersen, two of the party that left us on the 28th of August.

The party had many adventures and much suffering to tell of. They had verified by painful and perilous experience all I had anticipated for them. But the most stirring of their announcements was the condition they had left their associates in, two hundred miles off, divided in their counsels, their energies broken, and

their provisions nearly gone. I reserve for another page the history of their wanderings. My first thought was of the means of rescuing and relieving them.

I resolved to despatch the Esquimaux escort at once with such supplies as our miserably-imperfect stores allowed, they giving their pledge to carry them with all speed, and, what I felt to be much less certain, with all honesty. But neither of the gentlemen who had come with them felt himself in condition to repeat the journey. Mr. Bonsall was evidently broken down, and Petersen, never too reliable in emergency, was for postponing the time of setting out. Of our own party—those who had remained with the brig—McGary, Hans, and myself were the only ones able to move, and of these McGary was now fairly on the sick list. We could not be absent for a single day without jeoparding the lives of the rest.

"December 8, Friday.—I am much afraid these provisions will never reach the wanderers. We were busy every hour since Bonsall arrived getting them ready. We cleaned and boiled and packed a hundred pounds of pork, and sewed up smaller packages of meat-biscuit, bread-dust, and tea; and despatched the whole, some three hundred and fifty pounds, by the returning convoy. But I have no faith in an Esquimaux under temptation, and I almost regret that I did not accompany them myself. It might have been wiser. But I will set Hans on the track in the morning; and, if I do not hear within four days that the stores are fairly on their way, *coûte qui coûte*, I will be

off to the lower bay and hold the whole tribe as hostages for the absent party.

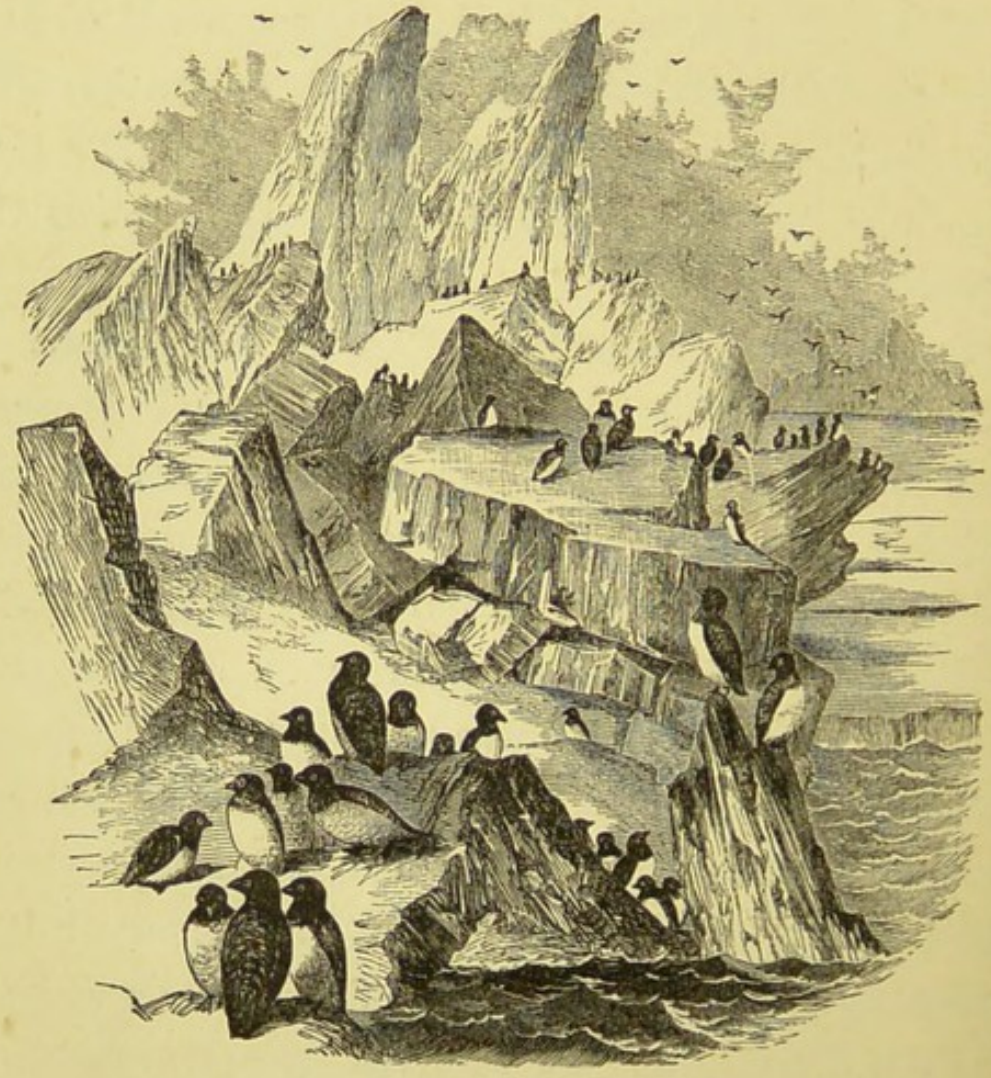
"Brooks is wasting with night-sweats; and my iron man, McGary, has been suffering for two days with anomalous cramps from exposure.

"These Esquimaux have left us some walrus-beef; and poor little Myouk, who is unabated in his affection for me, made me a special present of half a liver. These go of course to the hospital. God knows they are needed there!

"December 9, Saturday.—The superabundant life of Northumberland Island has impressed Petersen as much as it did me. I cannot think of it without recurring to the fortunes of Franklin's party. Our own sickness I attribute to our civilized diet; had we plenty of frozen walrus I would laugh at the scurvy. And it was only because I was looking to other objects—summer researches, and explorations in the fall with the single view to escape—that I failed to secure an abundance of fresh food. Even in August I could have gathered a winter's supply of birds and cochlearia.

"From May to August we lived on seal, twenty-five before the middle of July, all brought in by one man: a more assiduous and better-organized hunt would have swelled the number without a limit. A few boat-parties in June would have stocked us with eider-eggs for winter use, three thousand to the trip; and the snowdrifts would have kept them fresh for the breakfast-table. I loaded my boat with ducks in three hours, as late as the middle of July and not more than

thirty-five miles from our anchorage. And even now, here are these Esquimaux, sleek and oily with their walrus-blubber, only seventy miles off. It is not a region for starvation, nor ought it to be for scurvy.



CLIFFS, NORTHUMBERLAND ISLAND.

"December 12, Tuesday.—Brooks awoke me at three this morning with the cry of 'Esquimaux again!' I dressed hastily, and, groping my way over the pile of boxes that leads up from the hold into the darkness above, made out a group of human figures, masked by the hooded jumpers of the natives. They stopped at

the gangway, and, as I was about to challenge, one of them sprang forward and grasped my hand. It was Doctor Hayes. A few words, dictated by suffering, certainly not by any anxiety as to his reception, and at his bidding the whole party came upon deck. Poor fellows! I could only grasp their hands and give them a brother's welcome.

"The thermometer was at minus 50°; they were covered with rime and snow, and were fainting with hunger. It was necessary to use caution in taking them below; for, after an exposure of such fearful intensity and duration as they had gone through, the warmth of the cabin would have prostrated them completely. They had journeyed three hundred and fifty miles; and their last run from the bay near Etah, some seventy miles in a right line, was through the hummocks at this appalling temperature.

"One by one they all came in and were housed. Poor fellows! as they threw open their Esquimaux garments by the stove, how they relished the scanty luxuries which we had to offer them! The coffee and the meat-biscuit soup, and the molasses and the wheat bread, even the salt pork which our scurvy forbade the rest of us to touch,—how they relished it all! For more than two months they had lived on frozen seal and walrus-meat.

"They are almost all of them in danger of collapse, but I have no apprehension of life unless from tetanus. Stephenson is prostrate with pericarditis. I resigned my own bunk to Dr. Hayes, who is much prostrated:

he will probably lose two of his toes, perhaps a third. The rest have no special injury.

"I cannot crowd the details of their journey into my diary. I have noted some of them from Dr. Hayes's words; but he has promised me a written report, and I wait for it. It was providential that they did not stop for Petersen's return or rely on the engagements which his Esquimaux attendants had made to them as well as to us. The sledges that carried our relief of provisions passed through the Etah settlement empty, on some furtive project, we know not what.

"December 13, Wednesday.—The Esquimaux who accompanied the returning party are nearly all of them well-known friends. They were engaged from different settlements, but, as they neared the brig, volunteers added themselves to the escort till they numbered six drivers and as many as forty-two dogs. Whatever may have been their motive, their conduct to our poor friends was certainly full of humanity. They drove at flying speed; every hut gave its welcome as they halted; the women were ready without invitation to dry and chafe their worn-out guests.

"I found, however, that there were other objects connected with their visit to the brig. Suffering and a sense of necessity had involved some of our foot-worn absentees in a breach of hospitality. While resting at Kalutunah's hut, they had found opportunity of appropriating to their own use certain articles of clothing, fox-skins and the like, under circumstances which admitted of justification only by the law of the

more sagacious and the stronger. It was apparent that our savage friends had their plaint to make, or, it might be, to avenge.

"My first attention, after ministering to the immediate wants of all, was turned to the office of conciliating our Esquimaux benefactors. Though they wore their habitual faces of smiling satisfaction, I could read them too well to be deceived. Policy as well as moral duty have made me anxious always to deserve their respect; but I had seen enough of mankind in its varied relations not to know that respect is little else than a tribute to superiority either real or supposed,—and that among the rude at least, one of its elements is fear.

"I therefore called them together in stern and cheerless conference on the deck, as if to inquire into the truth of transactions that I had heard of, leaving it doubtful from my manner which was the party I proposed to implicate. Then, by the intervention of Petersen, I called on Kalutunah for his story, and went through a full train of questionings on both sides. It was not difficult to satisfy them that it was my purpose to do justice all round. The subject of controversy was set out fully, and in such a manner as to convince me that an appeal to kind feeling might have been substituted with all effect for the resort to artifice or force. I therefore, to the immense satisfaction of our stranger guests, assured them of my approval, and pulled their hair all around.

"They were introduced into the oriental recess of

our dormitory,—hitherto an unsolved mystery. There, seated on a red blanket, with four pork-fat lamps, throwing an illumination over old worsted damask curtains, hunting-knives, rifles, beer-barrels, galley-stove and chronometers, I dealt out to each man five needles, a file, and a stick of wood. To Kalutunah and Shunghu

SHUNGHU.

I gave knives and other extras; and in conclusion spread out our one remaining buffalo close to the stove, built a roaring fire, cooked a hearty supper, and by noonday they were sleeping away in a state of thorough content. I explained to them further that my people did not steal; that the fox-jumpers and boots and

BONSALL
BROOKS
DR KANE
DR HAYES
MORTON

sledges were only taken to save their lives; and I thereupon returned them.

"The party took a sound sleep, and a second or rather a continuous feed, and left again on their return through the hummocks with apparent confidence and good-humor. Of course they prigged a few knives and forks;—but that refers itself to a national trait.

"December 23, Saturday.—This uncalculated accession of numbers makes our little room too crowded to be wholesome: I have to guard its ventilation with all the severity that would befit a surgical ward of our Blockley Hospital. We are using the Esquimaux lamp as an accessory to our stove: it helps out the cooking and water-making, without encroaching upon our rigorously-meted allowance of wood. But the odor of pork-fat, our only oil, we have found to be injurious; and our lamps are therefore placed outside the *tossut*, in a small room bulkheaded off for their use.

"This new arrangement gave rise yesterday to a nearly fatal disaster. A watch had been stationed in charge of the lamp, with the usual order of 'No uncovered lights.' He deserted his post. Soon afterward, Hans found the cooking-room on fire. It was a horrible crisis; for no less than eight of our party were absolutely nailed to their beds, and there was nothing but a bulkhead between them and the fire. I gave short but instant orders, stationing a line between the side-hole and the main hatch, detailing two men to work with me, and ordering all the rest who could

move to their quarters. Dr. Hayes with his maimed foot, Mr. Brooks with his contracted legs, and poor Morton, otherwise among our best men, could do nothing.

"Before we reached the fire, the entire bulkhead was in a blaze, as well as the dry timbers and skin of the brig. Our moss walls, with their own tinder-like material and their light casing of inflammable wood, were entirely hidden by the flames. Fortunately the furs of the recently-returned party were at hand, and with them I succeeded in smothering the fire. But I was obliged to push through the blaze of our sailcloth bulkhead in order to defend the wall; and, in my anxiety to save time, I had left the cabin without either cap or mittens. I got through somehow or other, and tore down the canvas which hung against that dangerous locality. Our rifles were in this corner, and their muzzles pointing in all directions.

"The water now began to pass down; but with the discharge of the first bucketful the smoke overcame me. As I found myself going, I pushed for the hatchway, knowing that the bucket-line would *feel* me. Seeing was impossible; but, striking Ohlsen's legs as I fell, I was passed up to the deck, *minus* beard, eyebrows, and forelock, *plus* two burns on the forehead and one on each palm.

"In about three minutes after making way with the canvas, the fire was got under, and in less than half an hour all was safe again. But the transition, for even the shortest time, from the fiery Shadrachian furnace-

temperature below, to 46° below zero above, was intolerably trying. Every man suffered, and few escaped without frost-bitten fingers.

"The remembrance of the danger and its horrible results almost miraculously averted shocks us all. Had we lost our brig, not a man could have survived: without shelter, clothing, or food, the thermometer almost eighty degrees below the freezing point, and a brisk wind stirring, what hope could we have on the open ice-field?

"December 25, Christmas, Monday.—All together again, the returned and the steadfast, we sat down to our Christmas dinner. There was more love than with the stalled ox of former times; but of herbs none. We forgot our discomforts in the blessings which adhered to us still; and when we thought of the long road ahead of us, we thought of it hopefully. I pledged myself to give them their next Christmas with their homes; and each of us drank his 'absent friends' with ferocious zest over one-eighteenth part of a bottle of sillery,—the last of its hamper, and, alas! no longer *mousseux*.

"But if this solitary relic of festival days had lost its sparkle, we had not. We passed around merrily our turkeys roast and boiled, roast-beef, onions, potatoes and cucumbers, watermelons, and God knows what other cravings of the scurvy-sickened palate, with entire exclusion of the fact that each one of these was variously represented by pork and beans. Lord Peter himself was not more cordial in his dispensa-

tion of plum-pudding, mutton, and custard to his unbelieving brothers.

"McGary, of course, told us his story: we hear it every day, and laugh at it almost as heartily as he does himself. Cæsar Johnson is the guest of 'Ole Ben,' colored gentlemen both, who do occasional white-washing. The worthies have dined stanchly on the dish of beans, browned and relished by its surmounting cube of pork. A hospitable pause, and, with a complacent wave of the hand, Ole Ben addresses the lady hostess:—'Ole woman! bring on de resarve.' 'Ha'n't got no resarve.' 'Well, den,'—with a placid smile,—'bring on de beans!'

"So much for the Merrie Christmas. What portion of its mirth was genuine with the rest I cannot tell, for we are practised actors some of us; but there was no heart in my share of it. My thoughts were with those far off, who are thinking, I know, of me. I could bear my own troubles as I do my eider-down coverlet; for I can see myself as I am, and feel sustained by the knowledge that I have fought my battle well. But there is no one to tell of this at the home-table. Pertinacity, unwise daring, calamity,—any of these may come up unbidden, as my name circles round, to explain why I am still away."

For some days before Christmas I had been meditating a sledge-journey to our Esquimaux neighbors. The condition of the little party under my charge left me no alternative, uncomfortable and hazardous as I knew that it must be. I failed in the first effort; but

there were incidents connected with it which may deserve a place in this volume. I recur to my journal for a succinct record of my motives in setting out:—

"December 26, Tuesday.—The moon is nearly above the cliffs; the thermometer —57° to —45°, the mean of the past four days. In the midst of this cheering conjunction, I have ahead of me a journey of a hundred miles; to say nothing of the return. Worse than this, I have no landmarks to guide me, and must be my own pioneer.

"But there is a duty in the case. McGary and Brooks are sinking, and that rapidly. Walrus-beef alone can sustain them, and it is to be got from the natives and nowhere else. It is a merciful change of conditions that I am the strongest now of the whole party, as last winter I was the weakest. The duty of collecting food is on me. I shall go first to the lower Bay Esquimaux, and thence, if the hunt has failed there, to Cape Robertson.

"My misgivings are mostly on account of the dogs; for it is a rugged, hummocked drive of twenty-two hours, even with strong teams and Esquimaux drivers. We have been feeding them on salt meat, for we have had nothing else to give them; and they are out of health; and there are hardly enough of them at best to carry our lightest load. If one of these tetanoids should attack them on the road, it may be *game up* for all of us.

"But it is to be tried at last: Petersen will go with

me, and we will club our wits. I do not fear the cold: we are impregnable in our furs while under exercise, though if we should be forced to walk, and give out, it might be a different matter. We shall have, I imagine, a temperature not much above —54°, and I do not see how we are to carry heating-apparatus. We have load enough without it. Our only diet will be a stock of meat-biscuit, to which I shall add for myself—Petersen's taste is less educated—a few rats, chopped up and frozen into the tallow-balls.

"December 28, Thursday.—I have fed the dogs the last two days on their dead brethren. Spite of all proverbs, *dog will eat dog*, if properly cooked. I have been saving up some who died of fits, intending to use their skins, and these have come in very opportunely. I boil them into a sort of bloody soup, and deal them out twice a day in chunks and solid jelly; for of course they are frozen like quartz rock. These salt meats are absolutely poisonous to the Northern Esquimaux dog. We have now lost fifty odd, and one died yesterday in the very act of eating his reformed diet.

"The moon to-morrow will be for twelve hours above the horizon, and so nearly circumpolar afterward as to justify me in the attempt to reach the Esquimaux hunting-ground about Cape Alexander. Every thing is ready; and, God willing, I start to-morrow, and pass the four-hours' dog-halt in the untenanted hut of Anoatok. Then we have, as it may be, a fifteen, eighteen, or twenty hours' march, run and drive, before we reach a shelter among the heathen of the Bay.

"January 2, Tuesday.—The dogs began to show signs of that accursed tetanoid spasm of theirs before we passed Ten-mile Ravine. When we reached Basalt Camp, six out of eight were nearly useless. Our thermometer was at —44°, and the wind was blowing sharply out of the gorge from the glacier. Petersen wanted to return, but was persuaded by me to walk on to the huts at Anoatok, in the hope that a halt might restore the animals. We reached them after a thirty miles' march.

"The sinuosities of this bay gave fearful travel: the broken ice clung to the rocks; and we could only advance by climbing up the ice-foot and down again upon the floe, as one or the other gave us the chance of passing. It was eleven hours and over before we were at the huts, having made by sledge and foot-tramp forty-five miles. We took to the best hut, filled in its broken front with snow, housed our dogs, and crawled in among them.

"It was too cold to sleep. Next morning we broke down our door and tried the dogs again: they could hardly stand. A gale now set in from the southwest, obscuring the moon and blowing very hard. We were forced back into the hut; but, after corking up all openings with snow and making a fire with our Esquimaux lamp, we got up the temperature to 30° below zero, cooked coffee, and fed the dogs freely. This done, both Petersen and myself, our clothing frozen stiff, fell asleep through sheer exhaustion; the wind outside blowing death to all that might be exposed to its influence.

"I do not know how long we slept, but my admirable clothing kept me up. I was cold, but far from dangerously so; and was in a fair way of sleeping out a refreshing night, when Petersen waked me with—'Captain Kane, the lamp's out.' I heard him with a thrill of horror. The gale had increased; the cold was piercing, the darkness intense; our tinder had become moist, and was now like an icicle. All our fire-arms were stacked outside, for no Arctic man will trust powder in a condensing temperature. We did not dare to break down our doorway, for that would admit the gale; our only hope of heat was in re-lighting our lamp. Petersen, acting by my directions, made several attempts to obtain fire from a pocket-pistol; but his only tinder was moss, and our heavily stone-roofed hut or cave would not bear the concussion of a rammed wad.

"By good luck I found a bit of tolerably dry paper in my jumper; and, becoming apprehensive that Petersen would waste our few percussion-caps with his ineffectual snappings, I determined to take the pistol myself. It was so intensely dark that I had to grope for it, and in doing so touched his hand. At that instant the pistol became distinctly visible. A pale bluish light, slightly tremulous but not broken, covered the metallic parts of it, the barrel, lock, and trigger. The stock too, was clearly discernible as if by the reflected light, and, to the amazement of both of us, the thumb and two fingers with which Petersen was holding it, the creases, wrinkles, and circuit of the

nails clearly defined upon the skin. The phosphorescence was not unlike the ineffectual fire of the glow-worm. As I took the pistol my hand became illuminated also, and so did the powder-rubbed paper when I raised it against the muzzle.

"The paper did not ignite at the first trial, but, the light from it continuing, I was able to charge the pistol without difficulty, rolled up my paper into a cone, filled it with moss sprinkled over with powder, and held it in my hand while I fired. This time I succeeded in producing flame, and we saw no more of the phosphorescence. I do not stop for theory or argument to explain this opportune phenomenon; our fur clothing and the state of the atmosphere may refer it plausibly enough to our electrical condition.

"As soon as the wind had partially subsided, we broke out of the hut and tried the dogs toward Refuge Inlet; but the poor broken-down animals could not surmount the hummocks; and, as a forced necessity to save their lives and ours, we resolved to push for the brig on foot, driving them before us. We made the walk of forty-four miles in sixteen hours, almost scudding before the gale, and arrived safely at 7 P. M. of Sunday; the temperature —40°."

With this fruitless adventure closed the year 1854.

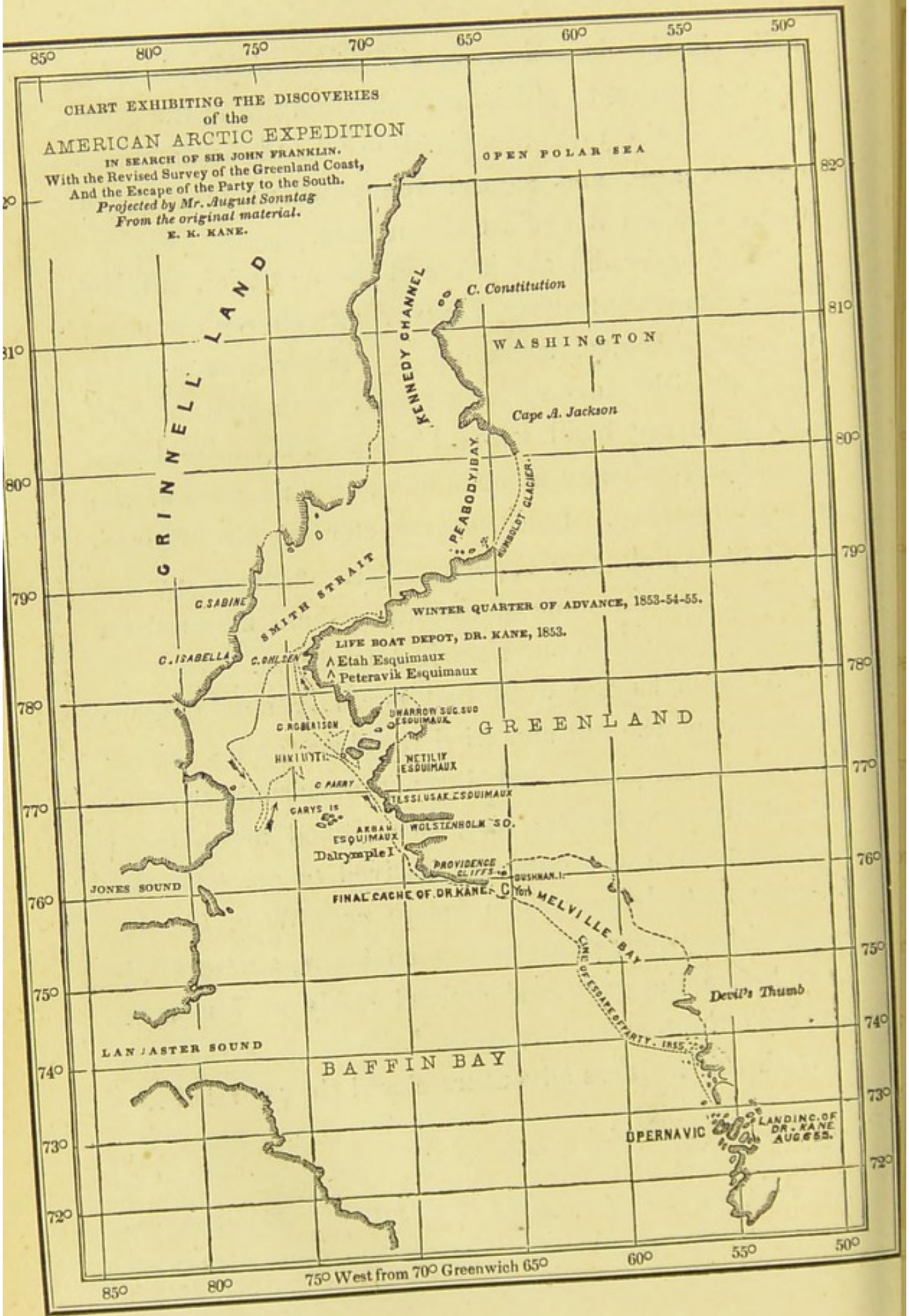


CHART EXHIBITING THE DISCOVERIES
of the
AMERICAN ARCTIC EXPEDITION
IN SEARCH OF SIR JOHN FRANKLIN.
With the Revised Survey of the Greenland Coast,
And the Escape of the Party to the South.
Projected by Mr. August Sonntag
From the original material.
E. K. KANE.
OPEN POLAR SEA
GRINNELL LAND
KENNEDY CHANNEL
C. Constitution
WASHINGTON
Cape A. Jackson
PEABODY BAY
HUMBOLDT GLACIER
SMITH STRAIT
C. SABINE
C. ISABELLA
C. OHLSEN
WINTER QUARTER OF ADVANCE, 1853-54-55.
LIVE BOAT DEPOT, DR. KANE, 1853.
Etah Esquimaux
Peteravik Esquimaux
GREENLAND
C. ROBERTSON
HAKLUYT I.
C. PARRY
UWARROW SUG. SUO ESQUIMAUX
NETILIK ESQUIMAUX
TESSI USAK ESQUIMAUX
CARYS IS.
AKBAR ESQUIMAUX
WOLSTENHOLM SD.
Dalrymple I
PROVIDENCE CLIFFS
BUSHNAN I.
JONES SOUND
FINAL CACHE OF DR. KANE
C. York
MELVILLE BAY
CAPE OF ESCAPE OF PARTY. 1855
Devil's Thumb
LANCASTER SOUND
BAFFIN BAY
OPERNAVIC
LANDING OF DR. KANE AUGUSS.
85° 80° 75° 70° 65° 60° 55° 50°
82° 81° 80° 79° 78° 77° 76° 75° 74° 73° 72°
75° West from 70° Greenwich 65°

CHAPTER XXXIII.

MODES OF LIFE — THE INSIDE DOG — PROJECTED JOURNEY — DOG-HABITS—THE DARKNESS—RAW MEAT—PLANS FOR SLEDGING—THE SOUTHEAST WINDS — PLAN OF JOURNEY — A RELISHING LUNCH—ITINERARY—OUTFIT—CARGO AND CLOTHING—KAPETAH AND NESSAK—FOOT-GEAR—THE FOX TAIL—CARPET-KNIGHTS—BURNING CABLES.

"JANUARY 6, 1855, Saturday.—If this journal ever gets to be inspected by other eyes, the color of its pages will tell of the atmosphere it is written in. We have been emulating the Esquimaux for some time in every thing else; and now, last of all, this intolerable temperature and our want of fuel have driven us to rely on our lamps for heat. Counting those which I have added since the wanderers came back, we have twelve constantly going, with the grease and soot everywhere in proportion.

"I can hardly keep my charts and registers in any thing like decent trim. Our beds and bedding are absolutely black, and our faces begrimed with fatty carbon like the Esquimaux of South Greenland. Nearer to us, our Smith's Straits Esquimaux are much

more cleanly in this branch of domestic arrangements. They attend their lamps with assiduous care, using the long radicles of a spongy moss for wick, and preparing the blubber for its office by breaking up the cells between their teeth. The condensed blubber, or more properly fat, of the walrus, is said to give the best flame.

"Our party, guided by the experience of the natives, use nearly the same form of wick, but of cotton. Pork-fat, boiled to lessen its salt, is our substitute for blubber; and, guided by a suggestion of Professor Olmstead, I mix a portion of resin with the lard to increase its fluidity. Sundry devices in the way of metal reverberators conduct and diffuse the heat, and so successfully that a single wick will keep liquid ten ounces of lard with the air around at minus 30°.

"The heat given out by these burners is astonishing. One four-wicked lamp not very well attended gives us six gallons of water in twelve hours from snow and ice of a temperature of minus 40°, raising the heat of the cabin to a corresponding extent, the lamp being entirely open. With a line-wick, another Esquimaux plan, we could bake bread or do other cookery. But the crust of the salt and the deposit from the resin are constantly fouling the flame; and the consequence is that we have been more than half the time in an atmosphere of smoke.

"Fearing the effect of this on the health of every one, crowded as we are, and inhaling so much insoluble foreign matter without intermission, I have to-day reduced the number of lights to four; two of

them stationary, and communicating by tin funnels with our chimney, so as to carry away their soot.

"Mr. Wilson has relapsed. I gave him a potash (saleratus) warm bath to-day, and took his place at watch. I have now seven hours' continuous watch at one beat.

"January 12, Friday.—In reviewing our temperatures, the monthly and annual means startle me. Whatever views we may have theoretically as to the distribution of heat, it was to have been expected that so large a water-area but thirty-five miles to the S.W. by W. of our position would tell upon our records; and this supposition was strengthened by the increased fall of snow, which was clearly due to the neighborhood of this water.

"January 13, Saturday.—I am feeding up my few remaining dogs very carefully; but I have no meat for them except the carcasses of their late companions. These have to be boiled; for in their frozen state they act as caustics, and, to dogs famishing as ours have been, frozen food often proves fatal, abrading the stomach and œsophagus. One of these poor creatures had been a child's pet among the Esquimaux. Last night I found her in nearly a dying state at the mouth of our *tossut*, wistfully eyeing the crevices of the door as they emitted their forbidden treasures of light and heat. She could not move, but, completely subdued, licked my hand,—the first time I ever had such a civilized greeting from an Esquimaux dog. I carried her in among the glories of the moderate paradise she

aspired to, and cooked her a dead-puppy soup. She is now slowly gaining strength, but can barely stand.

"I want all my scanty dog-force for another attempt to communicate with the bay settlements. I am confident we will find Esquimaux there alive, and they *shall* help us. I am not satisfied with Petersen, the companion of my last journey: he is too cautious for the emergency. The occasion is one that calls for every risk short of the final one that man can encounter. My mind is made up, should wind and ice at all point to its successful accomplishment, to try the thing with Hans. Hans is completely subject to my will, careful and attached to me, and by temperament daring and adventurous.

"Counting my greatest possible number of dogs, we have but five at all to be depended on, and these far from being in condition for the journey. Toodla, Jenny,—at this moment officiating as wet-nurse,—and Rhina, are the relics of my South Greenland teams; little Whitey is the solitary Newfoundlander; one big yellow and one feeble little black, all that are left of the powerful recruits we obtained from our Esquimaux brethren.

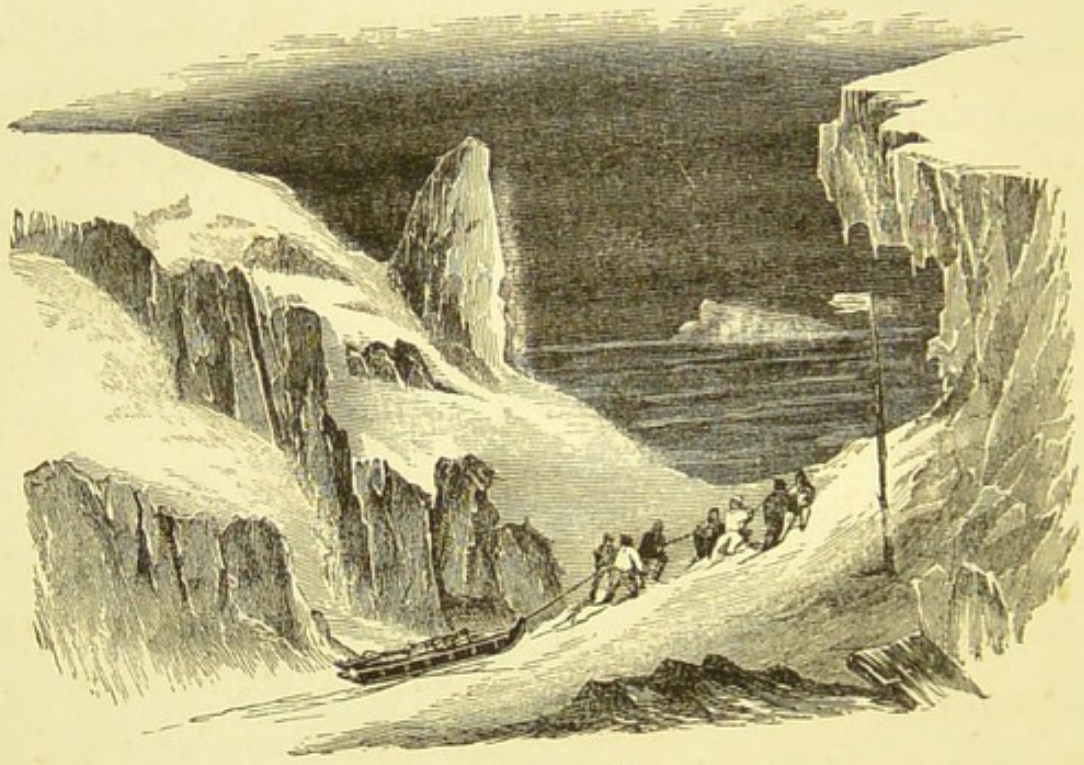
"It is a fearful thing to attempt a dog-trot of near one hundred miles, where your dogs may drop at any moment, and leave you without protection from fifty degrees below zero. As to riding, I do not look to it: we must run alongside of the sledge, as we do on shorter journeys. Our dogs cannot carry more than our scanty provisions, our sleeping-bags and guns.

"At home one would fear to encounter such hoop-spined, spitting, snarling beasts as the Esquimaux dogs of Peabody Bay. But, wolves as they are, they are far from dangerous: the slightest appearance of a missile or cudgel subdues them at once. Indispensable to the very life of their masters, they are treated, of course, with studied care and kindness; but they are taught from the earliest days of puppy-life a savory fear that makes them altogether safe companions even for the children. But they are absolutely ravenous of every thing below the human grade. Old Yellow, who goes about with arched back, gliding through the darkness more like a hyena than a dog, made a pounce the other day as I was feeding Jenny, and, almost before I could turn, had gobbled down one of her pups. As none of the litter will ever be of sledging use, I have taken the hint, and refreshed Old Yellow with a daily morning puppy. The two last of the family, who will then, I hope, be tolerably milk-fed, I shall reserve for my own eating.

"January 14, Sunday.—Our sick are about the same; Wilson, Brooks, Morton, McGary, and Riley unserviceable, Dr. Hayes getting better rapidly. How grateful I ought to be that I, the weakling of a year ago, am a well and helping man!

"At noonday, in spite of the mist, I can see the horizon gap of Charlotte Wood Fiord, between Bessie Mountain and the other hills to the southeast, growing lighter; its twilight is decidedly less doubtful. In four or five days we will have our noonday sun not more

than eight degrees below the horizon. This depression, which was Parry's lowest, enabled him by turning the paper toward the south to read diamond type. We are looking forward to this more penumbral darkness as an era. It has now been fifty-two days since we could read such type, even after climbing the dreary hills. One hundred and twenty-four days with the sun below the



A SKETCH.

horizon! One hundred and forty before he reaches the rocky shadowing of our brig!

"I found an overlooked godsend this morning,—a bear's head, put away for a specimen, but completely frozen. There is no inconsiderable quantity of meat adhering to it, and I serve it out raw to Brooks, Wilson, and Riley.

"I do not know that my journal anywhere mentions

our habituation to raw meats, nor does it dwell upon their strange adaptation to scorbutic disease. Our journeys have taught us the wisdom of the Esquimaux appetite, and there are few among us who do not relish a slice of raw blubber or a chunk of frozen walrus-beef. The liver of a walrus (awuktanuk) eaten with little slices of his fat,—of a verity it is a delicious morsel. Fire would ruin the curt, pithy expression of vitality which belongs to its uncooked juices. Charles Lamb's roast-pig was nothing to awuktanuk. I wonder that raw beef is not eaten at home. Deprived of extraneous fibre, it is neither indigestible nor difficult to masticate. With acids and condiments, it makes a salad which an educated palate cannot help relishing; and as a powerful and condensed heat-making and anti-scorbutic food it has no rival.

"I make this last broad assertion after carefully testing its truth. The natives of South Greenland prepare themselves for a long journey in the cold by a course of frozen seal. At Upernavik they do the same with the narwhal, which is thought more heat-making than the seal; while the bear, to use their own expression, is 'stronger travel than all.'

"In Smith's Sound, where the use of raw meat seems almost inevitable from the modes of living of the people, walrus holds the first rank. Certainly this pachyderm, whose finely-condensed tissue and delicately-permeating fat—oh! call it not blubber—assimilate it to the ox, is beyond all others, and is the very best fuel a man can swallow. It became our constant

companion whenever we could get it; and a frozen liver upon our sledge was valued far above the same weight of pemmican. Now as I write, short of all meat, without an ounce of walrus for sick or sound, my thoughts recal the frost-tempered junks of this pachydermoid amphibion as the highest of longed-for luxuries.

"My plans for sledging, simple as I once thought them, and simple certainly as compared with those of the English parties, have completely changed. Give me an eight-pound reindeer-fur bag to sleep in, an Esquimaux lamp with a lump of moss, a sheet-iron snow-melter or a copper soup-pot, with a tin cylinder to slip over it and defend it from the wind, a good *pièce de résistance* of raw walrus-beef; and I want nothing more for a long journey, if the thermometer will keep itself as high as minus 30°. Give me a bear-skin bag and coffee to boot; and with the clothes on my back I am ready for minus 60°,—but no wind.

"The programme runs after this fashion. Keep the blood in motion, without loitering on the march: and for the halt, raise a snow-house; or, if the snow lie scant or impracticable, ensconce yourself in a burrow or under the hospitable lee of an inclined hummock-slab. The outside fat of your walrus sustains your little moss fire: its frozen slices give you bread, its frozen blubber gives you butter, its scrag ends make the soup. The snow supplies you with water; and when you are ambitious of coffee there is a bagful stowed away in your boot. Spread out your bear bag, your only heavy movable; stuff your reindeer bag inside,

hang your boots up outside, take a blade of bone, and scrape off all the ice from your furs. Now crawl in, the whole party of you, feet foremost; draw the top of your dormitory close, heading to leeward. Fancy yourself in Sybaris; and, if you are only tired enough, you may sleep——like St. Lawrence on his gridiron, or even a trifle better.

"January 16, Tuesday.—Again the strange phenomena of the southeast winds. The late changes of the barometer ushered them in, and all hands are astir with their novel influences. With minus 16° outside, our cabin ceiling distils dirty drops of water, our beds become doubly damp, and our stove oppressive. We are vastly more comfortable, and therefore more healthy, below hatches, when it is at —60° on deck than when it rises above —30°. The mean heat of our room since the return of the party is, as nearly as can be determined, +48°.

"The sick generally are about the same; but Wilson has symptoms showing themselves, that fill me with distress. The state of things on board begins to press upon me personally; but by sleeping day-hours I manage well enough. Hans, Ohlsen, and myself are the only three sound men of the organized company.

"January 17, Wednesday.—There is no evading it any longer: it has been evident for the past ten days that the 'present state of things cannot last.' We require meat, and cannot get along without it. Our sick have finished the bear's head, and are now eating the condemned abscessed liver of the animal, including

some intestines that were not given to the dogs. We have about three days' allowance; thin chips of raw frozen meat, not exceeding four ounces in weight for each man per diem. Our poor fellows eat it with zest; but it is lamentably little.

"Although I was unsuccessful in my last attempt to reach the huts with the dogs, I am far from sure that with a proper equipment it could not be managed by walking. The thought weighs upon me. A foot-travel does not seem to have occurred to my comrades; and at first sight the idea of making for a point seventy-five miles by the shortest line from our brig, with this awfully cold darkness on, is gloomy enough.

"But I propose walking at first only as far as the broken hut at Anoatok, (the 'wind-loved spot,') and giving our poor dogs a chance of refreshing there. After this, Hans and myself will force them forward as far as we can, with nothing but our sleeping-gear, and spend the second night wherever they happen to break down. After that, we can manage the rest of the journey without any luggage but our personal clothing.

"It seems hard to sacrifice the dogs, not to speak of the rest of the party; but the necessity is too palpable and urgent. As we are now, a very few deaths would break us up entirely. Still, the emergency would not move me if I did not feel, after careful, painful thought, that the thing can be accomplished. If by the blessing of the Great Ruler it should prove successful, the result will secure the safety of all hands. No one knows as yet of my intention except Hans himself. I am

quietly preparing a special outfit, and will leave with the first return of moonlight.

"McGary, my relief, calls me: he has foraged out some raw cabbage and spiced it up with curry-powder, our only remaining pepper. This, with a piece of corn-bread,—no bad article either,—he wants me to share with him. True to my old-times habitude, I hasten to the cabbage,—cold roast-beef, Worcester sauce, a head of endive, and a bottle—not one drop less—of Preston ale, (I never drink any other) McGary, 'bring on de beans!'

"January 18, Thursday, midnight.—Wind howling on deck,—a number nine gale, a warm southeaster directly from the land. The mean temperature of this wind is —20°. Warm as this may seem, our experience has taught us to prefer —40° with a calm to —10° with a gale in the face.

"If we only had daylight, I should start as soon as the present wind subsides, counting on a three days' intermission of atmospheric disturbance. But we have no moon, and it is too dark to go tumbling about over the squeezed ice. I must wait.

"I alluded yesterday to my special equipment. Let me imagine myself explaining to the tea-table this evening's outfit, promise and purposes.

I. *Itinerary.*—From brig Advance, Rensselaer Harbor, to the Esquimaux huts of Etah Bay, following the line of ice-travel close along the coast:—

1. From brig to Ten-mile Ravine	10	miles.
2. From Ten-mile Ravine to Basalt Camp	6	"
3. From Basalt Camp to Helen River	10	"
4. Helen's River to Devil's Jaws (off Godsend Island)	9	"
5. Godsend Island to Anoatok and Hummock Pass	7	"
6. Hummock Pass to Refuge Inlet	7	"
7. Refuge Inlet to Cape Hatherton	8	"
8. Cape Hatherton to Second Hummock Pass	12	"
9. Across Second Pass to south end of Littleton Island	8	"
10. South end of Littleton Island to Point Salvation	2	"
11. Point Salvation to Esquimaux huts	12	"
Total travel in miles	91	miles.

II. *Temperature.*—Mean, about —45°. Range —40° to —60°.

III. *Resources.*—Five half-starved dogs; Hans Cristian, Dr. Kane, a light sledge, and outfit.

IV. *Outfit.*—To encounter broken ice in the midst of darkness and at a temperature destructive to life, every thing depends upon your sledge. Should it break down, you might as well break your own leg: there is no hope for you. Our sledge then is made of well-tried oak, dovetailed into a runner shod with iron. No metal is used besides, except the screws and rivets which confine the sledge to its runners. In this intense cold, iron snaps like glass, and no immovable or rigidly-fastened wood-work would stand for a moment the fierce concussions of the drive. Every thing is put together with lashings of seal-skin, and the whole fabric is the skeleton framework of a sledge as flexible as a lady's work-basket, and weighing only forty pounds. On this we fasten a sacking-bottom of canvas,

tightly stretched, like its namesake of the four-post bedstead, around the margin. We call this ticking the apron and cover; the apron being a flap of sixteen inches high, surrounding the cover, and either hanging loose at its sides like a valance, or laced up down the middle. Into this apron and cover you pack your cargo, the less of it the better; and then lace and lash the whole securely together.

V. *The cargo* may consist of:—1, a blanket-bag of fur, if you can get it; but on our present sleigh-ride, buffalo being too heavy and our reindeer-skins all destroyed by wet, I take an eider-down coverlet, adding—2, a pillow stuffed with straw or shavings, to be placed under the small of the back while sleeping; 3, an extra pair of boots; and, 4, a snow-saw.

"Superadd to these the ancient soup-pot, our soap-stone kollopsut, one Esquimaux lamp, one lump of moss, one cup, and a tinder-box; all these for the kitchen;—a roll of frozen meat-biscuit, some frozen lady-fingers of raw hashed fox, a small bag of coffee, and twenty-four pieces of hard tack, (ship's bread,) for the larder;—our fire-arms, and no less essential ice-poles:—all these, no more nor less, and you have the entirety of our outfit,—the means wherewith we are to track this icy labyrinth, under a frozen sky, for an uncertain asylum some ninety-three miles off.

"In general, eight powerful wolf-like dogs will draw such a cargo like the wind:—I have but four wretched animals, who can hardly drag themselves.

"The clothing or personal outfit demands the nicest

study of experience. Except a spare pair of boots, it is all upon the back. It requires the energies of tyrant custom to discipline a traveller into comfort under these Smith Sound temperatures; and, let him dress as he may, his drill will avail but little unless he has a windless atmosphere without and a heat-creating body within.

"Rightly clad, he is a lump of deformity waddling

KAPETAH.

NESSAK.

over the ice, unpicturesque, uncouth, and seemingly helpless. It is only when you meet him covered with rime, his face peering from an icy halo, his beard glued with frozen respiration, that you look with intelligent appreciation on his many-coated panoply against King Death.

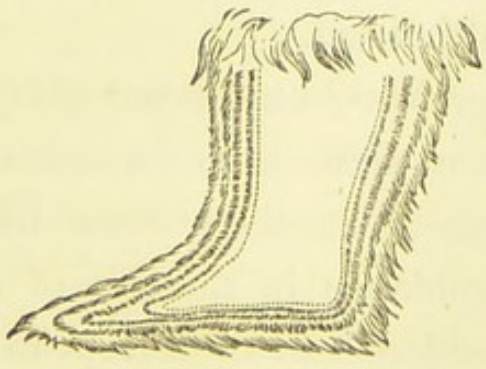
"The Smith's Straits fox-skin jumper, or *kapetah*, is a closed shirt, fitting very loosely to the person, but adapted to the head and neck by an almost air-tight hood, the *nessak*. The kapetah is put on from below;

the arms of the man pass through the arms of the garment, and the head rises through a slit at the top: around this slit comes up the hood. It is passed over the head from behind and made to embrace the face and forehead. Underneath the kapetah is a similar garment, but destitute of the hood, which is put on as we do an inner shirt. It is made of bird-skins chewed in the mouth by the women till they are perfectly soft, and it is worn with this unequalled down next the body. More than five hundred auks have been known to contribute to a garment of this description.

"So far the bust and upper limbs. The lower extremities are guarded by a pair of bear-skin breeches, the *nannooke*,—the characteristic and national vestiture of this strange people. They are literal copies, and in one sense fac-similes, of the courtly knee-buckled ones of our grandfathers, but not rising above the crests of the pelvis, thus leaving exposed those parts which in civilized countries are shielded most carefully.

"I regard these strange and apparently-inconvenient articles of dress as unique. They compressed the muscles, which they affected to cover, in a manner so ungrandisonian that I leave a special description of their structure to my note-book.

"The foot-gear consists of a bird-skin short sock, with a padding of grass nicely distributed over the sole. Outside of this comes a bear-skin



BOOT AND SOCKS.

leg, sewed with great skill to the natural sole of the plantigrade, and abundantly wadded about the foot with dry non-conducting straw.

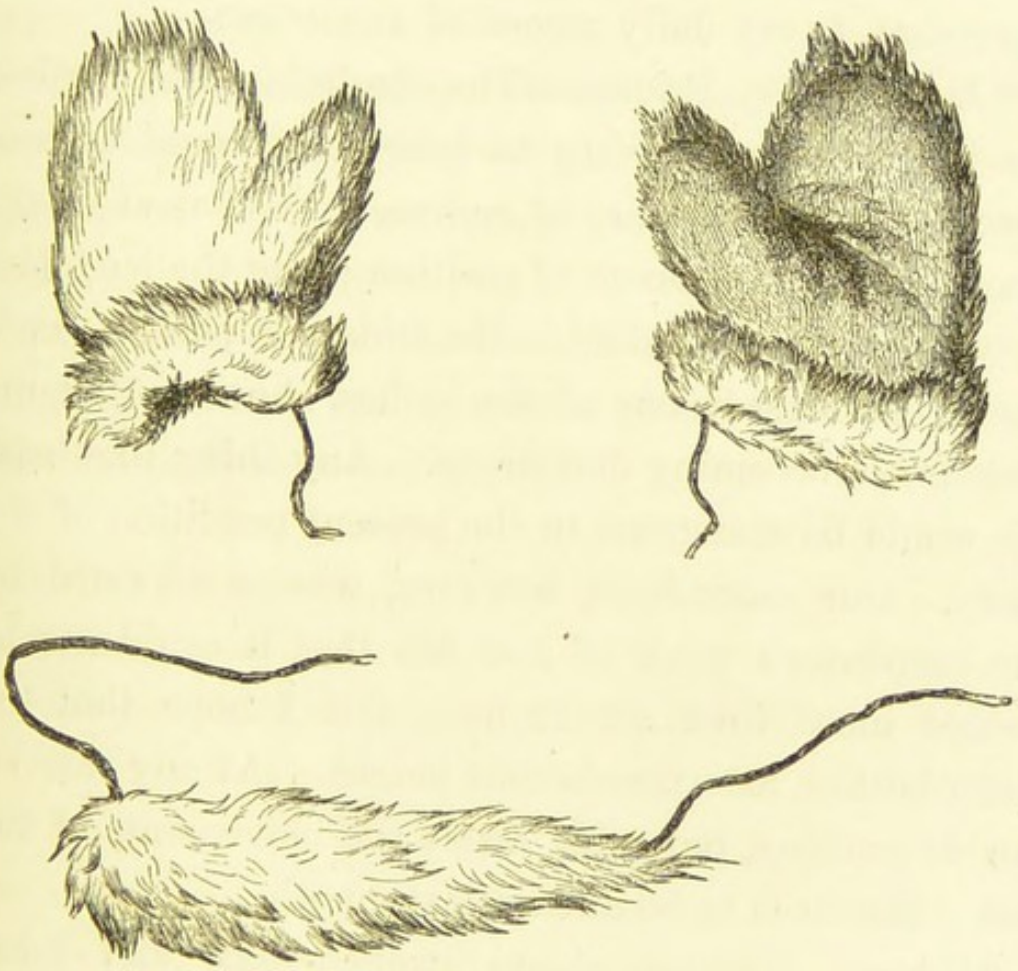
"When this simple wardrobe is fully adjusted to the person, we understand something of the wonderful endurance of these Arctic primates. Wrangell called the Jacuti iron men, because they slept at —50° opposite the fire, with their backs exposed. Now, they of Smith's Sound have always an uncovered space between the waistband of the nannooke and the kapetah. To bend forward exposes the back to partial nudity; and, no matter what the attitude, the entire chest is open to the atmosphere from below. Yet in this well-ventilated costume the man will sleep upon his sledge with the atmosphere 93° below our freezing-point.

"The only additional articles of dress are a fox's tail, held between the teeth to protect the nose in a wind, and mitts of seal-skin well wadded with sledge-straw.

"When I saw Kalutunah, who guided the return-party to the brig from Tesseusak, the temperature was below —50°. He was standing in the open air, comfortably scratching his naked skin, ready for a second journey; which, in effect, he made eight hours afterward.

"We—I mean our party of American hyperboreans—are mere carpet-knights aside of these indomitable savages. Experience has taught us to follow their guidance in matters of Arctic craft; but we have to add a host of European appendages to their out-door clothing.

"Imagine me, then, externally clad as I have described, but with furs and woollens layer upon layer inside, like the shards of an artichoke, till I am rounded into absolute obesity. Without all this, I cannot keep up my circulation on a sledge; nor indeed



FOX'S TAIL AND MITTENS.

without active exercise, if the thermometer is below —54°, the lowest at which I have taken the floes. I have to run occasionally, or I should succumb to the cold."

So much for my resources of travel, as I have thrown them together from different pages of my journal. The

apparent levity with which I have detailed them seems out of keeping with the date under which they stand. In truth, I was in no mirthful humor at any time during the month of January. I had a grave office to perform, and under grave responsibilities; and I had measured them well. I come back, after this long digression, to my daily record of anxieties:—

"January 19, Friday.—The declining tides allow the ice beneath the ship to take the ground at low-water. This occasions, of course, a good deal of upheaval and some change of position along the ice-tables in which we are cradled. Mr. Ohlsen reports a bending of our cross-beams of six inches, showing that the pressure is becoming dangerous. Any thing like leakage would be disastrous in the present condition of the party. Our cabin-floor, however, was so elevated by our carpenter's work of last fall that it could not be flooded more than six inches; and I hope that the under-bottom ice exceeds that height. At any rate we can do nothing, but must await the movements of the floe. March is to be our critical month.

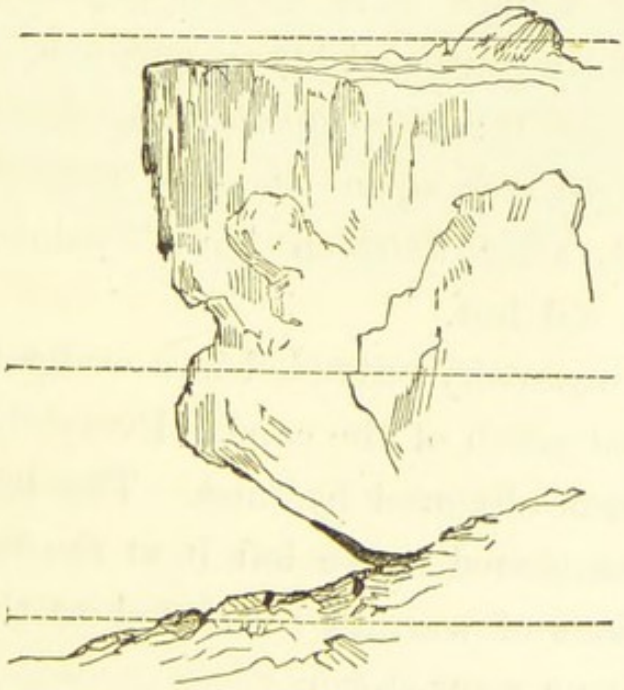
"George Whipple shows swelled legs and other symptoms of the enemy; Riley continues better; Brooks weak, but holding his ground; Wilson no better; if any thing, worse. I am myself so disabled in the joints as to be entirely unfit to attend to the traps or do any work. I shall try the vapor-bath and sweat, Indian fashion.

"January 21, Sunday.—We have been using up our tar-laid hemp hawsers for nearly a week, by way of

eking out our firewood, and have reduced our consumption of pitch-pine to thirty-nine pounds a day. But the fine particles of soot throughout the room have affected the lungs of the sick so much that I shall be obliged to give it up. I am now trying the Manilla; but it consumes too rapidly: with care we may make something of it.

"January 22, Monday.—Busy preparing for my trip to the lower Esquimaux settlement. The barometer remains at the extraordinary height of 30·85,—a bad prelude to a journey!

"Petersen caught another providential fox. We divided him into nine portions, three for each of our scurvied patients.——I am off."



SECTION OF ICE-FOOT.

CHAPTER XXXIV.

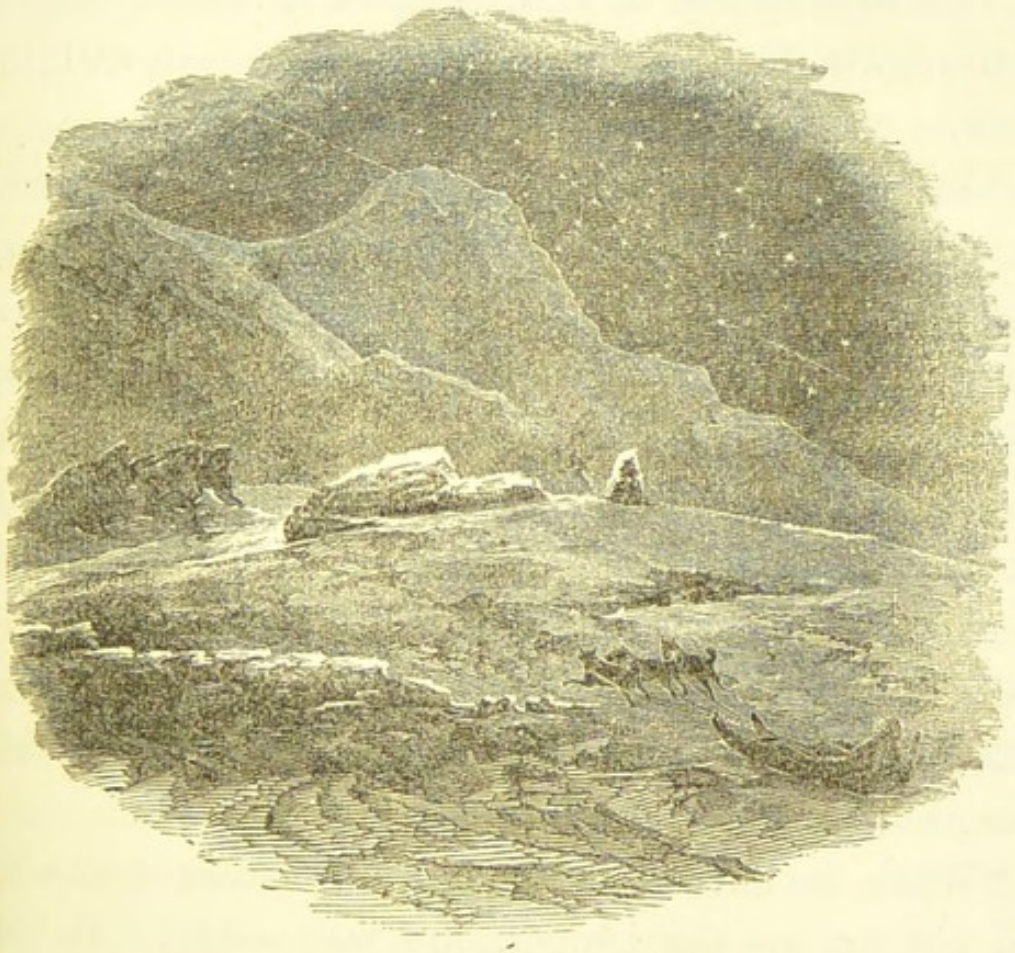
A BREAK DOWN — THE HUT IN A STORM — TWO NIGHTS IN THE HUT--FROST AGAIN—THE BACK TRACK—HEALTH ROLL—MEDICAL TREATMENT—HEALTH FAILING—UNSUCCESSFUL HUNT—THE LAST BOTTLES.

"JANUARY 29, Monday.—The dogs carried us to the lower curve of the reach before breaking down. I was just beginning to hope for an easy voyage, when Toodla and the Big Yellow gave way nearly together; the latter frightfully contorted by convulsions. There was no remedy for it: the moon went down, and the wretched night was upon us. We groped along the ice-foot, and, after fourteen hours' painful walking, reached the old hut.

"A dark water-sky extended in a wedge from Littleton to a point north of the cape. Everywhere else the firmament was obscured by mist. The height of the barometer continued as we left it at the brig, and our own sensations of warmth convinced us that we were about to have a snow-storm.

"We hardly expected to meet the Esquimaux here, and were not disappointed. Hans set to work at once

to cut out blocks of snow to close up the entrance to the hut. I carried in our blubber-lamp, food, and bedding, unharnessed the dogs, and took them into the same shelter. We were barely housed before the storm broke upon us.



NEARING THE HUT

"Here, completely excluded from the knowledge of things without, we spent many miserable hours. We could keep no note of time, and, except by the whirring of the drift against the roof of our kennel, had no information of the state of the weather. We slept, and cooked coffee, and drank coffee, and slept, and

cooked coffee, and drank again; and when by our tired instincts we thought that twelve hours must have passed, we treated ourselves to a meal,—that is to say, we divided impartial bites out of the raw hind-leg of a fox, to give zest to our biscuits spread with frozen tallow.

"We then turned in to sleep again, no longer heedful of the storm, for it had now buried us deep in with the snow.

"But in the mean time, although the storm continued, the temperatures underwent an extraordinary change. I was awakened by the dropping of water from the roof above me; and, upon turning back my sleeping-bag, found it saturated by the melting of its previously-condensed hoar-frost. My eider-down was like a wet swab. I found afterward that the phenomenon of the warm southeast had come unexpectedly upon us. The thermometers at the brig indicated +26°; and, closer as we were to the water, the weather was probably above the freezing-point.

"When we left the brig—how long before it was we did not know—the temperature was —44°. It had risen at least seventy degrees. I defy the strongest man not to suffer from such a change. A close, oppressive sensation attacked both Hans and myself. We both suffered from cardiac symptoms, and are up to this moment under anxious treatment by our comrades. Mr. Wilson, I find, has had spasmodic asthma from it here, and Brooks has a renewal of his old dyspnœa.

"In the morning—that is to say, when the combined light of the noonday dawn and the circumpolar moon permitted our escape—I found, by comparing the time as indicated by the Great Bear with the present increased altitude of the moon, that we had been pent up nearly two days. Under these circumstances we made directly for the hummocks, *en route* for the bay. But here was a disastrous change. The snow had accumulated under the windward sides of the inclined tables to a height so excessive that we buried sledge, dogs, and drivers, in the effort to work through. It was all in vain that Hans and I harnessed ourselves to, or lifted, levered, twisted, and pulled. Utterly exhausted and sick, I was obliged to give it up. The darkness closed in again, and with difficulty we regained the igloë.

"The ensuing night brought a return to hard freezing temperatures. Our luxurious and downy coverlet was a stiff, clotted lump of ice. In spite of our double lamp, it was a miserable halt. Our provisions grew short; the snow kept on falling, and we had still forty-six miles between us and the Esquimaux.

"I determined to try the land-ice (ice-foot) by Fog Inlet; and we worked four hours upon this without a breathing-spell,—utterly in vain. My poor Esquimaux, Hans, adventurous and buoyant as he was, began to cry like a child. Sick, worn out, strength gone, dogs fast and floundering, I am not ashamed to admit that, as I thought of the sick men on board, my own equanimity also was at fault.

"We had not been able to get the dogs out, when the big moon appeared above the water-smoke. A familiar hill, 'Old Beacon Knob,' was near. I scrambled to its top and reconnoitred the coast around it. The ridge about Cape Hatherton seemed to jut out of a perfect chaos of broken ice. The water—that inexplicable North Water—was there, a long black wedge,

THE WATER

overhung by crapy wreaths of smoke, running to the northward and eastward. Better than all yet,—could I be deceived?—a trough through the hummock-ridges, and level plains of ice stretching to the south!

"Hans heard my halloo, and came up to confirm me. But for our disabled dogs and the waning moonlight, we could easily have made our journey. It was with a rejoiced heart that I made my way back to our miserable little cavern, and restuffed its gaping entrance

with the snow. We had no blubber, and of course no fire; but I knew that we could gain the brig, and that, after refreshing the dogs and ourselves, we could now assuredly reach the settlements.

"We took the back track next morning over Bedevilled Reach upon the mid-ice floes, and reached the brig by 4 P. M. on Friday; since when I have been so stiff and scorbutic, so utterly used up, that to-day gives me a first return to my journal.

"January 30, Tuesday.—My companions on board felt all my disappointment at bringing back no meat; but infinite gladness took the place of regret when they heard the great news of a passage through the hummocks. Petersen began at once to busy himself with his wardrobe; and an eight-day party was organized almost before we turned in, to start as soon as the tempestuous weather subsides and the drifts settle down. It is four days since, but as yet we dare not venture out.

"That there is no time for delay, this health-table will show:—

"Henry Brooks: Unable any longer to go on deck: we carry him with difficulty from his berth to a cushioned locker.

"McGary: Less helpless; but off duty, and saturated with articular scurvy.

"Mr. Wilson: In bed. Severe purpuric blotches, and nodes in limbs. Cannot move.

"George Riley: Abed; limbs less stiff, gums better, unable to do duty.

"Thomas Hickey, (our cook:) Cannot keep his legs many days more; already swelled and blistered.

"William Morton: Down with a frozen heel; the bone exfoliating.

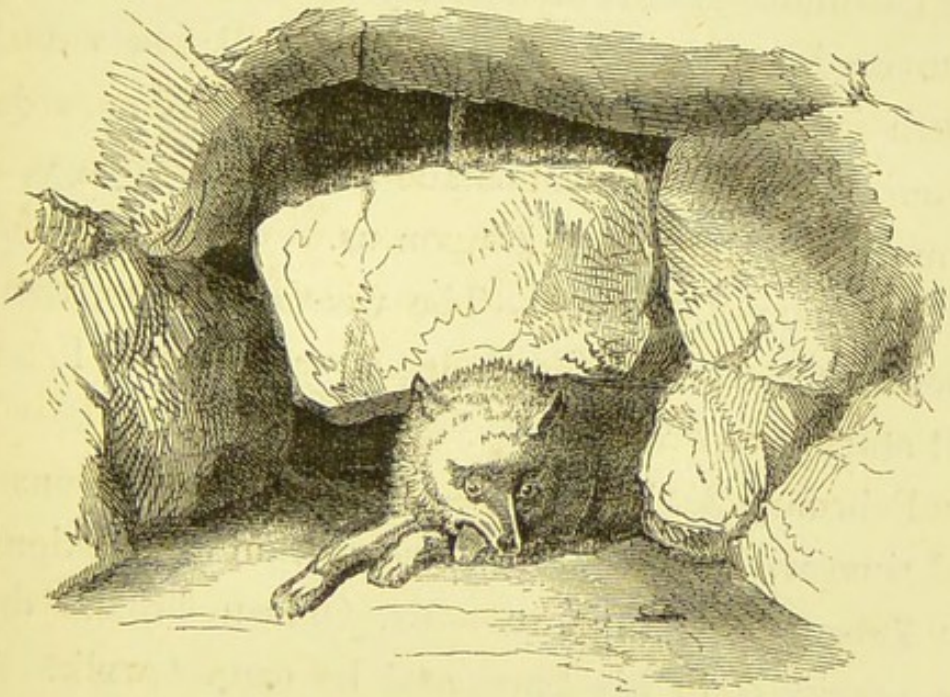
"Henry Goodfellow: Scurvied gums, but generally well.

"Dr. Hayes is prostrate with his amputated toes:—Sontag just able to hobble. In a word, our effective force is reduced to five,—Mr. Ohlsen, Mr Bonsall, Petersen, Hans, and the Commander; and even of these some might, perhaps, be rightfully transferred to the other list. We have the whole burden of the hourly observations and the routine of our domestic life, even to the cooking, which we take in rotation.

" . . . . Still this remarkable temperature; the barometer slowly librating between 29·20 and the old 30·40. Snow falling: wind from the southwest, hauling by the west to north: yet the thermometer at —10° and +3°. We long anxiously for weather to enable our meat-party to start. The past two days our sick have been entirely out of meat: the foxes seem to avoid our traps. I gave Wilson one raw meal from the masseter muscle which adhered to another old bear's head I was keeping for a specimen. But otherwise we have had no anti-scorbutic for three days.

"Among other remedies which I oppose to the distemper, I have commenced making sundry salts of iron; among them the citrate and a chlorohydrated tincture. We have but one bottle of brandy left: my applying a half-pint of it to the tincture shows the high value I

set upon this noble chalybeate. My nose bled to-day, and I was struck with the fluid brickdusty poverty of the blood. I use iron much among my people: as a single remedy it exceeds all others, except only the specific of raw meat: potash for its own action is well enough to meet some conditions of the disease, and we were in the habit of using freely an ex-



FOX-TRAPS.

temporaneous citrate prepared from our lime-juice; but, as our cases became more reduced and complicated with hemorrhages, iron was our one great remedy.

"January 31, Wednesday.—The weather still most extraordinary. The wind has hauled around, and is now blowing from the north and northeast, usually our coldest and clearest quarter. Yet the diffused mist

continues, the snow falls, and the thermometer never records below —20°.

"Our sick are worse; for our traps yield nothing, and we are still without fresh food. The absence of raw fox-meat for a single day shows itself in our scurvy. Hemorrhages are becoming common. My crew,—I have no crew any longer,—the tenants of my bunks cannot bear me to leave them a single watch. Yet I cannot make Petersen try the new path which I discovered and found practicable. Well; the wretched month is over. It is something to be living, able to write. No one has yet made the dark voyage, and January the thirty-first is upon us.

"February 2, Friday.—The weather clears, the full moon shows herself, the sledge is packed, and Petersen will start to-morrow.

"February 3, Saturday.—He is gone with Hans. A bad time with Brooks, in a swoon from exhaustion!

"February 4, Sunday.—Mr. Ohlsen breaks down: the scurvy is in his knee, and he cannot walk. This day, too, Thomas Hickey, our acting cook, gives way completely. I can hardly realize that among these strong men I alone should be the borne-up man,—the only one, except Mr. Bonsall, on his legs. It sometimes makes me tremble when I think how necessary I am to sustain this state of things. It is a Sunday thought, that it must be for some wise and good end I am thus supported.

"Made an unsuccessful hunt out toward Mary River: but, although the daylight was more than ample,

tracked nothing. Our sick have been on short commons for the last five days; and we have given up the traps for want of fresh meat to bait them with. The fiord looked frightfully desolate. Where once was a torrent fighting among ice and rocks, is now a tunnel of drifted snow. Mary Leiper River is a sinuous ravine, swept dry by the gales which issue from the hills, and its rocky bed patched with the frozen relics of its waters.

"I made a dish of freshened codfish-skin for Brooks and Wilson; they were hungry enough to relish it. Besides this, I had kept back six bottles of our Scotch ale to meet emergencies, and I am dealing these out to them by the wine-glass. It is too cold for brewing in our apartment: the water freezes two feet above the floor. I have given up my writing-table arrangements, and my unfortunate study-lamp is now fixed under a barrel to see if it cannot raise a fermenting temperature. I shall turn brewer to-morrow if it succeeds."

FOX-TRAP.

CHAPTER XXXV.

THE FIRE-CLOTHED BAG — THE WRAITH — COOKERY — A RESPITE — THE COMING DAWN — THE TRUST — PROSPECTS — ARGUMENT — COLORED SKIES — STOVE-FITTING.

"FEBRUARY 6, Tuesday.—At ten, last evening, not long after my journal-record, I heard voices outside. Petersen and Hans had returned. I met them silently on deck, and heard from poor Petersen how he had broken down. The snows had been increasing since my own last trial,—his strength had left him; the scurvy had entered his chest; in a word, he had failed, and Hans could not do the errand alone. Bad enough!

"But to-day our fortunes are on the mend. It has been beautifully clear; and for the first time a shade of bronzed yellow has warmed our noonday horizon, with a gentle violet running into rich brown clouds, totally unlike our night skies. Hans and I started for a hunt,—one to explore new grounds, the other to follow tracks in the recent snow. The result was two rabbits, the first-fruits of the coming light, and the promise of more in the numerous feeding-traces among the rocks of Charlotte Wood Fiord. The meat, our

first for ten days, was distributed raw. By keeping the rabbits carefully covered up, they reached the ship sufficiently unfrozen to give us about a pint of raw blood. It was a grateful cordial to Brooks, Wilson, and Riley.

"February 7, Wednesday.—The weather was misty when I went out this morning, and the twinkling of the stars confirmed Petersen's prognostic of a warm southeaster before evening. Mist, stars, and Petersen were right. The gale is upon us, darkening the air with snow, and singing in wild discords through the rigging.

"It is enough to solemnize men of more joyous temperament than ours has been for some months. We are contending at odds with angry forces close around us, without one agent or influence within eighteen hundred miles whose sympathy is on our side.

"My poor fellows, most of them bred in the superstitions of the sea, are full of evil bodings. We have a large old seal-skin bag on deck, that holds our remnant of furs. It hangs from the main-stay, and we have all of us jested in the times of ordinary darkness about its grotesque physiognomy. To-night it has worn a new character. One of the crew, crawling outside, saw it swinging in the storm with furious energy, and pounding against the mast like a giant boxing-glove. It glowed too with supernatural light; and he is sure it spoke some dreadful message, though he was too much perturbed to give it audience. There is no reasoning with him about it, and his messmates' laugh,

as they attempt to ridicule his fear, is like the ghost-story merriment of a nursery circle."

It was an ugly and withal an anxious night. Mr. Goodfellow, the youngest of our party, had left the cabin soon after dinner for an inland stroll with his gun, and he had not returned when the scanty twilight closed before its time. The wind blew off the coast, piling the snow in great hills and changing the whole face of the floe. As the darkness wore on we became uneasy, and at last alarmed, at his absence. We burnt bluelights and Roman candles to guide him through the night; but it was six o'clock in the morning before he came in, happily none the worse for his adventure.

Honest Tom Hickey had been on the deck reconnoitring for him while the gale was at its height. He came down to the mess just before the alarm of the thumping fur-bag, declaring he had seen Mr. Goodfellow moving cautiously along the land-ice and jumping down on the field below. He hurried his tea-things to give him a warm supper, but no one came. In the result, though Tom volunteered to make search at the spot where he had seen his messmate, and Riley offered to accompany him, and I myself looked diligently afterward with a lantern for some hundreds of yards around, we found nothing but fresh drifted snow, without the trace of a human foot. Tom had seen a *wraith;* he believes it religiously, and associates its mysterious advent with the luminous fur-bag.

"There must be some warm southern area over

which this wind comes, some open water it may be, that is drawing nearer to us, to minister after a time to our escape. But we must go alone. I have given up all hope of rescuing our little vessel. She has been safeguard and home for us through many lengthened trials; but her time has come. She can never float above the waves again. How many of us are to be more fortunate?

"February 9, Friday.—Still no supplies. Three of us have been out all day, without getting a shot. Hans thinks he saw a couple of reindeer at a distance; and his eyes rarely deceive him. He will try for them to-morrow. I have fitted out for him a tent and a sleeping-bag on the second table-land; and the thermometer is now so little below zero that he will be able to keep the field for a steady hunt. Our sick are sinking for want of fresh food. It is the only specific:—I dislike to use the unphilosophical term; but in our case it is the true one. In large quantities it dissipates the disease; in ordinary rations it prevents its occurrence; in small doses it checks it while sustaining the patient. We have learned its value too well to waste it; every part of every animal has its use. The skin makes the basis of a soup, and the claws can be boiled to a jelly. Lungs, larynx, stomach, and entrails, all are available. I have not permitted myself to taste more than an occasional entrail of our last half-dozen rabbits. Not that I am free from symptoms of the universal pest. I am conscious of a stiffness in the tendons, and a shortness of breath, and a weariness of

the bones, that should naturally attend the eruption which covers my body. But I have none of the more fearful signs. I can walk with energy after I get warmed up, I have no bleeding of the gums, and, better than all, thank God, I am without that horrible despondency which the disease nourishes and feeds on. I sleep sound and dream pleasantly,—generally about successes in the hunt, or a double ration of reindeer or ptarmigan.

"It has been a true warm southeaster. The housing-sails have been blown off by the storm, and we are buried up in a snow-drift. But one such feathery quilt is worth all the canvas covering in the world.

"My brewing apparatus has worked well, thanks to stove and storm; and I have on hand now as unsavory a dose of flax-seed and quinine as was ever honored by the name of beer.

"February 10, Saturday.—Three days' respite! Petersen and myself have made a fruitless hunt; but Hans comes in with three rabbits. Distribution:—the blood to Ohlsen and Thomas; and to the other eight of the sick men full rations; consuming a rabbit and a half. I cannot risk the depression that a single death would bring upon the whole party, and have to deal unfairly with those who can still keep about, to save the rest from sinking. Brooks and Ohlsen are in a precarious condition: they have lost the entire mucous membrane of the alveoli; and Mr. Wilson requires special attendance every hour to carry him through.

"The day is beginning to glow with the approaching sun. The south at noon has almost an orange tinge. In ten days his direct rays will reach our hill-tops; and in a week after he will be dispensing his blessed medicine among our sufferers.

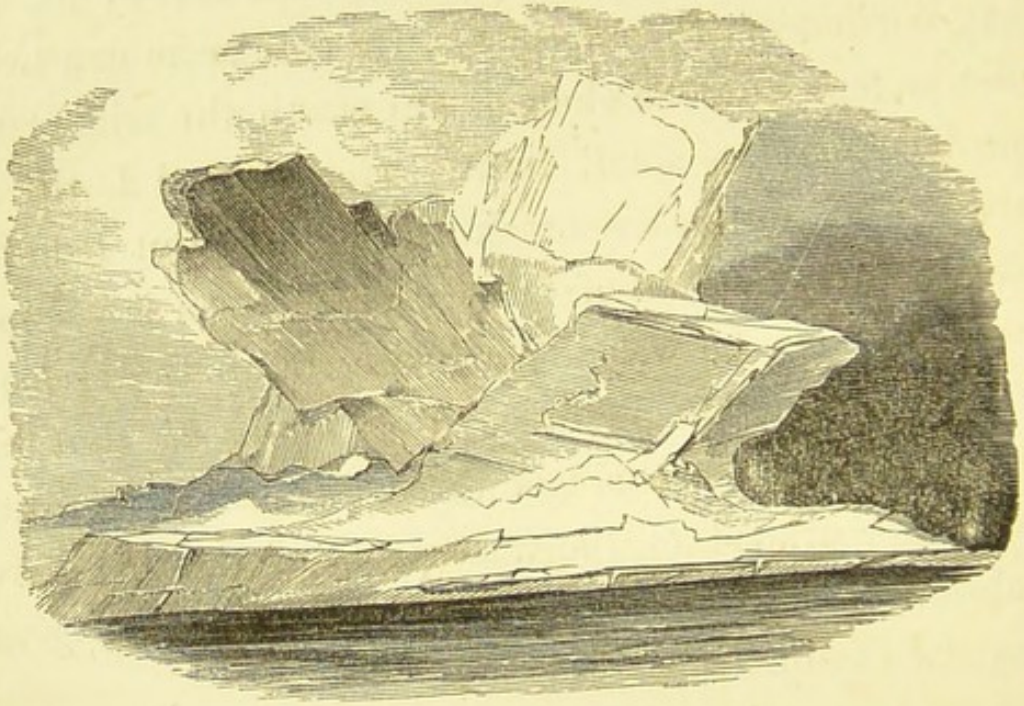
"February 12, Monday.—Hans is off for his hunting-lodge, 'over the hills and far away,' beyond Charlotte Wood Fiord. I have sent Godfrey with him; for I fear the boy has got the taint like the rest of us, and may suffer from the exposure. He thinks he can bring back a deer, and the chances are worth the trial. We can manage the small hunt, Petersen and I, till he comes back, unless we break down too. But I do not like these symptoms of mine, and Petersen is very far from the man he was. We had a tramp to-day, both of us, after an imaginary deer,—a *bennisoak* that has been supposed for the last three days to be hunting the neighborhood of the waterpools of the big fiord, and have come back jaded and sad. If Hans gives way, God help us!"

It is hardly worth while to inflict on the reader a succession of journal-records like these. They tell of nothing but the varying symptoms of sick men, dreary, profitless hunts, relieved now and then by the signalized incident of a killed rabbit or a deer seen, and the longed-for advent of the solar light.

We worked on board—those of us who could work at all—at arranging a new gangway with a more gentle slope, to let some of the party crawl up from their

hospital into the air. We were six, all told, out of eighteen, who could affect to hunt, cook, or nurse.

Meanwhile we tried to dream of commerce with the Esquimaux, and open water, and home. For myself, my thoughts had occupation enough in the question of our closing labors. I never lost my hope. I looked to the coming spring as full of responsibilities; but I had



DETACHED ICE-BELT.

bodily strength and moral tone enough to look through them to the end. A trust, based on experience as well as on promises, buoyed me up at the worst of times. Call it fatalism, as you ignorantly may, there is that in the story of every eventful life which teaches the inefficiency of human means and the present control of a Supreme Agency. See how often relief has come at the moment of extremity, in forms strangely unsought,

almost at the time unwelcome; see, still more, how the back has been strengthened to its increasing burden, and the heart cheered by some conscious influence of an unseen Power.

Thinking quietly over our condition, I spread out in my diary the results which it seemed to point to. After reviewing our sick-list and remarking how little efficiency there was in the other members of the party, my memorandum went on:—

"We have three months before us of intense cold. We have a large and laborious outfit to arrange, boats, sledges, provisions, and accoutrements for a journey of alternating ice and water of more than thirteen hundred miles. Our carpenter is among the worst of our invalids. Supposing all our men able to move, four at least of them must be carried by the rest, three in consequence of amputation, and one from frost-wounds; and our boats must be sledged over some sixty or perhaps ninety miles of terrible ice before launching and loading them. Finally, a part of our force, whatever it may be, must be detailed to guard our property from the Esquimaux while the other detachments are making their successive trips to the open water. So much for the shadow of the picture!

"But it has two sides; and, whether from constitutional temperament or well-reasoned argument, I find our state far from desperate. I cheer my comrades after this fashion:—

"1. I am convinced, from a careful analysis of our disease, that under its present aspects it is not beyond

control. If with the aid of our present hunting-resources or by any providential accession to them I can keep the cases from rapid depression, next month ought to give us a bear, and in the mean time Hans may find a deer; and, with a good stock of fresh meat even for a few days, I can venture away from the vessel to draw supplies from the Esquimaux at Etah. I should have been there before this, if I could have been spared for forty-eight hours. We want nothing but meat.

"2. The coming of the sun will open appliances of moral help to the sick, and give energy to the hygienic resorts which I am arranging at this moment. Our miserable little kennel, where eighteen are crowded into the space of ten, is thoroughly begrimed with lampblack from the inevitable smoke of our fuel. The weather has prevented our drying and airing the sleeping-gear. The floor is damp from the conducted warmth of the sea-water under us, melting the ice that has condensed everywhere below. Sunshine and dry weather will cure all this. I have window-sash ready to fix over the roof and southern side of the galley-house; and our useless daguerreotype plates, tacked over wooden screens, make admirable mirrors to transfer the sun-rays into the cabin. I have manufactured a full-draught pipe for our smoky stove. Chloride of sodium must do the rest.

"3. While we live we will stick together: one fate shall belong to us all, be it what it may.

"There is comfort in this review; and, please God in his beneficent providence to spare us for the work, I

will yet give one more manly tug to search the shores of Kennedy Channel for memorials of the lost; and then, our duties over here, and the brig still prison-bound, enter trustingly upon the task of our escape.

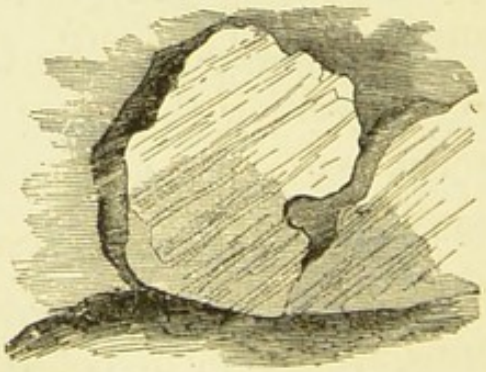
"February 21, Wednesday.—To-day the crests of the northeast headland were gilded by true sunshine, and all who were able assembled on deck to greet it. The sun rose above the horizon, though still screened from our eyes by intervening hills. Although the powerful refraction of Polar latitudes heralds his direct appearance by brilliant light, this is as far removed from the glorious tints of day as it is from the mere twilight. Nevertheless, for the past ten days we have been watching the growing warmth of our landscape, as it emerged from buried shadow, through all the stages of distinctness of an India-ink washing, step by step, into the sharp, bold definition of our desolate harbor scene. We have marked every dash of color which the great Painter in his benevolence vouchsafed to us; and now the empurpled blues, clear, unmistakable, the spreading lake, the flickering yellow: peering at all these, poor wretches! every thing seemed superlative lustre and unsurpassable glory. We had so grovelled in darkness that we oversaw the light.

"Mr. Wilson has caught cold and relapsed. Mr. Ohlsen, after a suspicious day, startles me by an attack of partial epilepsy; one of those strange indescribable spells, fits, seizures, whatever name the jargon gives them, which indicate deep disturbance. I conceal his case as far as I can; but it adds to my heavy pack of

troubles to anticipate the gloomy scenes of epileptic transport introduced into our one apartment. McGary holds his own.

"The work of stove-fitting is completed, and a new era marks its success. The increased draught which the prospective termination of our winter allows me to afford to our fuel brings an unhoped-for piece of good fortune. We can burn hemp cable and cast-off running-gear. By the aid of a high chimney and a good regulating valve, the smoke passes directly into the open air, and tarred junk is as good as oak itself. This will save our trebling, and, what is more, the labor of cutting it. In truth, very little of it has been used up, scarcely more than a single streak. We have been too weak to cut it off. All our disposable force was inadequate last Saturday to cut enough for a day's fuel in advance.

"The sickness of a single additional man would have left us without fire."



SCRATCHED GNEISS.

CHAPTER XXXVI.

THE BENNESOAK — A DILEMMA — THE SUN — END OF FEBRUARY — OUR CONDITION — THE WARM SOUTHEASTER — MOONLIGHT — THE LANDSCAPE.

"FEBRUARY 22, Thursday.—Washington's birthday: all our colors flying in the new sunlight. A day of good omen, even to the sojourners among the ice. Hans comes in with great news. He has had a shot at our bennesoak, a long shot; but it reached him. The animal made off at a slow run, but we are sure of him now. This same deer has been hanging round the lake at the fiord through all the dim returning twilight; and so many stories were told of his appearance and movements that he had almost grown into a myth. To morrow we shall desire his better acquaintance.

"The Esquimaux call the deer when he is without antlers a bennesoak. The greater number of these animals retain their antlers till the early spring, beginning to drop them about the return of sunshine; but some of the strongest lose them before the winter sets in. They are gregarious in their habits, and fond of particular localities. Where they have been gathered

together year after year, the accumulation of discarded antlers is immense. They tell me at Holsteinberg, where more than four thousand reindeer-skins find a market annually, that on the favorite hunting-grounds these horns are found in vast piles. They bring little or nothing at Copenhagen, but I suppose would find a ready sale among the button-workers of England.

"February 23, Friday.—Hans was out early this morning on the trail of the wounded deer. Rhina, the least barbarous of our sledge-dogs, assisted him. He was back by noon, with the joyful news, 'The tukkuk dead only two miles up big fiord!' The cry found its way through the hatch, and came back in a broken huzza from the sick men.

"We are so badly off for strong arms that our reindeer threatened to be as great an embarrassment to us as the auction-drawn elephant was to his lucky master. We had hard work with our dogs carrying him to the brig, and still harder, worn down as we were, in getting him over the ship's side. But we suceeeded, and were tumbling him down the hold, when we found ourselves in a dilemma like the Vicar of Wakefield with his family picture. It was impossible to drag the prize into our little moss-lined dormitory: and it was equally impossible to skin him anywhere else without freezing our fingers in the operation. It was a happy escape from the embarrassments of our hungry little council to determine that the animal might be carved before skinning as well as he could be afterward; and in a

very few minutes we proved our united wisdom by a feast on his quartered remains.

"It was a glorious meal, such as the compensations of Providence reserve for starving men alone. We ate, forgetful of the past, and almost heedless of the morrow; cleared away the offal wearily: and now, at 10 P. M., all hands have turned in to sleep, leaving to their commanding officer the solitary honor of an eight hours' vigil.

"This deer was among the largest of all the northern specimens I have seen. He measured five feet one inch in girth, and six feet two inches in length, and stood as large as a two years' heifer. We estimated his weight at three hundred pounds gross, or one hundred and eighty net. The head had a more than usually cumbrous character, and a long waving tuft of white hair, that depended from the throat, gave an appearance of excessive weight to the front view.

"The reindeer is in no respect a graceful animal. There is an apparent want of proportion between his cumbrous shoulders and light haunch, which is ungainly even in his rapid movements. But he makes up for all his defects of form when he presents himself as an article of diet.

"February 24, Saturday.—A bitter disappointment met us at our evening meal. The flesh of our deer was nearly uneatable from putrefaction; the liver and intestines, from which I had expected so much, utterly so. The rapidity of such a change, in a temperature so low as minus 35°, seems curious; but the Green-

landers say that extreme cold is rather a promoter than otherwise of the putrefactive process. All the gramivorous animals have the same tendency, as is well known to the butchers. Our buffalo-hunters, when they condescend to clean a carcass, do it at once; they have told me that the musk-ox is sometimes tainted after five minutes' exposure. The Esquimaux, with whom there is no fastidious sensibility of palate, are in the practice at Yotlik and Horses' Head, in latitude 73° 40′, even in the severest weather, of withdrawing the viscera immediately after death and filling the cavity with stones.

"February 25, Sunday.—The day of rest for those to whom rest can be; the day of grateful recognition for all! John, our volunteer cook of yesterday, is down: Morton, who could crawl out of bed to play baker for the party, and stood to it manfully yesterday, is down too. I have just one man left to help me in caring for the sick. Hans and Petersen, thank God! have vitality enough left to bear the toils of the hunt. One is out with his rifle, the other searching the traps.

"To-day, blessed be the Great Author of Light! I have once more looked upon the sun. I was standing on deck, thinking over our prospects, when a familiar berg, which had long been hid in shadow, flashed out in sun-birth. I knew this berg right well: it stood between Charlotte Wood Fiord and Little Willie's Monument. One year and one day ago I travelled toward it from Fern Rock to catch the sunshine. Then I had to climb the hills beyond, to get the luxury of

basking in its brightness; but now, though the sun was but a single degree above the true horizon, it was so much elevated by refraction that the sheen stretched across the trough of the fiord like a flaming tongue. I could not or would not resist the influence. It was a Sunday act of worship: I started off at an even run, and caught him as he rolled slowly along the horizon, and before he sank. I was again the first of my party to rejoice and meditate in sunshine. It is the third sun I have seen rise for a moment above the long night of an Arctic winter.

"February 26, Monday.—William Godfrey undertook to act as cook to day, but fainted before completing the experiment. The rest of us are little better; and now it looks as if we were to lose our best caterer, for Hans too shows signs of giving way to the scurvy.

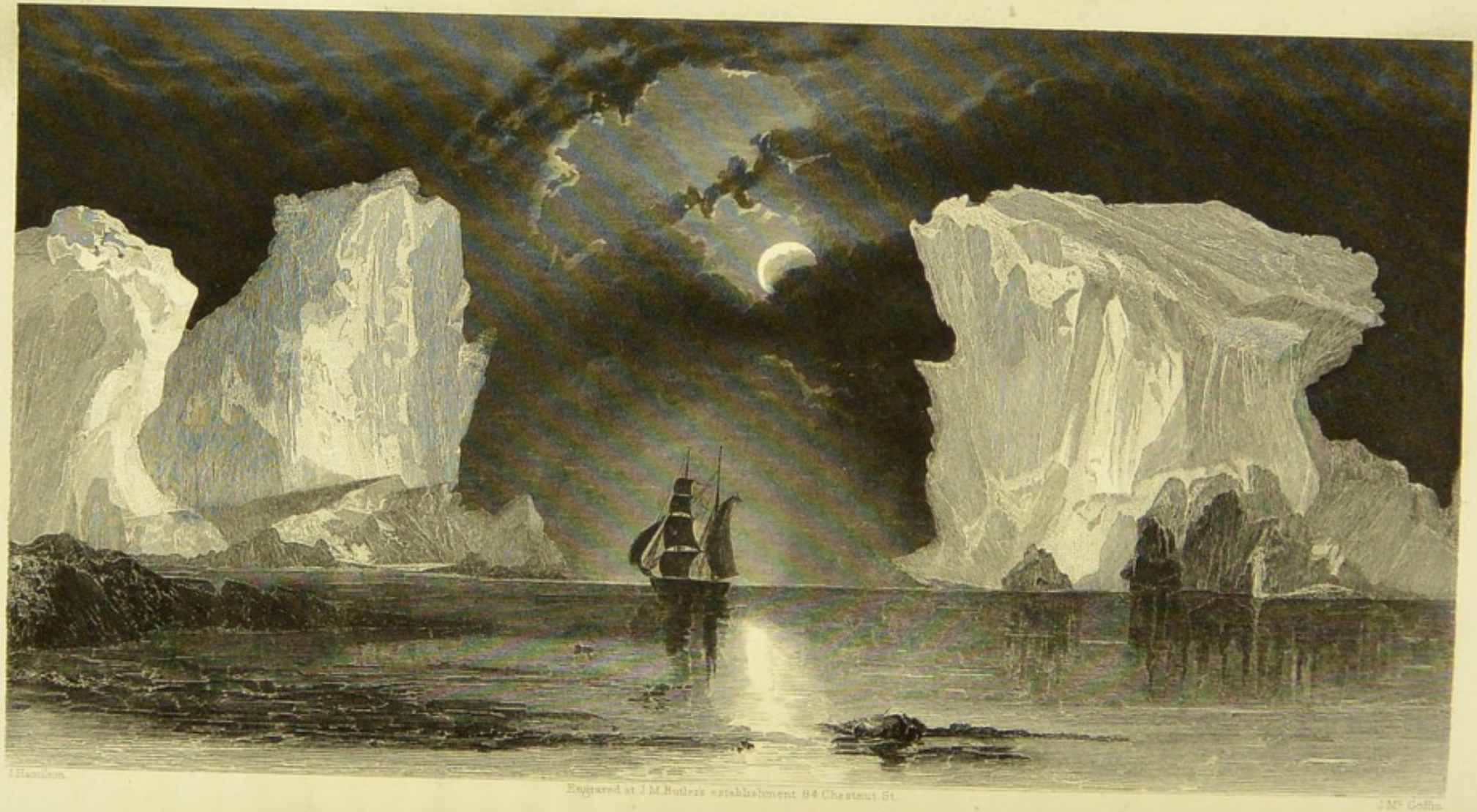
"I have been at work for an hour, cutting up the large Manilla hawser for fuel. I do not know that I have any very remarkable or valuable quality; but I do know that, however multiform may be my virtues, I am a singularly awkward hand in chopping up frozen cables.

"February 28, Wednesday.—February closes: thank God for the lapse of its twenty-eight days! Should the thirty-one of the coming March not drag us further downward, we may hope for a successful close to this dreary drama. By the tenth of April we should have seal; and when they come, if we remain to welcome them, we can call ourselves saved.

"But a fair review of our prospects tells me that I

must look the lion in the face. The scurvy is steadily gaining on us. I do my best to sustain the more desperate cases;. but as fast as I partially build up one, another is stricken down. The disease is perhaps less malignant than it was, but it is more diffused throughout our party. Except William Morton, who is disabled by a frozen heel, not one of our eighteen is exempt. Of the six workers of our party, as I counted them a month ago, two are unable to do out-door work, and the remaining four divide the duties of the ship among them. Hans musters his remaining energies to conduct the hunt. Petersen is his disheartened moping assistant. The other two, Bonsall and myself, have all the daily offices of household and hospital. We chop five large sacks of ice, cut six fathoms of eight-inch hawser into junks of a foot each, serve out the meat when we have it, hack at the molasses, and hew out with crowbar and axe the pork and dried apples, pass up the foul slop and cleansings of our dormitory; and, in a word, cook, *scullionize*, and attend the sick. Added to this, for five nights running I have kept watch from 8 P.M. to 4 A.M., catching cat-naps as I could in the day without changing my clothes, but carefully waking every hour to note thermometers.

"Such is the condition in which February leaves us, with forty-one days more ahead of just the same character in prospect as the twenty-eight which, thank God! are numbered now with the past. It is saddening to think how much those twenty-eight days have impaired our capacities of endurance. Yet there are



Engraved at J.M.Butler's establishment 84 Chestnut St.

J.Hamilton. J.McGoffin.

ICE BERGS NEAR KOSOAK.

LIFE BOAT COVE.

resources—accidental perhaps, mercifully providential let me rather term them, contingent certainly, so far as our prescience goes—which may avail to save us: another reindeer of sound carcass, a constant succession of small game, supplies of walrus from the fugitive Esquimaux, or that which I most expect and hope for—a bear. We have already seen some tracks of these animals; and last March there were many of them off Coffee Gorge and the Labyrinth. If Hans and myself can only hold on, we may work our way through. All rests upon destiny, or the Power which controls it.

"It will yet be many days before the sun overrides the shadow of Bessie Mountain and reaches our brig. The sick pine for him, and I have devised a clever system of mirrors to hasten his visit to their bunks. He will do more for them than all medicine besides.

"That strange phenomenon, the warm south and southeast winds which came upon us in January, did not pass away till the middle of this month. And, even after it had gone, the weather continued for some days to reflect its influence. The thermometer seldom fell below —40°, and stood sometimes as high as —30° It has been growing colder for the last three days, ranging from —46° to —51°; and the abundant snows of the warm spell are now compacted hard enough to be traversable, or else dissipated by the heavy winds. There is much to be studied in these atmospheric changes. There is a seeming connection between the increasing cold and the increasing moonlight, which

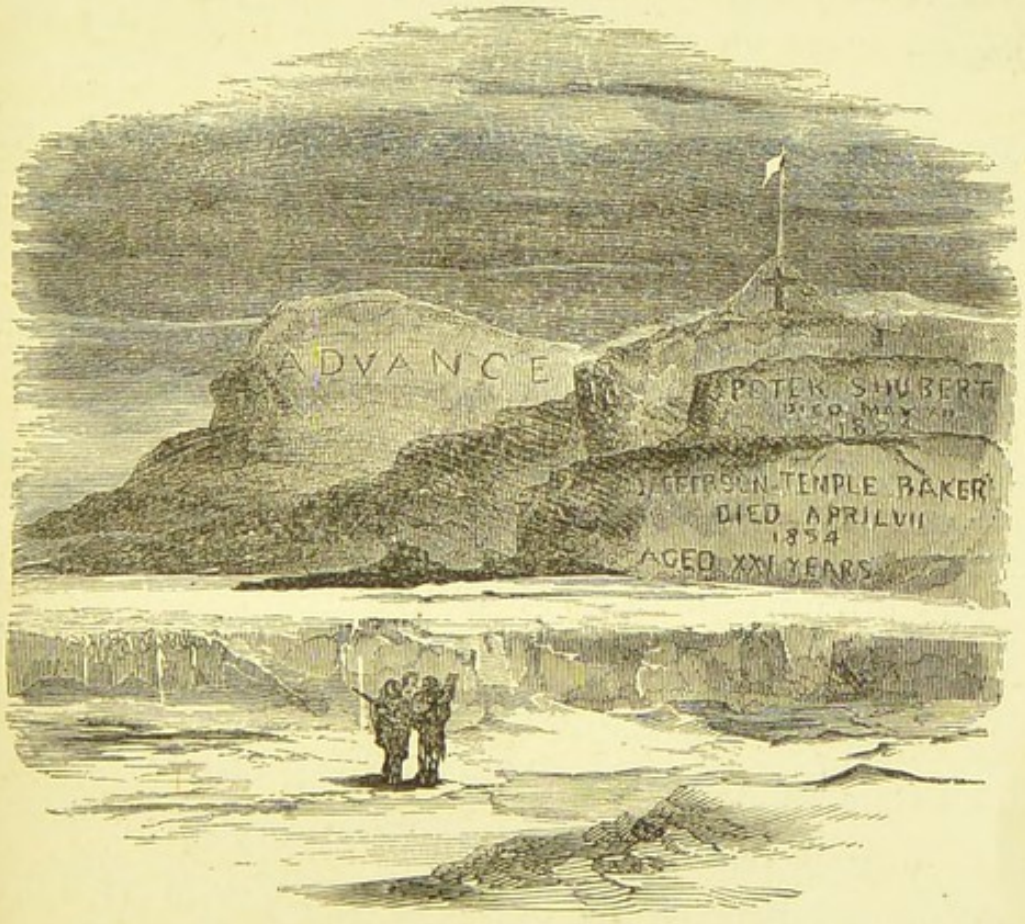
has sometimes forced itself on my notice; but I have barely strength enough to carry on our routine observations, and have no time to discuss phenomena.

"Two attempts have been made by my orders, since the month began, to communicate with the Esquimaux at their huts. Both were failures. Petersen, Hans, and Godfrey came back to denounce the journey as impracticable. I know better: the experience of my two attempts in the midst of the darkness satisfies me that at this period of the year the thing can be done; and, if I might venture to leave our sick-bay for a week, I would prove it. But there are dispositions and influences here around me, scarcely latent, yet repressed by my presence, which make it my duty at all hazards to stay where I am.

"March 1, Thursday.—A grander scene than our bay by moonlight can hardly be conceived. It is more dream-like and supernatural than a combination of earthly features.

"The moon is nearly full, and the dawning sunlight, mingling with hers, invests every thing with an atmosphere of ashy gray. It clothes the gnarled hills that make the horizon of our bay, shadows out the terraces in dull definition, grows darker and colder as it sinks into the fiords, and broods sad and dreary upon the ridges and measureless plains of ice that make up the rest of our field of view. Rising above all this, and shading down into it in strange combination, is the intense moonlight, glittering on every crag and spire, tracing the outline of the background with

contrasted brightness, and printing its fantastic profiles on the snow-field. It is a landscape such as Milton or Dante might imagine,—inorganic, desolate, mysterious. I have come down from deck with the feelings of a man who has looked upon a world unfinished by the hand of its Creator."



THE GRAVES BY MOONLIGHT.

CHAPTER XXXVII.

OUR CONDITION — THE RESORTS — THE SICK — THE RAT IN THE INSECT-BOX — ANTICIPATIONS — HANS'S RETURN — FAMINE AT ETAH — MYOUK ON BOARD — WALRUS-TACKLE — THE MEAT DIET.

My journal for the beginning of March is little else than a chronicle of sufferings. Our little party was quite broken down. Every man on board was tainted with scurvy, and it was not common to find more than three who could assist in caring for the rest. The greater number were in their bunks, absolutely unable to stir.

The circumstances were well fitted to bring out the character of individuals. Some were intensely grateful for every little act of kindness from their more fortunate messmates; some querulous; others desponding; others again wanted only strength to become mutinous. Brooks, my first officer, as stalwart a man-o'-war's man as ever faced an enemy, burst into tears when he first saw himself in the glass. On Sunday, the 4th, our last remnant of fresh meat had been doled out. Our invalids began to sink rapidly. The wounds of our amputated men opened afresh. The region

about our harbor ceased to furnish its scanty contingent of game. One of our huntsmen, Petersen, never very reliable in any thing, declared himself unfit for further duty. Hans was unsuccessful: he made several wide circuits, and saw deer twice; but once they were beyond range, and the next time his rifle missed fire.

I tried the hunt for a long morning myself, without meeting a single thing of life, and was convinced, by the appearance of things on my return to the brig, that I should peril the *morale*, and with it the only hope, of my command by repeating the experiment.

I labored, of course, with all the ingenuity of a well-taxed mind, to keep up the spirits of my comrades. I cooked for them all imaginable compounds of our unvaried diet-list, and brewed up flax-seed and lime-juice and quinine and willow-stems into an abomination which was dignified as beer, and which some were persuaded for the time to believe such. But it was becoming more and more certain every hour, that unless we could renew our supplies of fresh meat, the days of the party were numbered.

I spare myself, as well as the readers of this hastily-compiled volume, when I pass summarily over the details of our condition at this time.

I look back at it with recollections like those of a nightmare. Yet I was borne up wonderfully. I never doubted for an instant that the same Providence which had guarded us through the long darkness of winter was still watching over us for good, and that it was

yet in reserve for us—for some; I dared not hope for all—to bear back the tidings of our rescue to a Christian land. But how I did not see.

On the 6th of the month I made the desperate venture of sending off my only trusted and effective huntsman on a sledge-journey to find the Esquimaux of Etah. He took with him our two surviving dogs in our lightest sledge. The Arctic day had begun to set in; the ice-track had improved with the advance of the season; and the cold, though still intense, had moderated to about eighty degrees below the freezing-point. He was to make his first night-halt at Anoatok; and, if no misadventure thwarted his progress, we hoped that he might reach the settlement before the end of the second night. In three or at furthest four days more, I counted on his return. No language can express the anxiety with which our poor suffering crew awaited it.

"March 8, Thursday.—Hans must now be at the huts. If the natives have not gone south, if the walrus and bear have not failed them, and if they do not refuse to send us supplies, we may have fresh food in three days. God grant it may come in time!

"Stephenson and Riley are dangerously ill. We have moved Riley from his bunk, which, though lighter than most of the others, was dampened by the accumulations of ice. He is now upon a dry and heated platform close to the stove. Dr. Hayes's foot shows some ugly symptoms, which a change of his lodging-place may perhaps mitigate; and I have deter-

mined, therefore, to remove him to the berth Riley has vacated as soon as we can purify and dry it for him.

"In clearing out Riley's bunk, we found that a rat had built his nest in my insect-box, destroying all our specimens. This is a grave loss; for, besides that they were light of carriage, and might therefore have accompanied us in the retreat which now seems inevitable, they comprised our entire collection, and, though few in numbers, were rich for this stinted region. I had many spiders and bees. He is welcome to the whole of them, however, if I only catch him the fatter for the ration.

"March 9, Friday.—Strength going. It was with a feeling almost of dismay that I found how difficult it was to get through the day's labors,—Bonsall and myself the sole workers. After cleansing below, dressing and performing the loathsome duties of a nurse to the sick, cutting ice, cooking and serving messes, we could hardly go further.

"I realize fully the moral effects of an unbroken routine: systematic order once broken in upon, discomfort, despondency, and increase of disease must follow of course. It weighed heavily on my spirit to-day when I found my one comrade and myself were barely able to cut the necessary fuel. The hour of routine-nightfall finds us both stiff and ill at ease. Having to keep the night-watch until 6 A.M., I have plenty of time to revolve my most uncomfortable thoughts.

"Be it understood by any who may peradventure read of these things in my journal, that I express them nowhere else. What secret thoughts my companions may have are concealed from me and from each other; but none of them can see as I do the alternative future now so close at hand: bright and comforting it may be; but, if not, black and hopeless altogether.

"Should Hans come back with a good supply of walrus, and himself unsmitten by the enemy, our sick would rise under the genial specific of meat, and our strength probably increase enough to convey our boats to the North Water. The Refuge Inlet Polynia will hardly be more than forty miles from our brig, and, step by step, we can sledge our boats and their cargoes down to it. Once at Cape Alexander, we can support our sick by our guns, and make a regular Capua of the bird-colonies of Northumberland Island. This, in honest truth my yet unswerving and unshaken hope and expectation, is what I preach to my people; and often in the silent hours of night I chat to some sleepless patient of cochlearia salads and glorious feasts of loons and eider-ducks.

"On the other side, suppose Hans fails: the thought is horrible. The Spitzbergen victims were, at about this date, in better condition than we are: it was not until the middle of April that they began to die off. We have yet forty days to run before we can count upon the renovating blessings of animal life and restoring warmth. Neither Riley nor Wilson can last half that time without a supply of antiscorbutic food.

Indeed, there is not a man on board who can hope to linger on till the spring comes unless we have relief.

"I put all this down in no desponding spirit, but as a record to look back upon hereafter, when the immediate danger has passed away, and some new emergency has brought its own array of cares and trials. My mind is hopeful and reliant: there is something even cheering in the constant rally of its energies to meet the calls of the hour.

"March 10, Saturday.—Hans has not yet returned; so that he must have reached the settlement. His orders were, if no meat be obtained of the Esquimaux, to borrow their dogs and try for bears along the open water. In this resource I have confidence. The days are magnificent.

". . . . I had hardly written the above, when '*Bim, bim, bim!*' sounded from the deck, mixed with the chorus of our returning dogs. The next minute Hans and myself were shaking hands.

"He had much to tell us; to men in our condition Hans was as a man from cities. We of the wilderness flocked around him to hear the news. Sugar-teats of raw meat are passed around. 'Speak loud, Hans, that they may hear in the bunks.'

"The 'wind-loved' Anoatok he had reached on the first night after leaving the brig: no Esquimaux there of course; and he slept not warmly at a temperature of 53° below zero. On the evening of the next day he reached Etah Bay, and was hailed with joyous wel-

come. But a new phase of Esquimaux life had come upon its indolent, happy, blubber-fed denizens. Instead of plump, greasy children, and round-cheeked matrons, Hans saw around him lean figures of misery: the men looked hard and bony, and the children shrivelled in the hoods which cradled them at their mothers' backs. Famine had been among them; and the skin of a young sea-unicorn, lately caught, was all that remained to them of food. It was the old story of improvidence and its miserable train. They had even eaten their reserve of blubber, and were seated in darkness and cold, waiting gloomily for the sun. Even their dogs, their main reliance for the hunt and for an escape to some more favored camping-ground, had fallen a sacrifice to hunger. Only four remained out of thirty: the rest had been eaten.

"Hans behaved well, and carried out my orders in their full spirit. He proposed to aid them in the walrus-hunt. They smiled at first with true Indian contempt: but when they saw my Marston rifle, which he had with him, they changed their tone. When the sea is completely frozen, as it is now, the walrus can only be caught by harpooning them at their holes or in temporary cracks. This mode of hunting them is called *utok*. It requires great skill to enter the harpoon, and often fails from the line giving way in the struggles of the animal. They had lost a harpoon and line in this manner the very day before Hans's arrival. It required very little argument to persuade them to accept his offered company and try the effect of his

cone-ball on the harpooned animal before he made good his retreat.

"I have not time to detail Hans's adventurous hunt, equally important to the scurvied sick of Rensselaer and the starving residents of Etah Bay. Metek (the eider-duck) speared a medium-sized walrus, and Hans gave him no less than five Marston balls before he gave up his struggles. The beast was carried back in triumph, and all hands fed as if they could never know famine again. It was a regular feast, and the kablunah interest was exalted to the skies.

"Miserable, yet happy wretches, without one thought for the future, fighting against care when it comes unbidden, and enjoying to the full their scanty measure of present good! As a beast, the Esquimaux is a most sensible beast, worth a thousand Calibans, and certainly ahead of his cousin the Polar bear, from whom he borrows his pantaloons.

"I had directed Hans to endeavor to engage Myouk, if he could, to assist him in hunting. A most timely thought: for the morning's work made them receive the invitation as a great favor. Hans got his share of the meat, and returned to the brig accompanied by the boy, who is now under my care on board. This imp—for he is full of the devil—has always had a relishing fancy for the kicks and cuffs with which I recall the forks and teaspoons when they get astray; and, to tell the truth, he always takes care to earn them. He is very happy, but so wasted by hunger that the work of fattening him will be a costly one. Poor little fellow!

born to toil and necessity and peril; stern hunter as he already is, the lines of his face are still soft and child-like. I think we understand one another better than our incongruities would imply. He has fallen asleep in a deer-skin at my feet.

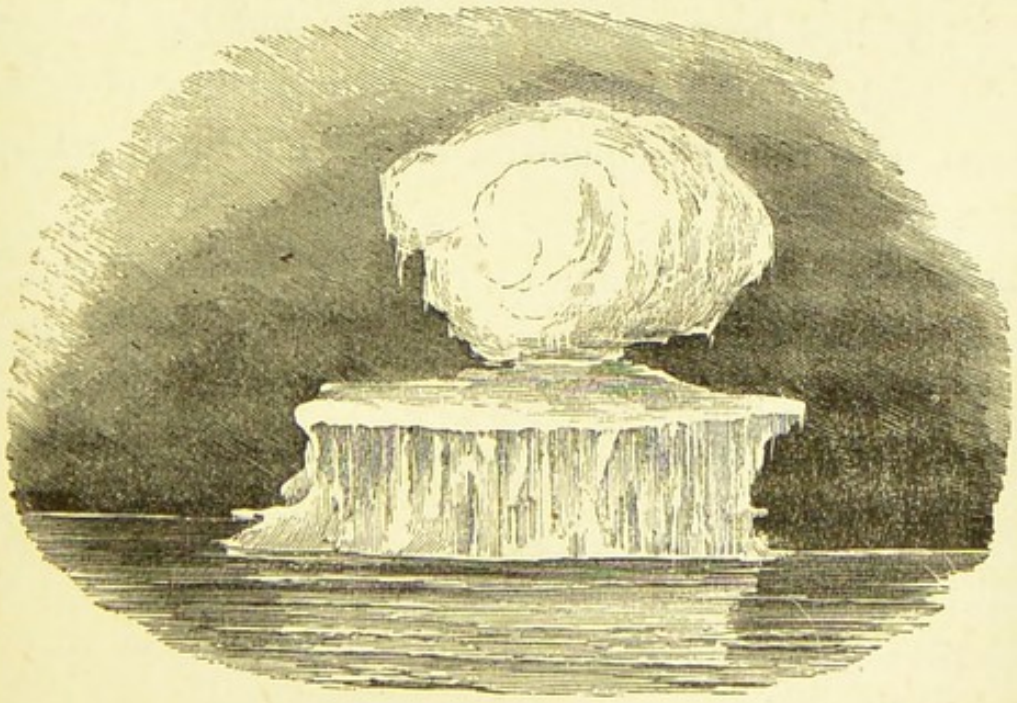
"March 11, Sunday.—The sick are not as bright as this relief ought to make them. The truth is, they are fearfully down. Neither poor Wilson nor Riley could bear the meat, and they both suffered excessive pain with fever from a meal that was very limited in quantity. Even the stoutest could hardly bear their once solicited allowance of raw meat. I dispensed it cautiously, for I knew the hazards; but I am sure it is to be the salvation of all of us. It gives a respite at any rate, and we could not in reason ask for more.

"Hans is making a walrus-harpoon and line; and, as soon as he and Myouk have freshened a little, I shall send them back to Anoatok in search of water-cracks. I am hard-worked, getting little rest, yet gratefully employed, for my people seem to thank me. My cookery unfortunately shows itself on the smeared pages of my journal.

"March 12, Monday.—The new tackle is finished. Myouk had lost his ussuk-line upon the iceberg, but we supplied its place with a light Manilla cord. Hans made the bonework of his naligeit from the reindeer-antlers which are abundant about the hills. They both rest to-night, and make an early start in the morning for their working-ground.

"The less severe cases on our sick-list are beginning

to feel the influence of their new diet; but Wilson and Brooks do not react. Their inclination for food, or rather their toleration of it, is so much impaired that they reject meat in its raw state, and when cooked it is much less prompt and efficient in its action. My mode of serving it out is this:—Each man has his saucer of thinly-sliced frozen walrus-heart, with lime-juice or vinegar, before breakfast; at breakfast, blood-gravy with wheaten bread; at dinner, steaks slightly stewed or fried, without limit of quantity; none at tea proper; but at 8 P.M. a renewed allowance of raw slices and vinegar. It shows how broken down the party is, that under the appetizing stimulations of an Arctic sky all our convalescents and well men together are content with some seven pounds of meat. Their prostrate comrades are sustained by broth."



ICE-RAFT.

CHAPTER XXXVIII.

LINE OF OPEN WATER—AWAHTOK—HIS FIRST-BORN—INSUBORDINATION—THE PLOT—THE DEVELOPMENT—THE DESERTION.

"March 13, Tuesday.—I walked out with Hans and Myouk to give them God-speed. Myouk had made me dress his frosted feet with rabbit-fur, swaddled with alternate folds of flannel and warm skins. The little scamp had not been so comfortable since his accident. The dogs were only four in number, for 'Young Whitey' had been used up at Etah; but the load was light, and Myouk managed to get a fair share of riding. Hans, with the consequential air of 'big Injin,' walked ahead.

"I enjoined on them extreme caution as to their proceedings. They are to stretch over to the Bergy ground, of dismal associations, and to look for ice-cracks in the level channel-way. Here, where I so nearly lost my life, they will seek bears and walrus, and, if they fail, work their way downward to the south. They sleep to-night in a snow-burrow, but hope to-morrow to reach Anoatok.

"March 15, Thursday.—Hans and Myouk returned at eight o'clock last night without game. Their sleep, in a snow-drift about twenty miles to the northward, in a temperature of —54°, was not comfortable, as might be expected. The marvel is how life sustains itself in such circumstances of cold. I have myself slept in an ordinary canvas tent without discomfort, yet without fire, at a temperature of —52°.

"Myouk was very glad to get back to my warm quarters; but Hans was chop-fallen at the dearth of game. They found no open water, but ice, ice, ice, as far to the north and east as the eye could range from an iceberg-elevation of eighty feet. It is the same opposite Anoatok; and, according to the Esquimaux, as far south of Cape Alexander as a point opposite Akotloowick, the first Baffin Bay huts. Beyond this, in spite of the severity of the winter, there is an open sea. It is in the month of March, if at all during the year, that the polynias are frozen up. Those of Refuge Bay and Littleton were open during the whole of last winter; and, considering how very severe the weather is now and has been for months past, I question very much if such extensive areas as the so-called North Water ever close completely.

"Hans saw numerous tracks of bears; and I have no doubt now but that we can secure some of these animals before the seal-season opens. One large beast passed in the night close by the snow-burrow in which our would-be hunters were ensconced. They followed his tracks in the morning; but the dogs were ex-

hausted and the cold was excessive, and they wisely returned to the brig.

" . . . . To-day we have finished burning our last Manilla hawser for fuel, the temperature remaining at the extraordinary mean of —52°. Our next resort must be to the trebling of the brig: Petersen—what remains of him, for the man's energies are gone—is now at work cutting it off. It is a hard trial for me. I have spared neither exertion, thought, nor suffering, to save the sea-worthiness of our little vessel, but all to no end: she can never bear us to the sea. Want of provisions alone, if nothing else, will drive us from her; for this solid case of nine-foot ice cannot possibly give way until the late changes of fall, nor then unless a hot summer and a retarded winter afterward allow the winds to break up its iron casing.

"March 16, Friday.—We have just a scant two day's allowance of meat for the sick. Hans has done his best; but there is nothing to be found on the hills: and I fear that a long hunting-journey to the south is our only resource.

"Awahtok: I have often mentioned him as a plump, good-natured fellow. He was one of my attachés; by which I mean one of the many who stick to me like a plaster, in order to draw or withdraw a share of the iron nails, hoops, buttons, and other treasures which I represent. Awahtok always struck me as a lazy, pleasant sort of fellow, a man who would be glad to bask in sunshine if he could find any. He has a young wife of eighteen, and he himself is but twenty-two. His

hut is quite cleanly, and we become his guests there with more satisfaction than at any other hostel in the village of Etah. Awahtok is evidently happy with his wife, and, the last time I saw him, was exulting over the first pledge of their union, a fine little girl. Well, all this about Awahtok is a prelude to the fact that he has just buried his daughter alive under a pile of stones.

"Myouk, who gave us the news to-day, when delicately questioned as to the cause of this little family arrangement, answered, with all simplicity of phrase, that the child had certain habits, common I believe to all the varieties of infancy.

"The month is gliding on, but without any contributions to science, though there are many things about me to suggest investigation.

"It is as much as I can do to complete the routine of the days and enable them to roll into each other. What a dreary death in life must be that of a maid or man of all work!

"March 17, Saturday.—I have been getting Hans ready for the settlement, with a five-sinnet line of Maury's sounding-twine. The natives to the south have lost nearly all their *allunaks* or walrus-lines by the accidents of December or January, and will be unable to replace them till the return of the seal. A good or even serviceable allunak requires a whole ussuk to cut it from. It is almost the only article whose manufacture seems to be conducted by the Esquimaux with any care and nicety of process. Our sounding-line will be

a valuable contribution to them, and may perchance, like some more ostentatious charities, include the liberal givers among those whom it principally blesses.

"March 18, Sunday.—I have a couple of men on board whose former history I would give something to know,—bad fellows both of them, but daring, energetic, and strong. They gave me trouble before we reached the coast of Greenland; and they keep me constantly on the watch at this moment, for it is evident to me that they have some secret object in view, involving probably a desertion and escape to the Esquimaux settlements. They are both feigning sickness this morning; and, from what I have overheard, it is with the view of getting thoroughly rested before a start. Hans's departure with the sledge and dogs would give them a fine chance, if they could only waylay him, of securing all our facilities for travel; and I should not be surprised if they tried to compel him to go along with them. They cannot succeed in this except by force.

"I am acting very guardedly with them. I cannot punish till I have the evidence of an overt act. Nor can I trust the matter to other hands. It would not do to depress my sick party by disclosing a scheme which, if it could be carried out fully, might be fatal to the whole of us. All this adds to my other duties those of a detective policeman. I do not find them agreeable.

"March 19, Monday.—Hans got off at eleven. I have been all right in my suspicions about John and

Bill. They were intensely anxious to get together this morning, and I was equally resolved to prevent any communication between them. I did this so ingeniously that they did not suspect my motive, by devising some outside duty for one or the other of them and keeping his comrade in the plot at work under my own eye. Their impatience and cunning little resorts to procure the chance of a word in private were quite amusing. It might be very far otherwise if they could manage to rob us of our dogs and gain the Netlik settlements.

"I hope the danger is over now. I shall keep the whole thing to myself; for, situated as we are, even the frustration of a mutinous purpose had best be concealed from the party.

"Petersen brought in to-day five ptarmigan, a cheering day's work, promising for the future, and allowing me to give an abundant meal to the sickest, and something to the sick. This is enough to keep up the health-working impression of the fresh-meat diet.

"March 20, Tuesday.—This morning I received information from Stephenson that Bill had declared his intention of leaving the brig to-day at some time unknown. John, being now really lame, could not accompany him. This Stephenson overheard in whispers during the night; and, in faithful execution of his duty, conveyed it to me.

"I kept the news to myself; but there was no time to be lost. William, therefore, was awakened at 6 A.M. —after my own night-watch—and ordered to cook

breakfast. Meantime I watched him. At first he appeared troubled, and had several stealthily-whispered interviews with John: finally his manner became more easy, and he cooked and served our breakfast-meal. I now felt convinced that he would meet John outside as soon as he could leave the room, and that one or both would then desert. I therefore threw on my furs and armed myself, made Bonsall and Morton acquainted with my plans, and then, crawling out of our dark passage, concealed myself near its entrance. I had hardly waited half an hour,—pretty cold work too,—when John crawled out, limping and grunting. Once fairly out, he looked furtively round, and then with a sigh of satisfaction mounted our ricketty steps entirely cured of his lameness. Within ten minutes after he had gained the deck the door opened again, and William made his appearance, booted for travel and clad in buffalo. As he emerged into the hold, I confronted him. He was ordered at once to the cabin; and Morton was despatched on deck to compel the presence of the third party; while Mr. Bonsall took his station at the door, allowing no one to pass out.

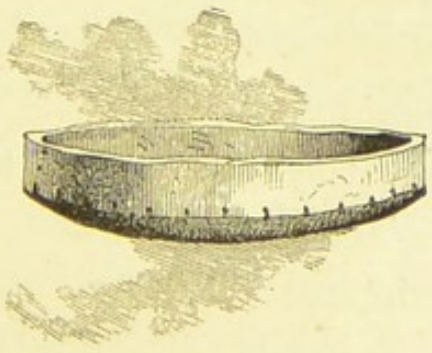
"In a very few minutes John crawled back again, as lame and exhausted as when he was last below, yet growing lamer rapidly as, recovering from the glare of the light, he saw the tableau. I then explained the state of things to the little company, and detailed step by step to the principals in the scene every one of their plans.

"Bill was the first to confess. I had prepared my-

self for the emergency, and punished him on the spot. As he rose with some difficulty, I detailed from the log-book the offences he had committed, and adduced the proofs.

"The short-handed condition of the brig made me unable to confine him; therefore I deemed it best to remove his handcuffs, to accept his protestations of reform, and put him again to work. He accepted my lenity with abundant thanks, went to duty, and in less than an hour deserted. I was hunting at the time, but the watch reported his having first been discovered on the ice-foot, and out of presenting-distance. His intention undoubtedly is to reach Etah Bay, and, robbing Hans of sledge and dogs, proceed south to Netlik.

"Should he succeed, the result will be a heavy loss to us. The dogs are indispensable in the hunt and in transporting us to Anoatok. The step however is not likely to be successful. At all events, he is off, and I regret that duty prevents my rejoicing at his departure, John remains with us, closely watched, but apparently sincere in his protestations of absolute reform."



SEAL-SKIN CUP.

CHAPTER XXXIX.

COLLOQUY IN THE BUNKS — WINTER TRAVEL — PREPARATIONS — REINDEER FEEDING-GROUNDS — TERRACED BEACHES — A WALK — OCCUPATIONS.

"MARCH 21, Wednesday.—On this day one year ago Mr. Brooks and his party were frozen up in the hummocks. The habit of comparing the condition of two periods, of balancing the thoughts and hopes of one with the realized experience of the other, seems to me a very unprofitable one. It interferes with the practical executive spirit of a man, to mix a bright and happy past with a dim and doubtful present. It's a maudlin piece of work at best, and I'll none of it.

"But listen to poor Brooks there, talking. He is sitting up, congratulating himself that he can nearly straighten his worst leg. 'Well, Mr. Ohlsen, I thought we would never get through them hummocks. You know we unloaded three times; now, I would not say it then, but seeing I am down I'll tell you. When we laid down the last pemmican-case, I went behind the ice, and don't remember nothing till Petersen called

me into the tent. I think I must have strained something, and gone off like in a kind of fit.'

"Ohlsen, who is as self-absorbed a man as I ever knew, replies by stating that his boots pinched him; to which poor Brooks, never dwelling long on his own troubles, says in a quiet, soliloquizing way, 'Yes, and Baker's boots pinched him too; but it wasn't the boots, but the killing cold outside of them. There was Pierre: his boots were moccasins, with deer-skin foot-rags, but he died of cold for all that; and there's Mr. Wilson and me, both hanging on in neither one way nor t'other: it's a question which of us lasts the longest.' McGary, another bedridden, but convalescent, I hope, here raises himself on his elbows and checks Brooks for being so down in the mouth; and Brooks, after a growling rejoinder, improves his merry reminiscences by turning to me.

"'Captain Kane, five nights to come one year, you came in upon four of us down as flat as flounders. I didn't look at your boots, but I know you wore Esquimaux ones. It was a hard walk for you, the greatest thing I ever heard tell off; but'—here he begins to soliloquize—'Baker's dead, Pierre's dead, and Wilson and I——'. 'Shut up, Brooks! shut up!' I broke in, whispering across the boards that separated our blankets; 'you will make the patients uncomfortable.' But no: the old times were strong upon him; he did not speak loud, but he caught me by both hands, and said, in his low bass, quiet tones, 'Doctor, you cried when you saw us, and didn't pull up till we jabbed

the stopper down the whiskey-tin and gave you a tot of it.'

"The general tone of the conversation around is like this specimen. I am glad to hear my shipmates talking together again, for we have of late been silent. The last year's battle commenced at this time a year ago, and it is natural the men should recall it. Had I succeeded in pushing my party across the bay, our success would have been unequalled; it was the true plan, the best-conceived, and in fact the only one by which, after the death of my dogs, I could hope to carry on the search. The temperatures were frightful, —40° to —56°; but my experience of last year on the rescue-party, where we travelled eighty miles in sixty odd hours, almost without a halt, yet without a frost-bite, shows that such temperatures are no obstacle to travel, provided you have the necessary practical knowledge of the equipment and conduct of your party. I firmly believe that no natural cold as yet known can arrest travel. The whole story of this winter illustrates it. I have both sledged and walked sixty and seventy miles over the roughest ice, in repeated journeys, at fifty degrees below zero, and the two parties from the south reached our brig in the dead of winter, after being exposed for three hundred miles to the same horrible cold.

"The day has been beautifully clear, and so mild that our mid-day thermometers gave but 7°. This bears badly upon the desertion of Godfrey, for the probabilities are that he will find Hans's buffalo-robe at the hut,

and thus sleep and be refreshed. In that case, he can easily reach the Esquimaux of Etah Bay, and may as easily seize upon the sledge-dogs, rifle, and trading-articles. The consequences of such an act would be very disastrous; nearly all my hopes of lifting the sick, and therefore of escaping in boats to the south, rest upon these dogs. By them only can we hunt bear and early seal, or rapidly transport ourselves to the tide-holes (*polynia*) of the spring, where we can add water-fowl to our game-list. I am entirely without a remedy. We cannot pursue him, nor could we have well prevented his escape; it is the most culpable desertion I ever knew or heard of. Bonsall, Petersen, and myself are the only men now on board who can work for the rest. Save the warnings of a secret trouble, the fox gnawing under the jacket, I do better than the rest; but I bear my fox. Bonsall is evidently more disabled.

"March 22, Thursday.—Petersen's ptarmigan are all gone, (five of them,) and of the rabbit but two rations of eight ounces each remain. We three, Bonsall, Petersen, and myself, have made up our minds to walk up Mary River Ravine until we reach the deer-plains, and there separate and close in upon them. To-day is therefore a busy one, for we must prepare beforehand the entire daily requirements of the sick: the ice for melting water must be cut in blocks and laid near the stove; the wood, of which it requires one entire day to tear enough out for two days, must be chopped and boiled within arm-reach; the bread must be cooked and

the provisions arranged, before we can leave our com rades. When we three leave the brig, there will not be a single able man on board. McGary is able to leave his bed and stump about a little; but this is all. Need the dear home-folks, who may some day read this, wonder that I am a little careworn, and that I leave the brig with reluctance? Of we three God-supported men, each has his own heavy load of scurvy.

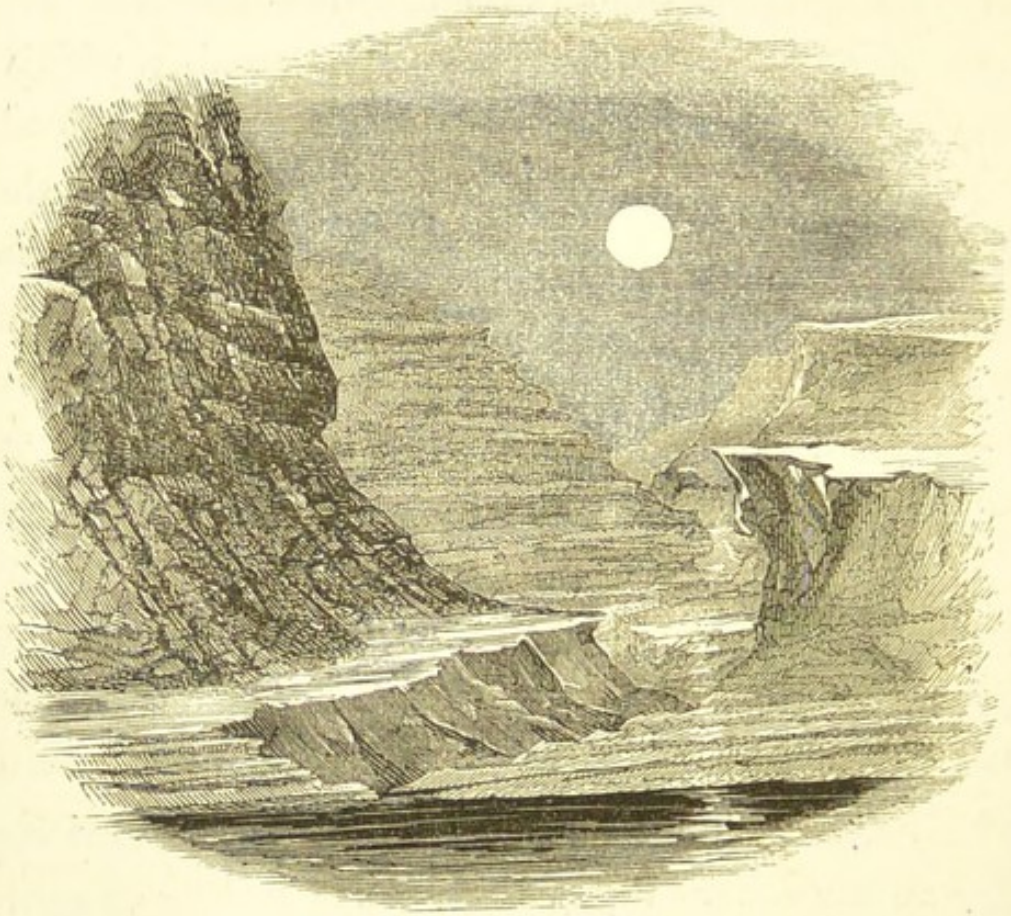
"March 23, Friday.—We started this morning, overworked and limping, rather as men ending a journey than beginning one. After four hours of forced walking, we reached the reindeer feeding-grounds, but were too late: the animals had left at least two hours before our arrival. An extensive rolling country, rather a lacustrine plain than a true plateau, was covered with traces of life. The snow had been turned up in patches of four or five yards in diameter, by the hoofs of the reindeer, over areas of twenty or fifty acres. The extensive levels were studded with them; and wherever we examined the ground-surface it was covered with grasses and destitute of lichens. We scouted it over the protruding syenites, and found a couple of ptarmigan and three hares: these we secured.

"Our little party reached the brig in the evening, after a walk over a heavy snow-lined country of thirty miles. Nevertheless, I had a walk full of instructive material. The frozen channel of Mary River abounds in noble sections and scenes of splendid wildness and desolation. I am too tired to epitomize here my note-book's record; but I may say that the opportunity

which I had to-day of comparing the terrace and boulder lines of Mary River and Charlotte Wood Fiord enables me to assert positively the interesting fact of a secular elevation of the crust, commencing at some as yet undetermined point north of 76°, and continuing to the Great Glacier and the high northern latitudes of Grinnell Land. This elevation, as connected with the equally well-sustained depression of the Greenland coast south of Kingatok, is in interesting keeping with the same undulating alternation on the Scandinavian side. Certainly there seems to be in the localities of these elevated and depressed areas a systematic compensation.

"I counted to-day forty-one distinct ledges or shelves of terrace embraced between our water-line and the syenitic ridges through which Mary River forces itself. These shelves, though sometimes merged into each other, presented distinct and recognisable embankments or escarps of elevation. Their surfaces were at a nearly uniform inclination of descent of 5°, and their breadth either twelve, twenty-four, thirty-six, or some other multiple of twelve paces. This imposing series of ledges carried you in forty-one gigantic steps to an elevation of four hundred and eighty feet; and, as the first rudiments of these ancient beaches left the granites which had once formed the barrier sea-coast, you could trace them passing from drift-strewn rocky barricades to cleanly-defined and gracefully-curved shelves of shingle and pebbles. I have studies of these terraced beaches at various points on the northern

coast of Greenland. They are more imposing and on a larger scale than those of Wellington Channel, which are now regarded by geologists as indicative of secular uplift of coast. As these strange structures wound in long spirals around the headlands of the fiords,



THE TERRACED FIORDS.

they reminded me of the parallel roads of Glen Roy,—a comparison which I make rather from general resemblance than ascertained analogies of causes.

"There is a boulder ten miles from our brig, say seven from the coast,—a mass of rounded syenite,—at an altitude of eleven hundred feet, resting, entirely

isolated, upon coarse sandstone: its cubical contents cannot be less than sixty tons. Tired as I am by this hard walk, I feel that it has rewarded me well. It was too cold for the pocket-sextant; but I managed to sketch in such features of the opposite coast as were not marked in our charts of last August. I had a full view of the inland glacier throughout a linear trend of twenty miles. I can measure the profitless non-observing routine of the past winter by my joy at this first break-in upon its drudgery. God knows I had laid down for myself much experimental observation, and some lines of what I hoped would be valuable travel and search; but I am thankful that I am here, able to empty a slop-bucket or rub a scurvied leg.

"My people had done well during my absence, and welcomed me back impressively.

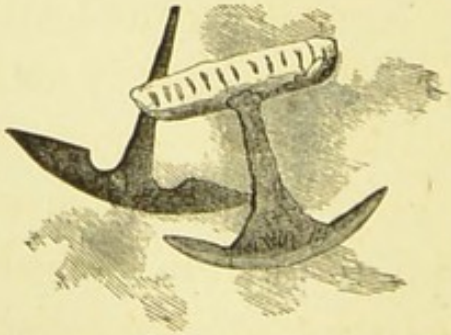
"March 24, Saturday.—Our yesterday's ptarmigan gave the most sick a raw ration, and to-day we killed a second pair, which will serve them for to-morrow. To my great joy, they seem on that limited allowance to hold their ground. I am the only man now who scents the fresh meat without tasting it. I actually long for it, but am obliged to give way to the sick.

"Yesterday's walk makes my scorbutized muscles very stiff. I went through my routine of labor, and, as usual in this strange disease, worked off my stiffness and my pain.

"Bonsall and Petersen are now woodmen, preparing

our daily fuel. My own pleasant duty consists in chopping from an iceberg six half-bushel bagfuls of frozen water, carrying it to the brig and passing it through the scuttle into our den; in emptying by three several jobs some twelve to fifteen bucketfuls from the slop-barrel; in administering both as nurse and physician to fourteen sick men; in helping to pick eider-down from its soil as material for boat-bedding; in writing this wretched daily record, eating my meals, sleeping my broken sleeps, and feeling that the days pass without congenial occupation or improving pursuit.

"Hans has not returned. I give him two days more before I fall in with the opinion which some seem to entertain, that Godfrey has waylaid or seized upon his sledge. This wretched man has been the very bane of the cruise. My conscience tells me that almost any measure against him would be justifiable as a relief to the rest; but an instinctive aversion to extreme measures binds my hands."



WOMEN'S SKIN KNIVES, FROM GRAVES AT DISCO

CHAPTER XL.

THE DELECTABLE MOUNTAINS—REVIEW OF MARCH—THE DESERTER AGAIN—HIS ESCAPE—GODFREY'S MEAT—CONVALESCENT.

"March 25, Sunday.—A hard-working, busy Sunday it has been,—a cheerless, scurvy-breeding day; and now by the midnight, which is as it were the evening of its continued light, I read the thermometers unaided except by the crimson fires of the northern horizon. It is, moreover, cold again, —37°, and the enemy has a harder grip on my grasshopper. Bonsall and Kane took the entire home-work on themselves to-day, that Petersen might have a chance of following rabbit-tracks up Mary River. He succeeded in shooting one large hare and a couple of ptarmigan,—thus giving our sick a good allowance for one day more.

"Refraction with all its magic is back upon us; the 'Delectable Mountains' appear again; and, as the sun has now worked his way to the margin of the north-western horizon, we can see the blaze stealing out from the black portals of these uplifted hills, as if there was truly beyond it a celestial gate.

"I do not know what preposterous working of brain

led me to compare this northwestern ridge to Bunyan's Delectable Mountains; but there was a time, only one year ago, when I used to gaze upon them with an eye of real longing. Very often, when they rose phantom-like into the sky, I would plan schemes by which to reach them, work over mentally my hard pilgrimage across the ice, and my escape from Doubting Castle to this scene of triumph and reward. Once upon your coasts, O inaccessible mountains, I would reach the Northern Ocean and gather together the remnants of poor Franklin's company. These would be to me the orchards and vineyards and running fountains. The 'Lord of the Hill would see in me a pilgrim.' 'Leaning upon our staves, as is common with weary pilgrims when they stand to talk with any by the way,' we would look down upon an open Polar sea, refulgent with northern sunshine.

"I did try to gain these summits; and when I think of poor Baker's and Pierre's death, of my own almost fatalistic anxiety to cross the frozen sea, and of the terrible physical trial by which we saved our advance party, I cannot help dwelling, as something curious in its likeness, on another scene which Bunyan's explorers witnessed among the Delectable Mountains. 'They hied them first to the top of a hill called Error, which was very steep on the farthest side. So Christian and Hopeful looked down, and saw at the bottom several men dashed all to pieces by a fall which they had from the top.

"'Then said the shepherds, "More than you see lie

dashed to pieces at the bottom of this mountain—and *have continued to this day unburied*, for an example to others to take heed how they clamber too high, or how they come too near to the brink of this mountain."'

"March 31, Saturday.—This month, badly as its daily record reads, is upon review a cheering one. We have managed to get enough game to revive the worst of our scurvy patients, and have kept in regular movement the domestic wheel of shipboard. Our troubles have been greater than at any time before; perhaps I ought to say they are greatest as the month closes: but, whatever of misery Bonsall and Petersen and myself may have endured, it seems nearly certain now that at least four men will soon be able to relieve us. Brooks, McGary, Riley, and Thomas, have seen the crisis of their malady, and, if secured from relapse, will recover rapidly. Ohlsen also is better, but slow to regain his powers. But the rest of the crew are still down.

"The game-season besides is drawing nearer; and, once able to shoot seal upon the ice, I have little fears for the recovery of the larger portion of our party. Perhaps I am too sanguine; for it is clear that those of us who have till now sustained the others are beginning to sink. Bonsall can barely walk in the morning, and his legs become stiffer daily; Petersen gives way at the ankles; and I suffer much from the eruption, a tormenting and anomalous symptom, which affects eight of our sick. It has many of the characteristics of exanthemata; but is singularly persistent, varied in its phases, and possibly in its result dangerous.

"The moral value of this toilsome month to myself has been the lesson of sympathy it has taught me with the laboring man. The fatigue and disgust and secret trials of the overworked brain are bad enough, but not to me more severe than those which follow the sick and jaded body to a sleepless bed. I have realized the sweat of the brow, and can feel how painful his earnings must be to whom the grasshopper has become a burden.

"April 2, Monday.—At eleven o'clock this morning Mr. Bonsall reported a man about a mile from the brig, apparently lurking on the ice-foot. I thought it was Hans, and we both went forward to meet him. As we drew closer we discovered our sledge and dog-team near where he stood; but the man turned and ran to the south.

"I pursued him, leaving Mr. Bonsall, who carried a Sharpe rifle, behind; and the man, whom I now recognised to be Godfrey, seeing me advance alone, stopped and met me. He told me that he had been to the south as far as Northumberland Island; that Hans was lying sick at Etah, in consequence of exposure; that he himself had made up his mind to go back and spend the rest of his life with Kalutunah and the Esquimaux; and that neither persuasion nor force should divert him from this purpose.

"Upon my presenting a pistol, I succeeded in forcing him back to the gangway of the brig; but he refused to go farther; and, being loath to injure him, I left him under the guardianship of Mr. Bonsall's weapon while

I went on board for irons; for both Bonsall and myself were barely able to walk, and utterly incapable of controlling him by manual force, and Petersen was out hunting: the rest, thirteen in all, are down with scurvy. I had just reached the deck, when he turned to run. Mr. Bonsall's pistol failed at the cap. I jumped at once to the gun-stand; but my first rifle, affected by the cold, went off in the act of cocking, and a second, aimed in haste at long but practicable distance, missed the fugitive. He made good his escape before we could lay hold of another weapon.

"I am now more anxious than ever about Hans. The past conduct of Godfrey on board, and his mutinous desertion, make me aware that he is capable of daring wrong as well as deception. Hans has been gone more than a fortnight: he has been used to making the same journey in less than a week. His sledge and dogs came back in the possession of the very man whom I suspected of an intention to waylay him; and this man, after being driven by menaces to the ship's side, perils his life rather than place himself in my power on board of her.

"Yet he came back to our neighborhood voluntarily, with sledge and dogs and walrus-meat! Can it have been that John, his former partner in the plot, was on the look-out for him, and had engaged his aid to consummate their joint desertion?

"One thing is plain. This man at large and his comrade still on board, the safety of the whole company exacts the sternest observance of discipline. I

have called all hands, and announced it as a standing order of the ship, and one to be observed inflexibly, that desertion, or the attempt to desert, shall be met at once by the sternest penalty. I have no alternative. By the body of my crew, sick, dependent, unable to move, and with every thing to lose by the withdrawal of any portion of our efficient force, this announcement was received as a guarantee of their personal safety. But it was called for by other grave considerations. There is at this time on the part of all, men as well as officers, a warm feeling toward myself, and a strict, stanch fidelity to the expedition. But, for moral reasons which would control me, even if my impulse were different, I am constrained for the time to mingle among them without reserve, to act as a servant to their wants, to encourage colloquial equality and good-humor; and, looking only a little way ahead to the juncture when a perfectly-regulated subordination will become essential, I know that my present stand will be of value.

"This sledge-load of Godfrey's meat, coming as it does, may well be called a Godsend: one may forgive the man in consideration of the good which it has done us all. We have had a regular feed all round, and exult to think we need no catering for the morrow. It has cheered our downhearted sick men wonderfully. Our brew of beer, too,—the 'Arctic Linseed Mucilage Adaptation,'—turns out excellent. Our grunts and growls are really beginning to have a good-natured twang. Our faces lessen as our shadows promise to

increase. I think I see a change which points to the happier future.

"Our sick, however, are still non-operatives, and our one room is like the convalescent ward of a hospital, with Bonsall and myself for the only nurses."

MESSARK—JUMPER-HOOD.

CHAPTER XLI.

ROUTINE—GETTING UP—BREAKFAST—WORK—TURNING IN—HANDS STILL MISSING—THE DETERMINATION.

"April 3, Tuesday.—To-day I detained Petersen from his hunt, and took a holiday rest myself,—that is to say, went to bed and——sweated: to-morrow I promise as much for Bonsall.

"While here in bed I will give the routine of a day in this spring-time of year:—

"At 7.30 call 'all hands;' which means that one of the well trio wakes the other two. This order is obeyed slowly. The commander confesses for himself that the breakfast is wellnigh upon table before he gets his stiff ankles to the floor. Looking around, he sees the usual mosaic of sleepers as ingeniously dovetailed and crowded together as the campers-out in a buffalo-bag. He winds his way through them, and, as he does so, some stereotyped remarks are interchanged. 'Thomas!'—our ex-cook, now side by side with the first officer of the expedition,—'Thomas, turn out!' 'Eugh-ng, sir.' 'Turn out; get up.' 'Ys-sir;' (sits bolt upright, and rubs his eyes.) 'How d'you feel, Mr.

Ohlsen?' 'Better, sir.' 'How 've you passed the night, Mr. Brooks?' 'Middlin', sir.' And, after a diversified series of spavined efforts, the mystical number forms its triangle at the table.

"It still stands in its simple dignity, an unclothed platform of boards, with a pile of plates in the centre. Near these is a virtuoso collection of cups grouped in a tumulus or cairn, commencing philosophically at the base with heavy stoneware, and ending with battered tin: the absolute pinnacle a debased dredging-box, which makes a bad goblet, being unpleasantly sharp at its rim. At one end of this table, partly hid by the beer-barrel, stands Petersen; at the side, Bonsall; and a lime-juice cask opposite marks my seat. We are all standing: a momentary hush is made among the sick; and the daily prayer comes with one heart:—'Accept our gratitude, and restore us to our homes.'

"The act of devotion over, we sit down, and look—not at the breakfast, but at each other.

"It may sound absurd to those who cannot understand the narrowing interest which we three availables feel in our continued mutual ability, for me to say that we spend the first five minutes in a detail of symptoms. The state of each man's gums and shins and ankles, his elbows, loins, and kidneys, is canvassed minutely and compared with his yesterday's report: the recital might edify a specialist who was anxious to register the Protean indications of scurvy. It is sometimes ludicrous, but always sad.

"Now for the bill of fare. 'Who cooked?'—I am describing a gala-day.—'It was Morton: he felt so much better that he got up at six; but he caved in soon after:'—

"First, coffee, great comforter to hard-worked men; one part of the genuine berry to three of navy-beans; next, sugar: what complex memories the word brings back!—the veritable sugar has been long ago defunct; but we have its representative molasses twice a week in our tea. Third, butter; there it is in a mutilated vegetable-dish; my own invention, melted from salt beef and washed in many waters: the unskilled might call it tallow. Fourth, a real delicacy, not to be surpassed in court or camp, for Morton was up to see to it:—a pile of hot rolls of fine Virginia flour. What else? Nothing else: the breakfast resolves itself into bean-coffee, tallow, and hot bread. Yet a cordial meal it is. I am sorry to hurry over it so uncourteously, for I could dwell with Charles Lamb's pensive enthusiasm upon the fleshpots; but I have been longer in describing the feast than it takes us to dispose of it. I hurry on with the interesting detail. Dinner is breakfast, with the beans converted into soup instead of coffee; and supper boasts of stewed apples.

"Work commences at nine. Petersen is off with his gun, and the two remaining dearly-beloved Rogers arrange their carte: one makes the round of the sick and deals out their daily allowance of raw meat; the other goes to cutting ice. Those who can sit in bed and work, pick eider-down or cotton, for coverlets to our

boat-bedding on the escape; others sew canvas bags for the same purpose; and Brooks balls off twine in order to lay up 'small stuff.'

"At times when the sun comes out very brightly, Brooks and Wilson get permission to go on deck. One of us assists them, and, by the aid of creeping and crawling, these poor cripples manage to sit upon the combings of the hatch and look around in the glorious daylight. The sight seldom fails to affect them. There are emotions among rude, roughly-nurtured men which vent themselves in true poetry. Brooks has about him sensibilities that shame me.

"The afternoon, save to the cook, is a season of rest; a real lazy, lounging interval, arrested by the call to supper. The coming night-watch obliges me to take an evening cat-nap. I state this by way of implying that I never sleep o' daytimes.

"After supper, we have a better state of things than two weeks ago. Then the few tired outworkers were regaled by the groans and tossings of the sick. There was little conversation, and the physiognomy of our smoke-blackened little den was truly dismal. Now daylight pours in from the scuttle, the tea-kettle sings upon the stove, the convalescents rise up on their elbows and spin merry yarns. We are not yet sufficiently jolly for cards; but we are sufficiently thankful to do without them. At nine, silence almost unbroken prevails throughout our dormitory, and the watch-officer slips on his bear-skin, and, full of thoughts of to-morrow, resigns himself to a round of little routine

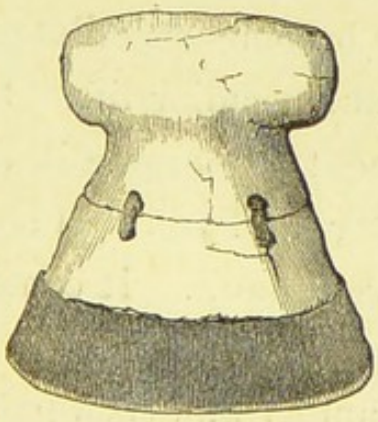
observances, the most worthless of which is this unbroken record of the changing days.

"April 6, Friday.—Our little family is growing more and more uneasy about Hans. William reported him sick at Etah; but we had no faith in this story, and looked on his absence as merely the result of fatigue from exposure. But there really seems ground for serious apprehension now. My own fear is that William may have conveyed to him some false message, or some threat or reproof, using my name, and in this way deterred him from returning. Hans is very faithful; but he is entirely unaware of William's desertion, and he is besides both credulous and sensitive. I am attached to Hans: he has always been a sort of henchman, a body-guard, the companion of my walks. He is a devout Moravian; and when the party withdrew from the brig last fall he refused to accompany them on grounds of religious obligation. The boy has fixed, honorable principles. Petersen thinks that he ought to be sent for, but he has not thought out the question who is to be sent. Bonsall is too lame to travel; Petersen himself is infinitely the best fitted, but he shirks the duty, and to-day he takes to his bed: I alone am left.

"Clearly duty to this poor boy calls me to seek him, and clearly duty to these dependent men calls upon me to stay. Long and uncomfortably have I pondered over these opposing calls, but at last have come to a determination. Hans was faithful to me: the danger to him is imminent; the danger to those left behind

only contingent upon my failure to return. With earnest trust in that same supervising Agency which has so often before in graver straits interfered to protect and carry me through, I have resolved to go after Hans.

"The orders are given. In three hours I will be equipped and ready to take advantage of the first practicable moment for the start. It makes me write gravely; for I am far from well, very far from strong, and am obliged to drive our reduced team twice seventy miles. The latter half of the journey I shall have to do entirely on foot, and our lowest night-temperatures are under —40°.



ESQUIMAUX WOMAN'S KNIFE.

CHAPTER XLII.

JOURNEY AFTER HANS — ESQUIMAUX SLEDGING — HANS FOUND — RECEPTO AMICO — EXPLANATION — FURTHER SEARCH — MATURING PLANS — CHANCES OF ESCAPE — FOOD PLENTY — PAULIK — FAMINE AMONG THE ESQUIMAUX — EXTINCTION — LIGHT HEARTS — DESERTER RECOVERED.

"April 10, Tuesday.—I left the brig at 10½ A.M., with but five dogs and a load so light as to be hardly felt.

"It requires some suggestive incident to show us how we have gradually become assimilated in our habits to the necessities of our peculiar life. Such an incident I find in my equipment. Compare it with similar sledge-outfits of last winter, and you will see that we are now more than half Esquimaux. It consists of—

"1. One small sledge, five feet six by two.

"2. An extra jumper and sack-pants for sleeping.

"3. A ball of raw walrus-meat.—This is all.

"The sledge is portable, and adapted to jump over the chasms of the land-ice, and to overturn with impunity, save to the luckless driver. It has two standards, or, as we call them, "up-standers," which spring like elbows from its hinder extremity.

"They serve as handles, by which, running or walking behind, you guide the sledge, lift it over rugged places, or rest yourself and your dogs while in progress together.

"The extra jumper is a bear-skin jacket, or rather shirt, which after being put on is overlapped at the waist by a large pair of footed trowsers. No winter traveller should be without these:—at temperatures below --25° or —30° they are invaluable. Blanket-

CAPE INGLEFIELD, (REFUGE HARBOR.)

bags are nearly useless below —30°, in a gale of wind; it riddles through them.

"The ball of raw meat is made by chopping into inch-pieces walrus or other meat, and pouring among it hot tallow, by which the pieces are prevented from freezing too hard, so that you can readily cut out your meal as it is required. A little butter, if you have some, will contribute to soften it: olive-oil perhaps would be better; but without some such luxurious additions a man in too great a hurry for dinner might be apt to risk his teeth. In the present journey,

having nothing but tallow, I made my meat-ball like a twist-loaf, and broke it with a stone.

"I have no incidents to record in the shape of disaster. My dogs were in excellent condition, and the ice good for travel. The real incident of the journey was its early success. My dogs, in spite of low feeding, carried me sixty-four miles in eleven hours.

"Faithful Hans! Dear good follower and friend! I was out on the floes just beyond the headlands of our old 'Refuge Harbor,' when I made out a black speck far in to shoreward. Refraction will deceive a novice on the ice; but we have learned to baffle refraction. By sighting the suspected object with your rifle at rest, you soon detect motion. It was a living animal—a man. Shoreward went the sledge; off sprang the dogs ten miles an hour, their driver yelling the familiar provocative to speed, 'Nannook! nannook!' 'A bear! a bear!' at the top of his lungs.

"There was no room for mistaking the methodical seal-stalking gait of Hans. He hardly varied from it as we came near; but in about fifteen minutes we were shaking hands and jabbering, in a patois of Esquimaux and English, our mutual news. The poor fellow had been really ill: five days down with severe pains of limbs have left him still a 'little veek;' which means with Hans well used up. I stuck him on the sledge and carried him to Anoatok.

"Fortunately Anoatok for once belied its name: there was no wind, and the sun broke down upon us with a genial +14°, although the shade gave —25°.

I had brought with me, expecting the boy might need it, a small mustard-bottle of our treasured molasses, and a little tea. We keep a camp-kettle at this hut, and both of us wore in our belts the inseparable tin-cup. How the boy enjoyed his hot tea! Metek had given him a few lumps of frozen walrus-liver, the very best provision for cold travel: our appetites were good; and, the two thus fitly harmonizing, we crunched away right merrily.

"Hans reached Etah with Myouk two days after leaving us, and at once commenced his hunt. In the course of five days of most hazardous ice-range, he killed two fine young animals; his three companions in the hunt killing only three. He had the great advantage of my powerful Marston rifle, but his tackle was very inferior. Our sinnet-laid twine would not stand the powerful struggles of the beast, and on one occasion parted while fast in a large female. Still his success must have acquired for him the good-will of these people, for in the 'flens' or hunting-division of spoil they gained by his companionship.

"In the sickness that followed his long exposure, he tells me, he was waited on most carefully at the settlement. A young daughter of Shunghu elected herself his nurse, and her sympathies and smiles have, I fear, made an impression on his heart which a certain damsel near Upernavik might be sorry to hear of.

"Hans cached part of his meat at Littleton Island, after sending a load by William to the brig. He had

no difficulty, I find, in penetrating this man's designs. He was indeed urged by him to agree that they should drive off together to the south and so leave us sledgeless. Upon Hans's refusal, he tried to obtain his rifle; but this of course was easily prevented. He consented at last to take up the meat, with a view of making

WALRUS CACHE.

terms with me and securing probably a companion Baffled in this, as I have mentioned, he made his escape a second time to Etah. There I might be content to leave him, an unwelcome guest, and dependent upon the Esquimaux. Strong and healthy as he is, our daily work goes on better for his absence, and the ship seems better when purged by his desertion; but the example is disastrous; and, cost what it may, I must have him back.

"April 11, Wednesday.—Hans started again to bring back the meat from Littleton Island cache. If he feels strengthened, I have given him a commission to which I attach the greatest importance.

"My hopes of again undertaking a spring journey to Kennedy Channel were strong in the early months of the winter; but, as our dogs died away a second time, and the scurvy crept in upon us, I became sad and distrustful as to the chance of our ever living to gain the open water. The return of the withdrawing party absorbed all my thoughts. They brought news of disaster, starvation, and loss of dogs, among the natives. Our prospects seemed at the lowest ebb. Still, I cherished a secret hope of making another journey, and had determined to undertake it alone with our poor remnant of four dogs, trusting to my rifle for provision. In fact, this continuation of my one great duty has been constantly before me, and I now think that I can manage it. Thus:—The Esquimaux have left Northumberland Island, and are now near Cape Alexander, as a better hunting-ground. Kalutunah, the best and most provident man among them, has managed to save seven dogs. I have authorized Hans to negotiate *carte-blanche*, if necessary, for four of these, even as a loan; promising as a final bait the contingent possession of my whole team when I reach the open water on my return. On this mission I send my '*fides Achates*,' and await his return with anxious hope.

"I have seen, almost from the first day of our im-

prisonment by the ice, the probability, if nothing more, that we might never be able to liberate the ship. Elsewhere in this journal I have explained by what construction of my duty I urged the brig to the north, and why I deemed it impossible honorably to abandon her after a single season. The same train of reasoning now leads me to mature and organize every thing for an early departure without her in case she cannot be released. My hopes of this release are very feeble; and I know that when it does occur, if ever, the season will, like the last, be too far advanced for me to carry my people home. All my experience, carefully reviewed from my note-books and confirmed by consultation with Petersen, convinces me that I must start early, and govern my boat and sledges by the condition of the ice and hunting-grounds.

"Whatever of executive ability I have picked up during this brain and body-wearing cruise warns me against immature preparation or vacillating purposes. I must have an exact discipline, a rigid routine, and a perfectly-thought-out organization. For the past six weeks I have, in the intervals between my duty to the sick and the ship, arranged the schedule of our future course. Much of it is already under way. My journal shows what I have done, but what there is to do is appalling.

"I state all this to show how much I hazard and possibly sacrifice by my intended journey to the north, and to explain why I have so little time and mood for scientific observation or research. My feelings may be

understood when I say that my carpenter and all the working men, save Bonsall, are still on their backs; and that a month's preliminary labor is needed before I can commence the heavy work of transporting my three boats over the ice to the anticipated water. At the moment of my writing this, the water is over eighty miles in a straight line from our brig.

"April 12, Thursday.—The wind still blowing as yesterday, from the southward and eastward. This is certainly favorable to the advance of open water. The long swell from the open spaces in Baffin's Bay has such a powerful effect upon the ice, that I should not wonder if the floes about Lifeboat Cove, off McGary Island, were broken up by the first of May.

"Our sick have been without fresh food since the 5th; but such is the stimulus imparted by our late supply that they as yet show no backward symptoms. McGary and Ohlsen and Brooks and Riley sun themselves daily, and are able to do much useful jobbing. Thomas begins to relieve me in cooking, Riley to take a spell at the slops, Morton cooks breakfast, and, aided by McGary and Ohlsen, has already finished one worsted quilted camp-blanket, with which I intend to cover our last remaining buffalo-skins. Wilson comes on slowly; Dr. Hayes's toe begins to heal; Sontag is more cheery. With the exception of Goodfellow, John, and Whipple, I can feel that those of my little household are fast becoming men again.

"April 13, Friday.—Our sick—which still means all hands except the cook, which means the captain—

entered this morning on their eighth day of fasting from flesh. One or two have been softening about the gums again for some days past, and all feel weak with involuntary abstinence. The evening comes, and 'Bim! bim! bim!' sounds upon the deck: Hans is back with his dogs. Rabbit-stew and walrus-liver!—a supper for a king!

"This life of ours—for we have been living much in this way for nine months past—makes me more charitable than I used to be with our Esquimaux neighbors. The day provides for itself; or, if it does not, we trust in the morrow, and are happy till to-morrow disappoints us. Our smoke-dried cabin is a scene worth looking at: no man with his heart in the right place but would enjoy it. Every man is elbowed up on his platform, with a bowl of rich gravy-soup between his knees and a stick of frozen liver at his side, gorging himself with the antiscorbutic luxuries, and laughing as if neither ice nor water was before him to traverse.

"Hans has brought Metek with him, and Metek's young nephew, a fine-looking boy of fourteen.

"I do not know whether I have mentioned that some little time before our treaty of alliance and mutual honesty Metek stole the gunwale of the Red Eric. He has been, of course, in something of uncertainty as to his political and personal relations, and his present visit to the nalegak with a noble sledge-load of walrus-meat is evidently intended as a propitiation for his wrong.

"They are welcome, the meat and Metek, abun-

dantly. He is the chieftain of Etah, and, as such, a vassal of him of Aūnatok, the 'Open Place,' which we have named Rensselaer Harbor. He speaks sadly, and so does Hans, of the fortunes of the winter.

PAULIK, METEK'S NEPHEW.

"The Netelik settlement on Northumberland Island was already, when we heard of it last, the refuge of the natives from the farther South, even beyond Wolstenholme. It has always been a hunting stronghold; but, as the winter darkness advanced, the pressure of numbers combined with their habitual improvidence to dissipate their supplies.

"It seems that the poor wretches suffered terribly,—even more than our neighbors of Etah Bay. Their laws exact an equal division; and the success of the best hunters was dissipated by the crowds of feeble claimants upon their spoils. At last the broken nature of the ice-margin and the freezing-up of a large zone of ice prevented them from seeking walrus. The water was inaccessible, and the last resource pressed itself upon them. They killed their dogs. Fearful as it sounds when we think how indispensable the services of these animals are to their daily existence, they cannot now number more than twenty in the entire ownership of the tribe. From Glacier South to Glacier North, from Glacier East to the rude icebound coast which completes the circuit of their little world, this nation have but twenty dogs. What can they hope for without them?

"I can already count eight settlements, including about one hundred and forty souls. There are more, perhaps, but certainly not many. Out of these I can number five deaths since our arrival; and I am aware of hardships and disasters encountered by the survivors, which, repeated as they must be in the future, cannot fail to involve a larger mortality. Crime combines with disease and exposure to thin their numbers: I know of three murders within the past two years; and one infanticide occurred only a few months ago. These facts, which are open to my limited sources of information, cannot, of course, indicate the number of deaths correctly. They confirm, however, a fearful conclusion

which these poor wretches have themselves communicated to us,—that they are dying out; not lingeringly, like the American tribes, but so rapidly as to be able to mark within a generation their progress toward extinction. Nothing can be more saddening, measured by our own sensibilities, than such a conviction; but it seems to have no effect upon this remarkable people. Surrounded by the graves of their dead, by huts untenanted yet still recent in their memory as homesteads, even by caches of meat which, frozen under the snow by the dead of one year, are eaten by the living of the next, they show neither apprehension nor regret. Even Kalutunah—a man of fine instincts, and, I think, of heart—will retain his apathy of face as, by the aid of Petersen, our interpreter, I point out to him the certainty of their speedy extinction. He will smile in his efforts to count the years which must obliterate his nation, and break in with a laugh as his children shout out their 'Amna Ayah' and dance to the tap of his drum.

"How wonderful is all this! Rude as are their ideas of numbers, there are those among this merry-hearted people who can reckon up to the fate of their last man.

"After Netelik, the receptacle of these half-starved fugitives, had been obliged itself to capitulate with famine, the body corporate determined, as on like occasions it had often done before, to migrate to the seats of the more northern hunt.

"The movements of the walrus and the condition of

the ice seem to be known to them by a kind of in stinct; so, when the light came, they harnessed in their reserve of dogs and started for Cape Alexander.

"It could not, one might suppose, have been a very cheerful migration,—women, children, and young babies thrusting themselves into a frozen wilderness at temperatures below —30°, and sometimes verging on —60°. But Hans, with a laugh that seemed to indicate some exquisite point of concealed appreciation of the ludicrous, said they travelled generally in squads, singing 'Amna Ayah,' and, when they reached any of the halting-huts, ate the blubber and liver of the owners and danced all night. So at last they came to Utak-soak, the 'great caldron,' which we call Cape Alexander, and settled down at Peteravik, or the 'Welcome Halt.'

"At first game was scarce here also; but the season came soon when the female walrus is tending her calf on the ice, and then, but for the protracted exposure of the hunt, there was no drawback to its success. They are desperately merry now, and seem to have forgotten that a second winter is ahead of them. Hans said, with one of his quiet laughs, 'One-half of them are sick and cannot hunt: these do nothing but eat, and sing "Amna Ayah."'

"April 18, Wednesday.—I am just off a two hundred miles' journey, bringing back my deserter, and, what is perhaps quite as important, a sledge-load of choice walrus-cuts.

"I found from Hans that his negotiation for the dogs

had failed, and that unless I could do something by individual persuasion I must give up my scheme of a closing exploration to the north. I learned too that Godfrey was playing the great man at Etah, defying recapture; and I was not willing to trust the influence he might exert on my relations with the tribe. I determined that he should return to the brig.

"I began by stratagem. I placed a pair of foot-cuffs on Metek's sledge, and, after looking carefully to my body-companion six-shooter, invited myself to ride back with him to Etah. His nephew remained on board in charge of Hans, and I disguised myself so well in my nessak that, as we moved off, I could easily have passed for the boy Paulik, whose place I had taken.

"As our eighty miles drew to an end, and that which we call the settlement came close in view, its population streamed out to welcome their chief's return. Among the first and most prominent was the individual whom I desired to meet, waving his hand and shouting 'Tima!' as loudly as the choicest savage of them all. An instant later and I was at his ear, with a short phrase of salutation and its appropriate gesture. He yielded unconditionally at once, and, after walking and running by turns for some eighty miles before the sledge, with a short respite at Anoatok, is now a prisoner on board.

"My remaining errand was almost as successful."

CHAPTER XLIII.

HARTSTENE BAY—ESQUIMAUX DWELLINGS—A CROWDED INTERIOR —THE NIGHT'S LODGING—A MORNING REPAST—MOURNING FOR THE DEAD—FUNERAL RITES—PENANCE.

ETAH is on the northeastern curve of Hartstene Bay, facing to the south and west. As you stretch over from the south point of Littleton Island to the main, the broken character of the ice subsides into a traversable plain, and the shore-scenery assumes a singular wildness. The bottom series of plutonics rises to grand and mountainous proportions, and in the background, soaring above these, are the escaladed greenstones of the more northern coast. At the very bottom of the bay are two perforations, one a fortress-mantled fiord, the other a sloping ravine: both are occupied by extensions of the same glacier.

The fiord points to Peteravik, where Kalutunah and his hungry southern corps have now taken up their quarters; the other is the oft-mentioned settlement of Etah. A snow-drift, rising at an angle of forty-five degrees till it mingles with the steep sides of a mountain, is dotted by two dark blemishes upon its pure

LIFE IN THE ESQUIMAUX IGLÖE

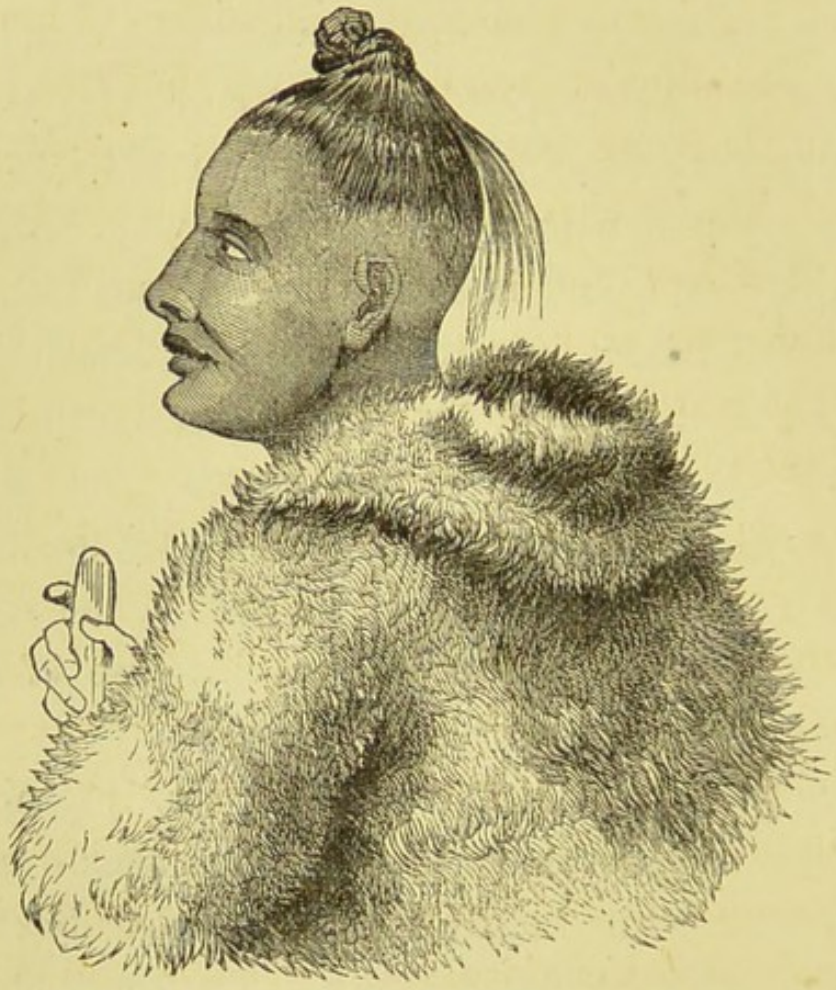
white. Coming nearer, you see that the dirt-spots are perforations of the snow: nearer still, you see above each opening a smaller one, and a covered roof connecting them. These are the doors and windows of the settlement; two huts and four families, but for these vent-holes entirely buried in the snow.

The inmates of the burrows swarmed around me as I arrived. "Nalegak! nalegak! tima!" was yelled in chorus: never seemed people more anxious to propitiate, or more pleased with an unexpected visit. But they were airily clad, and it blew a northwester; and they soon crowded back into their ant-hill. Meantime preparations were making for my in-door reception, and after a little while Metek and myself crawled in on hands and knees, through an extraordinary tossut thirty paces long. As I emerged on the inside, the salute of "nalegak" was repeated with an increase of energy that was any thing but pleasant.

There were guests before me,—six sturdy denizens of the neighboring settlement. They had been overtaken by the storm while hunting, and were already crowded upon the central dais of honor. They united in the yell of welcome, and I soon found myself gasping the ammoniacal steam of some fourteen vigorous, amply-fed, unwashed, unclothed fellow-lodgers. I had come somewhat exhausted by an eighty miles' journey through the atmosphere of the floes: the thermometer inside was at +90°, and the vault measured fifteen feet by six. Such an amorphous mass of compounded humanity one could see nowhere else: men, women,

children, with nothing but their native dirt to cover them, twined and dovetailed together like the worms in a fishing-basket.

No hyperbole could exaggerate that which in serious



PORTRAIT OF ANINGNAH.

earnest I give as the truth. The platform measured but seven feet in breadth by six in depth, the shape being semi-elliptical. Upon this, including children and excluding myself, were bestowed thirteen persons.

The kotluk of each matron was glowing with a flame sixteen inches long. A flipper-quarter of walrus, which

lay frozen on the floor of the netek, was cut into steaks; and the kolopsuts began to smoke with a burden of ten or fifteen pounds apiece. Metek, with a little amateur aid from some of the sleepers, emptied these without my assistance. I had the most cordial invitation to precede them; but I had seen enough of the culinary régime to render it impossible. I broke my fast on a handful of frozen liver-nuts that Bill brought me, and, bursting out into a profuse perspiration, I stripped like the rest, threw my well-tired carcass across Mrs. Eider-duck's extremities, put her left-hand baby under my armpit, pillowed my head on Myouk's somewhat warm stomach, and thus, an honored guest and in the place of honor, fell asleep.

Next morning, the sun nearly at noonday height, I awoke: Mrs. Eider-duck had my breakfast very temptingly ready. It was forked on the end of a curved piece of bone,—a lump of boiled blubber and a choice cut of meat. The preliminary cookery I had not seen: I am an old traveller, and do not care to intrude into the mysteries of the kitchen. My appetite was in its usual blessed redundance, and I was about to grasp the smiling proffer, when I saw the matron, who was manipulating as chief intendant of the other kotluk, performing an operation that arrested me. She had in her hand a counterpart of the curved bone that supported my *déjeuner*,—indeed, it is the universal implement of an Esquimaux cuisine; and, as I turned my head, I saw her quietly withdrawing it from beneath her dress, and then plunging it into the soup-pot

before her, to bring out the counterpart of my own smoking morsel. I learned afterward that the utensil has its two recognised uses; and that, when not immediately wanted for the purposes of pot or table, it ministers to the "royal luxury" of the Scottish king. I dare not amplify this description.

Dirt or filth in our sense is not a conceived quality with these Esquimaux. Incidentally it may be an annoyance or obstruction; but their nearest word, "Eberk," expresses no more than this.

It is an ethnological trait of these ultra-northern nomads,—so far as I know, a unique one; and must be attributed not alone to their predatory diet and peculiar domestic system, but to the extreme cold, which by rapid freezing resists putrefaction and prevents the joint accumulation of the dogs and the household from being intolerable. Their senses seem to take no cognizance of what all instinct and association make revolting to the sight and touch and smell of civilized man.

My note-book proves this by exact and disgusting details, the very mildest of which I cannot transfer to these pages.

I spent some time at Etah in examining the glacier and in making sketches of things about me. I met several old friends. Among the rest was Awahtok, only now recovering from his severe frost-bite, the effect of his fearful adventure with Myouk among the drifting ice. I gave him a piece of red flannel and powwowed him. He resides with Ootuniah in the

second hut, a smaller one than Metek's, with his pretty wife, a sister of Kalutunah's. I could hardly believe the infanticide story which Hans had told me of this young couple; and, pretending ignorance of the matter, I asked after the child's health. Their manner satisfied me that the story was true; they turned their hands downward, but without any sign of confusion. They did not even pay its memory the cheap compliment of tears, which among these people are always at hand.

There is a singular custom which I have often noticed here as well as among some of the Asiatics, and which has its analogies in more cultivated centres. I allude to the regulated formalities of mourning for the dead. They weep according to system; when one begins all are expected to join, and it is the office of courtesy for the most distinguished of the company to wipe the eyes of the chief mourner. They often assemble by concert for a general weeping-match; but it happens sometimes that one will break out into tears and others courteously follow, without knowing at first what is the particular subject of grief.

It is not, however, the dead alone who are sorrowed for by such a ceremony. Any other calamity may call for it as well: the failure of a hunt, the snapping of a walrus-line, or the death of a dog. Mrs. Eider-duck, *née* Small Belly, (Egurk,) once looked up at me from her kolupsut and burst into a gentle gush of wo. I was not informed of her immediate topic of thought, but with remarkable presence of mind I took out my

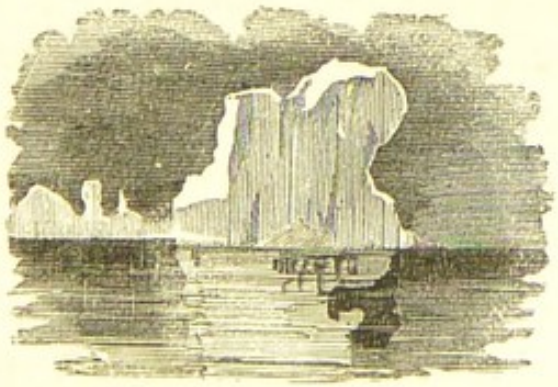
handkerchief,—made by Morton out of the body of an unused shirt,—and, after wiping her eyes politely, wept a few tears myself. This little passage was soon over; Mrs. Eider-duck returned to her kolupsut, and Nalegak to his note-book.

The ceremonial mourning, however, is attended sometimes, if not always, by observances of a more serious character. So far as my information goes, the religious notions of the Esquimaux extend only to the recognition of supernatural agencies, and to certain usages by which they may be conciliated. The angekok of the tribe—the prophet, as he is called among our Indians of the West—is the general counsellor. He prescribes or powwows in sickness and over wounds, directs the policy and movements of the little state, and, though not the titular chief, is really the power behind the throne. It is among the prerogatives and duties of his office to declare the appropriate oblations and penances of grief. These are sometimes quite oppressive. The bereaved husband may be required even to abstain from the seal- or walrus-hunt for the whole year, from *Okiakut* to *Okiakut*—winter to winter. More generally he is denied the luxury of some article of food, as the rabbit or a favorite part of the walrus; or he may be forbidden to throw back his nessak, and forced to go with uncovered head.

A sister of Kalutunah died suddenly at Peteravik. Her body was sewed up in skins, not in a sitting posture, like the remains which we found in the graves at the South, but with the limbs extended at full

length; and her husband bore her unattended to her resting-place, and covered her, stone by stone, with a rude monumental cairn. The blubber-lamp was kept burning outside the hut while the solitary funeral was in progress; and when it was over the mourners came together to weep and howl, while the widower recited his sorrows and her praise. His penance was severe, and combined most of the inflictions which I have described above.

It is almost as difficult to trace back the customs of the Smith's Sound Esquimaux as it is to describe their religious faith. They are a declining—almost an obsolete—people, "*toto orbe divisos*," and too much engaged with the necessities of the present to cherish memorials of the past. It was otherwise with those whom we met in the more southern settlements. These are now for the most part concentrated about the Danish posts, in very different circumstances, physical as well as moral, from their brethren of the North.



CHAPTER XLIV.

THE ESQUIMAUX OF GREENLAND — CHANGE OF CHARACTER — LABORS OF THE MISSIONARIES—NÖLUK—THE OMINAKS—PINGEIAK AND JENS — THE ANGEKOKS — HUSUTOKS — THE IMNAPOK — THE DECREE.

Some thirty years ago the small-pox found its way among the natives of the upper coast, and most of those who escaped or survived its ravages sought the protection of the colony. Others followed from the more inland regions; and now there is not an Esquimaux, from the Great Glaciers of Melville Bay down to Upernavik, who does not claim fellowship in that community.

We found traces of their former haunts much farther north than they appear to have been noticed by others; some of such a character as to indicate for them a tolerably recent date. I have already mentioned the deserted huts which we came upon in Shoal-Water Cove, in lat. 78° 27′, and the stone fox-traps upon the rocks near them. Other huts, evidently of Esquimaux construction, but very ancient, were found

on the in-shore side of Littleton Island; and among the cairns around them that had served to conceal provisions or that now covered the remains of the dead, were numerous implements of the chase.

The huts which I saw near Refuge Harbor, in lat. 78° 33′, were much more perfect, and had been inhabited very recently. From some of the marks which I have referred to in my journal, there was reason to suppose that the inmates might return before the opening of another season.

It was still otherwise with those that we met at Karsuk and elsewhere farther to the south. These, though retaining signs of comparatively modern habitation, were plainly deserted homes. I met at Upernavik an ancient woman, the latest survivor of the few who escaped from these settlements during the general pestilence.

The labors of the Lutheran and Moravian missionaries have been so far successful among these people that but few of them are now without the pale of professed Christianity, and its reforming influences have affected the moral tone of all. Before the arrival of these self-sacrificing evangelists, murder, incest, burial of the living, and infanticide, were not numbered among crimes. It was unsafe for vessels to touch upon the coast; treachery was as common and as much honored as among the Polynesians of the Eastern seas. Crantz tells us of a Dutch brig that was seized by the natives at the port of Disco, in 1740, and the whole crew murdered; and two years

later the same fate befell the seamen of another vessel that had accidentally stranded.

But for the last hundred years Greenland has been safer for the wrecked mariner than many parts of our own coast. Hospitality is the universal characteristic, enjoined upon the converted as a Christian duty, but everywhere a virtue of savage life. From Upernavik to Cape Farewell, the Esquimaux does not hesitate to devote his own meal to the necessities of a guest.

The benefits of the missionary school are not confined to the Christianized natives; and it is observable that the virtues of truth, self-reliance, and generous bearing, have been inculcated successfully with men who still cherish the wild traditionary superstitions of their fathers. Some of these are persons of strongly-marked character, and are trusted largely by the Danish officials. One of them, the nalegak-soak, or great chief, Nöluk, claims to have been the king or "head-man" of his people.

But among the native Greenlanders, as among other nomads, there seems to be no recognition of mastership except such as may be claimed by superiority of prowess. They have definite traditions of the organized games and exercises by which this superiority used to be authenticated. Indeed, the custom obtained until within the two last generations, and is traceable still in many of the periodical sports. Wrestling, jumping, tracking by the fingers or with hooked arms, pushing heel to heel in a sitting posture, dealing and receiving

alternate blows on the left shoulder, shooting farther and with the stronger bow, carrying the heavier stone the greater distance, were among their trials of strength. I have seen some of these stones at Fortuna Bay and Disco Fiord, which remain as they were left at the end of the contest, memorials of the athlete who sustained their weight.

Nöluk is a remarkably powerful man, and as straight and graceful as an Iroquois. He is now a grandfather by his second wife; but he is still the best hunter of the settlement, and disdains to comply with the usage which would transfer his dog-teams and apparatus of the hunt to his grown-up son. During the pestilence of 1820 he resided fifty-six miles north of Upernavik, at Tessiusak, in lat. 73° 36′: I have seen the ruins of his hut there. When all the families fled from the sick, Nöluk still drove his sledge homeward and deposited food regularly for his dying wife. On his last visit he saw her through the window a corpse, and his infant son sucking at her frozen breast. Parental instinct was mastered by panic: he made his way to the south without crossing the threshold.

Among the regal perquisites of the Nalegak-soak was the questionable privilege of having as many wives as he could support. Besides this, he had little except an imperfectly-defined claim to certain proceeds of the hunt. In old times, the subordinate Nalegaks, chieftains of minor settlements, held their office by a similar title of personal might among their immediate fellows; thus constituting something

like a system of feudal sovereignties without hereditary descent.

It is related, however, much as it is in histories with which we are more familiar, that the supremacy of the "Great Master" sometimes encountered rebuke from his barons. The Upernavik reindeer-hunters used to ascend the Salmon River, near Svartehuk, to a point from which by a single day's journey they could reach Okossisak, a hunting-station of the Ominaks. It so happened upon one occasion, when the Ominaks had been more than ordinarily successful in the chase, that a band of Upernaviks, with whom fortune had been less propitious, determined to pay them a predatory visit, attended by their great chief, the liege lord of both tribes. They found the Ominaks with their chief in company, a short chunky fellow, who proffered the accustomed hospitalities of his tent in true knightly style. But, in reply to the salutation "Be seated and eat," the Great Upernavik, whose companions were watching for their cue, gave a scowl, the reverse of the uniform formula of acceptance, which is simply to sit down and be filled. Hereupon old Ominak strung silently a heavy bow, and, drawing his arrow to the head, buried it in the narrow cleft of a distant rock, soliloquizing, as it struck, "He who is better than I am is my master." I give his words in the original for an exercise in phonetics: "Kinajougenerua," who is better, "Ovanöt," than I am; the rest of the sentence—"is my master"—being understood: an elliptical form of expression very common among these people, and often

aided by accompanying gestures. Thus euphoniously solicited, the Upernaviks sat down and ate, and, pronouncing the brief acknowledgment, "Thanks," which always ends a stranger's meal, went their way in peace.

The old practice which is found among some of the Asiatic and North American tribes, of carrying off the bride by force, is common among the Esquimaux, and reluctantly abandoned even by the converted. The ceremonial rite follows at the convenience of the parties. Jens, the son of my old friend Cristiansen at Pröven, came very nigh being left a bachelor by an exercise of this custom. He was not quite ready to perform the gallant function himself toward his lady-love, when a lusty rival, one Pingeiak, carried her off bodily in dead of night. The damsel made good fight, however, and, though the abduction was repeated three times over, she managed to keep her troth. In the result, Jens, as phlegmatic and stupid a half-breed as I ever met with, got the prettiest woman in all North Greenland. Pingeiak was the best hunter and had the largest tent, but Jens was the son of the head-man. I believe such things may come about in other parts of the world.

I remember other instances among parties whom I knew. A young aspirant for the favors of an unbaptized daughter of the settlement at Sever-nik got a companion to assist him, and succeeded in carrying her to his sledge. But the ruthless father had the quicker dog-team, and pursued with such ferocious alacrity that the unlucky devotee of ancient custom had to

clamber up a rocky gorge to escape his wrath, leaving the chosen one behind him. The report—for scandal is not frozen out of Greenland—makes the lady a willing eloper, and more courageous than her runaway lover.

The mysteries of the angekok, still so marked in their influence farther to the north, are not openly recognised near the Danish settlements. The last regular professor of them, Kenguit, was baptized at Pröven in 1844, changing his name to Jonathan Jeremias. But as you recede from the missionary influence the dark art is still practised in all its power.

A fact of psychological interest, as it shows that civilized or savage wonder-workers form a single family, is that the angekoks believe firmly in their own powers. I have known several of them personally, after my skill in pow-wow had given me a sort of correlative rank among them, and can speak with confidence on this point. I could not detect them in any resort to jugglery or natural magic: their deceptions are simply vocal, a change of voice, and perhaps a limited profession of ventriloquism, made more imposing by the darkness. They have, however, like the members of the learned professions everywhere else, a certain language or jargon of their own, in which they communicate with each other. Lieutenant-Governor Steffenson, who had charge of the Northern District up to 1829, and was an admirable student of every thing that regards these people, says that their artificial language is nothing but the ordinary dialect of the country, modified in the pronunciation, with some change in the import

of the words and the introduction of a few cabalistic terms.

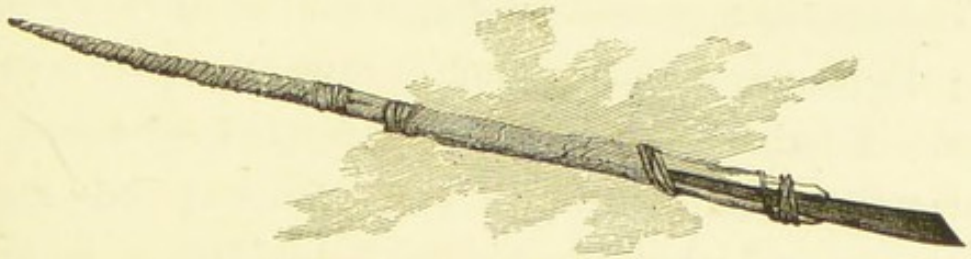
Besides the angekoks, who are looked up to as the hierophants or dispensers of good, they have the *issiutok*, or evil men, who work injurious spells, enchantments, metamorphoses. Like the witches of both Englands, the Old and the New, these malignants are rarely submitted to trial till they have been subjected to punishment—"castigat auditque." The finder of the Runic stone, old Pelemut, was one of them, and dealt with accordingly. Two others, only as far back as 1828, suffered the penalty of their crime on the same day, one at Karmenak, the other at Upernavik. This last was laudably killed after the "old customs," custom being the apology of the rude everywhere for things revolting to modern sense. He was first harpooned, then eviscerated, a flap let down from his forehead "to cover his eyes and prevent his seeing again," —he had the "evil eye," it might seem; and then small portions of his heart were eaten, so as to make it secure that he could not come back to earth unchanged. All this in accordance with venerated ritual.

The other, the Karmenak case, was that of an old sick man. He was dealt with more succinctly by his neighbor Kamokah, now old Tobias; who, at the instance of the issiutok family, pushed him into the sea after harpooning him, and then gave his flesh to the dogs. I have seen Tobias at Pröven, a Christianized man now, of very good repute, and, for aught I know, worthy of it.

The capital punishment with them, as with us, seems in general to be reserved for offences of the higher grade. For those of minor dignity, such as form the staple of our civilized forums, and even those which might find their way profitably into a court of honor, the *Imnapok* is the time-honored tribunal of redress. The original meaning of this word, I believe, is a native dance or singsong; but the institution which now bears the name is of much more dignity, and is found, with only circumstantial differences, among many other tribes within and beyond the Arctic circle.

An Esquimaux has inflicted an injury on one of his countrymen: he has cut his seal-lines, or harmed his dogs, or burnt his bladder-float, or perpetrated some enormity equally grievous. A summons comes to him from the angekok to meet the "country-side" at an Imnapok. The friends of the parties and the idlers of many miles around gather about the justice-seat, it may be at some little cluster of huts, or, if the weather permits, in the open air. The accuser rises and preludes a few discords with a seal-rib on a tom-tom or drum. He then passes to the charge, and pours out in long paragraphic words all the abuse and ridicule to which his outrageous vernacular can give expression. The accused meanwhile is silent; but, as the orator pauses after a signal hit or to flourish a cadence on his musical instrument, the whole audience, friends, neutrals, and opponents, signalize their approval by outcries as harmonious as those which we sometimes hear in our town-meetings at home. Stimulated by

the applause, and warming with his own fires, the accuser renews the attack; his eloquence becoming more and more licentious and vituperative, until it has exhausted either his strength or his vocabulary of invective. Now comes the accused, with defence and countercharge and retorted abuse; the assembly still listening and applauding through a lengthened session. The Homeric debate at a close, the angekoks hold a powwow, and a penalty is denounced against the accused for his guilt, or the accuser for his unsustained prosecution.



LANCE OF SEA-UNICORN.

CHAPTER XLV.

WALRUS-HUNTING—ESQUIMAUX HABITS—RETURN TO ETAH—PREPARING FOR ESCAPE—MAKING SLEDGES—DR. HAYES.

THE six storm-arrested strangers were off early in the morning: I sent messages of compliment by them to Kalutunah, inviting him to visit the brig; and in the afternoon Myouk and myself followed them to the floes for a walrus-hunt.

The walrus supplies the staple food of the Rensselaer Bay Esquimaux throughout the greater part of the year. To the south as far as Murchison Channel, the seal, unicorn, and white whale alternate at their appropriate seasons; but in Smith's Sound these last are accidental rather than sustained hunts.

The manner of hunting the walrus depends in a considerable degree on the season of the year. In the fall, when the pack is but partially closed, they are found in numbers, hanging around the neutral region of mixed ice and water, and, as this becomes solid with the advance of winter, following it more and more to the south.

The Esquimaux approach them then over the young ice, and assail them in cracks and holes with nalegeit and line. This fishery, as the season grows colder, darker, and more tempestuous, is fearfully hazardous: scarcely a year passes without a catastrophe. It was the theme of happy augury last winter, that no lives had been lost for some months before, and the angekoks even ventured to prophesy from it that the hunt would be auspicious,—a prophecy, like some others, hazarded after the event, for the ice had continued open for the walrus till late in December.

With the earliest spring, or, more strictly, about a month after the reappearance of the sun, the winter famine is generally relieved. January and February are often, in fact nearly always, months of privation; but during the latter part of March the spring fishery commences. Every thing is then life and excitement.

The walrus is now taken in two ways. Sometimes he has risen by the side of an iceberg, where the currents have worn away the floe, or through a tide-crack, and, enjoying the sunshine too long, finds his retreat cut off by the freezing up of the opening; for, like the seal at its attuk, the walrus can only work from below. When thus caught, the Esquimaux, who with keen hunter-craft are scouring the floes, scent him out by their dogs and spear him.

The early spring is the breeding-season, and the walrus then are in their glory. My observations show that they tenant the region throughout the entire year; but at this time the female, with her calf, is accompa-

nied by the grim-visaged father, surging in loving trios from crack to crack, sporting around the berg-water or basking in the sun. While thus on their tours, they invite their vigilant enemies to the second method of capture. This also is by the lance and harpoon; but it often becomes a regular battle, the male gallantly fronting the assault and charging the hunters with furious bravery. Not unfrequently the entire family, mother, calf, and bull, are killed in one of these contests.

The huts—those poor, miserable, snow-covered dens—are now scenes of life and activity. Stacks of jointed meat are piled upon the ice-foot; the women are stretching the hide for sole-leather, and the men cutting out a reserve of harpoon-lines for the winter. Tusky walrus-heads stare at you from the snow-bank, where they are stowed for their ivory; the dogs are tethered to the ice; and the children, each one armed with the curved rib of some big amphibion, are playing ball and bat among the drifts.

On the day of my arrival, four walrus were killed at Etah, and no doubt many more by Kalutak at Peteravik. The quantity of beef which is thus gained during a season of plenty, one might suppose, should put them beyond winter want; but there are other causes besides improvidence which make their supplies scanty. The poor creatures are not idle: they hunt indomitably, without the loss of a day. When the storms prevent the use of the sledge, they still work in stowing away the carcasses of previous hunts. An

excavation is made either on the mainland, or, what is preferred, upon an island inaccessible to foxes, and the jointed meat is stacked inside and covered with heavy stones. One such cache, which I met on a small island a short distance from Etah, contained the

CHILDREN PLAYING BALL.

flesh of ten walrus, and I know of several others equally large.

The excessive consumption is the true explanation of the scarcity. By their ancient laws all share with all; and, as they migrate in numbers as their necessities prompt, the tax on each particular settlement is

excessive. The quantity which the members of a family consume, exorbitant as it seems to a stranger, is rather a necessity of their peculiar life and organization than the result of inconsiderate gluttony. In active exercise and constant exposure to cold the waste of carbon must be enormous.

When in-doors and at rest, tinkering over their ivory harness-rings, fowl-nets, or other household-gear, they eat as we often do in more civilized lands—for animal enjoyment and to pass away time. But when on the hunt they take but one meal a day, and that after the day's labor is over; they go out upon the ice without breakfast, and, except the "cold cuts," which I confess are numerous, eat nothing until their return. I would average the Esquimaux ration in a season of plenty—it is of course a mere estimate, but I believe a perfectly fair one—at eight or ten pounds a day, with soup and water to the extent of half a gallon.

At the moment of my visit, when returning plenty had just broken in upon their famine, it was not wonderful that they were hunting with avidity. The settlements of the South seek at this season the hunting-ground above, and, until the seals begin to form their basking-holes, some ten days later, the walrus is the single spoil.

I incline to the opinion that these animals frequent the half-broken ice-margin throughout the year; for, after the season has become comparatively open, they are still found in groups, with their young, disporting in the leads and shore-water. They are, of course,

secure under such circumstances from the Esquimaux hunters of the Far North, who, not having the kayak of the more southern settlements, can only approach them on the ice.

In the late summer or "ausak," after all ice has melted, the walrus are in the habit of resorting to the rocks. They are then extremely alert and watchful; but the Esquimaux note their haunts carefully, and, concealing themselves in the clefts, await their approach with patient silence, and secure them by the harpoon and line.

My departure from Etah Bay was hastened by news from the brig. Hans brought me a letter from Dr. Hayes, while I was out walrus-hunting near Life-Boat Cove, which apprised me of the dangerous illness of Mr. McGary. I had a load of meat on my sledge, and was therefore unable to make good speed with my four tired dogs; but I rode and ran by turns, and reached the brig, after fifty miles' travel, in seven hours from the time of meeting Hans. I was thoroughly broken down by the effort, but had the satisfaction of finding that my excellent second officer had passed the crisis of his attack.

I left Hans behind me with orders to go to Peteravik and persuade Kalutunah to come to the brig, sending him a capstan-bar as a pledge of future largess,—invaluable for its adaptation to harpoon-shafts.

"April 19, Thursday.—The open water has not advanced from the south more than four miles within the past three weeks. It is still barely within Cape

Alexander. It is a subject of serious anxiety to me Our experience has taught us that the swell caused by these winds breaks up the ice rapidly. Now, there can be no swell to the southward, or these heavy gales would have done this now. It augurs ill not only for the possible release of the brig, but for the facility of our boat-voyage if we shall be obliged to forsake her, as every thing seems to say we must do soon. Last year, on the 10th of May, the water was free around Littleton Island, and coming up to within two miles of Refuge Inlet. It is now forty miles farther off!

"Petersen and Ohlsen are working by short spells at the boats and sledges.

"I will not leave the brig until it is absolutely certain that she cannot thaw out this season; but every thing shall be matured for our instant departure as soon as her fate is decided. Every detail is arranged; and, if the sick go on as they have done, I do not doubt but that we may carry our boats some thirty or forty miles over the ice before finally deciding whether we must desert the brig.

"April 20, Friday.—A relief-watch, of Riley, Morton, and Bonsall, are preparing to saw out sledge-runners from our cross-beams. It is slow work. They are very weak, and the thermometer sinks at night to —26°. Nearly all our beams have been used up for fuel; but I have saved enough to construct two long sledges of seventeen feet six inches each. I want a sledge sufficiently long to bring the weight of the whaleboat and her stowage within the line of the

runner: this will prevent her rocking and pitching when crossing hummocked ice, and enable us to cradle her firmly to the sledge.

"They are at this moment breaking out our cabin bulkhead to extract the beam. Our cabin-dormitory is full of cold vapor. Every thing is comfortless: blankets make a sorry substitute for the moss-padded wall which protected us from —60°.

"April 21, Saturday.—Morton's heel is nearly closed, and there is apparently a sound bone underneath. He has been upon his back since October. I can now set this faithful and valuable man to active duty very soon.

"The beam was too long to be carried through our hatches; we therefore have sawed it as it stands, and will carry up the slabs separately. These slabs are but one and a half inches wide, and must be strengthened by iron bolts and cross-pieces; still, they are all that we have. I made the bolts out of our cabin curtain-rods, long disused. Mr. Petersen aids Ohlsen in grinding his tools. They will complete the job to-morrow,—for we must work on Sunday now,—and by Monday be able to begin at other things. Petersen undertakes to manufacture our cooking and mess-gear. I have a sad-looking assortment of battered rusty tins to offer him; but with stove-pipe much may be done.

"April 22, Sunday.—Gave rest for all but the sawyers, who keep manfully at the beam. Some notion of our weakness may be formed from the fact

of these five poor fellows averaging among them but one foot per hour.

"I read our usual prayers; and Dr. Hayes, who feels sadly the loss of his foot, came aft and crawled upon deck to sniff the daylight. He had not seen the sun for five months and three weeks."

BERG-RAFT.

CHAPTER XLVI.

KALUTUNAH — THE HUNTING PARTY — SETTING OUT — MY TALLOW-BALL — A WILD CHASE — HUNTING STILL — THE GREAT GLACIER — THE ESCALADED STRUCTURE — FORMATION OF BERGS — THE VISCOUS FLOW — CREVASSES — THE FROZEN WATER-TUNNEL — CAPE FORBES — FACE OF GLACIER.

We continued toiling on with our complicated preparations till the evening of the 24th, when Hans came back well laden with walrus-meat. Three of the Esquimaux accompanied him, each with his sledge and dog-team fully equipped for a hunt. The leader of the party, Kalutunah, was a noble savage, greatly superior in every thing to the others of his race. He greeted me with respectful courtesy, yet as one who might rightfully expect an equal measure of it in return, and, after a short interchange of salutations, seated himself in the post of honor at my side.

I waited of course till the company had fed and slept, for among savages especially haste is indecorous, and then, after distributing a few presents, opened to them my project of a northern exploration. Kalutunah received his knife and needles with a "Kuyanaka," "I

thank you:" the first thanks I have heard from a native of this upper region. He called me his friend,—"Asakaoteet," "I love you well,"—and would be happy, he said, to join the "nalegak-soak" in a hunt.

PORTRAIT OF KALUTUNAH.

The project was one that had engaged my thoughts long before daylight had renewed the possibility of carrying it out. I felt that the farther shores beyond Kennedy Channel were still to be searched before our work could be considered finished; but we were without dogs, the indispensable means of travel. We had only four left out of sixty-two. Famine among the Esquimaux

had been as disastrous as disease with us: they had killed all but thirty, and of these there were now sixteen picketed on the ice about the brig. The aid and influence of Kalutunah could secure my closing expedition.

I succeeded in making my arrangements with him, provisionally at least, and the morning after we all set

KALUTUNAH'S PARTY.

out. The party consisted of Kalutunah, Shanghu, and Tatterat, with their three sledges. Hans, armed with the Marston rifle, was my only companion from the ship's company. The natives carried no arms but the long knife and their unicorn-ivory lances. Our whole equipment was by no means cumbersome: except the clothes upon our back and raw walrus-meat, we carried nothing. The walrus, both flesh and blubber, was cut into flat slabs half an inch thick and about as long

and wide as a folio volume. These when frozen were laid directly upon the cross-bars of the sledge, and served as a sort of floor. The rifle and the noonghak were placed on top, and the whole was covered by a well-rubbed bear-skin, strapped down by a pliant cord of walrus-hide.

Thus stowed, the sledge is wonderfully adapted to its wild travel. It may roll over and over, for it defies an upset; and its runners of the bones of the whale seem to bear with impunity the fierce shocks of the ice. The meat, as hard as a plank, is the driver's seat: it is secure from the dogs; and when it is wanted for a cold cut, which is not seldom, the sledge is turned upside-down, and the layers of flesh are hacked away from between the cross-bars.

We started with a wild yell of dogs and men in chorus, Kalutunah and myself leading. In about two hours we had reached a high berg about fifteen miles north of the brig. Here I reconnoitred the ice ahead. It was not cheering; the outside tide-channel, where I had broken through the fall before, was now full of squeezed ice, and the plain beyond the bergs seemed much distorted. The Esquimaux, nevertheless, acceded to my wish to attempt the passage, and we were soon among the hummocks. We ran beside our sledges, clinging to the upstanders, but making perhaps four miles an hour where, unassisted by the dogs, we could certainly have made but one. Things began to look more auspicious.

We halted about thirty miles north of the brig, after

edging along the coast about thirty miles to the eastward. Here Shanghu burrowed into a snow-bank and slept, the thermometer standing at —30°. The rest of us turned in to lunch; the sledge was turned over, and we were cutting away at the raw meat, each man for himself, when I heard an exclamation from Tatterat, an outlandish Esquimaux, who had his name from the Kittywake gull. He had found a tallow-ball, which had been hid away without my knowledge by my comrades for my private use. Instantly his knife entered the prized recesses of my ball, and, as the lumps of liver and cooked muscle came tossing out in delicate succession, Kalutunah yielded to the temptation, and both of them picked the savory bits as we would the truffles of a "Perigord pâté." Of necessity I joined the group, and took my share; but Hans, poor fellow, too indignant at the liberty taken with my provender, refused to share in the work of demolishing it. My ten-pound ball vanished nevertheless in scarcely as many minutes.

The journey began again as the feast closed, and we should have accomplished my wishes had it not been for the untoward influence of sundry bears. The tracks of these animals were becoming more and more numerous as we rounded one iceberg after another; and we could see the beds they had worn in the snow while watching for seal. These swayed the dogs from their course: yet we kept edging onward; and when in sight of the northern coast, about thirty miles from the central peak of the "Three Brothers," I saw a deep

band of stratus lying over the horizon in the direction of Kennedy Channel. This water-sky indicated the continued opening of the channel, and made me more deeply anxious to proceed. But at this moment our dogs encountered a large male bear in the act of devouring a seal. The impulse was irresistible: I lost all control over both dogs and drivers. They seemed dead to every thing but the passion of pursuit. Off they sped with incredible swiftness; the Esquimaux clinging to their sledges and cheering their dogs with loud cries of "Nannook!" A mad, wild chase, wilder than German legend,—the dogs, wolves; the drivers, devils. After a furious run, the animal was brought to bay; the lance and the rifle did their work, and we halted for a general feed. The dogs gorged themselves, the drivers did as much, and we buried the remainder of the carcass in the snow. A second bear had been tracked by the party to a large iceberg north of Cape Russell; for we had now travelled to the neighborhood of the Great Glacier. But the dogs were too much distended by their abundant diet to move: their drivers were scarcely better. Rest was indispensable.

We took a four hours' sleep on the open ice, the most uncomfortable that I remember. Our fatigue had made us dispense with the snow-house; and, though I was heavily clad in a full suit of furs, and squeezed myself in between Kalutunah and Shanghu, I could not bear the intense temperature. I rose in the morning stiff and sore. I mention it as a trait of nobleness on the part of Kalutunah, which I appre-

ciated very sensibly at the time, that, seeing me suffer, he took his kapetah from his back and placed it around my feet.

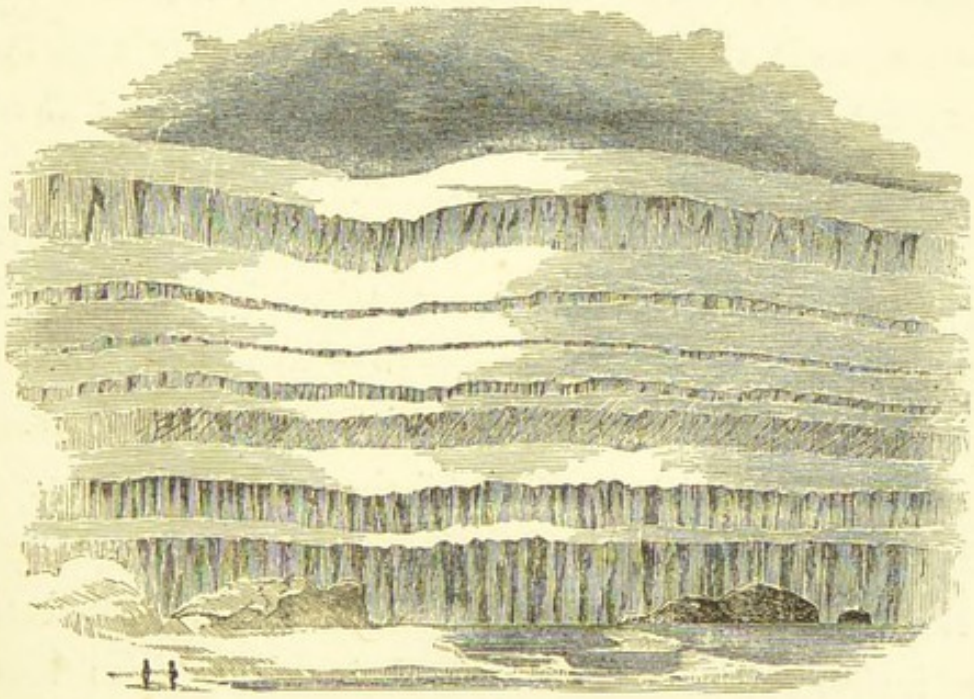
The next day I tried again to make my friends steer to the northward. But the bears were most numerous upon the Greenland side; and they determined to push on toward the glacier. They were sure, they said, of finding the game among the broken icebergs at the base of it. All my remonstrances and urgent entreaties were unavailing to make them resume their promised route. They said that to cross so high up as we then were was impossible, and I felt the truth of this when I remembered the fate of poor Baker and Schubert at this very passage. Kalutunah added, significantly, that the bear-meat was absolutely necessary for the support of their families, and that Nalegak had no right to prevent him from providing for his household. It was a strong argument, and withal the argument of the strong.

I found now that my projected survey of the northern coast must be abandoned, at least for the time. My next wish was to get back to the brig, and to negotiate with Metek for a purchase or loan of his dogs as my last chance. But even this was not readily gratified. All of Saturday was spent in bear-hunting. The natives, as indomitable as their dogs, made the entire circuit of Dallas Bay, and finally halted again under one of the islands which group themselves between the headlands of Advance Bay and at the base of the glacier.

Anxious as I was to press our return to the brig, I was well paid for my disappointment. I had not realized fully the spectacle of this stupendous monument of frost. I had seen it for some hours hanging over the ice like a white-mist cloud, but now it rose up before me clearly defined and almost precipitous. The whole horizon, so vague and shadowy before, was broken by long lines of icebergs; and as the dogs, cheered by the cries of their wild drivers, went on, losing themselves deeper and deeper in the labyrinth, it seemed like closing around us the walls of an icy world. They stopped at last; and I had time, while my companions rested and fed, to climb one of the highest bergs. The atmosphere favored me: the blue tops of Washington Land were in full view; and, losing itself in a dark water-cloud, the noble headland of John Barrow.

The trend of this glacier is a few degrees to the west of north. We followed its face afterward, edging in for the Greenland coast, about the rocky archipelago which I have named after the Advance. From one of these rugged islets, the nearest to the glacier which could be approached with any thing like safety, I could see another island larger and closer in shore, already half covered by the encroaching face of the glacier, and great masses of ice still detaching themselves and splintering as they fell upon that portion which protruded. Repose was not the characteristic of this seemingly solid mass; every feature indicated activity, energy, movement.

The surface seemed to follow that of the basis-country over which it flowed. It was undulating about the horizon, but as it descended toward the sea it represented a broken plain with a general inclination of some nine degrees, still diminishing toward the foreground. Crevasses, in the distance mere wrinkles, expanded as they came nearer, and were



THE ESCALADED STRUCTURE.

crossed almost at right angles by long continuous lines of fracture parallel with the face of the glacier.

These lines too, scarcely traceable in the far distance, widened as they approached the sea until they formed a gigantic stairway. It seemed as though the ice had lost its support below, and that the mass was let down from above in a series of steps. Such an action, owing to the heat derived from the soil, the

excessive surface-drainage, and the constant abrasion of the sea, must in reality take place. My note-book may enable me at some future day to develop its details. I have referred to this as the escaladed structure of the Arctic glacier.

The indication of a great propelling agency seemed to be just commencing at the time I was observing it. These split-off lines of ice were evidently in motion, pressed on by those behind, but still widening their fissures, as if the impelling action was more and more energetic nearer the water, till at last they floated away in the form of icebergs. Long files of these detached masses could be traced slowly sailing off into the distance, their separation marked by dark parallel shadows—broad and spacious avenues near the eye, but narrowed in the perspective to mere lines. A more impressive illustration of the forces of nature can hardly be conceived.

Regarded upon a large scale, I am satisfied that the iceberg is not disengaged by *debâcle*, as I once supposed. So far from falling into the sea, broken by its weight from the parent-glacier, it rises from the sea. The process is at once gradual and comparatively quiet. The idea of icebergs being discharged, so universal among systematic writers and so recently admitted by myself, seems to me now at variance with the regulated and progressive actions of nature. Developed by such a process, the thousands of bergs which throng these seas should keep the air and water in perpetual commotion, one fearful suc-

cession of explosive detonations and propagated waves. But it is only the lesser masses falling into deep waters which could justify the popular opinion. The enormous masses of the Great Glacier are propelled, step by step and year by year, until, reaching water capable of supporting them, they are floated off to be lost in the temperatures of other regions.

INDICATIONS OF VISCOUS FLOW.

The frozen masses before me were similar in structure to the Alpine and Norwegian ice-growths. It would be foreign to the character of this book to enter upon the discussion which the remark suggests; but it will be seen by the sketch, imperfect as it is, that their face presented nearly all the characteristic features of the Swiss Alps. The *overflow*, as I have called the viscous overlapping of the surface, was more clearly

marked than upon any Alpine glacier with which I am acquainted. When close to the island-rocks and looking out upon the upper table of the glacier, I was struck with the homely analogy of the batter-cake spreading itself out under the ladle of the housewife, the upper surface less affected by friction, and rolling forward in consequence.

The crevasses bore the marks of direct fracture and the more gradual action of surface-drainage. The extensive water-shed between their converging planes gave to the icy surface most of the hydrographic features of a river-system. The ice-born rivers which divided them were margined occasionally with spires of discolored ice, and generally lost themselves in the central arèas of the glacier before reaching its foreground. Occasionally, too, the face of the glacier was cut by vertical lines, which, as in the Alpine growths, were evidently outlets for the surface-drainage. Every thing was of course bound in solid ice when I looked at it; but the evidences of torrent-action were unequivocal, and Mr. Bonsall and Mr. Morton, at their visits of the preceding year, found both cascades and water-tunnels in abundance.

The height of this ice-wall at the nearest point was about three hundred feet, measured from the water's edge; and the unbroken right line of its diminishing perspective showed that this might be regarded as its constant measurement. It seemed, in fact, a great icy table-land, abutting with a clean precipice against the sea. This is indeed characteristic of all those Arctic

glaciers which issue from central reservoirs or *mers de glace* upon the fiords or bays, and is strikingly in contrast with the dependent or hanging glacier of the ravines, where every line and furrow and chasm seems

THE FROZEN WATER-TUNNEL.

to indicate the movement of descent and the mechanical disturbances which have retarded it.

I have named this great glacier after Alexander Von Humboldt, and the cape which flanks it on the Greenland coast after Professor Agassiz.

The point at which this immense body of ice enters

the Land of Washington gives even to a distant view impressive indications of its plastic or semi-solid character. No one could resist the impression of fluidity conveyed by its peculiar markings. I have named it Cape Forbes, after the eminent crystallogist whose views it so abundantly confirms.

CAPE FORBES.

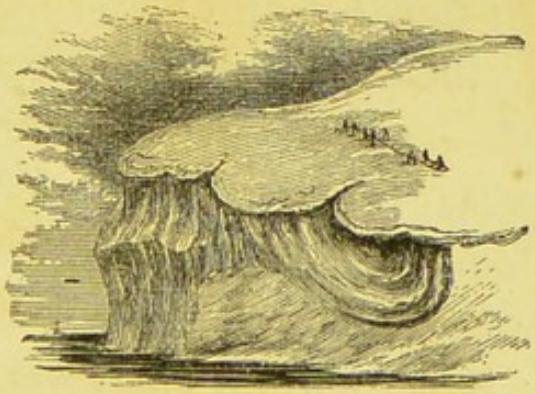
As the surface of the glacier receded to the south, its face seemed broken with piles of earth and rock-stained rubbish, till far back in the interior it was hidden from me by the slope of a hill. Still beyond this, however, the white blink or glare of the sky above showed its continued extension.

It was more difficult to trace its outline to the northward, on account of the immense discharges at its base. The talus of its descent from the interior, looking far

GREAT GLACIER OF HUMBOLDT.

off to the east, ranged from 7° to 15°, so broken by the crevasses, however, as to give the effect of an inclined plane only in the distance. A few black knobs rose from the white snow, like islands from the sea.

The general configuration of its surface showed how it adapted itself to the inequalities of the basis-country beneath. There was every modification of hill and valley, just as upon land. Thus diversified in its aspect, it stretches to the north till it bounds upon the new land of Washington, cementing into one the Greenland of the Scandinavian Vikings and the America of Columbus.



CHAPTER XLVII.

CAPE JAMES KENT—MARSHALL BAY—ICE-RAFTS—STRIATED BOULDERS—DALLAS BAY—ANTIQUITIES—THE BEAR-CHASE—THE BEAR AT BAY—THE SINGLE HUNT—TEETH-WOUNDS—THE LAST EFFORT—CLOSE OF THE SEARCH.

WHILE the Esquimaux were hunting about the bergs, I sat with my sketch-book, absorbed in the spectacle before me; but. seeing them come to a halt above the island, I gained the nearest sledge, and the whole party gathered together a few miles from the face of the glacier. Here Hans and myself crawled with Tatterat and his dogs into an impromptu snow-hut, and, cheered by our aggregated warmth, slept comfortably. Our little dome, or rather burrow, for it was scooped out of a drift—fell down in the night; but we were so worn out that it did not wake us.

On rising from a sleep in the open air, at a temperature of 12° below zero, the hunt was resumed along the face of the glacier, with just enough of success to wear out the dogs and endanger my chances of return to the

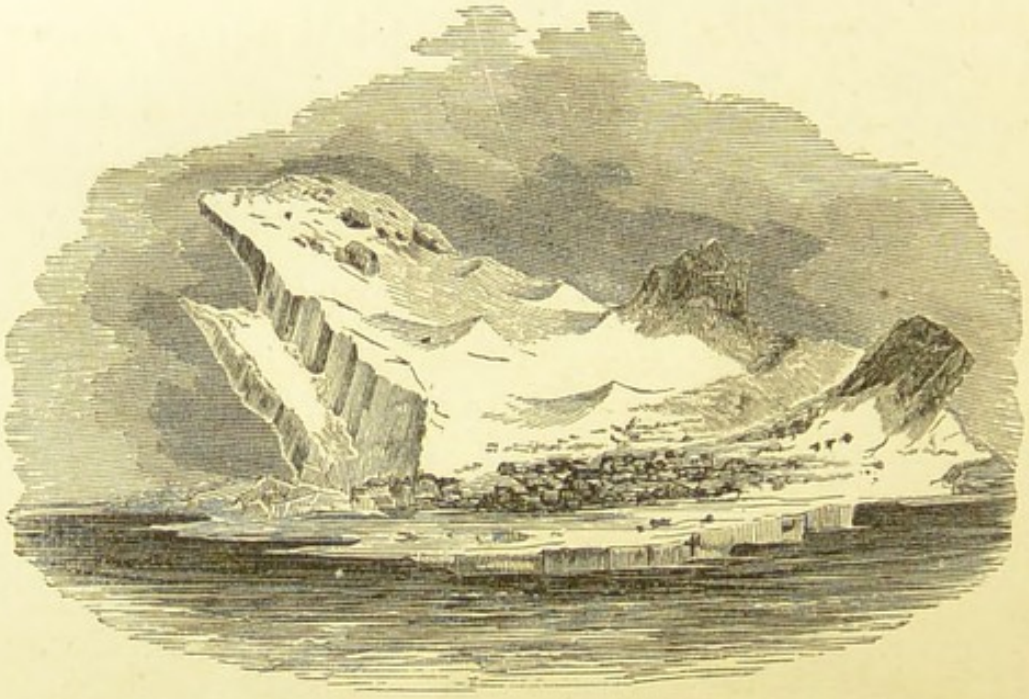
brig. In spite of the grandeur of the scenery and the noble displays of force exhibited by the falling bergs, my thoughts wandered back to the party I had left; and I was really glad when Kalutunah yielded to my re-

CAPE JAMES KENT.

newed persuasion and turned his team toward the ice-belt of the southeastern shore.

The spot at which we landed I have called Cape James Kent. It was a lofty headland, and the land-ice which hugged its base was covered with rocks from the cliffs above. As I looked over this ice-belt, losing itself

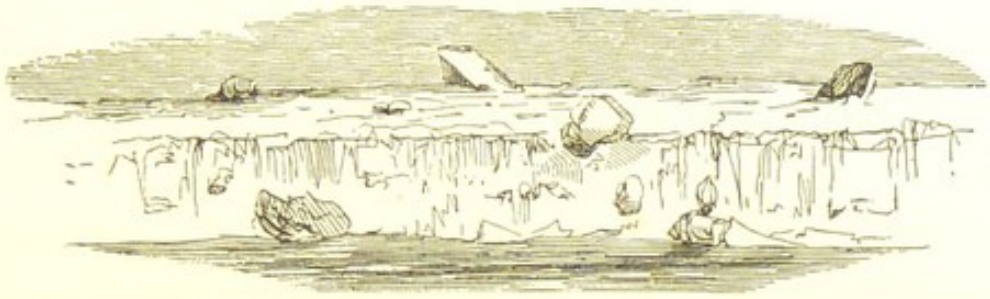
in the far distance, and covered with its millions of tons of rubbish, greenstones, limestones, chlorite slates, rounded and angular, massive and ground to powder, its importance as a geological agent in the transportation of drift struck me with great force. Its whole substance was studded with these varied contributions from the shore: and farther to the south, upon the now



ICE-RAFT.

frozen waters of Marshall Bay, I could recognise raft after raft from the last year's ice-belt, which had been caught by the winter, each one laden with its heavy freight of foreign material.

The water-torrents and thaws of summer unite with the tides in disengaging the ice-belt from the coast; but it is not uncommon for large bergs to drive against it and carry away the growths of many years. I have



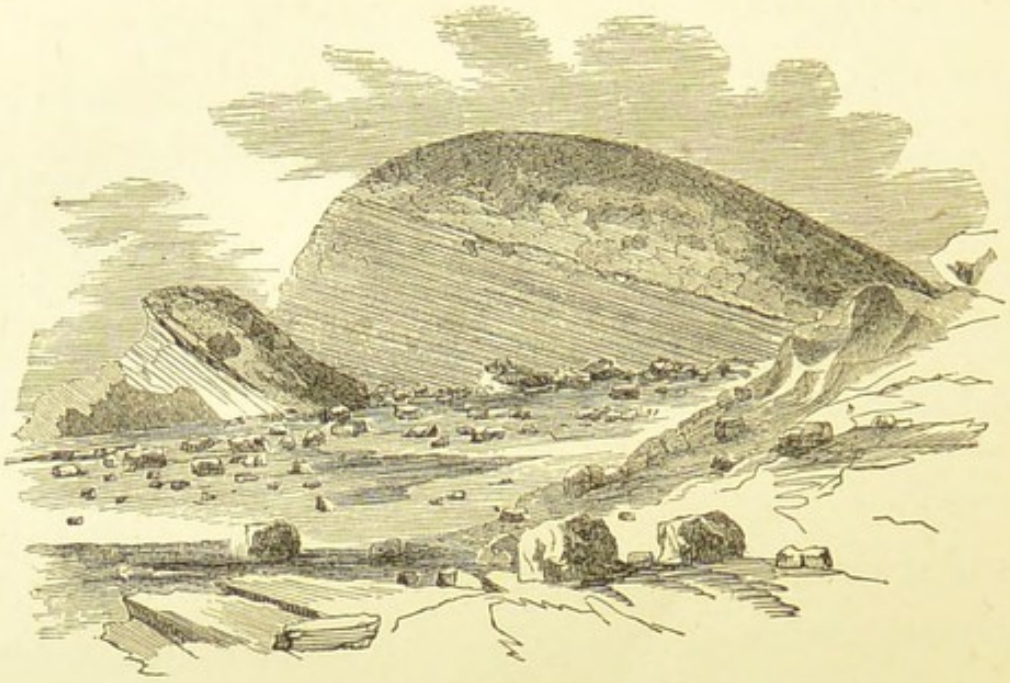
RAFT OF BELT-ICE.

found masses that had been detached in this way, floating many miles out to sea,—long, symmetrical tables, two hundred feet long by eighty broad, covered with large angular rocks and boulders, and seemingly impregnated throughout with detrited matter. These rafts in Marshall Bay were so numerous, that, could

RAFT OF SLATES.

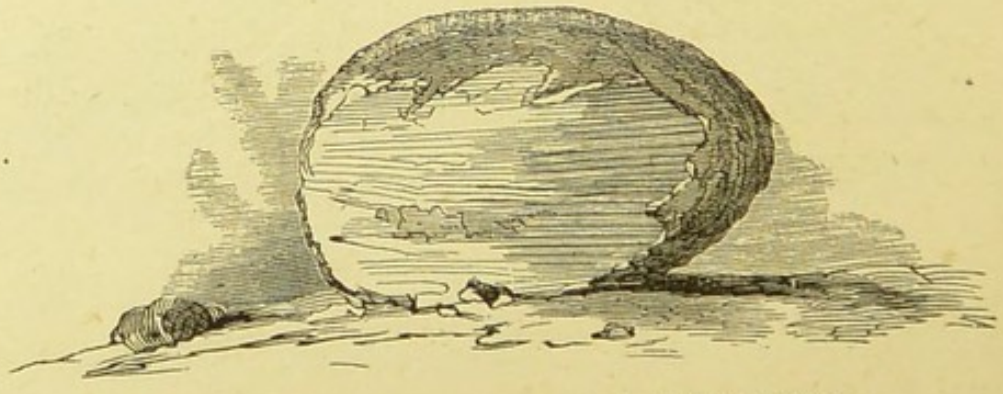
they have melted as I saw them, the bottom of the sea would have presented a more curious study for the geologist than the boulder-covered lines of our middle latitudes.

One in particular, a sketch of which I attach, had its origin in a valley where rounded fragments of water-



ROCHE MOUTONNEE, IN ICE-BELT.

washed greenstone had been poured out by the torrents and frozen into the coast-ice of the belt. The attrition of subsequent matter had truncated the great



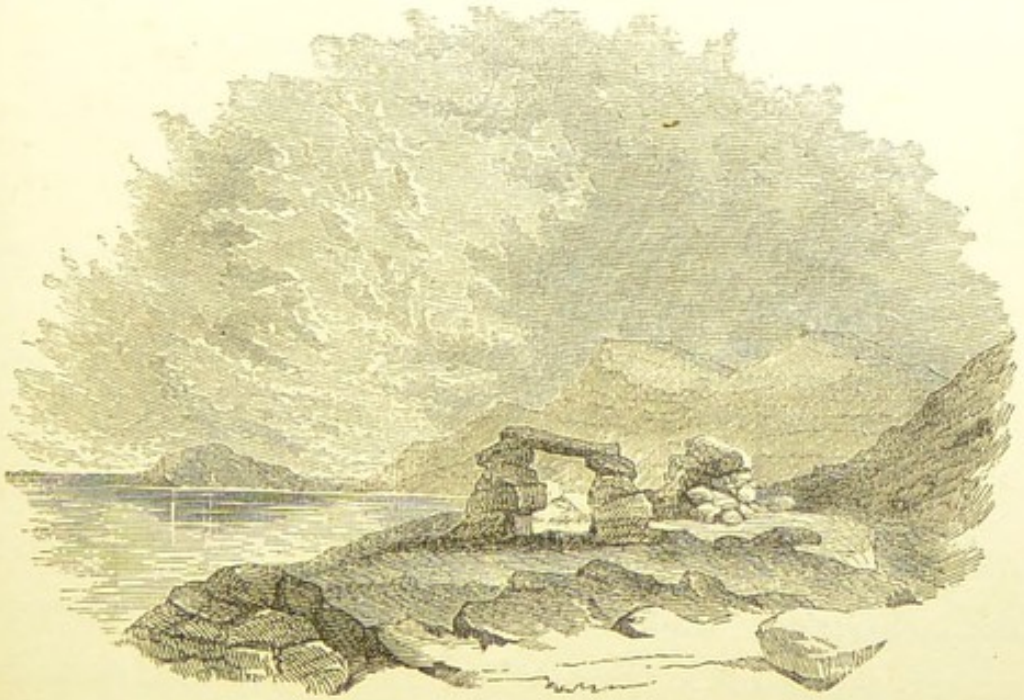
STRIATED BOULDER FROM MARY LEIPER FIORD.

egg-shaped rock, and worn its sides into a striated face, whose scratches still indicated the line of water-flow.

On the southeastern corner of this bay, where some

low islands at the mouth of the fiord formed a sort of protection against the north wind, was a group of Esquimaux remains,—huts, cairns, and graves. Though evidently long deserted, my drivers seemed to know all about them, for they suspended the hunt around the bergs to take a look at these evidences of a bygone generation of their fathers.

There were five huts, with two stone pedestals for the protection of meat, and one of those strange little kennels which serve as dormitories when the igloë is

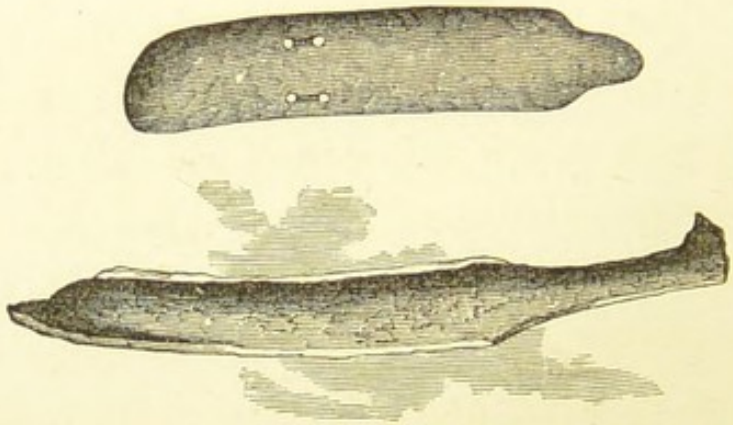


DALLAS BAY HUTS.

crowded. The graves were farther up the fiord: from them I obtained a knife of bone, but no indications of iron.

These huts stood high up, upon a set of shingle-terraces similar to those of Rensselaer Bay. The belt-ice at their foot was old, and undisturbed, and must have

been so for years; so too was the heavy ice of the bag. Yet around these old homesteads were bones of the seal and walrus, and the vertebræ of a whale similar to that at the igloë of Anoatok. There must have been both open water and a hunting-ground around them, and the huts had in former days been close upon this water-line. "Una suna nuna?" "What land is this, Kalutunah?" I did not understand his answer, which was long and emphatic; but I found from our



BONE KNIVES FROM PEABODY AND DALLAS BAYS.

interpreter that the place was still called "the inhabited spot;" and that a story was well preserved among them of a time when families were sustained beside its open water and musk-ox inhabited the hills. We followed the belt-ice, crossing only at the headlands of the bays, and arrived at the brig on the afternoon of Wednesday.

Our whole journey had been an almost unbroken and scarcely-varied series of bear-hunts. They had lost for me the attractions of novelty; but, like the

contests with the walrus, they were always interesting, because characteristic of this rude people.

The dogs are carefully trained not to engage in contest with the bear, but to retard his flight. While one engrosses his attention ahead, a second attacks him in the rear; and, always alert and each protecting the other, it rarely happens that they are seriously injured, or that they fail to delay the animal until the hunters come up.

Let us suppose a bear scented out at the base of an iceberg. The Esquimaux examines the track with sagacious care, to determine its age and direction, and the speed with which the animal was moving when he passed along. The dogs are set upon the trail, and the hunter courses over the ice at their side in silence. As he turns the angle of the berg his game is in view before him, stalking probably along with quiet march, sometimes snuffing the air suspiciously, but making, nevertheless, for a nest of broken hummocks. The dogs spring forward, opening in a wild wolfish yell, the driver shrieking "Nannook! nannook!" and all straining every nerve in pursuit.

The bear rises on his haunches, inspects his pursuers, and starts off at full speed. The hunter, as he runs, leaning over his sledge, seizes the traces of a couple of his dogs and liberates them from their burden. It is the work of a minute; for the motion is not checked, and the remaining dogs rush on with apparent ease.

Now, pressed more severely, the bear makes for an

iceberg and stands at bay, while his two foremost pursuers halt at a short distance and quietly await the arrival of the hunter. At this moment the whole pack are liberated; the hunter grasps his lance, and, tumbling through the snow and ice, prepares for the encounter.

THE BEAR AT BAY.

If there be two hunters, the bear is killed easily; for one makes a feint of thrusting a spear at the right side, and, as the animal turns with his arms toward the threatened attack, the left is unprotected and receives the death-wound.

But if there be only one hunter, he does not hesitate. Grasping the lance firmly in his hands, he provokes the animal to pursue him by moving rapidly across its path, and then running as if to escape. But

hardly is its long unwieldy body extended for the solicited chase, before with a rapid jump the hunter doubles on his track and runs back toward his first position. The bear is in the act of turning after him again when the lance is plunged into the left side below the shoulder. So dexterously has this thrust

THE SINGLE HUNT.

to be made, that an unpractised hunter has often to leave his spear in the side of his prey and run for his life. But even then, if well aided by the dogs, a cool, skilful man seldom fails to kill his adversary.

Many wounds are received by the Etah Bay Esquimaux in these encounters: the bear is looked upon as more fierce in that neighborhood, and about Anoatok and Rensselaer Bay, than around the broken ice to

the south. He uses his teeth much more generally than is supposed by systematic writers. The hugging, pawing, and boxing, which characterize the black and grisly bears, are resorted to by him only under peculiar circumstances. While wandering over his icy fields, he will rear himself upon his hind-legs to enlarge his circle of vision; and I have often seen him in this attitude pawing the air, as if practising for an apprehended conflict. But it is only when absolutely beset, or when the female is defending her cub, that the Polar bear shows fight upon its haunches. Among seven hunters who visited the brig last December, no less than five were scarred by direct teeth-wounds of bears. Two of these had been bit in the calves of the legs while running; and one, our friend Metek, had received a like dishonorable wound somewhat higher. Our dogs were seized by the nape of the neck and flung violently many paces to one side.

The bear-hunt ranks foremost among the exhibitions of personal prowess. My intelligent friend Kalutunah excelled in it. Shanghu, his principal associate, was also skilful as well as daring.

They both left the brig after a day's rest, fully laden with wood and other presents, and promising to engage Metek, if they could, to come up with his four dogs. They themselves engaged to loan me one dog from each of their teams. It pleased me to find that I had earned character with these people, at first so suspicious and distrustful. They left on board each man his dog, without a shade of doubt as to my good faith,

only begging me to watch the poor animals' feet, as the famine had nearly exterminated their stock.

The month of May had come. Metek, less confiding because less trustworthy than Kalutunah, did not bring his dogs, and my own exhausted team was in almost daily requisition to bring in supplies of food from Etah. Every thing admonished me that the time was at hand when we must leave the brig and trust our fortunes to the floes. Our preparations were well advanced, and the crew so far restored to health that all but three or four could take some part in completing them.

Still, I could not allow myself to pass away from our region of search without a last effort to visit the farther shores of the channel. Our communications with the Esquimaux, and some successful hunts of our own, had given us a stock of provisions for at least a week in advance. I conferred with my officers, made a full distribution of the work to be performed in my absence, and set out once more, with Morton for my only companion. We took with us the light sledge, adding the two borrowed dogs to our team, but travelling ourselves on foot. Our course was to be by the middle ice, and our hope that we might find it free enough from hummocks to permit us to pass.

My journal, written after our return, gives nothing but a series of observations going to verify and complete my charts. We struggled manfully to force our way through,—days and nights of adventurous exposure and recurring disaster,—and at last found our

way back to the brig, Morton broken down anew, and my own energies just adequate to the duty of supervising our final departure. I had neither time nor strength to expend on my diary.

The operations of the search were closed.

BEAR-HUNTING ON THE FLOES.

CHAPTER XLVIII.

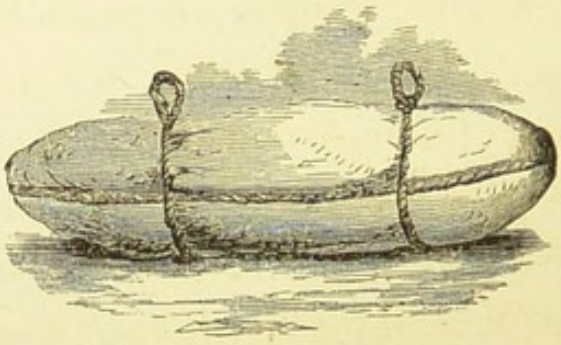
PREPARATIONS FOR ESCAPE—PROVISIONS—BOATS—THE SLEDGES—INSTRUMENTS AND ARMS—COOKING APPARATUS—TABLE FURNITURE—CRADLING THE BOATS—THE SLEDGES MOVING—THE RECREATION.

The detailed preparations for our escape would have little interest for the general reader; but they were so arduous and so important that I cannot pass them by without a special notice. They had been begun from an early day of the fall, and had not been entirely intermitted during our severest winter-trials. All who could work, even at picking over eider-down, found every moment of leisure fully appropriated. But since our party had begun to develop the stimulus of more liberal diet, our labors were more systematic and diversified.

The manufacture of clothing had made considerable progress. Canvas moccasins had been made for every one of the party, and three dozen were added as a common stock to meet emergencies. Three pairs of boots were allowed each man. These were generally of carpeting, with soles of walrus and seal hide; and

when the supply of these gave out, the leather from the chafing-gear of the brig for a time supplied their place. A much better substitute was found afterward in the gutta percha that had formed the speaking-tube. This was softened by warm water, cut into lengths, and so made available to its new uses. Blankets were served out as the material for body-clothing: every man was his own tailor.

For bedding, the woollen curtains that had formerly decorated our berths supplied us with a couple of large



PROVISION-SACK.

coverlets, which were abundantly quilted with eider-down. Two buffalo-robes of the same size with the coverlets were arranged so as to button on them, forming sleeping-sacks for the occasion, but easily detached for the purpose of drying or airing.

Our provision-bags were of assorted sizes, to fit under the thwarts of the boats. They were of sail-cloth made water-tight by tar and pitch, which we kept from penetrating the canvas by first coating it with flour-paste and plaster of Paris. The bread-bags were double, the inner saturated with paste and plaster by boiling in

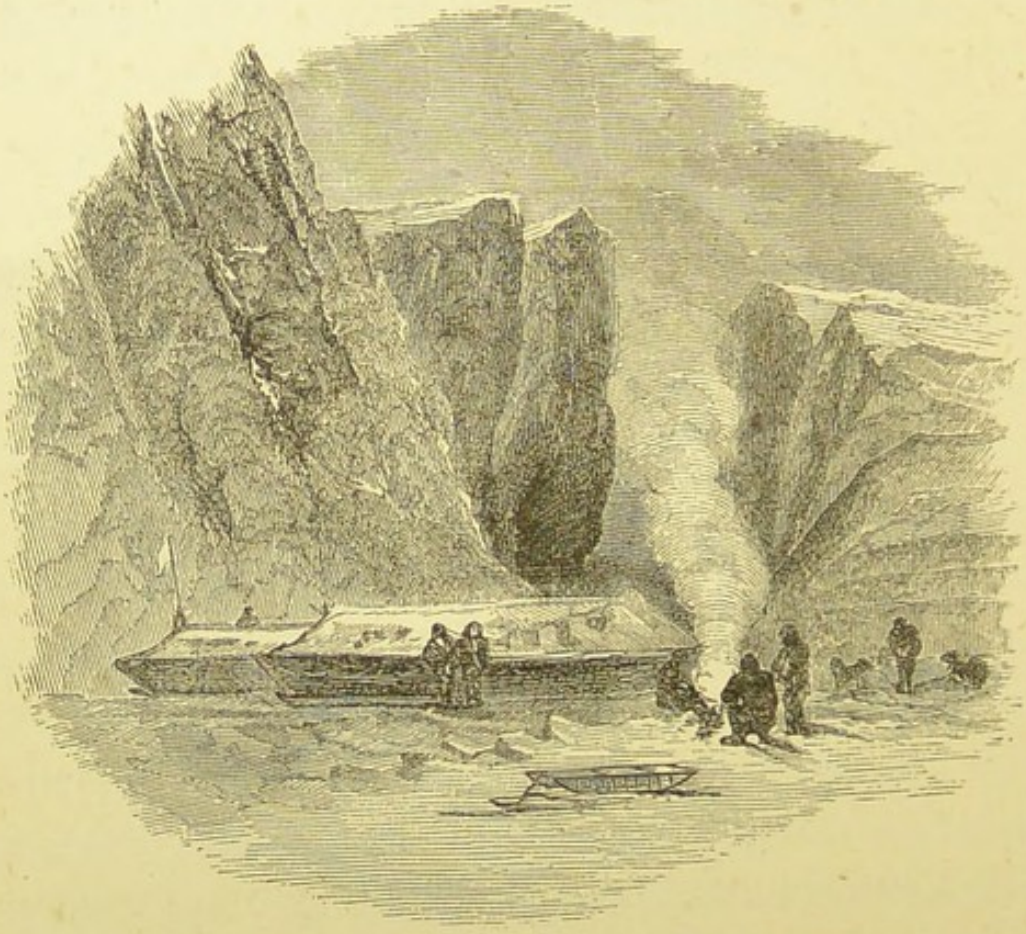
the mixture, and the space between the two filled with pitch. Every bag was, in sailor-phrase, roped and becketed; in ordinary parlance, well secured by cordage.

These different manufactures had all of them been going on through the winter, and more rapidly as the spring advanced. They had given employment to the thoughts of our sick men, and in this way had exerted a wholesome influence on their moral tone and assisted their convalescence. Other preparations had been begun more recently. The provisions for the descent were to be got ready and packed. The ship-bread was powdered by beating it with a capstan-bar, and pressed down into the bags which were to carry it. Pork-fat and tallow were melted down, and poured into other bags to freeze. A stock of concentrated bean-soup was cooked, and secured for carriage like the pork-fat; and the flour and remaining meat-biscuit were to be protected from moisture in double bags. These were the only provisions we were to carry with us. I knew I should be able to subsist the party for some time after their setting out by the food I could bring from the vessel by occasional trips with my dog-team. For the rest we relied upon our guns.

Besides all this, we had our camp-equipage to get in order, and the vitally-important organization of our system of boats and sledges.

Our boats were three in number, all of them well battered by exposure to ice and storm, almost as destructive of their sea-worthiness as the hot sun of other regions. Two of them were cypress whaleboats, twenty-

six feet long, with seven feet beam, and three feet deep. These were strengthened with oak bottom-pieces and a long string-piece bolted to the keel. A washboard of light cedar, about six inches high, served to strengthen



WHALEBOATS AND HOUSING

the gunwale and give increased depth. A neat housing of light canvas was stretched upon a ridge-line sustained fore and aft by stanchions, and hung down over the boat's sides, where it was fastened (stopped) to a jack-stay. My last year's experience on the attempt to reach Beechy Island determined me to carry but

one mast to each boat. It was stepped into an oaken thwart, made especially strong, as it was expected to carry sail over ice as well as water: the mast could be readily unshipped, and carried, with the oars, boat-hooks, and ice-poles, alongside the boat. The third boat was my little Red Eric. We mounted her on the old sledge, the "Faith," hardly relying on her for any purposes of navigation, but with the intention of cut-

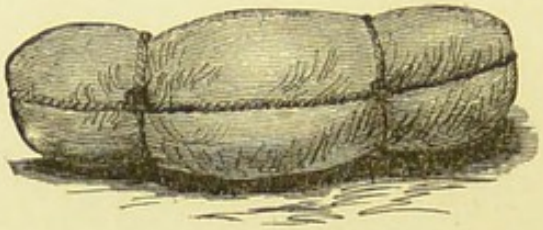
RED ERIC—PREPARATIONS FOR ESCAPE.

ting her up for firewood in case our guns should fail to give us a supply of blubber.

Indeed, in spite of all the ingenuity of our carpenter, Mr. Ohlsen, well seconded by the persevering labors of McGary and Bonsall, not one of our boats was positively sea-worthy. The "Hope" would not pass even charitable inspection, and we expected to burn her on reaching water. The planking of all of them was so dried up that it could hardly be made tight by calking.

The three boats were mounted on sledges rigged with rue-raddies; the provisions stowed snugly under

the thwarts; the chronometers, carefully boxed and padded, placed in the stern-sheets of the Hope, in charge of Mr. Sontag. With them were such of the instruments as we could venture to transport. They consisted of two Gambey sextants, with artificial horizon, our transit-unifilar, and dip-instruments. Our glasses, with a few of the smaller field-instruments, we carried on our persons. Our fine theodolite we were forced to abandon.

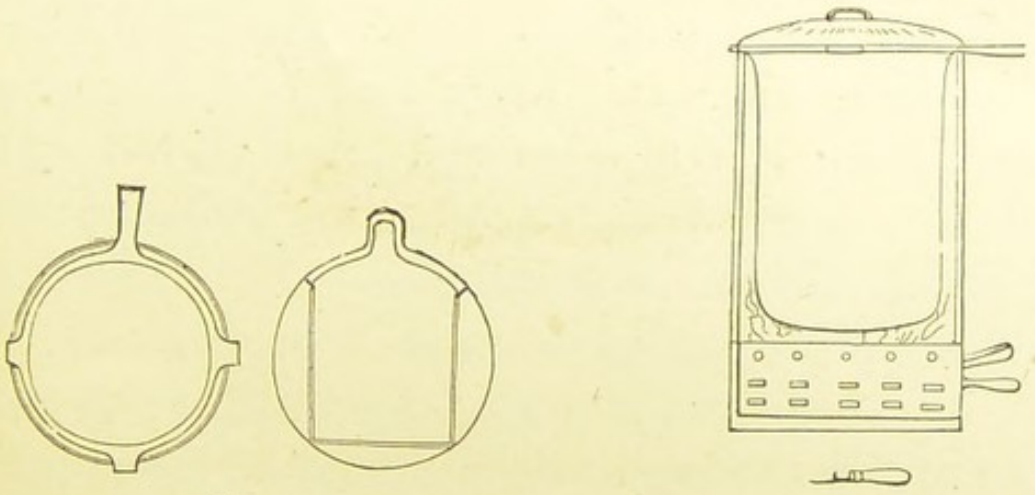


MEAT-BISCUIT CASE.

Our powder and shot, upon which our lives depended, were carefully distributed in bags and tin canisters. The percussion-caps I took into my own possession, as more precious than gold. Mr. Bonsall had a general charge of the arms and ammunition. Places were arranged for the guns, and hunters appointed for each boat. Mr. Petersen took charge of the most important part of our field-equipage, our cooking-gear. Petersen was our best tinker. All the old stove-pipe, now none the better for two winters of Arctic fires, was called into requisition. Each boat was provided with two large iron cylinders, fourteen inches in diameter and eighteen high. Each of them held an iron saucer or lamp, in which we could place our melted pork-fat or

blubber, and, with the aid of spun-yarn for a wick, make a roaring fire. I need not say that the fat and oil always froze when not ignited.

Into these cylinders, which were used merely to defend our lamp from the wind and our pots from contact with the cold air, we placed a couple of large tin vessels, suitable either for melting snow or making tea or soup. They were made out of cake-canisters cut



Plan. *Elevation.*

COOKING APPARATUS.

down. How many kindly festival associations hung by these now abused soup-cans! one of them had, before the fire rubbed off its bright gilding, the wedding-inscription of a large fruit-cake.

We carried spare tins in case the others should burn out: it was well we did so. So completely had we exhausted our household furniture, that we had neither cups nor plates, except crockery. This, of course, would not stand the travel, and our spare tin had to be saved for protecting the boats from ice. At this

juncture we cut plates out of every imaginable and rejected piece of tinware. Borden's meat-biscuit canisters furnished us with a splendid dinner-service; and some rightly-feared tin jars, with ominous labels of Corrosive Sublimate and Arsenic, which once belonged to our department of Natural History, were emptied, scoured, and cut down into tea-cups.

Recognising the importance of acting directly upon the men's minds, my first step now was to issue a general order appointing a certain day, the 17th of May, for setting out. Every man had twenty-four hours given him to select and get ready his eight pounds of personal effects. After that, his time was to cease to be his own for any purpose. The long-indulged waywardness of our convalescents made them take this hardly. Some who were at work on articles of apparel that were really important to them threw them down unfinished, in a sick man's pet. I had these in some cases picked up quietly and finished by others. But I showed myself inexorable. It was necessary to brace up and concentrate every man's thoughts and energies upon the one great common object,—our departure from the vessel on the 17th, not to return.

I tried my best also to fix and diffuse impressions that we were going home. But in this I was not always successful: I was displeased, indeed, with the moody indifference with which many went about the tasks to which I put them. The completeness of my preparations I know had its influence; but there were many doubters. Some were convinced that my

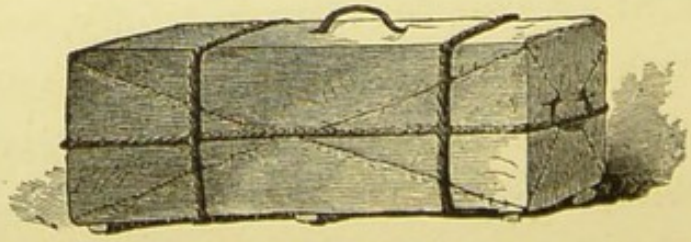
only object was to move farther south, retaining the brig, however, as a home to retreat to. Others whispered that I wanted to transport the sick to the hunting-grounds and other resources of the lower settlements, which I had such difficulty in preventing the mutinous from securing for themselves alone. A few of a more cheerful spirit thought I had resolved to make for some point of look-out, in the hope of a rescue by whalers or English expedition-parties which were supposed still to be within the Arctic circle. The number is unfortunately small of those human beings whom calamity elevates.

There was no sign or affectation of spirit or enthusiasm upon the memorable day when we first adjusted the boats to their cradles on the sledges and moved them off to the ice-foot. But the ice immediately around the vessel was smooth; and, as the boats had not received their lading, the first labor was an easy one. As the runners moved, the gloom of several countenances was perceptibly lightened. The croakers had protested that we could not stir an inch. These cheering remarks always reach a commander's ears, and I took good care of course to make the outset contradict them. By the time we reached the end of our little level, the tone had improved wonderfully, and we were prepared for the effort of crossing the successive lines of the belt-ice and forcing a way through the smashed material which interposed between us and the ice-foot.

This was a work of great difficulty, and sorrowfully exhausting to the poor fellows not yet accustomed to

heave together. But in the end I had the satisfaction, before twenty-four hours were over, of seeing our little arks of safety hauled upon the higher plane of the ice-foot, in full trim for ornamental exhibition from the brig; their neat canvas housing rigged tent-fashion over the entire length of each; a jaunty little flag, made out of one of the commander's obsolete linen shirts, decorated in stripes from a disused article of stationery, the red-ink bottle, and with a very little of the blue-bag in the star-spangled corner. All hands after this returned on board: I had ready for them the best supper our supplies afforded, and they turned in with minds prepared for their departure next day.

They were nearly all of them invalids, unused to open air and exercise. It was necessary to train them very gradually. We made but two miles the first day, and with a single boat; and indeed for some time after this I took care that they should not be disheartened by overwork. They came back early to a hearty supper and warm beds, and I had the satisfaction of marching them back each recurring morning refreshed and cheerful. The weather, happily, was superb.



DOCUMENT-BOX.

CHAPTER XLIX.

THE PLEDGES — THE ARGUMENT — FAREWELL TO THE BRIG — THE MUSTER — THE ROUTINE — THE MESSES.

Our last farewell to the brig was made with more solemnity. The entire ship's company was collected in our dismantled winter-chamber to take part in the ceremonial. It was Sunday. Our moss walls had been torn down, and the wood that supported them burned. Our beds were off at the boats. The galley was unfurnished and cold. Every thing about the little den of refuge was desolate.

We read prayers and a chapter of the Bible; and then, all standing silently round, I took Sir John Franklin's portrait from its frame and cased it in an India-rubber scroll. I next read the reports of inspection and survey which had been made by the several commissions organized for the purpose, all of them testifying to the necessities under which I was about to act. I then addressed the party: I did not affect to disguise the difficulties that were before us; but I assured them that they could all be overcome by energy and subor-

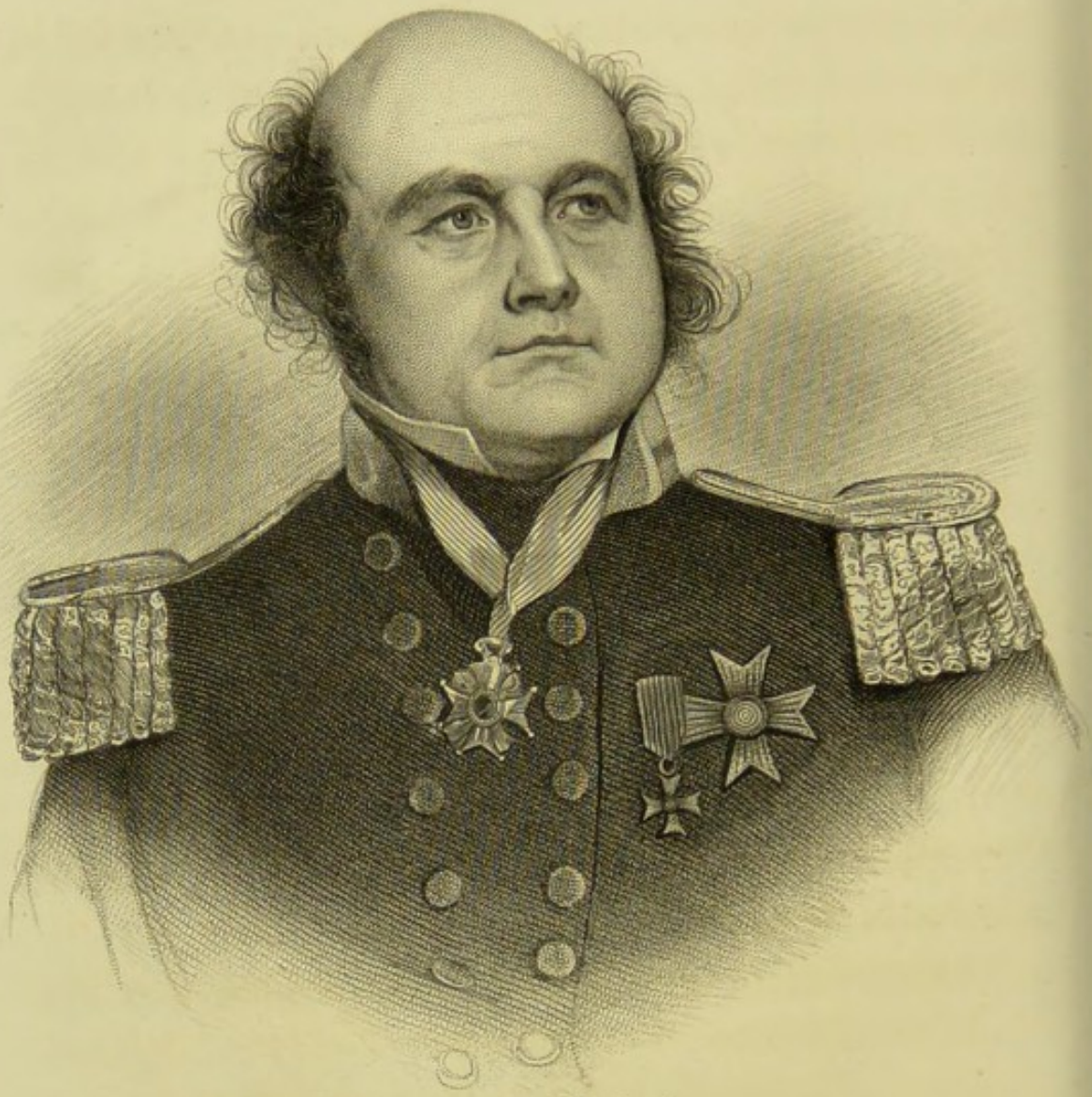
dination to command: and that the thirteen hundred miles of ice and water that lay between us and North Greenland could be traversed with safety for most of us, and hope for all. I added, that as men and messmates it was the duty of us all, enjoined by gallantry as well as religion, to postpone every consideration of self to the protection of the wounded and sick; and that this must be regarded by every man and under all circumstances as a paramount order. In conclusion, I told them to think over the trials we had all of us gone through, and to remember each man for himself how often an unseen Power had rescued him in peril, and I admonished them still to place reliance on Him who could not change.

I was met with a right spirit. After a short conference, an engagement was drawn up by one of the officers, and brought to me with the signatures of all the company, without an exception. It read as follows:—

"Second Grinnell Expedition,
"Brig Advance, May 20, 1855.

"The undersigned, being convinced of the impossibility of the liberation of the brig, and equally convinced of the impossibility of remaining in the ice a third winter, do fervently concur with the commander in his attempt to reach the South by means of boats.

"Knowing the trials and hardships which are before us, and feeling the necessity of union, harmony, and discipline, we have determined to abide faithfully by



Engraved by R. Whitechurch.

SIR JOHN FRANKLIN, CAPT R.N

John Franklin

the expedition and our sick comrades, and to do all that we can, as true men, to advance the objects in view.

Henry Brooks,	J. Wall Wilson,
James McGary,	Amos Bonsall,
George Riley,	I. I. Hayes,
William Morton,	August Sontag,
C. Ohlsen,	&c. &c."

I had prepared a brief memorial of the considerations which justified our abandonment of the vessel, and had read it as part of my address. I now fixed it to a stanchion near the gangway, where it must attract the notice of any who might seek us hereafter, and stand with them as my vindication for the step, in case we should be overtaken by disaster. It closed with these words:—

"I regard the abandonment of the brig as inevitable. We have by actual inspection but thirty-six days' provisions, and a careful survey shows that we cannot cut more firewood without rendering our craft unseaworthy. A third winter would force us, as the only means of escaping starvation, to resort to Esquimaux habits and give up all hope of remaining by the vessel and her resources. It would therefore in no manner advance the search after Sir John Franklin.

"Under any circumstances, to remain longer would be destructive to those of our little party who have already suffered from the extreme severity of the climate and its tendencies to disease. Scurvy has

enfeebled more or less every man in the expedition, and an anomalous spasmodic disorder, allied to tetanus, has cost us the life of two of our most prized comrades.

"I hope, speaking on the part of my companions and myself, that we have done all that we ought to do to prove our tenacity of purpose and devotion to the cause which we have undertaken. This attempt to escape by crossing the southern ice on sledges is regarded by me as an imperative duty,—the only means of saving ourselves and preserving the laboriously-earned results of the expedition.

"E. K. KANE,
"*Com. Grinnell Expedition.*

"ADVANCE, RENSSELAER BAY, May 20, 1855."

We then went upon deck: the flags were hoisted and hauled down again, and our party walked once or twice around the brig, looking at her timbers and exchanging comments upon the scars which reminded them of every stage of her dismantling. Our figure-head—the fair Augusta, the little blue girl with pink cheeks, who had lost her breast by an iceberg and her nose by a nip off Bedevilled Reach—was taken from our bows and placed aboard the "Hope." "She is at any rate wood," said the men, when I hesitated about giving them the additional burden; "and if we cannot carry her far we can burn her."

OUR AUGUSTA.

No one thought of the mockery of cheers: we had no festival-liquor to mislead our perception of the real state of things. When all hands were quite ready, we scrambled off over the ice together, much like a gang of stevedores going to work over a quayful of broken cargo.

On reaching the boats, the party were regularly mustered and divided between the two. A rigid inspection was had of every article of personal equipment. Each man had a woollen underdress and an Esquimaux suit of fur clothing,—kapetah, nessak, and nannooke complete, with boots of our own make; that is to say, one pair of canvas faced with walrus-hide, and another inside made of the cabin Brussels carpet. In addition to this, each carried a rue-raddy adjusted to fit him comfortably, a pair of socks next his skin, and a pair of large goggles for snow-blindness, made Esquimaux-fashion by cutting a small slit in a piece of wood. Some of us had gutta percha masks fitting closely to the face, as large as an ordinary domino; but these were still less favorable to personal appearance than the goggles. The provision-bags and other stores were numbered, and each man and officer had his own bag and a place assigned for it, to prevent confusion in rapid stowing and unstowing.

Excluding four sick men, who were unable to move, and myself, who had to drive the dog-team and serve as common carrier and courier, we numbered but twelve men,—which would have given six to a sledge, or too few to move it. It was therefore necessary to concen-

trate our entire force upon one sledge at a time. On the other hand, however, it was important to the efficiency of our organization that matters of cooking, sleeping, baggage, and rations, should be regulated by separate messes.

The routine I established was the most precise:— Daily prayers both morning and evening, all hands gathering round in a circle and standing uncovered during the short exercise; regulated hours; fixed duties and positions at the track-lines and on the halt; the cooking to be taken by turns, the captains of the boats alone being excused. The charge of the log was confided to Dr. Hayes, and the running survey to Mr. Sontag. Though little could be expected from either of these gentlemen at this time, I deemed it best to keep up the appearance of ordinary voyaging; and after we left the first ices of Smith's Straits I was indebted to them for valuable results. The thermometer was observed every three hours.

To my faithful friend and first officer, boatswain Brooks, I assigned the command of the boats and sledges. I knew how well he was fitted for it; and when forced, as I was afterward during the descent, to be in constant motion between the sick-station, the Esquimaux settlements, and the deserted brig, I felt safe in the assurance of his tried fidelity and indomitable resolution. The party under him was marshalled at the rue-raddies as a single gang; but the messes were arranged with reference to the two whale-

boats, and when we came afterward to the open water the crews were distributed in the same way:—

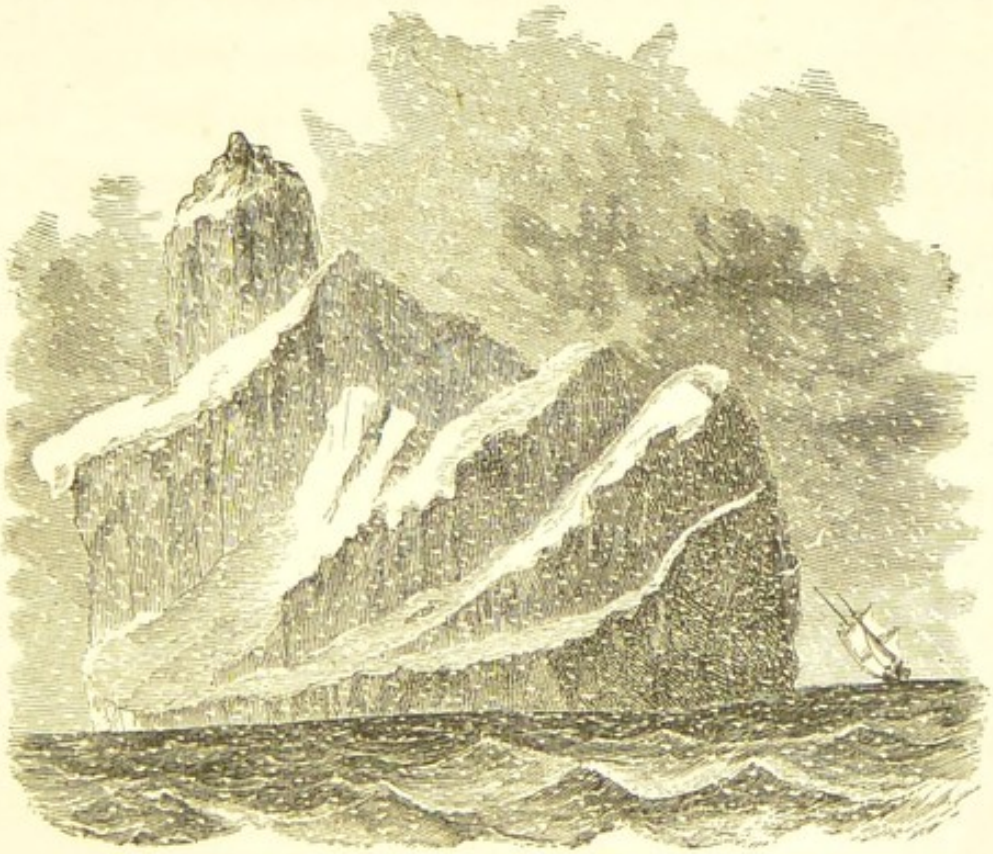
To the Faith.

JAMES MCGARY,
CHRISTIAN OHLSEN,
AMOS BONSALL,
CARL J. PETERSEN.
THOMAS HICKEY

To the Hope.

WILLIAM MORTON,
AUGUST SONTAG,
GEORGE RILEY,
JOHN BLAKE,
WILLIAM GODFREY.

With this organization we set out on our march.



CHAPTER L.

THE SICK HUT — TO FIRST RAVINE — MOVING THE SICK — THE HEALTH-STATION — CONVALESCENCE.

I HAD employed myself and the team from an early day in furnishing out accommodations for the sick at Anoatok. I have already described this station as the halting-place of our winter-journeys. The hut was a low dome of heavy stones, more like a cave than a human habitation. It was perched on the very point of the rocky promontory which I have named after Captain Inglefield, of the British Navy. Both to the north and south it commanded a view of the ice-expanse of the straits; and what little sunshine ever broke through the gorges by which it was environed encouraged a perceptible growth of flowering plants and coarse grasses on the level behind it. The ice-belt, now beautifully smooth, brought us almost to the edge of this little plain.

I had made up my mind from an early period that, in the event of our attempting to escape upon the ice, the "wind-loved spot," as the Esquimaux poetically

named it, would be well adapted to the purposes of an entrepôt, and had endeavored within the last few weeks to fit it up also as a resting-place for our sick during the turmoil of removing from the brig. I had its broken outlet closed by a practicable door, and the roof perforated to receive a stove-pipe. Still more recently the stone platform or dais had been thoroughly cleansed, and covered with shavings which Ohlsen had saved while working at his boats. Over these again were laid my best cushions; and two blankets, all that we could spare, were employed to tapestry the walls. A small pane of glass, formerly the facing of a daguerreotype, inserted in the door, and a stove, made by combining the copper dog-vane of the galley with some dazzling tin pipes, completed the furniture. It was a gloomy hospital after all for the poor fellows, who, more than sharing all the anxiety of their comrades, could have no relief in the excitement of active toil.

I made many journeys between the brig and Anoatok while the arrangements for our setting out were in progress, and after the sledges were under way. All of our invalids were housed there in safety, one or two of them occupying the dog-sledge for the trip. Most of our provision for the march and voyage of escape had also been stacked in the neighborhood of the huts: eight hundred pounds out of fifteen hundred were already there. The remaining seven hundred I undertook to carry myself, as I had done most of the rest. It would have been folly to encumber my main body with any thing more than their boats and sledges;

they were barely able at first to carry even these. Our effort to escape would indeed have resulted in miserable failure, had we been without our little Esquimaux dog-team to move the sick, and forward the intended lading of the boats, and keep up supplies along the line of march. I find by my notes that these six dogs, well worn by previous travel, carried me with a fully-burdened sledge between seven and eight hundred miles during the first fortnight after leaving the brig,—a mean travel of fifty-seven miles a day.

Up to the evening of the 23d, the progress had been a little more than a mile a day for one sledge: on the 24th, both sledges had reached First Ravine, a distance of seven miles, and the dog-sledge had brought on to this station the buffalo-bags and other sleeping-appliances which we had prepared during the winter. The condition of the party was such that it was essential they should sleep in comfort; and it was a rule therefore during the whole journey, never departed from unless in extreme emergency, never to begin a new day's labor till the party was refreshed from the exertions of the day before. Our halts were regulated by the condition of the men rather than by arbitrary hours, and sleep was meted out in proportion to the trials of the march. The thermometer still ranged below zero; but our housed boats, well crowded, and fully stocked with sleeping-gear, were hardly uncomfortable to weary men; besides which, we slept by day when the sun was warmest, and travelled when we could avoid his greatest glare.

Mr. Morton, Ohlsen, and Petersen, during this time performed a double duty. They took their turn at the sledges with the rest, but they were also engaged in preparing the Red Eric as a comrade boat. She was mounted on our good old sledge, the *Faith*,—a sledge that, like her namesake our most reliable whaleboat, had been our very present help in many times of trouble. I believe every man felt, when he saw her brought out, that stout work was to be done, and under auspices of good.

In the mean time I had carried Mr. Goodfellow to the sick-station with my dog-sledge, and had managed to convey the rest one by one to the same spot. Mr. Wilson, whose stump was still unhealed, and who suffered besides from scurvy, George Whipple, whose tendons were so contracted that he could not extend his legs, and poor Stephenson, just able to keep the lamps burning and warm up food for the rest, were the other invalids, all incapable of moving without assistance. It is just that I should speak of the manly fortitude with which they bore up during this painful imprisonment. Dr. Hayes, though still disabled from his frozen foot, adhered manfully to the sledges.

I have already expressed my belief that this little refuge-hut of Anoatok was the means of saving the lives of these four men. When they were first transported to it, they were all of them so drawn up with scurvy as to be unable to move. There was but one among them able to melt water for the rest. I attended them myself during the first week, at every

interval that I could snatch from the duty of transporting our provisions. The temperature in which they lived was at first below zero; but, as the sun rose and the warmth increased, they gradually gained strength, and were able at last to crawl out and breathe in the gladdening air.

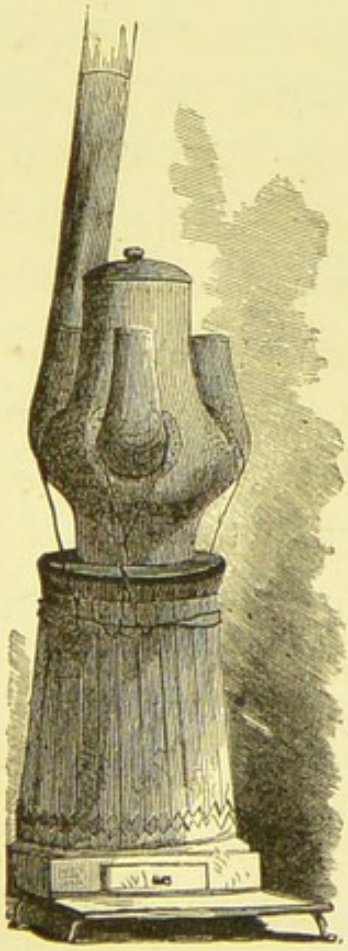
Had I attempted to bring them down on our boat-sledges, our progress would have been seriously impeded and their lives jeoparded. I cannot imagine a worse position for a sick and helpless man than some of those which I have described in our transit from the brig.

On the other hand, to have left them for the time behind us would have made it quite possible that they might not at last be reclaimed. Every day was making the ice-travel more difficult and full of hazard till we reached the open water; and they could not fail to know this as soon as they were able to look out on the floes. My occasional visits as I passed Anoatok on my way to Etah, or as I brought supplies for them on the return, gave them assurances of continued interest in their fortunes, and advices of our progress and of their own hopes and ours.

Besides all this, there is something in the insidious disease which was their most dangerous enemy that is best combated by moral excitement. A change of scene, renewed or increased responsibilities, topics of active thought, incitements to physical effort, are among the very best prescriptions for men suffering with the scurvy. I have had reason to feel, while

tracing these pages, how reluctantly the system renews its energies under the pressure of a daily unvarying task.

The patients at our sick-station no doubt suffered much, and for a while I never parted from them without anxiety. But their health improved under the stimulus of a new mode of life: and by the time that we called on them to rejoin us their whole tone had undergone a happy change. I congratulate myself, as I write, that all who reached the open water with me are able now to bear a part in society and toil.



THE STOVE AT ANOATOK.

CHAPTER LI.

TO THE BRIG AGAIN — WELCOME AT THE HUT — LOG OF THE SLEDGES—EDUCATED FAITH—GOOD-BYE TO THE BRIG—METEK'S PRAYER.

As I review my notes of the first few days of our ice-journey, I find them full of incidents interesting and even momentous when they occurred, but which cannot claim a place in this narrative. The sledges were advancing slowly, the men often discouraged, and now and then one giving way under the unaccustomed labor; the sick at Anoatok always dreary in their solitude, and suffering, perhaps, under an exacerbation of disease, or, like the rest of us, from a penury of appropriate food. Things looked gloomy enough at times.

The Red Boat was completed for service in a few days, and joined the sledge-party on the floes,—an additional burden, but a necessary one, for our weary raddies; and I set out for the sick-station with Mr. Goodfellow, our last remaining invalid. As my team reached the entrance of Force Bay, I saw that poor

Nessark, the Esquimaux, who had carried Mr. Wilson and some stores to Anoatok, finding his sledge-load too heavy, had thrown out a portion of it upon the ice. He had naturally enough selected the bread for his jettison, an article of diet unknown among the Esquimaux, but precisely that of which our sick were most in need. I lost some time in collecting such parts of his rejected cargo as I could find, and, when I reached the huts after a twelve hours' drive, the condition of our sick men made it imperative that I should return at once to the brig. The dogs gave out while crossing the reach of Force Bay, and I was forced to camp out with them on the ice-belt, but early in the morning I came upon the fires of the sledge-party.

The men were at prayers when I first saw them; but, as they passed to the drag-ropes, I was pained to see how wearily they moved. Poor Brooks's legs were so swollen that he could not brace them in his blanket coverings, and Dr. Hayes could hardly keep his place. The men generally showed symptoms of increasing scurvy. It was plain that they could not hold their own without an increased allowance, if not of meat, at least of fresh bread and hot tea.

Taking with me Morton, my faithful adjutant always, I hurried on to the brig. It was in the full glare of noon that we entered the familiar curve of Rensselaer Bay. The black spars of our deserted vessel cut sharply against the shores; there was the deeply-marked snow-track that led to Observatory Island and the graves of poor Baker and Schubert,

with their cairn and its white-cross beacon: every thing looked as when we defiled in funeral procession round the cliffs a year before. But, as we came close upon the brig and drove our dogs up the gangway, along which Bonsall and myself had staggered so often with our daily loads of ice, we heard the rustling of wings, and a large raven sailed away in the air past Sylvia Headland. It was old Magog, one of a pair that had cautiously haunted near our brig during the last two years. He had already appropriated our homestead.

We lighted fires in the galley, melted pork, baked a large batch of bread, gathered together a quantity of beans and dried apples, somewhat damaged but still eatable, and by the time our dogs had fed and rested we were ready for the return. Distributing our supplies as we passed the squads on the floe, I hastened to Anoatok. I had taken Godfrey with us from his party, and, as it was painfully evident that the men could not continue to work without more generous food, I sent him on to Etah with the dogs, in the hope of procuring a stock of walrus-meat.

The little company at the hut welcomed my return. They had exhausted their provisions; their lamp had gone out; the snow-drift had forced its way in at the door so that they could not close it; it was blowing a northeaster; and the thermometer, which hung against the blanketed walls, stood only sixteen degrees above zero. The poor fellows had all the will to protect themselves, but they were lame and weak and hungry and disheartened. We built a fire for them of tarred

rope, dried their bedding, cooked them a porridge of meat-biscuit and pea-soup, fastened up their desolate doorway, hung a dripping slab of pork-fat over their lamp-wick, and, first joining in a prayer of thankfulness and then a round of merry gossip, all hands forgot sickness and privation and distance in the contentment of our sleeping-bags. I cannot tell how long we slept, for all our watches ran down before we awoke.

The gale had risen, and it was snowing hard when I replenished the fires of our hearthstone. But we went on burning rope and fat, in a regular tea-drinking frolic, till not an icicle or even a frost-mark was to be seen on the roof. After a time Godfrey rejoined us; Metek came with him; and between their two sledges they brought an ample supply of meat. With part of this I hastened to the sledge-party. They were now off Ten-mile Ravine, struggling through the accumulated snows, and much exhausted, though not out of heart. In spite of their swollen feet, they had worked fourteen hours a day, passing in that time over some twelve miles of surface, and advancing a mile and a half on their way.

A few extracts from their log-book, as kept by Dr. Hayes, may show something of our mode of travel, though it conveys but an imperfect idea of its trials.

Log of Sledge-Party.

"May 23, Wednesday.—Mr. Bonsall, cook, called at 8 P.M. George Riley suffering from snow-blindness,

but able to take a place at the drag-ropes. Read prayers, and got under way at 10¼ P.M.

"Took 'Faith' to bluff at head of ravine. Left Dr. Hayes there and returned for 'Hope.' Carried her on to 'Faith's' camp and halted. All hands very much tired. Sledges haul heavy. Snow in drifts on the ice-foot, requiring a standing haul.

"Captain Kane passed us from Esquimaux hut on his way to brig, at 11 A.M., while we were sleeping. Captain Kane overtook and passed us again with his dog-sledge and provision-cargo, on way to sick-station, at two o'clock, Tuesday, while cooking, taking with him William Godfrey.

"May 24, Thursday.—Cook, George Riley, called at 4 P.M. Read prayers and got under way at eight o'clock. Took 'Faith' beyond the headland of yesterday. Melted snow for drink. Left Dr. Hayes here and returned for 'Hope.' Carried her back to 'Faith' camp by 5 A.M. of Friday, and halted. Hayes about the same; Riley's eyes better. Mr. Bonsall and McGary begin to give in. Slush for burning all gone. Party with 'Red Boat' not yet come up.

"May 25, Friday.—Mr. Sontag, cook, called at 6 P.M. Mr. Ohlsen, with the 'Red Boat' and cargo, came up at one o'clock, bringing orders from Captain Kane. Being knocked up, he and his party turned in. After prayers, stowed the spare cargo of the whaleboats into the 'Red Eric,' and all hands, except Mr. Sontag and Dr. Hayes, hauled her down to the ice-foot of the Bedevilled Reach Turn-off station, below Basalt Camp.

"Returned, and reached the whaleboats at five o'clock, Saturday morning. All hands tired, turned in. Riley's eyes well.

"May 26, Saturday.—Strong wind, with snow, during night. Captain Kane came from south at half-past three o'clock with the dog-team, bringing a supply of walrus-beef, with Metek and sledge."

Once more leaving the party on the floe, Morton and myself, with Metek and his sledge in company, revisited the brig, and set ourselves to work baking bread. We had both of us ample experience in this branch of the culinary art, and I could gain some credit, perhaps, with a portion of my readers, by teaching them how bread may be raised in three hours without salt, saleratus, or shortening. But it is not the office of this book to deal in occult mysteries. The thing can be done, and we did it: *sat verbum.* The brig was dreary enough, and Metek was glad to bid it good-bye, with one hundred and fifty pounds on his dog-sledge, consigned to Mr. Brooks. But he carried besides a letter, safely trusted to his inspection, which directed that he should be sent back forthwith for another load. It was something like a breach of faith, perhaps, but his services were indispensable, and his dogs still more so. He returned, of course, for there was no escaping us; his village lay in the opposite direction, and he could not deviate from the track after once setting out. In the mean time we had cooked about a hundred pounds of flour pudding, and tried out

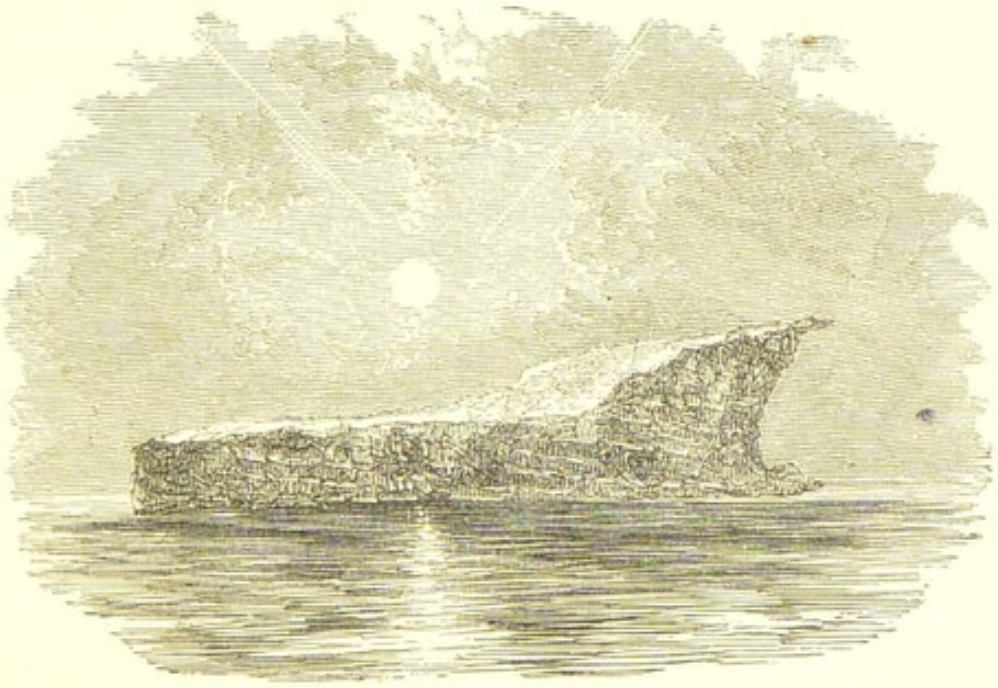
a couple of bagfuls of pork-fat;—a good day's work,—and we were quite ready, before the subdued brightness of midnight came, to turn in to our beds. Our beds!—there was not an article of covering left on board. We ripped open the old mattresses, and, all three crawling down among the curled hair, Morton, Metek, and the Nalegak slept as sound as vagrants on a haystack.

On Monday, the 28th, we all set out for the boats and Anoatok. Both Metek and myself had our sledges heavily laden. We carried the last of our provision-bags, completing now our full complement of fifteen hundred pounds, the limit of capacity of our otherwise crowded boats.

It caused me a bitter pang to abandon our collection of objects of Natural History, the cherished fruit of so much exposure and toil; and it was hardly easier to leave some other things behind,—several of my well-tested instruments, for instance, and those silent friends, my books. They had all been packed up, hoping for a chance of saving them; and, to the credit of my comrades, let me say gratefully that they offered to exclude both clothes and food in favor of a full freight of these treasures.

But the thing was not to be thought of. I gave a last look at the desolate galley-stove, the representative of our long winter's fireside, at the still bright coppers now full of frozen water, the theodolite, the chart-box, and poor Wilson's guitar,—one more at the remnant of

the old moss walls, the useless daguerreotypes, and the skeletons of dog and deer and bear and musk-ox,—stoppered in the rigging;—and, that done, whipped up my dogs so much after the manner of a sentimentalizing Christian, that our pagan Metek raised a prayer in their behalf.



CHAPTER LII.

NEW STATIONS—THE ICE-MARSHES—POINT SECURITY—OOPEGSOAK—CATCHING AUKS—ANINGNAH—NESSARK.

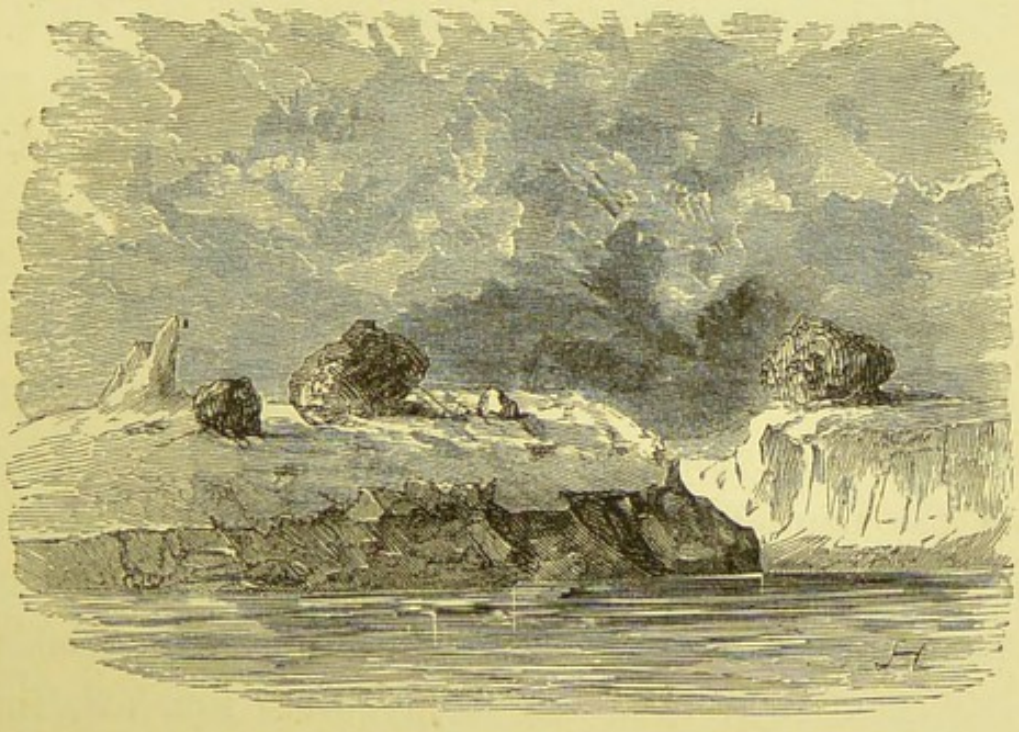
I FOUND that Mr. Brooks had succeeded in getting his boat and sledges as far as the floe off Bedevilled Reach. I stopped only long enough to point out to him an outside track, where I had found the ice quite smooth and free from snow, and pressed my dogs for the hut. I noticed to my great joy, too, that the health of his party seemed to be improving under our raw-meat specific, and could not find fault with the extravagant use they were making of it.

THE FLOE.

The invalids at the sick-station were not as well as I could have wished: but I had only time to renew their stock of provision

and give them a few cheering words. Our walrus-meat was nearly exhausted.

I had fixed upon two new stations farther to the south, as the depôts to which our stores were now to be transported. One was upon the old and heavy floes off Navialik, "the big gull's place,"—a headland opposite Cape Hatherton,—the other on the level ice-plain



ICE-BELT AND CHASM.

near Littleton Island. Having now gathered our stores at Anoatok, I began with a thankful heart to move them onward. I sent on Metek to the farther station with two bags of bread-dust, each weighing ninety pounds, and, having myself secured some three hundred pounds at Navialik, drove on for Etah Bay.

My long succession of journeys on this route had made me thoroughly weary of the endless waste of ice

to seaward, and I foolishly sought upon this trip to vary the travel by following the ice-belt. But, upon reaching Refuge Harbor, I found the snow so heavy and the fragments from the cliffs so numerous and threatening, that I was obliged to give it up. A large chasm stopped my advance and drove me out again upon the floes.

Getting beyond a table-land known as Kasarsoak, or "the big promontory," I emerged from the broken ice upon a wide plain. Here I first saw with alarm that the ice had changed its character: the snow which covered it had become lead-colored and sodden by the water from beneath, and ice-fields after ice-fields stretching before me were all covered with stained patches. As I rode along these lonely marshes, for such they were, the increased labor of the dogs admonished me that the floe was no longer to be trusted. It chilled my heart to remember the position of our boats and stores. Nearly nine hundred pounds of food, exclusive of the load now upon my sledge, were still awaiting transportation at Anoatok.

THE ISLAND CAMP.

Two hundred more, including our shot and bullet-bags, were at the Cape Hatherton station; and Metek's load was probably by this time lying on the ice opposite McGary Island. Like Robinson Crusoe with

his powder, the reflection came over me:—"Good God! what will become of us if all this is destroyed?"

Only by men experienced in the rapid changes of Arctic ice can the full force of this reflection be appreciated. A single gale might convert the precarious platform, over which we were travelling, into a tumultuous ice-pack. Had the boats their stores on board even, and could they break through without foundering, there was not the remotest prospect of their being liberated in open water; and I knew well what obstacles a wet, sludgy surface would present to our overtasked and almost worn-out party.

I determined, therefore, as soon as I could secure the meat, which was my immediate errand, to make a requisition upon the Esquimaux for two of the four dogs which were still at Etah, and by their aid to place the provisions in safety. The north cape of Littleton Island, afterward called Point Security, was selected for the purpose, and I left orders with the invalids at the sick-station to be in readiness for instant removal. I pursued my journey alone.

It was quite late in the evening when I drew near Etah. I mean that it was verging on to our midnight, the sun being low in the heavens, and the air breathing that solemn stillness which belongs to the sleeping-time of birds and plants. I had not quite reached the little settlement when loud sounds of laughter came to my ear; and, turning the cape, I burst suddenly upon an encampment of the inhabitants.

Some thirty men, women, and children, were gathered

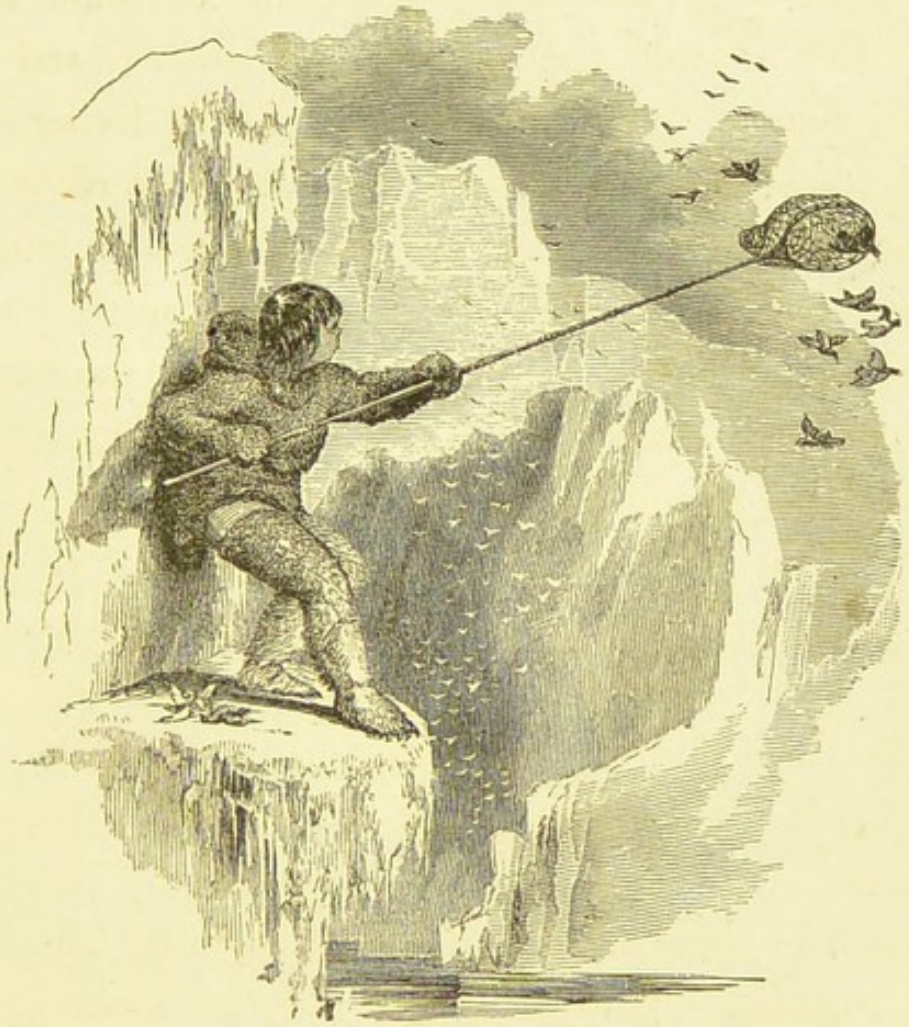
together upon a little face of offal-stained rock. Except a bank of moss, which broke the wind-draught from the fiord, they were entirely without protection from the weather, though the temperature was 5° below zero. The huts were completely deserted, the snow tossut had fallen in, and the window was as free and open as summer to the purifying air. Every living thing about the settlement was out upon the bare rocks.

Rudest of gypsies, how they squalled, and laughed, and snored, and rolled about! Some were sucking bird-skins, others were boiling incredible numbers of auks in huge soapstone pots, and two youngsters, crying, at the top of their voices, "Oopegsoak! Oopegsoak!" were fighting for an owl. It was the only specimen (*Strix nyctea*) that I had seen except on the wing; but, before I could secure it, they had torn it limb from limb, and were eating its warm flesh and blood, their faces buried among its dishevelled feathers.

The fires were of peat-moss greased with the fat of the bird-skins. They were used only for cooking, however, the people depending for comfort on the warmth of close contact. Old Kresut, the blind patriarch of the settlement, was the favored centre, and around him, as a focus, was a coil of men, women, and children, as perplexing to unravel as a skein of eels. The children alone were toddling about and bringing in stores of moss, their faces smeared with blood, and titbits of raw liver between their teeth.

The scene was redolent of plenty and indolence,—

the *dolce far niente* of the short-lived Esquimaux summer. Provision for the dark winter was furthest from their thoughts; for, although the rocks were patched with sun-dried birds, a single hunting-party from



CATCHING AUKS.

Peteravik could have eaten up their entire supplies in a night.

There was enough to make them improvident. The little auks were breeding in the low cones of rubbish under the cliffs in such numbers that it cost them no more to get food than it does a cook to gather vege-

tables. A boy, ordered to climb the rocks with one of their purse-nets of seal-skin at the end of a narwhal's tusk, would return in a few minutes with as many as he could carry.

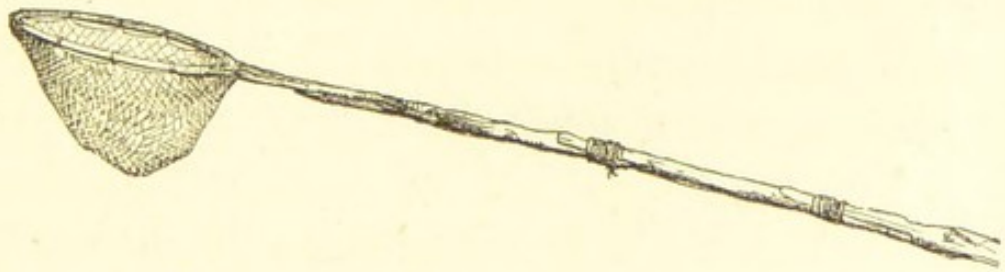
The dogs seemed as happy as their masters: they were tethered by seal-skin thongs to prevent robbery, but evidently fed to the full extent of their capacity.

Aningnah, wife of Marsumah, the lady whose likeness beautifies page 564, was one of the presiding deities of the soup-pot, or rather first witch of the caldron. She was a tall, well-made woman, and, next to Mrs. Metek, had a larger influence than any female in the settlement.

During one of my visits to the settlement, I had relieved her from much suffering by opening a furuncle, and the kind creature never lost an opportunity of showing how she remembered it. Poor old Kresut was summarily banished from the central seat of honor, and the nalegak installed in his place. She stripped herself of her bird-skin kapetah to make me a coverlet, and gave me her two-year-old baby for a pillow. There was a little commotion in the tangled mass of humanity as I crawled over them to accept these proffered hospitalities; but it was all of a welcoming sort. I had learned by this time to take kindly and condescendingly the privileges of my rank; and, with my inner man well refreshed with auk-livers, I was soon asleep.

In the morning I left my own tired dogs in charge

of Marsumah, quite confident that his wife would feed them faithfully, and took from them their only team in unequal exchange. Such had become our relations with these poor friends of ours, that such an act of authority would have gone unquestioned if it had cost them a much graver sacrifice. They saw the condition of my own travel-broken animals, and were well aware of the sufferings of our party, so long their neighbors and allies. Old Nessark filled my sledge with walrus-meat; and two of the young men joined me on foot, to assist me through the broken ice between Littleton Island and the mainland.



CHAPTER LIII.

THE GAME OF BALL—MY BROTHER'S LAKE—THE POLAR SEASONS —FATE OF THE ESQUIMAUX—THE ESQUIMAUX LIMITS—ESQUIMAUX ENDURANCE — AWAHTOK'S HUNT — HIS ESCAPE — THE GUARDIAN WALRUS.

BEFORE I left Etah on my return, I took an early stroll with Sip-su, "the handsome boy," to the lake back of my old travelling-route, and directly under the face of the glacier.

He led me first to the play-ground, where all his young friends of the settlement were busy in one of their sports. Each of them had a walrus-rib for a *golph* or *shinny-stick*, and they were contending to drive a *hurley*, made out of the round knob of a flipper-joint, up a bank of frozen snow. Roars of laughter greeted the impatient striker as he missed his blow at the shining ball, and eager cries told how close the match was drawing to an end. They were counting on the fingers of both hands, Eight, eight, eight: the game is ten.

Strange,—the thought intruded itself, but there was no wisdom in it,—strange that these famine-pinched

wanderers of the ice should rejoice in sports and playthings like the children of our own smiling sky, and that parents should fashion for them toy sledges, and harpoons, and nets, miniature emblems of a life of suffering and peril! how strange this joyous merriment under the monitory shadow of these jagged ice-cliffs! My spirit was oppressed as I imagined the possibility of our tarrying longer in these frozen regions; but it was ordinary life with these other children of the same Creator, and they were playing as unconcerned as the birds that circled above our heads. "Fear not, therefore: ye are of more value than many sparrows."

I do not wonder that the scene at the lake impressed my brother when he visited it on his errand of rescue: Lieutenant Hartstene and he were the only white men, except myself, that have ever seen it.

A body of ice, resplendent in the sunshine, was enclosed between the lofty walls of black basalt; and from its base a great archway or tunnel poured out a dashing stream into the lake, disturbing its quiet surface with a horse-shoe of foam. Birds flew about in myriads, and the green sloping banks were checquered with the purple lychnis and Arctic chickweeds.

I have named this lake after my brother, for it was near its shores that, led by Myouk, he stumbled on the summer tents of the natives and obtained the evidence of our departure south. I built a large cairn here, and placed within it a copper penny, on which was scratched the letter K; but, like many other

such deposits, it never met the eyes for which it was intended.

The lake abounds in fish, apparently the salmon-trout; but the natives have not the art of fishing. The stream, which tunnels its way out near the glacier-foot, is about ten feet in diameter; and I was assured that it never completely suspends its flow. Although the tunnel closes with ice, and the surface of the lake freezes for many feet below, the water may still be seen and heard beneath, even in midwinter, wearing its way at the base of the glacier.

This fact is of importance, as it bears upon the temperature of deep ice-beds. It shows that with an atmosphere whose mean is below zero throughout the year, and a mean summer heat but 4° above the freezing-point, these great Polar glaciers retain a high interior temperature not far from 32°, which enables them to resume their great functions of movement and discharge readily, when the cold of winter is at an end, and not improbably to temper to some extent the natural rigor of the climate. Even in the heart of the ice nature has her compensations.

The phases of the Polar year so blend and separate that it is difficult to distribute them into seasons. In the Arctic latitudes a thousand miles to the south, travellers speak of winter and summer as if the climate underwent no intermediate changes. But nature impresses no such contrasts upon any portion of her realm; and, whatever may be the registrations of the meteorologist, the rude Esquimaux of these icy soli-

tudes derives from his own experience and necessities a more accurate and practical system of notation.

He measures his life by winters, as the American Indian does by the summers, and for a like reason. Winter is for him the great dominant period of the year: he calls it "okipok," the season of fast ice.

But when the day has come again, and the first thawing begins to show itself in the sunshine, as winter declines before the promise of spring, he tells you that it is "upernasak," the time of water-drops. It is then the snow-bird comes back and the white ptarmigan takes a few brown feathers. His well-known heath, too, the irsuteet, (*Andromeda tetragona*,) is green again below its dried stems under the snow.

About the end of May, or a little later, comes "upernak," the season of thaws. It is his true summer. Animal and vegetable life are now back again: the floes break upon the sea and drift in ice-rafts about the coasts; snow is disappearing from the hill-tops; and the water-torrents pour down from the long-sealed ravines and valleys.

About the middle of August the upernak has passed into the season of no ice, "aosak," the short interval between complete thaw and reconsolidation. It is never really iceless; but the floes have now drifted to the south, and the sea along the coast is more open than at any other period. It ends with the latter weeks of September, and sees the departure of all migratory life.

The fifth season is a late fall, the "okiakut," when

the water-torrents begin to freeze in the fiords and thawing ceases except at noonday. This terminates when the young ice has formed in a permanent layer on the bays, and winter returns with its long reign of cold and darkness.

It is with a feeling of melancholy that I recall these familiar names. They illustrate the trials and modes of life of a simple-minded people, for whom it seems to be decreed that the year must very soon cease to renew its changes. It pains me when I think of their approaching destiny,—in the region of night and winter, where the earth yields no fruit and the waters are locked,—without the resorts of skill or even the rude materials of art, and walled in from the world by barriers of ice without an outlet.

If you point to the east, inland, where the herds of reindeer run over the barren hills unmolested,—for they have no means of capturing them,—they will cry "Sermik," "glacier;" and, question them as you may about the range of their nation to the north and south, the answer is still the same, with a shake of the head, "Sermik, sermik-soak," "the great ice-wall:" there is no more beyond.

They have no "kresuk," no wood. The drift-timber which blesses their more southern brethren never reaches them. The bow and arrow are therefore unknown; and the kayak, the national implement of the Greenlander, which, like the palm-tree to the natives of the tropics, ministers to almost every want, exists among them only as a legendary word.

The narrow belt subjected to their nomadic range cannot be less than six hundred miles long; and throughout this extent of country every man knows every man. There is not a marriage or a birth or a death that is not talked over and mentally registered by all. I have a census, exactly confirmed by three separate informants, which enables me to count by name about one hundred and forty souls, scattered along from Kosoak, the Great River at the base of a glacier near Cape Melville, to the wind-loved hut of Anoatok.

Destitute as they are, they exist both in love and community of resources as a single family. The sites of their huts—for they are so few in number as not to bear the name of villages—are arranged with reference to the length of the dog-march and the seat of the hunt; and thus, when winter has built her highway and cemented into one the sea, the islands, and the main, they interchange with each other the sympathies and social communion of man, and diffuse through the darkness a knowledge of the resources and condition of all.

The main line of travel is then as beaten as a road at home. The dogs speed from hut to hut, almost unguided by their drivers. They regulate their time by the stars. Every rock has its name, every hill its significance; and a cache of meat deposited anywhere in this harsh wilderness can be recovered by the youngest hunter in the nation.

From Cape York to a settlement at Saunders Island,

called Appah, from the "Appah" or Lumme which colonize here in almost incredible numbers, the drive has been made in a single day; and thence to Netelik, on the main of Murchison Sound, in another. In a third, the long reach has been traversed by Cape Saumarez to the settlement of Karsioot, on a low tongue near Cape Robertson; and the fourth day has closed at Etah, or even Aunatok, the open place,—the resting-place now of our poor deserted Oomiak-soak. This four days' travel cannot be less than six hundred miles; and Amaladok, Metek's half-brother, assured me that he had made it in three,—probably changing his teams.

Their powers of resistance to exposure and fatigue are not greater perhaps than those of a well-trained voyager from other regions. But the necessities of their precarious life familiarize them with dangers from which the bravest among us might shrink without dishonor. To exemplify this, I select a single one from a number of adventures that were familiar in their recent history.

During the famine at Etah last winter, when we ourselves were so much distressed for fresh food, two of my friends, Awahtok and Myouk, determined to seek the walrus on the open ice. It was a performance of the greatest danger; but it was better in their eyes than the sacrifice of their dogs, and they both possessed to the fullest extent that apathetic fatalism which belongs to all lowly-cultivated races. They succeeded in killing a large male, and were in the act

of returning joyfully to their village, when a north wind broke up the ice, and they found themselves afloat. The impulse of a European would have been to seek the land; but they knew that the drift was always most dangerous on the coast, and urged their dogs toward the nearest iceberg. They reached it after a struggle, and, by great efforts, made good their landing with their dogs and the half-butchered carcass of the walrus.

Poor Myouk, as he told the story to Petersen, made a frightful picture of their sufferings, the more so from the quiet, stoical manner with which he detailed the facts. It was at the close, he said, of the last moonlight of December, and in the midst of the heavy storm which held Petersen and myself prisoners at Anoatok. A complete darkness settled around them. They tied the dogs down to knobs of ice to prevent their losing their foothold, and prostrated themselves to escape being blown off by the violence of the wind. At first the sea broke over them, but they gained a higher level, and built a sort of screen of ice.

On the fifth night afterward, judging as well as they could, Myouk froze one of his feet, and Awahtok lost his great toe by frost-bite. But they kept heart of grace, and ate their walrus-meat as they floated slowly to the south. The berg came twice into collision with floes, and they thought at one time that they had passed the Utlak-soak, the Great Caldron, and had entered the North Water of Baffin's Bay. It was toward the close of the second moonlight, after a

month's imprisonment, living as only these iron men could live, that they found the berg had grounded. They liberated their dogs as soon as the young ice would bear their weight, and, attaching long lines to them, which they cut from the hide of the dead walrus, they succeeded in hauling themselves through the water-space which always surrounds an iceberg, and reaching safe ice. They returned to their village like men raised from the dead, to meet a welcome, but to meet famine along with it.

I believe the explanation was never given to me in detail, or, if it was, I have forgotten it; but the whole misadventure was referred to an infringement of some canonical ritual in their conduct of the hunt. The walrus, and perhaps the seal also, is under the protective guardianship of a special representative or prototype, who takes care that he shall have fair play. They all believe that in the recesses of Force Bay, near a conical peak which has often served me as a landmark on my sledge-journeys, a great walrus lives in the hills, and crawls out, when there is no moon, to the edge of a ravine, where he bellows with a voice far more powerful than his fellows out to sea. Ootuniah had often heard this walrus, and once, when I was crossing Bedevilled Reach, he stopped me to listen to his dismal tones. I certainly heard them, and Ootuniah said that a good hunt would come of it. I tried to talk to him about echoes; but, as neither of us could understand the other, I listened quietly at last to the Big Walrus, and went my way.

WALRUS HUNT OFF PIMANTIK.

CHAPTER LIV.

THE BAKERY—THE GUITAR GHOST—THE BOAT CAMP—NESSARK'S WIFE—OUT IN A GALE—CAPE MISERY—THE BURROW—THE RETREAT.

THE sledge-party under Mr. Brooks had advanced to within three miles of the hut when I reached them on my return. They had found the ice more practicable, and their health was improving. But their desire for food had increased proportionably; and, as it was a well-understood rule of our commissariat not to touch the reserved provision of the boats, it became necessary to draw additional supplies from the brig. The seven hundred pounds of bread-dust, our entire stock, could not be reduced with safety.

But the dogs were wanted to advance the contents of our Anoatok storehouse to the stations farther south, and I resolved to take Tom Hickey with me and walk back for another baking exploit. It was more of an effort than I counted on: we were sixteen hours on the ice, and we had forgotten our gutta-percha eyautick, or slit goggles. The glare of the sun as we entered the curve of our ice-cumbered harbor almost blinded us.

Tom had been a baker at home; but he assures me with all the authority of an ancient member of the guild, that our achievement the day we came on board might be worthy of praise in the "old country:" Tom knows no praise more expanded. We kneaded the dough in a large pickled-cabbage cask, fired sundry volumes of the Penny Cyclopedia of Useful Knowledge, and converted, between duff and loaf, almost a whole barrel of flour into a strong likeness to the staff of life. It was the last of our stock; and "all the better too," said my improvident comrade, who retained some of the genius of blundering as well as the gallantry of his countrymen, "all the better, sir, since we'll have no more bread to bake."

Godfrey came on with the dogs three days after, to carry back the fruits of our labor; but an abrupt change of the weather gave us a howling gale outside, and we were all of us storm-stayed. It was Sunday, and probably the last time that two or three would be gathered together in our dreary cabin. So I took a Bible from one of the bunks, and we went through the old-times service. It was my closing act of official duty among my shipmates on board the poor little craft. I visited her afterward, but none of them were with me.

Tom and myself set out soon after, though the wind drove heavily from the south, leaving our companion to recover from his fatigue. We brought on our sledge-load safely, and had forgotten our baking achievement, with things of minor note, in that dreamless sleep which rewards physical exhaustion, when Godfrey

came in upon us. He had had a hard chase behind the sledge, and was unwilling to confess at first what had brought him after us so soon. He had tried to forget himself among the debris of a mattress on the cabin floor, when he heard a sound from Mr. Wilson's guitar, sad and flowing in all its unearthly harmonies. He was sure he was awake, for he ran for it on the instant, and the proof was, he had left his coat behind him. The harp of Æolus had not been dreamed of in Bill's philosophy.

KOTLUK.

I was glad, when I reached the sick-station, to find things so much better. Everybody was stronger, and, as a consequence, more cheerful. They had learned housekeeping, with its courtesies as well as comforts. Their kotluk would have done credit to Aningnah herself: they had a dish of tea for us, and a lump of walrus; and they bestirred themselves real housewife-fashion, to give us the warm place and make us comfortable. I was right sorry to leave them, for the snow outside was drifting with the gale; but after a little while the dogs struck the track of the sledges, and, following it with unerring instinct, did not slacken their

pace till they had brought us to our companions on the floe.

They had wisely halted on account of the storm, and, with their three little boats drawn up side by side for mutual protection, had been lying to for the past

BOAT'S CAMP IN A STORM.

two days, tightly housed, and moored fast by whale-lines to the ice. But the drifts had almost buried the "Hope," which was the windward boat; and when I saw the burly form of Brooks emerging from the snow-covered roof, I could have fancied it a walrus rising through the ice.

They had found it hard travel, but were doing well. Brooks's provision-report was the old story,—out of meat and nearly out of bread:—no pleasant news for a tired-out man, who saw in this the necessity of another trip to Etah. I was only too glad, however, to see that their appetites held, for with the animal man, as with all others, while he feeds he lives. Short allowance for working-men on bread diet was of course out of the question. For the past week, each man had eaten three pounds of duff a day, and I did not dare to check them, although we had no more flour in reserve to draw upon. But the question how long matters could go on at this rate admitted of a simple arithmetical solution.

Six Esquimaux, three of them women,—that ugly beauty, Nessark's wife, at the head of them,—had come off to the boats for shelter from the gale. They seemed so entirely deferential, and to recognise with such simple trust our mutual relations of alliance, that I resolved to drive down to Etah with Petersen as interpreter, and formally claim assistance, according to their own laws, on the ground of our established brotherhood. I had thought of this before; but both Marsumah and Metek had been so engrossed with their bird-catching that I was loath to take them from their families.

Our dogs moved slowly, and the discolored ice admonished me to make long circuits. As we neared Littleton Island, the wind blew so freshly from the southwest, that I determined to take the in-shore chan-

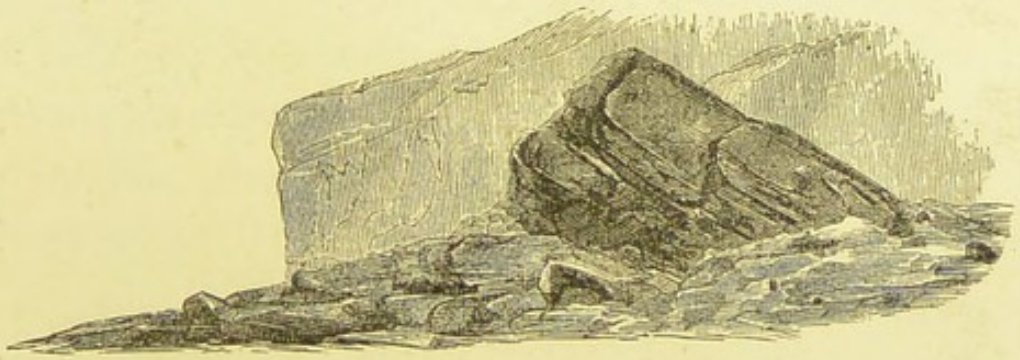
nel and attempt to make the settlements over land. But I was hardly under the lee of the island, when there broke upon us one of the most fearful gales I have ever experienced. It had the character and the

"ANAK," WIFE OF NESSARK.

force of a cyclome. The dogs were literally blown from their harness, and it was only by throwing ourselves on our faces that we saved ourselves from being swept away: it seemed as if the ice must give way. We availed ourselves of a momentary lull to shoulder the sledge, and, calling the affrighted dogs around

us, made for the rocks of Eider Island, and, after the most exhausting exertions, succeeded in gaining terra firma.

We were now safe from the danger that had seemed most imminent; but our condition was not improved. We were out on a blank cliff, the wind eddying round us so furiously that we could not keep our feet, and the air so darkened with the snow-wreaths that, although we were in the full daytime of the Arctic summer, we could neither see each other nor our dogs.



CAPE MISERY.

There was not a cleft or a projecting knob that could give us refuge. I saw that we must move or die. It was impossible that the ice should continue to resist such a hurricane, and a bold channel separated us from the shore. Petersen indeed protested that the channel was already broken up and driving with the storm. We made the effort, and crossed.

We struck a headland on the main shore, where a dark hornblende rock, perhaps thirty feet high, had formed a barricade, behind which the drifts piled themselves; and into this mound of snow we had just

strength enough left to dig a burrow. We knew it soon after as Cape Misery.

The dogs and sledge were dragged in, and Petersen and myself, reclining "spoon-fashion," cowered among them. The snow piled over us all, and we were very soon so roofed in and quilted round that the storm seemed to rage far outside of us. We could only hear the wind droning like a great fly-wheel, except when a surge of greater malignity would sweep up over our burial-place and sift the snow upon the surface like hail. Our greatest enemy here was warmth. Our fur jumpers had been literally torn off our backs by the wind; but the united respiration of dogs and men melted the snow around us, and we were soon wet to the skin. It was a noisome vapor-bath, and we experienced its effects in an alarming tendency to syncope and loss of power.

Is it possible to imagine a juncture of more comic annoyance than that which now introduced itself among the terrors of our position? Toodla, our master-dog, was seized with a violent fit; and, as their custom is, his companions indulged in a family conflict upon the occasion, which was only mediated, after much effort, at the sacrifice of all that remained of Petersen's pantaloons and drawers.

We had all the longing for repose that accompanies extreme prostration, and had been fearing every moment that the combatants would bring the snow down upon us. At last down came our whole canopy, and we were exposed in an instant to the fury of the ele-

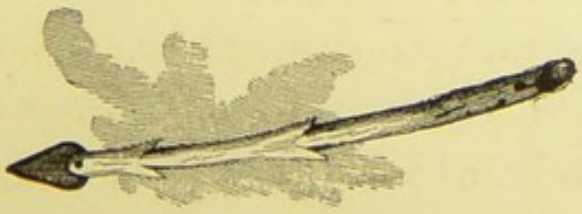
ments. I do not think, often as I have gone up on deck from a close cabin in a gale at sea, that I was ever more struck with the extreme noise and tumult of a storm.

Once more snowed up,—for the drift built its crystal palace rapidly about us,—we remained cramped and seething till our appetites reminded us of the neces-

ICE-BELT BROKEN BY FALLING ROCK.

sities of the inner man. To breast the gale was simply impossible; the alternative was to drive before it to the north and east. Forty miles of floundering travel brought us in twenty hours to the party on the floes.

They too had felt the force of the storm, and had drawn up the boats with their prows to the wind, all hands housed, and wondering as much as we did that the ice still held.



CHAPTER LV.

FRESH DOGS—THE SLIDES—ROCKING-STONES—OHLSEN'S ACCIDENT —ICE-SAILING—MOUNTING THE BELT—THE ICE-MARSHES—PEKIUTLIK—HANS THE BENEDICK.

PETERSEN and myself gave up the sledge to Morton, who, with Marsumah and Nessark, set out at once to negotiate at Etah, while I took my place with the sledge-parties.

The ice, though not broken up by the storm, had been so much affected by it, as well as by the advancing season, that I felt we could not spare ourselves an hour's rest. The snow-fields before us to the south were already saturated with wet. Around the bergs the black water came directly to the surface, and the whole area was spotted with pools. We summoned all our energies on the 5th for this dangerous traverse; but, although the boats were unladen and every thing transported by sledge, it was impossible to prevent accidents. One of the sledges broke through, carrying six men into the water, and the Hope narrowly escaped being lost. Her stern went down, and she was extricated with great difficulty.

The 6th saw the same disheartening work. The ice was almost impassable. Both sick and well worked at the drag-ropes alike, and hardly a man but was constantly wet to the skin. Fearing for the invalids at the sick-station in case we should be cut off from them, I sent for Mr. Goodfellow at once, and gave orders for the rest to be in readiness for removal at a moment's notice.

The next day Morton returned from Etah. The natives had responded to the brotherly appeal of the ñalegak; and they came down from the settlement, bringing a full supply of meat and blubber, and every sound dog that belonged to them. I had now once more a serviceable team. The comfort and security of such a possession to men in our critical position can hardly be realized. It was more than an addition of ten strong men to our party. I set off at once with Metek to glean from the brig her last remnant of slush, (tallow,) and to bring down the sick men from Anoatok.

As we travelled with our empty sledges along a sort of beaten track or road which led close under the cliffs, I realized very forcibly the influence of the coming summer upon the rocks above us. They were just released from the frost which had bound them so long and closely, and were rolling down the slopes of the debris with the din of a battle-field, and absolutely clogging the ice-belt at the foot. Here and there, too, a large sheet of rocks and earth would leave its bed at once, and, gathering mass as it travelled, move down-

ward like a cataract of ruins. The dogs were terrified by the clamor, and could hardly be driven on till it intermitted.

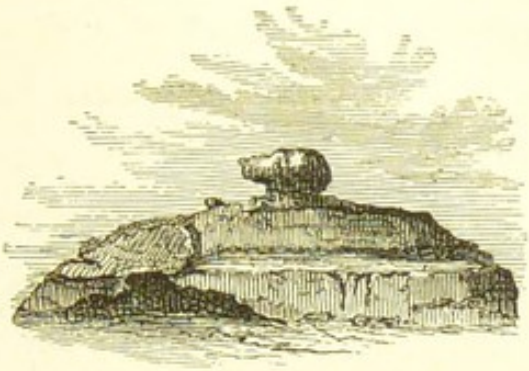
Just beyond Six-mile Ravine my sledge barely es-

THE SLIDE.

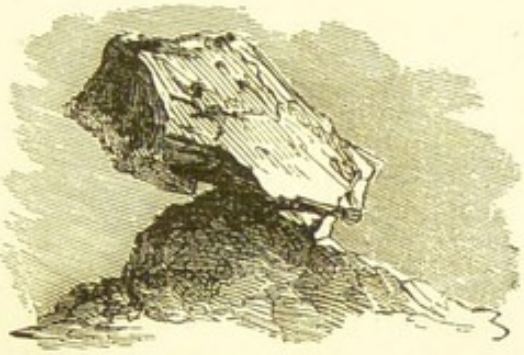
caped destruction from one of these land-slides. Happily Metek was behind, and warned me of the danger just in time to cut loose the traces and drag away the sledge.

But it is not in the season of thaws only that these

wonderful geological changes take place. Large rocks are projected in the fall by the water freezing in the crevices, like the Mons Meg cannon-balls. Our old boat, the "Forlorn Hope," the veteran of my Beechy Island attempt, was stove in by one of these while drawn up under the cliffs of "Ten-mile Gorge."



LIMESTONE ON MICA SLATE.

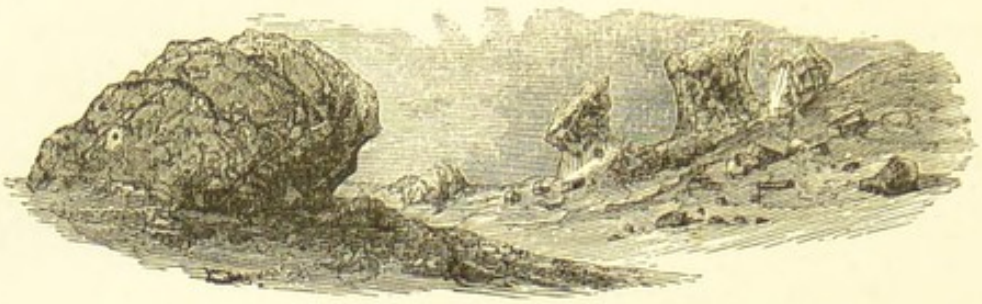


GREENSTONE ON GNEISS.

The rocks which fell in this manner upon the ice-belt were rapidly imbedded by the action of the sun's heat; and it happened frequently, of course, that one more recently disengaged would overlie another that had already sunk below the surface. This, as the ice-belt subsided in the gradual thaw, had given many examples of the rocking-stone. I have placed in the margin

LIMESTONE ON GREENSTONE.

GNEISS ON GREENSTONE.



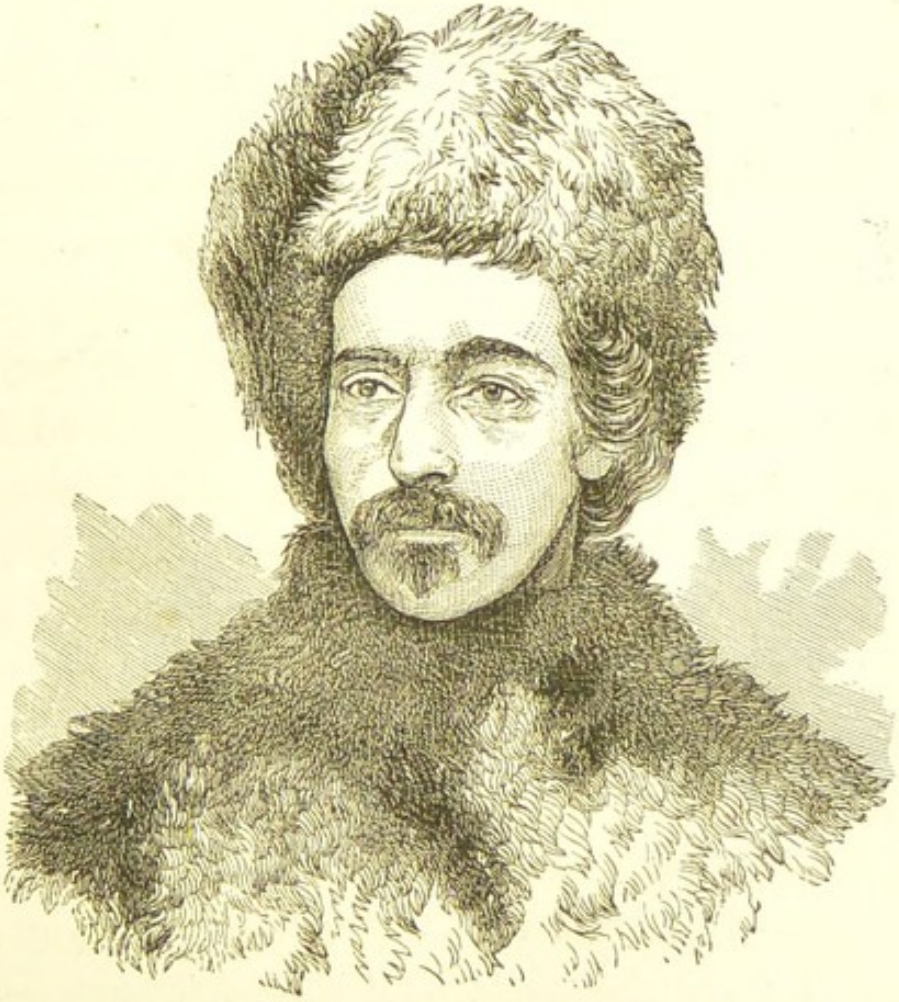
SYENITES AND LIMESTONES.

some drawings of these geological puzzles. They were of all sizes, from tons to pounds, often strangely dissimilar in material, though grouped within a narrow area, their diversity depending on the varying strata from which they came. There were some strange illustrations among them of the transporting forces of the ice-raft, which I should like to dwell on, if the character of my book and the haste with which it is approaching its close did not forbid me.

Our visit to the brig was soon over: we had very few stores to remove. I trod her solitary deck for the last time, and returned with Metek to his sledge.

I had left the party on the floes with many apprehensions for their safety, and the result proved they were not without cause. While crossing a "tide-hole," one of the runners of the Hope's sledge broke through, and, but for the strength and presence of mind of Ohlsen, the boat would have gone under. He saw the ice give way, and, by a violent exercise of strength, passed a capstan-bar under the sledge, and thus bore the load till it was hauled on to safer ice. He was a very powerful man, and might have done this without

injuring himself; but it would seem his footing gave way under him, forcing him to make a still more desperate effort to extricate himself. It cost him his life: he died three days afterwards.



PORTRAIT OF CHRISTIAN OHLSEN.

I was bringing down George Stephenson from the sick-station, and, my sledge being heavily laden, I had just crossed, with some anxiety, near the spot at which the accident occurred. A little way beyond we met Mr Ohlsen, seated upon a lump of ice, and very pale. He pointed to the camp about three miles farther on,

and told us, in a faint voice, that he had not detained the party: he "had a little cramp in the small of the back," but would soon be better.

I put him at once in Stephenson's place, and drove him on to the "Faith." Here he was placed in the stern-sheets of the boat, and well muffled up in our best buffalo-robes. During all that night he was assiduously attended by Dr. Hayes; but he sank rapidly. His symptoms had from the first a certain obscure but fatal resemblance to our winter's tetanus, which filled us with forebodings.

On Saturday, June 6, after stowing away our disabled comrade in the "Faith," we again set all hands at the drag-ropes. The ice ahead of us bore the same character as the day before,—no better: we were all perceptibly weaker, and much disheartened.

We had been tugging in harness about two hours, when a breeze set in from the northward, the first that we had felt since crossing Bedevilled Reach. We got out our long steering-oar as a boom, and made sail upon the boats. The wind freshened almost to a gale; and, heading toward the depôt on Littleton Island, we ran gallantly before it.

It was a new sensation to our foot-sore men, this sailing over solid ice. Levels which, under the slow labor of the drag-ropes, would have delayed us for hours, were glided over without a halt. We thought it dangerous work at first, but the speed of the sledges made rotten ice nearly as available as sound. The men could see plainly that they were approaching new

landmarks and leaving old ones behind. Their spirits rose; the sick mounted the thwarts; the well clung to the gunwale: and, for the first time for nearly a year, broke out the sailor's chorus, "Storm along, my hearty boys!"

We must have made a greater distance in this single day than in the five that preceded it. We encamped at 5 P.M. near a small berg, which gave us plenty of fresh water, after a progress of at least eight miles.

As we were halting, I saw two Esquimaux on the ice toward Life-boat Cove; and the well-known "Huk! huuk!" a sort of Masonic signal among them, soon brought them to us. They turned out to be Sip-su and old Nessark. They were the bearers of good news: my dogs were refreshed and nearly able to travel again; and, as they volunteered to do me service, I harnessed up our united teams, and despatched Nessark to the hut to bring down Mr. Wilson and George Whipple.

We expected now to have our whole party together again; and the day would have been an active cheering one throughout, but for the condition of poor Ohlsen, who was growing rapidly worse.

From this time we went on for some days aided by our sails, meeting with accidents occasionally,—the giving way of a spar or the falling of some of the party through the spongy ice,—and occasionally, when the floe was altogether too infirm, laboring our way with great difficulty upon the ice-belt. To mount this solid highway, or to descend from it, the axes were always in requisition. An inclined plane was to be

cut, ten, fifteen, or even thirty feet long, and along this the sledges were to be pushed and guided by bars and levers with painful labor. These are light things, as I refer to them here; but in our circumstances, at the time I write of, when the breaking of a stick of timber was an irreparable harm, and the delay of a day involved the peril of life, they were grave enough. Even on the floes the axe was often indispensable to carve our path through the hummocks; and many a weary and anxious hour have I looked on and toiled

ICE-MARSHES.

while the sledges were waiting for the way to open. Sometimes too, both on the land-ice and on the belt, we encountered heavy snow-drifts, which were to be shovelled away before we could get along; and within an hour afterward, or perhaps even at the bottom of the drift, one of the sledge-runners would cut through to the water.

It was saddening to our poor fellows, when we were forced to leave the ice-belt and push out into the open field, to look ahead at the salt ice-marshes, as they called them, studded with black pools, with only a white

lump rising here and there through the lead-colored surface, like tussocks of grass or rushes struggling through a swamp. The labor would have been too much for us, weary and broken as we were, but for the occasional assistance we derived from the Esquimaux. I remember once a sledge went so far under, carrying with it several of the party, that the boat floated loose. Just then seven of the natives came up to us, —five sturdy men, and two almost as sturdy women,— and, without waiting to be called on, worked with us most efficiently for more than half a day, asking no reward.

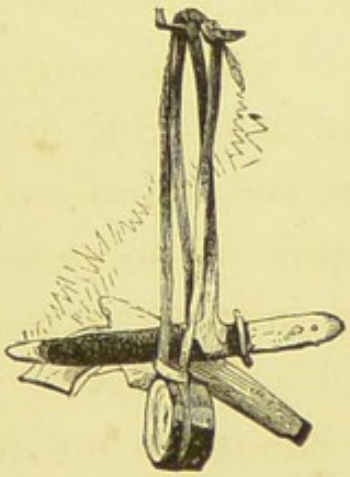
Still passing slowly on day after day,—I am reluctant to borrow from my journal the details of anxiety and embarrassment with which it abounds throughout this period,—we came at last to the unmistakable neighborhood of the open water. We were off Pekiutlik, the largest of the Littleton Island group, opposite "Kosoak," the Great River. Here Mr. Wilson and George Whipple rejoined us, under the faithful charge of old Nessark. They had broken through twice on the road, but without any serious inconvenience in consequence. It was with truly thankful hearts we united in our prayers that evening.

One only was absent of all the party that remained on our rolls. Hans, the kind son and ardent young lover of Fiskernaes, my well-trusted friend, had been missing for nearly two months. I am loath to tell the story as I believe it, for it may not be the true one

after all, and I would not intimate an unwarranted doubt of the constancy of boyish love. But I must explain, as far as I can at least, why he was not with us when we first looked at the open water. Just before my departure for my April hunt, Hans came to me with a long face, asking permission to visit Peteravik: "he had no boots, and wanted to lay in a stock of walrus-hide for soles: he did not need the dogs; he would rather walk." It was a long march, but he was well practised in it, and I consented of course. Both Petersen and myself gave him commissions to execute, and he left us, intending to stop by the way at Etah.

In our labors of the next month we missed Hans much. He had not yet returned, and the stories of him that came to us from Etah were the theme of much conversation and surmise among us. He had certainly called there as he promised, and given to Nessark's wife an order for a pair of boots, and he had then wended his way across the big headland to Peteravik, where Shang-hu and his pretty daughter had their home. This intimation was given with many an explanatory grin; for Hans was a favorite with all, the fair especially, and, as a *match*, one of the greatest men in the country. It required all my recollections of his "old love" to make me suspend my judgment; for the boots came, as if to confirm the scandal. I never failed in my efforts afterward to find his whereabouts, and went out of our way to interrogate this and that settlement; for, independent of every

thing like duty, I was very fond of him. But the story was everywhere the same. Hans the faithful—yet, I fear, the faithless—was last seen upon a native sledge, driving south from Peteravik, with a maiden at his side, and professedly bound to a new principality at Uwarrow Suk-suk, high up Murchison's Sound. Alas for Hans, the married man!



FIELD-GEAR.

CHAPTER LVI.

THE RED BOAT SINKING — THE LIFE-BOAT CACHE — THE OPEN WATER—OHLSEN'S DEATH—HIS FUNERAL—BARENTZ, OUR PRECURSOR — ACCOMODAH — THE PRESCRIPTION — CAPE WELCOME — THE RESOLVE.

THOUGH the condition of the ice assured us that we were drawing near the end of our sledge-journeys, it by no means diminished their difficulty or hazards. The part of the field near the open water is always abraded by the currents, while it remains apparently firm on the surface. In some places it was so transparent that we could even see the gurgling eddies below it; while in others it was worn into open holes that were already the resort of wild fowl. But in general it looked hard and plausible, though not more than a foot or even six inches in thickness.

This continued to be its character as long as we pursued the Littleton Island channel, and we were compelled, the whole way through, to sound ahead with the boat-hook or narwhal-horn. We learned this

THE BROKEN FLOES.

precaution from the Esquimaux, who always move in advance of their sledges when the ice is treacherous, and test its strength before bringing on their teams. Our first warning impressed us with the policy of observing it. We were making wide circuits with the whaleboats to avoid the tide-holes, when signals of distress from men scrambling on the ice announced to us that the Red Eric had disappeared. This unfortunate little craft contained all the dearly-earned documents of the expedition. There was not a man who did not feel that the reputation of the party rested in a great degree upon their preservation. It had cost us many a pang to give up our collections of natural history, to which every one had contributed his quota of labor and interest; but the destruction of the vouchers of the cruise—the log-books, the meteorological registers, the surveys, and the journals—seemed to strike them all as an irreparable disaster.

When I reached the boat every thing was in confusion. Blake, with a line passed round his waist, was standing up to his knees in sludge, groping for the document-box, and Mr. Bonsall, dripping wet, was endeavoring to haul the provision-bags to a place of safety. Happily the boat was our lightest one, and every thing was saved. She was gradually lightened until she could bear a man, and her cargo was then passed out by a line and hauled upon the ice. In spite of the wet and the cold and our thoughts of poor Ohlsen, we greeted its safety with three cheers.

It was by great good fortune that no lives were lost.

Stephenson was caught as he sank by one of the sledge-runners, and Morton, while in the very act of drifting under the ice, was seized by the hair of the head by Mr. Bonsall and saved.

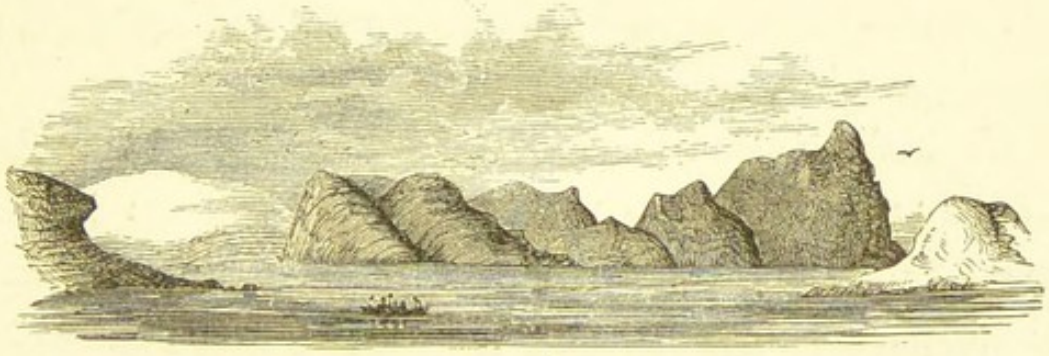
We were now close upon Life-boat Cove, where nearly two years before we had made provision for just such a contingency as that which was now before us. Buried under the frozen soil, our stores had escaped even the keen scrutiny of our savage allies, and we now turned to them as essential to our relief. Mr. McGary was sent to the cache, with orders to bring every thing except the salt beef. This had been so long a poison to us, that, tainted as we were by scurvy, I was afraid to bring it among those who might be tempted to indulge in it.

On the 12th the boats and sledges came to a halt in the narrow passage between the islands opposite Cape Misery, the scene of our late snow-storm. All our cargo had been gathered together at this spot, and the rocks were covered with our stores. Out of the fourteen hundred pounds not an ounce had been sacrificed. Every thing was cased in its water-proof covering, and as dry and perfect as when it had left the brig.

The Littleton Island of Captain Inglefield is one of a group of four *skiers* which flank the northeast headland of Hartstene Bay. They are of the bottom-series, coarse gneisses and mica schists. When here before, at this time of the year, they were surrounded by water, and the eider-ducks were breeding on their slopes. Now, as if to illustrate the difference of the

seasons here, as well as the influence which they exert upon the habits of the migratory wild-fowl, they were thoroughly cased in ice, and not a nest was to be seen.

I ascended some eight hundred feet to the summit of Pekiutlik, and, looking out, beheld the open water, so long the goal of our struggles, spread out before me. It extended seemingly to Cape Alexander, and was nearer to the westward than the south of my position by some five or six miles. But the ice in the latter direction led into the curve of the bay, and was thus



PEKIUTLIK, (THE BOBBING SEAL.)

protected from the wind and swell. My jaded comrades pleaded anxiously in favor of the direct line to the water; but I knew that this ice would give us both safer and better travel. I determined to adopt the inshore route. Our position at Pekiutlik, as we determined carefully by the mean of several observations, is in latitude 78° 22′ 1″ and longitude 74° 10′. We connected it with Cape Alexander and other determined stations to the north and west.

The channel between the islands was much choked with upreared ice; but our dogs had now come back to

us so much refreshed that I was able to call their services again into requisition. We carried one entire load to the main which forms the northeast headland of Hartstene Bay, and, the Esquimaux assisting us, deposited it safely on the inner side.

I was with the advance boat, trying to force a way through the channel, when the report came to me from Dr. Hayes that Ohlsen was no more. He had shown, a short half-hour before, some signs of revival, and Petersen had gone out to kill a few birds, in the hope of possibly sustaining him by a concentrated soup. But it was in vain: the poor fellow flushed up only to die a few minutes after.

We had no time to mourn the loss of our comrade, a tried and courageous man, who met his death in the gallant discharge of duty. It cast a gloom over the whole party; but the exigencies of the moment were upon us, and we knew not whose turn would come next, or how soon we might all of us follow him together.

I had carefully concealed Mr. Ohlsen's sickness from the Esquimaux, with every thing else that could intimate our weakness; for, without reflecting at all upon their fidelity, I felt that with them, as with the rest of the world, pity was a less active provocative to good deeds than the deference which is exacted by power. I had therefore represented our abandonment of the brig as merely the absence of a general hunting-party to the Far South, and I was willing now to keep up the impression. I leave to moralists the discussion of

the question how far I erred; but I now sent them to their village under pretext of obtaining birds, and lent them our dogs to insure their departure.

The body of Mr. Ohlsen was sewed up, while they were gone, in his own blankets, and carried in procession to the head of a little gorge on the east face of Pekiutlik, where by hard labor we consigned his remains to a sort of trench, and covered them with rocks to protect them from the fox and bear. Without the knowledge of my comrades, I encroached on our little store of sheet-lead, which we were husbanding to mend our leaky boats with, and, cutting on a small tablet his name and age,—

CHRISTIAN OHLSEN,

AGED 36 YEARS,

laid it on his manly breast. The cape that looks down on him bears his name.

As we walked back to our camp upon the ice, the death of Ohlsen brought to my mind the strange parallel of our story with that of old William Barentz, —a parallel which might verify that sad truth of history that human adventure repeats itself.

Two hundred and fifty-nine years ago, William Barentz, Chief Pilot of the States-General of Holland,—the United States of that day,—had wintered on the coast of Novaia Zemlia, exploring the northernmost region of the Old Continent, as we had that of the New. His men, seventeen in number, broke down during the trials of the winter, and three died, just as

of our eighteen three had gone. He abandoned his vessel as we had abandoned ours, took to his boats, and escaped along the Lapland coast to lands of Norwegian civilization. We had embarked with sledge and boat to attempt the same thing. We had the longer journey and the more difficult before us. He lost, as we had done, a cherished comrade by the wayside; and, as I thought of this closing resemblance in our fortunes also, my mind left but one part of the parallel incomplete,—*Barentz himself perished.*

CARRYING THE SICK.

We gave two quiet hours to the memory of our dead brother, and then resumed our toilsome march. We kept up nearly the same routine as before; but, as we neared the settlements, the Esquimaux came in flocks to our assistance. They volunteered to aid us at the drag-ropes. They carried our sick upon hand-sledges. They relieved us of all care for our supplies of daily food. The quantity of little auks that they brought

us was enormous. They fed us and our dogs at the rate of eight thousand birds a week, all of them caught in their little hand-nets. All anxiety left us for the time. The men broke out in their old forecastle-songs; the sledges began to move merrily ahead, and laugh and jest drove out the old moody silence.

During one of our evening halts, when the congregation of natives had scattered away to their camp-fires, Metek and Nualik his wife came to me privately on a matter of grave consultation. They brought with them a fat, curious-looking boy. "Accomodah," said they, "is our youngest son. His sleep at night is bad, and his *nangah*"—pointing to that protuberance which is supposed to represent aldermanic dignity—"is always round and hard. He eats ossuk (blubber) and no meat, and bleeds at the nose. Besides, he does not grow." They wanted me, in my capacity of angekok-soak, to charm or cure him.

I told them, with all the freedom from mystery that distinguishes the regulated practitioner from the empiric, what must be my mode of treatment: that I must dip my hand into the salt water where the ice cut against the sea, and lay it on the offending nangah; and that if they would bring to me their rotund little companion within three days, at that broad and deep Bethesda, I would signalize my consideration of the kindness of the tribe by a trial of my powers.

They went away very thankful, taking a preliminary

prescription of a lump of brown soap, a silk shirt, and a *taboo* of all further eating of ossuk; and I had no doubt that their anxiety to have the boy duly powwowed, would urge forward our sledges and bring us early to the healing waters. We longed for them

ACCOMODAH.

at least as much as Metek, and needed them more than Accomodah.

My little note-book closes for the week with this gratefully-expanded record:—

"June 16, Saturday.—Our boats are at the open

water. We see its deep indigo horizon, and hear its roar against the icy beach. Its scent is in our nostrils and our hearts.

"Our camp is but three-quarters of a mile from the sea: it is at the northern curve of the North Baffin

CAPE WELCOME.

polynia. We must reach it at the southern sweep of Etah Bay, about three miles from Cape Alexander. A dark headland defines the spot. It is more marked than the southern entrance of Smith's Straits. How magnificently the surf beats against its sides! There

are ridges of squeezed ice between us and it, and a broad zone of floating sludge is swelling and rolling sluggishly along its margin:—formidable barriers to boats and sledges. But we have mastered worse obstacles, and by God's help we will master these."

ANOTHER MODE OF CARRYING THE SICK.

CHAPTER LVII.

THE FAREWELL — ATTEMPT TO EMBARK.

We had our boats to prepare now for a long and adventurous navigation. They were so small and heavily laden as hardly to justify much confidence in their buoyancy; but, besides this, they were split with frost and warped by sunshine, and fairly open at the seams. They were to be calked and swelled and launched and stowed, before we could venture to embark in them. A rainy southwester too, which had met us on our arrival, was now spreading with its black nimbus over the bay, and it looked as if we were to be storm-stayed on the precarious ice-beach. It was a time of anxiety, but to me personally of comparative rest. I resumed my journal:—

"July 18, Monday.—The Esquimaux are camped by our side,—the whole settlement of Etah congregated around the 'big caldron' of Cape Alexander, to bid us good-bye. There are Metek, and Nualik his wife, our old acquaintance Mrs. Eider-duck, and their five children, commencing with Myouk, my body-guard, and

ending with the ventricose little Accomodah. There is Nessark and Anak his wife; and Tellerk the 'Right Arm,' and Amaunalik his wife; and Sip-su, and Marsumah and Aningnah—and who not? I can name them every one, and they know us as well. We have found brothers in a strange land.

"Each one has a knife, or a file, or a saw, or some such treasured keepsake; and the children have a lump of soap, the greatest of all great medicines. The

BABY SLEDGES.

merry little urchins break in upon me even now as I am writing:—'Kuyanake, kuyanake, Nalegak-soak!' 'Thank you, thank you, big chief!' while Myouk is crowding fresh presents of raw birds on me as if I could eat forever, and poor Aningnah is crying beside the tent-curtain, wiping her eyes on a bird-skin!

"My heart warms to these poor, dirty, miserable, yet happy beings, so long our neighbors, and of late so stanchly our friends. Theirs is no affectation of regret. There are twenty-two of them around me, all

busy in good offices to the Docto Kayens; and there are only two women and the old blind patriarch Kresuk, 'Drift-wood,' left behind at the settlement.

"But see! more of them are coming up,—boys ten years old pushing forward babies on their sledges. The whole nation is gypsying with us upon the icy meadows.

"We cook for them in our big camp-kettle; they sleep in the Red Eric; a berg close at hand supplies them with water: and thus, rich in all that they value, —sleep and food and drink and companionship,—with their treasured short-lived summer sun above them, the *beau ideal* and sum of Esquimaux blessings, they seem supremely happy.

"Poor creatures! It is only six months ago that starvation was among them: many of the faces around me have not yet lost the lines of wasting suspense. The walrus-season is again of doubtful productiveness, and they are cut off from their brethren to the south, at Netelik and Appah, until winter rebuilds the avenue of ice. With all this, no thoughts of the future cross them. Babies squall, and women chatter, and the men weave their long yarns with peals of rattling hearty laughter between.

"Ever since we reached Pekiutlik, these friends of ours have considered us their guests. They have given us hand-sledges for our baggage, and taken turn about in watches to carry us and it to the water's edge. But for them our dreary journey would have been prolonged at least a fortnight, and we are so late even now that hours may measure our lives. Mętek, Myouk,

Nessark, Marsumah, Erkee, and the half-grown boys, have been our chief laborers; but women, children, and dogs are all bearing their part.

"Whatever may have been the faults of these Esquimaux heretofore, stealing was the only grave one. Treachery they may have conceived; and I have reason to believe that, under superstitious fears of an evil influence from our presence, they would at one time have been glad to destroy us. But the day of all this has passed away. When trouble came to us and to them, and we bent ourselves to their habits,—when we looked to them to procure us fresh meat, and they found at our poor Oomiak-soak shelter and protection during their wild bear-hunts,—then we were so blended in our interests as well as modes of life that every trace of enmity wore away. God knows that since they professed friendship, albeit the imaginary powers of the angekok-soak and the marvellous six-shooter which attested them may have had their influence, never have friends been more true. Although, since Ohlsen's death, numberless articles of inestimable value to them have been scattered upon the ice unwatched, they have not stolen a nail. It was only yesterday that Metek, upon my alluding to the manner in which property of all sorts was exposed without pilfering, explained through Petersen, in these two short sentences, the argument of their morality:—

"'You have done us good. We are not hungry; we will not take, (steal.)——You have done us good; we want to help you: we are friends.'"

I made my last visit to Etah while we were waiting the issue of the storm. I saw old Kresuk (Drift-wood) the blind man, and listened to his long good-bye talk. I had passed with the Esquimaux as an angekok, in virtue of some simple exploits of natural magic; and it was one of the regular old-times entertainments of our visitors at the brig, to see my hand terrible with blazing ether, while it lifted nails with a magnet. I tried now to communicate a portion of my wonder-working talent. I made a lens of ice before them, and "drew down the sun," so as to light the moss under their kolupsut. I did not quite understand old Kresuk, and I was not quite sure he understood himself. But I trusted to the others to explain to him what I had done, and burned the back of his hand for a testimony in the most friendly manner. After all which, with a reputation for wisdom which I dare say will live in their short annals, I wended my way to the brig again.

We renewed our queries about Hans, but could get no further news of him. The last story is, that the poor boy and his better half were seen leaving Peter-avik, "the halting-place," in company with Shang-hu and one of his big sons. Lover as he was, and nalegak by the all-hail hereafter, joy go with him, for he was a right good fellow.

We had quite a scene, distributing our last presents. My amputating-knives, the great gift of all, went to Metek and Nessark; but every one had something as his special prize. Our dogs went to the community at large, as tenants in common, except Toodla-mik and

Whitey, our representative dogs through very many trials. I could not part with them, the leaders of my team; I have them still.

But Nualik, the poor mother, had something still to remind me of. She had accompanied us throughout the transit of Etah Bay, with her boy Accomodah, waiting anxiously for the moment when the first salt water would enable me to fulfil my promised exorcisation of the demon in his stomach. There was no alternative now but to fulfil the pledge with faithful ceremony. The boy was taken to the water's edge, and his exorbitant little nangah faithfully embrocated in the presence of both his parents. I could not speak my thanks in their language, but I contributed my scanty stock of silk shirts to the poor little sufferer,—for such he was,—and I blessed them for their humanity to us with a fervor of heart which from a better man might peradventure have carried a blessing along with it.

And now it only remained for us to make our farewell to these desolate and confiding people. I gathered them round me on the ice-beach, and talked to them as brothers for whose kindness I had still a return to make. I told them what I knew of the tribes from which they were separated by the glacier and the sea, of the resources that abounded in those less ungenial regions not very far off to the south, the greater duration of daylight, the less intensity of the cold, the facilities of the hunt, the frequent drift-wood, the kayak, and the fishing-net. I tried to explain to them

how, under bold and cautious guidance, they might reach there in a few seasons of patient march. I gave them drawings of the coast, with its headlands and hunting-grounds, as far as Cape Shackleton, and its best camping-stations from Red Head to the Danish settlements.

They listened with breathless interest, closing their circle round me; and, as Petersen described the big ussuk, the white whale, the bear, and the long open-water hunts with the kayak and the rifle, they looked at each other with a significance not to be misunderstood They would anxiously have had me promise that I would some day return and carry a load of them down to the settlements; and I shall not wonder if—guided perhaps by Hans—they hereafter attempt the journey without other aid.

This was our parting. A letter which I addressed, at the moment of reaching the settlements, to the Lutheran Missions, the tutelar society of the Esquimaux of Greenland, will attest the sincerity of my professions and my willingness to assist in giving them effect.

It was in the soft subdued light of a Sunday evening, June 17, that, after hauling our boats with much hard labor through the hummocks, we stood beside the open sea-way. Before midnight we had launched the Red Eric, and given three cheers for Henry Grinnell and "homeward bound," unfurling all our flags.

But we were not yet to embark; for the gale which

had been long brooding now began to dash a heavy *wind-lipper* against the floe, and obliged us to retreat before it, hauling our boats back with each fresh breakage of the ice. It rose more fiercely, and we were obliged to give way before it still more. Our

BIDDING GOOD-BYE.

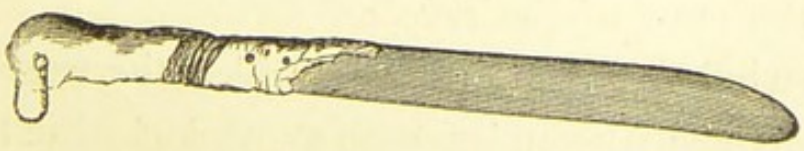
goods, which had been stacked upon the ice, had to be carried farther inward. We worked our way back thus, step by step, before the breaking ice, for about two hundred yards. At last it became apparent that the men must sleep and rest, or sink; and, giving up for the present all thoughts of embarking, I hauled

the boats at once nearly a mile from the water's edge, where a large iceberg was frozen tight in the floes.

But here we were still pursued. All the next night it blew fearfully, and at last our berg crashed away through the broken ice, and our asylum was destroyed. Again we fell to hauling back the boats; until, fearing that the continuance of the gale might induce a ground-swell, which would have been fatal to us, I came to a halt near the slope of a low iceberg, on which I felt confident that we could haul up in case of the entire disruption of the floes. The entire area was already intersected with long cracks, and the surface began to show a perceptible undulation beneath our feet.

It was well for us I had not gratified the men by taking the outside track: we should certainly have been rafted off into the storm, and without an apparent possibility of escape.

I climbed to the summit of the berg; but it was impossible to penetrate the obscurity of mist and spray and cloud farther than a thousand yards. The sea tore the ice up almost to the very base of the berg, and all around it looked like one vast tumultuous caldron, the ice-tables crashing together in every possible position with deafening clamor.



45 KNIFE.

CHAPTER LVIII.

SUTHERLAND ISLAND — HAKLUYT ISLAND — NORTHUMBERLAND ISLAND—FITZ-CLARENCE ROCK—DALRYMPLE ROCK—GIVING OUT — BREAK-UP OF THE FLOE — BROKEN DOWN — WEARY MAN'S REST — THE FOURTH — SHORT COMMONS.

The gale died away to a calm, and the water became as tranquil as if the gale had never been. All hands were called to prepare for embarking. The boats were stowed, and the cargo divided between them equally; the sledges unlashed and slung outside the gunwales; and on Tuesday the 19th, at 4 P.M., with the bay as smooth as a garden-lake, I put off in the Faith. She was followed by the Red Eric on our quarter, and the Hope astern. In the Faith I had with me Mr. McGary, and Petersen, Hickey, Stephenson, and Whipple. Mr. Brooks was in the Hope, with Hayes, Sontag, Morton, Goodfellow, and Blake. Bonsall, Riley, and Godfrey made the crew of the Eric.

The wind freshened as we doubled the westernmost point of Cape Alexander, and, as we looked out on the expanse of the sound, we saw the kittiwakes and the

ivory-gulls and jagers dipping their wings in the curling waves. They seemed the very same birds we had left two years before screaming and catching fish in the beautiful water. We tried to make our first rest at Sutherland Island; but we found it so barricaded by the precipitous ice-belt that it was impossible to land. I clambered myself from the boat's mast upon the platform and filled our kettles with snow, and then, after cooking our supper in the boats, we stood away for Hakluyt. It was an ugly crossing: we had a short chopping sea from the southeast; and, after a while, the Red Boat swamped. Riley and Godfrey managed to struggle to the Faith, and Bonsall to the Hope; but it was impossible to remove the cargo of our little comrade: it was as much as we could do to keep her afloat and let her tow behind us. Just at this time, too, the Hope made a signal of distress; and Brooks hailed us to say that she was making water faster than he could free her.

The wind was hauling round to the westward, and we could not take the sea abeam. But, as I made a rapid survey of the area round me, studded already with floating shreds of floe-ice, I saw ahead the low gray blink of the pack. I remembered well the experience of our Beechy Island trip, and knew that the margin of these large fields is almost always broken by inlets of open water, which give much the same sort of protection as the creeks and rivers of an adverse coast. We were fortunate in finding one of these and fastening ourselves to an old floe, alongside of which

our weary men turned in to sleep without hauling up the boats.

When Petersen and myself returned from an unsuccessful hunt upon the ice, we found them still asleep, in spite of a cold and drizzling rain that might have stimulated wakefulness. I did not disturb them till eight o'clock. We then retreated from our breakwater of refuge, generally pulling along by the boat-hooks, but sometimes dragging our boats over the ice; and at last, bending to our oars as the water opened, reached the shore of Hakluyt Island.

It was hardly less repulsive than the ice-cliffs of the day before; but a spit to the southward gave us the opportunity of hauling up as the tide rose, and we finally succeeded in transferring ourselves and all our fortunes to the land-ice, and thence to the rocks beyond. It snowed hard in the night, and the work of calking went on badly, though we expended on it a prodigal share of our remaining white-lead. We rigged up, however, a tent for the sick, and reinforced our bread-dust and tallow supper by a few birds. We had shot a seal in the course of the day, but we lost him by his sinking.

In the morning of the 22d we pushed forward through the snow-storm for Northumberland Island, and succeeded in reaching it a little to the eastward of my former landing-place. Myriads of auks greeted us, and we returned their greeting by the appropriate invitation to our table. A fox also saluted us with an admirable imitation of the "Huk-huk-huk," which

among the Esquimaux is the never-unheeded call of distress; but the rascal, after seducing us a mile and a half out of our way, escaped our guns.

Our boats entered a little patch of open water that conducted us to the beach, directly below one of the

MY BROTHER JOHN'S GLACIER.

hanging glaciers. The interest with which these impressed me when I was turning back from my Beechy Island effort was justified very fully by what I saw of them now. It seemed as if a caldron of ice inside the coast-ridge was boiling over, and throwing its crust in

huge fragments from the overhanging lip into the sea below. The glacier must have been eleven hundred feet high; but even at its summit we could see the lines of viscous movement which I have endeavored to transfer to my sketch.

We crossed Murchison Channel on the 23d, and encamped for the night on the land-floe at the base of Cape Parry; a hard day's travel, partly by tracking over ice, partly through tortuous and zigzag leads. The next day brought us to the neighborhood of Fitz-Clarence Rock, one of the most interesting monuments that rear themselves along this dreary coast: in a region more familiar to men, it would be a landmark to the navigator. It rises from a field of ice like an Egyptian pyramid surmounted by an obelisk.

I had been anxious to communicate with the Esquimaux of Netelik, in the hope of gaining some further intelligence of Hans. Our friends of Etah had given me, in their own style, a complete itinerary of this region, and we had no difficulty in instructing Godfrey how to trace his way across the neck of land which stood between us and the settlement. He made the attempt, but found the snow-drift impassable; and Petersen, whom I sent on the same errand to Tessiusak, returned equally unsuccessful.

The next day gave us admirable progress. The ice opened in leads before us, somewhat tortuous, but, on the whole, favoring, and for sixteen hours I never left the helm. We were all of us exhausted when the day's work came to a close. Our allowance had been

small from the first; but the delays we seemed fated to encounter had made me reduce them to what I then thought the minimum quantity, six ounces of bread-dust and a lump of tallow the size of a walnut: a paste or broth, made of these before setting out in the morning and distributed occasionally through the day in scanty rations, was our only fare. We were all of us glad when, running the boats under the lee of a berg, we were able to fill our kettles with snow and boil up for our great restorative tea. I may remark that, under the circumstances of most privation, I found no comforter so welcome to the party as this. We drank immoderately of it, and always with advantage.

While the men slept after their weary labor, McGary and myself climbed the berg for a view ahead. It was a saddening one. We had lost sight of Cary Island; but shoreward, up Wostenholm Channel, the ice seemed as if it had not yet begun to yield to the influences of summer. Every thing showed how intense the last winter had been. We were close upon the 1st of July, and had a right to look for the North Water of the whalers where we now had solid ice or close pack, both of them almost equally unfavorable to our progress. Far off in the distance—how far I could not measure—rose the Dalrymple Rock, projecting from the lofty precipice of the island ahead; but between us and it the land-ice spread itself from the base of Saunders's Island unbroken to the Far South.

The next day's progress was of course slow and wearisome, pushing through alternate ice and water for

the land-belt. We fastened at last to the great floe near the shore, making our harbor in a crack which opened with the changes of tide.

The imperfect diet of the party was showing itself more and more in the decline of their muscular power. They seemed scarcely aware of it themselves, and referred the difficulty they found in dragging and pushing to something uncommon about the ice or sludge rather than to their own weakness. But, as we endeavored to renew our labors through the morning fog, belted in on all sides by ice-fields so distorted and rugged as to defy our efforts to cross them, the truth seemed to burst upon every one. We had lost the feeling of hunger, and were almost satisfied with our pasty broth and the large draughts of tea which accompanied it. I was anxious to send our small boat, the Eric, across to the lumme-hill of Appah, where I knew from the Esquimaux we should find plenty of birds; but the strength of the party was insufficient to drag her.

We were sorely disheartened, and could only wait for the fog to rise, in the hope of some smoother platform than that which was about us, or some lead that might save us the painful labor of tracking. I had climbed the iceberg; and there was nothing in view except Dalrymple Rock, with its red brassy face towering in the unknown distance. But I hardly got back to my boat, before a gale struck us from the northwest, and a floe, taking upon a tongue of ice about a mile to the north of us, began to swing upon it like a pivot and close slowly in upon our narrow resting-place.

"THE ESCAPE OFF WEARY MEN'S REST."

At first our own floe also was driven before the wind; but in a little while it encountered the stationary ice at the foot of the very rock itself. On the instant the wildest imaginable ruin rose around us. The men sprang mechanically each one to his station, bearing back the boats and stores; but I gave up for the moment all hope of our escape. It was not a nip, such as is familiar to Arctic navigators; but the whole platform, where we stood and for hundreds of yards on every side of us, crumbled and crushed and piled and tossed itself madly under the pressure. I do not believe that of our little body of men, all of them disciplined in trials, able to measure danger while combating it,—I do not believe there is one who this day can explain how or why—hardly when, in fact—we found ourselves afloat. We only know that in the midst of a clamor utterly indescribable, through which the braying of a thousand trumpets could no more have been heard than the voice of a man, we were shaken and raised and whirled and let down again in a swelling waste of broken hummocks, and, as the men grasped their boat-hooks in the stillness that followed, the boats eddied away in a tumultuous skreed of ice and snow and water.

We were borne along in this manner as long as the unbroken remnant of the in-shore floe continued revolving,—utterly powerless, and catching a glimpse every now and then of the brazen headland that looked down on us through the snowy sky. At last the floe brought up against the rocks, the looser fragments that

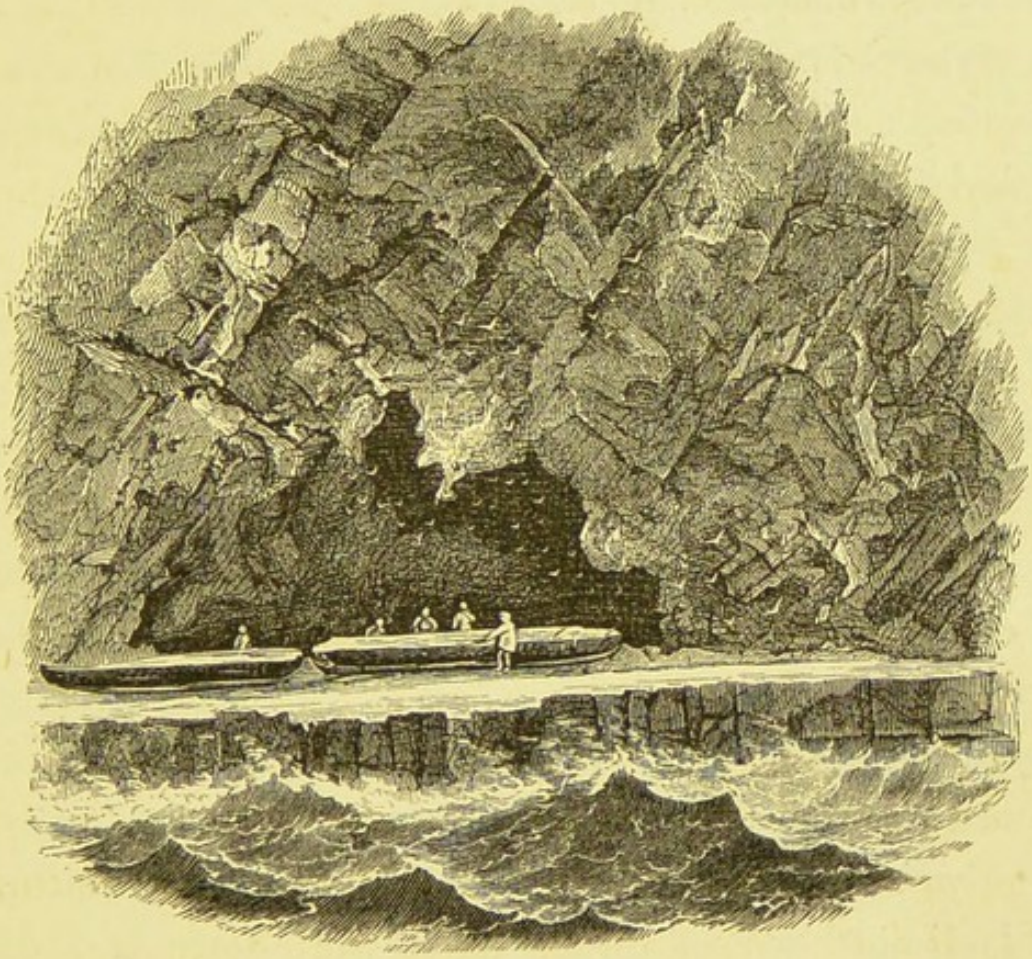
hung round it began to separate, and we were able by oars and boat-hooks to force our battered little flotilla clear of them. To our joyful surprise, we soon found ourselves in a stretch of the land-water wide enough to give us rowing-room, and with the assured promise of land close ahead.

As we neared it, we saw the same forbidding wall of belt-ice as at Sutherland and Hakluyt. We pulled along its margin, seeking in vain either an opening of access or a nook of shelter. The gale rose, and the ice began to drive again; but there was nothing to be done but get a grapnel out to the belt and hold on for the rising tide. The Hope stove her bottom and lost part of her weather-boarding, and all the boats were badly chafed. It was an awful storm; and it was not without constant exertion that we kept afloat, baling out the scud that broke over us, and warding off the ice with boat-hooks.

At three o'clock the tide was high enough for us to scale the ice-cliff. One by one we pulled up the boats upon a narrow shelf, the whole sixteen of us uniting at each pull. We were too much worn down to unload; but a deep and narrow gorge opened in the cliffs almost at the spot where we clambered up; and, as we pushed the boats into it on an even keel, the rocks seemed to close above our heads, until an abrupt turn in the course of the ravine placed a protecting cliff between us and the gale. We were completely encaved.

Just as we had brought in the last boat, the Red Eric, and were shoring her up with blocks of ice, a long

unused but familiar and unmistakable sound startled and gladdened every ear, and a flock of eiders flecking the sky for a moment passed swiftly in front of us. We knew that we must be at their breeding-grounds; and, as we turned in wet and hungry to our



WEARY MAN'S REST

long-coveted sleep, it was only to dream of eggs and abundance.

We remained almost three days in our crystal retreat, gathering eggs at the rate of twelve hundred a day. Outside, the storm raged without intermission, and our egg-hunters found it difficult to keep their feet; but a

merrier set of gourmands than were gathered within never surfeited in genial diet.

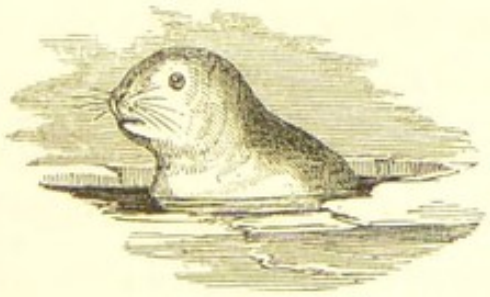
On the 3d of July the wind began to moderate, though the snow still fell heavily; and the next morning, after a patriotic egg-nog, the liquor borrowed grudgingly from our alcohol-flask, and diluted till it was worthy of temperance praise,—we lowered our boats, and bade a grateful farewell to "Weary Man's Rest." We rowed to the southeast end of Wostenholme Island; but the tide left us there, and we moved to the ice-foot.

For some days after this we kept moving slowly to the south, along the lanes that opened between the belt-ice and the floe. The weather continued dull and unfavorable for observations of any sort, and we were off a large glacier before we were aware that further progress near the shore was impracticable. Great chains of bergs presented themselves as barriers in our way, the spaces between choked by barricades of hummocks. It was hopeless to bore. We tried for sixteen hours together without finding a possibility of egress. The whole sea was rugged and broken in the extreme.

I climbed one of the bergs to the height of about two hundred feet, and, looking well to the west, was satisfied that a lead which I saw there could be followed in the direction of Conical Rocks, and beyond toward Cape Dudley Digges. But, on conferring with Brooks and McGary, I was startled to find how much the boats had suffered in the rude encounters of the last few days. The "Hope" was in fact altogether unseaworthy: the ice had strained her bottom-timbers, and it required

nearly all our wood to repair her; bit by bit we had already cut up and burned the runners and cross-bars of two sledges; the third we had to reserve as essential to our ice-crossings.

In the mean time, the birds, which had been so abundant when we left Dalrymple's Island, and which we had counted on for a continuous store, seemed to have been driven off by the storm. We were again reduced to short daily rations of bread-dust, and I was aware that the change of diet could not fail to tell upon the strength and energies of the party. I determined to keep in-shore, in spite of the barricades of ice, in the hope of renewing, to some extent at least, our supplies of game. We were fifty-two hours in forcing this rugged passage: a most painful labor, which but for the disciplined endurance of the men might well have been deemed impracticable.



SEAL-HOLE.

CHAPTER LIX.

A LOOK-OUT — PROVIDENCE HALT — THE GLACIER — PROVIDENCE DIET.

ONCE through the barrier, the leads began to open again, and on the 11th we found ourselves approaching Cape Dudley Digges, with a light breeze from the north-west. It looked for some hours as if our troubles were over, when a glacier came in sight not laid down on the charts, whose tongue of floe extended still farther out to sea than the one we had just passed with so much labor. Our first resolve was to double it at all hazards, for our crews were too much weakened to justify another tracking through the hummocks, and the soft snow which covered the land-floes was an obstacle quite insuperable. Nevertheless, we forced our way into a lead of sludge, mingled with the comminuted ice of the glacier; but the only result was a lesson of gratitude for our escape from it. Our frail and weather-worn boats were quite unequal to the duty.

I again climbed the nearest berg,—for these ice-moun-

tains were to us like the look-out hills of men at home, —and surveyed the ice to the south far on toward Cape York. My eyes never looked on a spectacle more painful. We were in advance of the season: the floes had not broken up. There was no "western water." Here, in a *cul-de-sac*, between two barriers, both impassable to men in our condition, with stores miserably inadequate and strength broken down, we were to wait till the tardy summer should open to us a way.

I headed for the cliffs. Desolate and frowning as they were, it was better to reach them and halt upon the inhospitable shore than await the fruitless ventures of the sea. A narrow lead, a mere fissure at the edge of the land-ice, ended opposite a low platform: we had traced its whole extent, and it landed us close under the shadow of the precipitous shore.

My sketch intended to represent this wild locality, like that of the "Weary Man's Rest," gives a very imperfect idea of the scene.

Where the cape lies directly open to the swell of the northwest winds, at the base of a lofty precipice there was left still clinging to the rock a fragment of the winter ice-belt not more than five feet wide. The tides rose over it and the waves washed against it continually, but it gave a perfectly safe perch to our little boats. Above, cliff seemed to pile over cliff, until in the high distance the rocks looked like the overlapping scales of ancient armor. They were at least eleven hundred feet high, their summits generally lost in fog and mist; and all the way up we seemed to see the birds whose

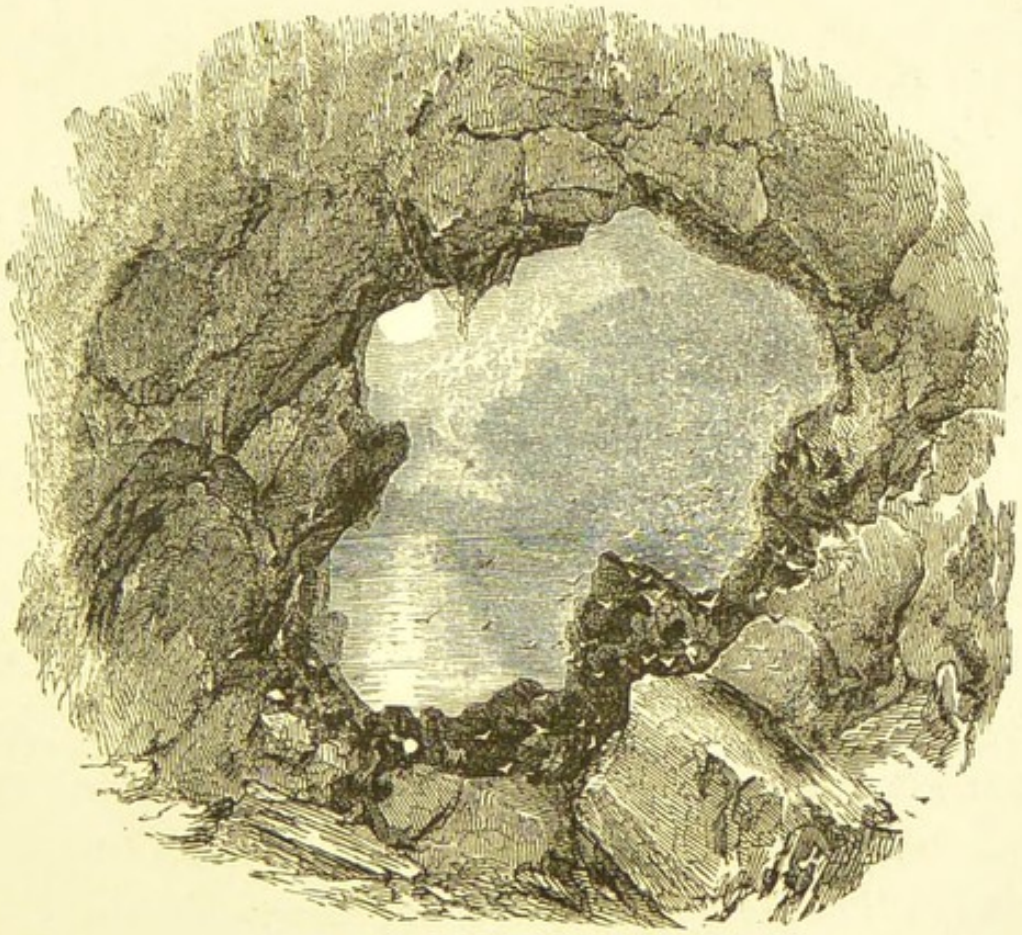
home is among their clefts. The nests were thickest on the shelves some fifty yards above the water; but both lumme and tridactyl gulls filled the entire air with glimmering specks, cawing and screeching with an incessant clamor.

PROVIDENCE HALT.

To soften the scene, a natural bridge opened on our right hand into a little valley cove, green with mosses, and beyond and above it, cold and white, the glacier.

This glacier was about seven miles across at its

"debouche;" it sloped gradually upward for some five miles back, and then, following the irregularities of its rocky sub-structure, suddenly became a steep crevassed hill, ascending in abrupt terraces. Then came two intervals of less rugged ice, from which the glacier passed into the great *mer de glace.*



THE BRIDGE.

On ascending a high craggy hill to the northward, I had a sublime prospect of this great frozen ocean, which seems to form the continental axis of Greenland,—a vast undulating plain of purple-tinted ice, studded with islands, and absolutely gemming the horizon with the varied glitter of sun-tipped crystal.

The discharge of water from the lower surface of the glacier exceeded that of any of the northern glaciers except that of Humboldt and the one near Etah. One torrent on the side nearest me overran the ice-foot from two to five feet in depth, and spread itself upon the floes for several hundred yards; and another, finding its outlet near the summit of the glacier, broke over the rocks, and poured in cataracts upon the beach below.

The ranunculus, saxifrages, chickweeds, abundant mosses, and Arctic grasses, flourished near the level of the first talus of the glacier: the stone crops I found some two hundred feet higher. The thermometer was at 90° in the sun; in the shade at 38°.

I have tried to describe the natural features of the scene, but I have omitted that which was its most valued characteristic. It abounded in life. The lumme, nearly as large as canvas-backs, and, as we thought, altogether sweeter and more juicy; their eggs, well known as delicacies on the Labrador coast; the cochlearia, growing superbly on the guano-coated surface;—all of them in endless abundance:—imagine such a combination of charms for scurvy-broken, hunger-stricken men.

I could not allow the fuel for a fire; our slush and tallow was reduced to very little more than a hundred pounds. The more curious in that art which has dignified the memory of Lucullus, and may do as much for Soyer, made experiments upon the organic matters within their reach,—the dried nests of the kittiwake,

the sods of poa, the heavy mosses, and the fatty skins of the birds around us. But they would none of them burn; and the most fastidious consoled himself at last with the doubt whether heat, though concentrating flavor, might not impair some other excellence. We

PROVIDENCE CLIFFS.

limited ourselves to an average of a bird a-piece per meal,—of choice, not of necessity,—and renewed the zest of the table with the best salad in the world,—raw eggs and cochlearia.

It was one glorious holiday, our week at Providence

Halt, so full of refreshment and all-happy thoughts, that I never allowed myself to detract from it by acknowledging that it was other than premeditated. There were only two of the party who had looked out with me on the bleak ice-field ahead, and them I had pledged to silence.

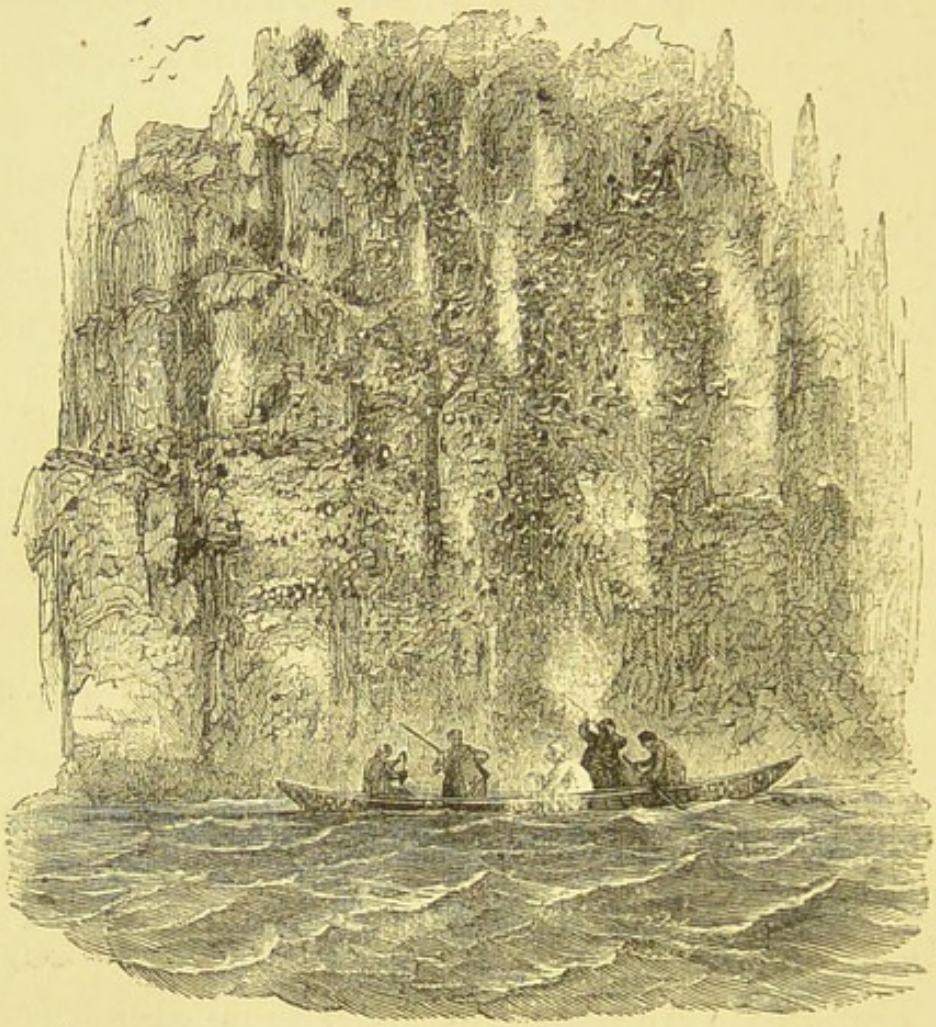
CHAPTER LX.

THE CRIMSON CLIFFS — THE ESQUIMAUX EDEN — DEPRESSION OF THE COAST—INVENTORY—IMALIK—LOSING OUR WAY—AT THE RUE-RADDIES — THE OPEN SEA — EFFECTS OF HUNGER — RESCUE OF THE FAITH.

It was the 18th of July before the aspects of the ice about us gave me the hope of progress. We had prepared ourselves for the new encounter with the sea and its trials by laying in a store of lumme; two hundred and fifty of which had been duly skinned, spread open, and dried on the rocks, as the *entremets* of our bread-dust and tallow.

My journal tells of disaster in its record of our setting out. In launching the Hope from the frail and perishing ice-wharf on which we found our first refuge from the gale, she was precipitated into the sludge below, carrying away rail and bulwark, losing overboard our best shot-gun, Bonsall's favorite, and, worst of all, that universal favorite, our kettle,—soup-kettle, paste-kettle, tea-kettle, water-kettle, in one. I may mention before I pass, that the kettle found its substitute and successor in the remains of a tin can which a

good aunt of mine had filled with ginger-nuts two years before, and which had long survived the condiments that once gave it dignity. "Such are the uses of adversity."



PASSING THE CRIMSON CLIFFS.

Our descent to the coast followed the margin of the fast ice. After passing the Crimson Cliffs of Sir John Ross, it wore almost the dress of a holiday excursion,—a rude one perhaps, yet truly one in feeling. Our course, except where a protruding glacier interfered with it, was nearly parallel to the shore. The birds

along it were rejoicing in the young summer, and when we halted it was upon some green-clothed cape near a stream of water from the ice-fields above. Our sportsmen would clamber up the cliffs and come back laden with little auks; great generous fires of turf, that cost nothing but the toil of gathering, blazed merrily; and our happy oarsmen, after a long day's work, made easy by the promise ahead, would stretch themselves in the sunshine and dream happily away till called to the morning wash and prayers. We enjoyed it the more, for we all of us knew that it could not last.

This coast must have been a favorite region at one time with the natives,—a sort of Esquimaux Eden. We seldom encamped without finding the ruins of their habitations, for the most part overgrown with lichens, and exhibiting every mark of antiquity. One of these, in latitude 76° 20′, was once, no doubt, an extensive village. Cairns for the safe deposit of meat stood in long lines, six or eight in a group; and the huts, built of large rocks, faced each other, as if disposed on a street or avenue.

The same reasoning which deduces the subsidence of the coast from the actual base of the Temple of Serapis, proves that the depression of the Greenland coast, which I had detected as far north as Upernavik, is also going on up here. Some of these huts were washed by the sea or torn away by the ice that had descended with the tides. The turf, too, a representative of very ancient growth, was cut off even with the water's edge, giving sections two feet thick. I had not

noticed before such unmistakable evidence of the depression of this coast: its converse elevation I had observed to the north of Wostenholme Sound. The axis of oscillation must be somewhere in the neighborhood of latitude 77°.

We reached Cape York on the 21st, after a tortuous but romantic travel through a misty atmosphere. Here the land-leads ceased, with the exception of some small and scarcely-practicable openings near the shore, which were evidently owing to the wind that prevailed for the time. Every thing bore proof of the late development of the season. The red snow was a fortnight behind its time. A fast floe extended with numerous tongues far out to the south and east. The only question was between a new rest, for the shore-ices to open, or a desertion of the coast and a trial of the open water to the west.

We sent off a detachment to see whether the Esquimaux might not be passing the summer at Episok, behind the glacier of Cape Imalik, and began an inventory of our stock on hand. I give the result:—

Dried lumme	195 birds.
Pork-slush	112 pounds.
Flour	50 "
Indian meal	50 "
Meat-biscuit	80 "
Bread	348 "

Six hundred and forty pounds of provision, all told, exclusive of our dried birds, or some thirty-six pounds

a man. Tom Hickey found a turf, something like his native peat, which we thought might help to boil our kettle; and with the aid of this our fuel-account stood thus:—

Turf, for two boilings a day	7 days.
Two sledge-runners	6 "
Spare oars, sledges, and an empty cask	4 "

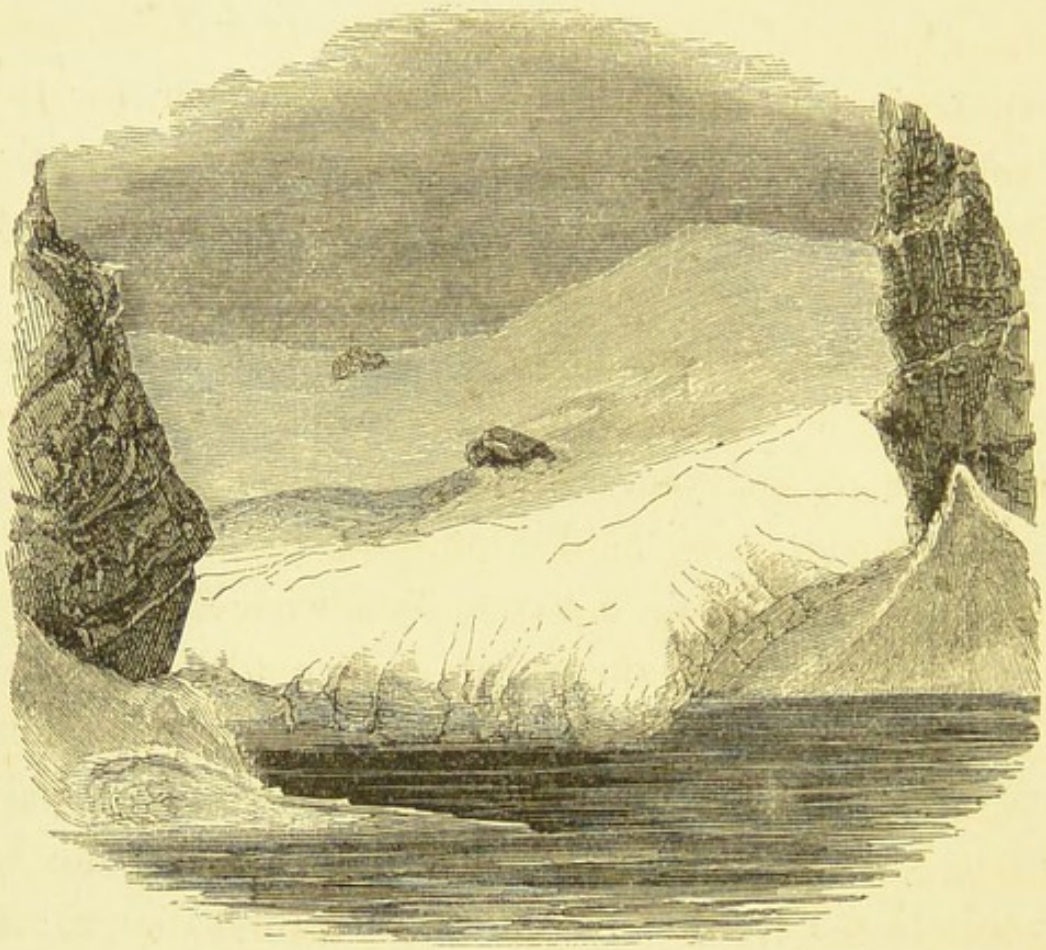
Seventeen days in all; not counting, however, the Red Boat, which would add something, and our emptied provision-bags, which might carry on the estimate to about three weeks.

The return of the party from Imalik gave us no reason to hesitate. The Esquimaux had not been there for several years. There were no birds in the neighborhood.

I climbed the rocks a second time with Mr. McGary, and took a careful survey of the ice with my glass. The "fast," as the whalers call the immovable shore-ice, could be seen in a nearly unbroken sweep, passing by Bushnell's Island, and joining the coast not far from where I stood. The outside floes were large, and had evidently been not long broken; but it cheered my heart to see that there was one well-defined lead which followed the main floe until it lost itself to seaward.

I called my officers together, explained to them the motives which governed me, and prepared to re-embark. The boats were hauled up, examined carefully, and, as far as our means permitted, repaired. The Red Eric was stripped of her outfit and cargo, to be broken up

for fuel when the occasion should come. A large beacon-cairn was built on an eminence, open to view from the south and west; and a red flannel shirt, spared with some reluctance, was hoisted as a pennant to draw attention to the spot. Here I deposited a



IMALIK.

succinct record of our condition and purposes, and then directed our course south by west into the ice-fields.

By degrees the ice through which we were moving became more and more impacted; and it sometimes required all our ice-knowledge to determine whether a particular lead was practicable or not. The irregu-

larities of the surface, broken by hummocks, and occasionally by larger masses, made it difficult to see far ahead; besides which, we were often embarrassed by the fogs. I was awakened one evening from a weary sleep in my fox-skins, to discover that we had fairly lost our way. The officer at the helm of the leading boat, misled by the irregular shape of a large iceberg that crossed his track, had lost the main lead some time before, and was steering shoreward far out of the true course. The little canal in which he had locked us was hardly two boats'-lengths across, and lost itself not far off in a feeble zigzag both behind and before us: it was evidently closing, and we could not retreat.

Without apprising the men of our misadventure, I ordered the boats hauled up, and, under pretence of drying the clothing and stores, made a camp on the ice. A few hours after, the weather cleared enough for the first time to allow a view of the distance, and McGary and myself climbed a berg some three hundred feet high for the purpose. It was truly fearful: we were deep in the recesses of the bay, surrounded on all sides by stupendous icebergs and tangled floe-pieces. My sturdy second officer, not naturally impressible, and long accustomed to the vicissitudes of whaling life, shed tears at the prospect.

There was but one thing to be done: cost what it might, we must harness our sledges again and retrace our way to the westward. One sledge had been already used for firewood; the Red Eric, to which it had belonged, was now cut up, and her light cedar planking

laid upon the floor of the other boats; and we went to work with the rue-raddies as in the olden time. It was not till the third toilsome day was well spent that we reached the berg which had bewildered our helmsman. We hauled over its tongue, and joyously embarked again upon a free lead, with a fine breeze from the north.

Our little squadron was now reduced to two boats. The land to the northward was no longer visible; and whenever I left the margin of the fast to avoid its deep sinuosities, I was obliged to trust entirely to the compass. We had at least eight days' allowance of fuel on board; but our provisions were running very low, and we met few birds, and failed to secure any larger game. We saw several large seals upon the ice, but they were too watchful for us; and on two occasions we came upon the walrus sleeping,—once within actual lance-thrust; but the animal charged in the teeth of his assailant and made good his retreat.

On the 28th I instituted a quiet review of the state of things before us. Our draft on the stores we had laid in at Providence Halt had been limited for some days to three raw eggs and two breasts of birds a day; but we had a small ration of bread-dust besides; and when we halted, as we did regularly for meals, our fuel allowed us to indulge lavishly in the great panacea of Arctic travel, tea. The men's strength was waning under this restricted diet; but a careful reckoning up of our remaining supplies proved to me now that even this was more than we could afford ourselves without

an undue reliance on the fortunes of the hunt. Our next land was to be Cape Shackleton, one of the most prolific bird-colonies of the coast, which we were all looking to, much as sailors nearing home in their boats after disaster and short allowance at sea. But, meting out our stores through the number of days that must elapse before we could expect to share its hospitable welcome, I found that five ounces of bread-dust, four of tallow, and three of bird-meat, must from this time form our daily ration.

So far we had generally coasted the fast ice: it had given us an occasional resting-place and refuge, and we were able sometimes to reinforce our stores of provisions by our guns. But it made our progress tediously slow, and our stock of small-shot was so nearly exhausted that I was convinced our safety depended on an increase of speed. I determined to try the more open sea.

For the first two days the experiment was a failure. We were surrounded by heavy fogs; a southwest wind brought the outside pack upon us and obliged us to haul up on the drifting ice. We were thus carried to the northward, and lost about twenty miles. My party, much overworked, felt despondingly the want of the protection of the land-floes.

Nevertheless, I held to my purpose, steering S.S.W. as nearly as the leads would admit, and looking constantly for the thinning out of the pack that hangs around the western water.

Although the low diet and exposure to wet had

again reduced our party, there was no apparent relaxation of energy; and it was not until some days later that I found their strength seriously giving way.

It is a little curious that the effect of a short allowance of food does not show itself in hunger. The first symptom is a loss of power, often so imperceptibly brought on that it becomes evident only by an accident. I well remember our look of blank amazement as, one day, the order being given to haul the "Hope" over a tongue of ice, we found that she would not budge. At first I thought it was owing to the wetness of the snow-covered surface in which her runners were; but, as there was a heavy gale blowing outside, and I was extremely anxious to get her on to a larger floe to prevent being drifted off, I lightened her cargo and set both crews upon her. In the land of promise, off Crimson Cliffs, such a force would have trundled her like a wheelbarrow: we could almost have borne her upon our backs. Now, with incessant labor and standing-hauls, she moved at a snail's pace.

The "Faith" was left behind, and barely escaped destruction. The outside pressure cleft the floe asunder, and we saw our best boat, with all our stores, drifting rapidly away from us. The sight produced an almost hysterical impression upon our party. Two days of want of bread, I am sure, would have destroyed us; and we had now left us but eight pounds of shot in all. To launch the Hope again, and rescue her comrade or share her fortunes, would have been

the instinct of other circumstances; but it was out of the question now. Happily, before we had time to ponder our loss, a flat cake of ice eddied round near the floe we were upon; McGary and myself sprang to it at the moment, and succeeded in floating it across the chasm in time to secure her. The rest of the crew rejoined her by only scrambling over the crushed ice as we brought her in at the hummock-lines.

KINGSTON HUTS.

CHAPTER LXI.

THE SEAL! THE SEAL! — THE FESTIVAL — TERRA FIRMA — PAUL ZACHARIAS — THE FRAULEIN FLAISCHER — THE NEWS — AT THE SETTLEMENTS — THE WELCOME.

THINGS grew worse and worse with us: the old difficulty of breathing came back again, and our feet swelled to such an extent that we were obliged to cut open our canvas boots. But the symptom which gave me most uneasiness was our inability to sleep. A form of low fever which hung by us when at work had been kept down by the thoroughness of our daily rest: all my hopes of escape were in the refreshing influences of the halt.

It must be remembered that we were now in the open bay, in the full line of the great ice-drift to the Atlantic, and in boats so frail and unseaworthy as to require constant baling to keep them afloat.

It was at this crisis of our fortunes that we saw a large seal floating—as is the custom of these animals—on a small patch of ice, and seemingly asleep. It was an ussuk, and so large that I at first mistook it for a

walrus. Signal was made for the Hope to follow astern, and, trembling with anxiety, we prepared to crawl down upon him.

Petersen, with the large English rifle, was stationed in the bow, and stockings were drawn over the oars as mufflers. As we neared the animal, our excitement became so intense that the men could hardly keep stroke. I had a set of signals for such occasions, which spared us the noise of the voice; and when about three hundred yards off, the oars were taken in, and we moved on in deep silence with a single scull astern.

He was not asleep, for he reared his head when we were almost within rifle-shot; and to this day I can remember the hard, careworn, almost despairing expression of the men's thin faces as they saw him move: their lives depended on his capture.

I depressed my hand nervously, as a signal for Petersen to fire. McGary hung upon his oar, and the boat, slowly but noiselessly sagging ahead, seemed to me within certain range. Looking at Petersen, I saw that the poor fellow was paralyzed by his anxiety, trying vainly to obtain a rest for his gun against the cutwater of the boat. The seal rose on his fore-flippers, gazed at us for a moment with frightened curiosity, and coiled himself for a plunge. At that instant, simultaneously with the crack of our rifle, he relaxed his long length on the ice, and, at the very brink of the water, his head fell helpless to one side.

I would have ordered another shot, but no discipline could have controlled the men. With a wild yell, each

vociferating according to his own impulse, they urged both boats upon the floes. A crowd of hands seized the seal and bore him up to safer ice. The men seemed half crazy: I had not realized how much we were reduced by absolute famine. They ran over the floe, crying and laughing and brandishing their knives. It was not five minutes before every man was sucking his bloody fingers or mouthing long strips of raw blubber.

Not an ounce of this seal was lost. The intestines found their way into the soup-kettles without any observance of the preliminary home-processes. The cartilaginous parts of the fore-flippers were cut off in the *mêlée*, and passed round to be chewed upon; and even the liver, warm and raw as it was, bade fair to be eaten before it had seen the pot. That night, on the large halting-floe, to which, in contempt of the dangers of drifting, we happy men had hauled our boats, two entire planks of the Red Eric were devoted to a grand cooking-fire, and we enjoyed a rare and savage feast.

This was our last experience of the disagreeable effects of hunger. In the words of George Stephenson, "The charm was broken, and the dogs were safe." The dogs I have said little about, for none of us liked to think of them. The poor creatures Toodla and Whitey had been taken with us as last resources against starvation. They were, as McGary worded it, "meat on the hoof," and "able to carry their own fat over the floes." Once, near Weary Man's Rest, I had been on the point of killing them; but they had been

the leaders of our winter's team, and we could not bear the sacrifice.

I need not detail our journey any farther. Within a day or two we shot another seal, and from that time forward had a full supply of food.

On the 1st of August we sighted the Devil's Thumb, and were again among the familiar localities of the whalers' battling-ground. The bay was quite open, and we had been making easting for two days before. We were soon among the Duck Islands, and, passing to the south of Cape Shackleton, prepared to land.

"Terra firma! Terra firma!" How very pleasant it was to look upon, and with what a tingle of excited thankfulness we drew near it! A little time to seek a cove among the wrinkled hills, a little time to exchange congratulations, and then our battered boats were hauled high and dry upon the rocks, and our party, with hearts full of our deliverance, lay down to rest.

And now, with the apparent certainty of reaching our homes, came that nervous apprehension which follows upon hope long deferred. I could not trust myself to take the outside passage, but timidly sought the quiet-water channels running deep into the archipelago which forms a sort of labyrinth along the coast.

Thus it was that at one of our sleeping-halts upon the rocks—for we still adhered to the old routine—Petersen awoke me with a story. He had just seen and recognised a native, who, in his frail kayak, was

evidently seeking eider-down among the islands. The man had once been an inmate of his family. "Paul Zacharias, don't you know me? I'm Carl Petersen!" "No," said the man; "his wife says he's dead;" and, with a stolid expression of wonder, he stared for a

THE FIRST KAYAK.

moment at the long beard that loomed at him through the fog, and paddled away with all the energy of fright.

Two days after this, a mist had settled down upon the islands which embayed us, and when it lifted we found ourselves rowing, in lazy time, under the shadow

of Karkamoot. Just then a familiar sound came to us over the water. We had often listened to the screeching of the gulls or the bark of the fox, and mistaken it for the "Huk" of the Esquimaux; but this had about it an inflection not to be mistaken, for it died away in the familiar cadence of a "halloo."

"Listen, Petersen! oars, men!" "What is it?"—and he listened quietly at first, and then, trembling, said, in a half whisper, "Dannemarkers!"

I remember this, the first tone of Christian voice which had greeted our return to the world. How we all stood up and peered into the distant nooks; and how the cry came to us again, just as, having seen nothing, we were doubting whether the whole was not a dream; and then how, with long sweeps, the white ash cracking under the spring of the rowers, we stood for the cape that the sound proceeded from, and how nervously we scanned the green spots which our experience, grown now into instinct, told us would be the likely camping-ground of wayfarers.

By-and-by—for we must have been pulling a good half hour—the single mast of a small shallop showed itself; and Petersen, who had been very quiet and grave, burst out into an incoherent fit of crying, only relieved by broken exclamations of mingled Danish and English. "'Tis the Upernavik oil-boat! The Fraulein Flaischer! Carlie Mossyn, the assistant cooper, must be on his road to Kingatok for blubber. The Mariane (the one annual ship) has come, and Carlie

Mossyn——" and here he did it all over again, gulping down his words and wringing his hands.

It was Carlie Mossyn, sure enough. The quiet routine of a Danish settlement is the same year after year, and Petersen had hit upon the exact state of things. The Mariane was at Proven, and Carlie Mossyn had come up in the Fraulein Flaischer to get the year's supply of blubber from Kingatok.

Here we first got our cloudy vague idea of what had passed in the big world during our absence. The friction of its fierce rotation had not much disturbed this little outpost of civilization, and we thought it a sort of blunder as he told us that France and England were leagued with the Mussulman against the Greek Church. He was a good Lutheran, this assistant cooper, and all news with him had a theological complexion.

"What of America? eh, Petersen?"—and we all looked, waiting for him to interpret the answer.

"America?" said Carlie; "we don't know much of that country here, for they have no whalers on the coast; but a steamer and a barque passed up a fortnight ago, and have gone out into the ice to seek your party."

How gently all the lore of this man oozed out of him! he seemed an oracle, as, with hot-tingling fingers pressed against the gunwale of the boat, we listened to his words. "Sebastopol ain't taken." Where and what was Sebastopol?

But "Sir John Franklin?" There we were at home

again,—our own delusive little speciality rose uppermost. Franklin's party, or traces of the dead which represented it, had been found nearly a thousand miles to the south of where we had been searching for them. He knew it; for the priest (Pastor Kraag) had a Ger-

ENTERING THE DANISH SETTLEMENT.

man newspaper which told all about it. And so we "out oars" again, and rowed into the fogs.

Another sleeping-halt has passed, and we have all washed clean at the fresh-water basins and furbished up our ragged furs and woollens. Kasarsoak, the snow top of Sanderson's Hope, shows itself above the

mists, and we hear the yelling of the dogs. Petersen had been foreman of the settlement, and he calls my attention, with a sort of pride, to the tolling of the workmen's bell. It is six o'clock. We are nearing the end of our trials. Can it be a dream?——

We hugged the land by the big harbor, turned the corner by the old brew-house, and, in the midst of a crowd of children, hauled our boats for the last time upon the rocks.

For eighty-four days we had lived in the open air. Our habits were hard and weather-worn. We could not remain within the four walls of a house without a distressing sense of suffocation. But we drank coffee that night before many a hospitable threshold, and listened again and again to the hymn of welcome, which, sung by many voices, greeted our deliverance.

OOMIAK.

J. Hamilton. Engraved at J.M.Butler's establishment 84 Chestnut St. A.W. Graham.

KASARSOAK. SANDERSON'S HOPE.

UPERNAVIK.

[From a sketch by Dr. Kane.]

CONCLUSION.

We received all manner of kindness from the Danes of Upernavik. The residents of this distant settlement are dependent for their supplies on the annual trading-ship of the colonies, and they of course could not minister to our many necessities without much personal inconvenience. But they fitted up a loft for our reception, and shared their stores with us in liberal Christian charity.

They gave us many details of the expeditions in search of Sir John Franklin, and added the painful news that my gallant friend and comrade, Bellot, had perished in a second crusade to save him. We knew each other by many common sympathies: I had divided with him the hazards of mutual rescue among the ice-fields; and his last letter to me, just before I left New York, promised me the hope that we were to meet again in Baffin's Bay, and that he would unite himself with our party as a volunteer. The French service never lost a more chivalrous spirit.

The Danish vessel was not ready for her homeward journey till the 4th of September; but the interval was

well spent in regaining health and gradually accustoming ourselves to in-door life and habits. It is a fact, which the physiologist will not find it difficult to reconcile with established theories, that we were all more prostrated by the repose and comfort of our new condition than we had been by nearly three months of constant exposure and effort.

On the 6th I left Upernavik, with all our party, in the Mariane, a stanch but antiquated little barque, under the command of Captain Ammondson, a fine representative of the true-hearted and skilful seamen of his nation, who promised to drop us at the Shetland Islands. Our little boat, the Faith, which was regarded by all of us as a precious relic, took passage along with us. Except the furs on our backs, and the documents that recorded our labors and our trials, it was all we brought back of the Advance and her fortunes.

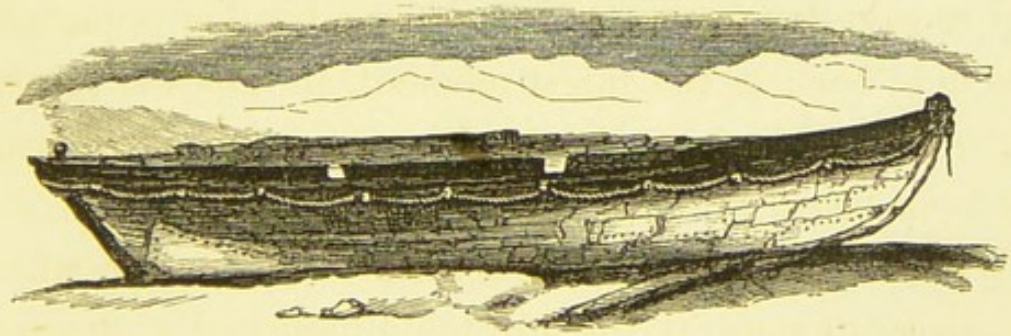
On the 11th we arrived at Godhavn, the inspectorate of North Greenland, and had a characteristic welcome from my excellent friend, Mr. Olrik. The Mariane had stopped only to discharge a few stores and receive her papers of clearance; but her departure was held back to the latest moment, in hopes of receiving news of Captain Hartstene's squadron, which had not been heard of since the 21st of July.

We were upon the eve of setting out, however, when the look-out man at the hill-top announced a steamer in the distance. It drew near, with a barque in tow, and we soon recognised the stars and stripes of our

own country. The Faith was lowered for the last time into the water, and the little flag which had floated so near the poles of both hemispheres opened once more to the breeze. With Brooks at the tiller and Mr. Olrik at my side, followed by all the boats of the settlement, we went out to meet them.

Not even after the death of the usuk did our men lay to their oars more heartily. We neared the squadron and the gallant men that had come out to seek us; we could see the scars which their own ice-battles had impressed on the vessels; we knew the gold lace of the officers' cap-bands, and discerned the groups who, glass in hand, were evidently regarding us.

Presently we were alongside. An officer, whom I shall ever remember as a cherished friend, Captain Hartstene, hailed a little man in a ragged flannel shirt, "Is that Dr. Kane?" and with the "Yes!" that followed, the rigging was manned by our countrymen, and cheers welcomed us back to the social world of love which they represented.



THE FAITH.

THE HARTSTENE RELIEF-EXPEDITION.

The Expedition for the relief of Dr. Kane and his party, to which allusion is made in the closing chapter, was dispatched by authority of Congress, under command of Lieutenant Henry J. Hartstene, U. S. N., with two vessels, the bark Release and the propeller Arctic. They sailed from New York, May 31, 1855, precisely two years after the departure of the Advance from the same port, and, having penetrated northward to a point thirty miles below Rensselaer Harbor, were returning southward, when they fell in with Dr. Kane and his companions at Lievely, in time to take them from a Danish vessel, in which they had embarked for home by way of the Shetland Islands.

Lieutenant Hartstene had nobly volunteered for this service, and showed himself worthy of it by the words with which he closed a letter to the Secretary of the Navy on entering the Arctic regions: "To avoid further risk of human life in a search so extremely hazardous, I would suggest the impropriety of making any efforts to relieve us if we should not return."

Dr. John K. Kane, a younger brother of the explorer, and then not yet of age, was also among the volunteers, and prepared a graphic and spirited sketch of the Relief Expedition, which was published in Putnam's Magazine for May, 1856.

APPENDIX.

A SKETCH OF THE LIFE OF

ELISHA KENT KANE, M. D., U. S. N.,

BY

PROF. CHARLES W. SHIELDS, D. D., OF PRINCETON COLLEGE, N. J.

THE Life of Dr. Kane is already a fireside tale. Every one is familiar with it as the story of a young knight-errant of philanthropy and science, who traversed nearly the whole surface of the globe, within the short period of fourteen years; who gathered here and there a laurel from every walk of physical research in which he strayed; who plunged into the thick of perilous adventure, abstracting in the spirit of philosophy, yet seeing with the eye of poesy, and loving with the heart of humanity; who penetrated, under such impulses, even to the Northern pole of the planet and remained secluded amidst the horrors of two Arctic winters; who returned like one come back from another world, to invest the very story of his escape with the charms of literature and art, and transport us, by his graphic pen, into scenes we scarcely realize as belonging to the earth we inhabit; and who died at length, in the flush of his manhood and the morning of his fame, lamented by his country and the world.

To write the story of such a life as it should be written, would be impossible within the limits assigned to this memoir, and nothing more, therefore, will be here attempted than such a sketch as may serve to introduce this new edition of his works to the reader. As we trace the usual biographical themes, though in the briefest manner, it will be found that his origin and education, the leading events in his career, the prominent traits of his character, his public services, and his private life and last moments, together yield an impression which is suited at once to justify his fame and perpetuate the lessons he has left to the world.*

*Besides the private sources of information from which this sketch has been drawn, acknowledgments are due, and are here made, to the Biography of Elisha Kent Kane, by Dr. William Elder, published by Childs & Peterson, Philadelphia, and Philips, Sampson & Co., Boston, 1858.

Elisha Kent Kane, the leader in the American search for Sir John Franklin, was born in Philadelphia, Feb. 3, A. D. 1820. He received the name of his grandfather, who had himself been named after his maternal grandfather, the Reverend Elisha Kent, of "Kent's Parish," N. Y., and he was baptized by his uncle, the Reverend Jacob J. Janeway, D. D., then pastor of the Second Presbyterian Church, which his parents attended.

On the father's side he was descended from Colonel John Kane, of the British Army, his great-grandfather, who came from Ireland to the colony of New York about the year 1756, retired to Dutchess County, and there married Miss Sybil Kent, daughter of the clergyman above named, and aunt of Chancellor Kent. His grandfather, Elisha K. Kane, was a successful merchant in Albany and New York, who married Miss Alida Van Rensselaer, daughter of General Robert Van Rensselaer, of Claverack, and subsequently removed to Philadelphia. His father, the late Hon. John K. Kane, a graduate of Yale College, and successively a member of the Philadelphia bar, Attorney-General of the State, and Judge of the United States Court for the Eastern District of Pennsylvania, was well known as an acute and learned jurist within his profession, as an influential statesman of the old school of politics, an active promoter of the arts, sciences, and charities in Philadelphia, an accomplished scholar in classical and English literature, and a courtly gentleman in society. And the culture, efficiency, and tact which distinguished him in every relation of life were not wanting in his honored son.

On the mother's side he was descended from Thomas Leiper, a younger son of a Scotch family of French origin, who came in search of fortune about the year 1764, to the colony of Virginia, and thence to Pennsylvania; built extensive mills near Philadelphia; aided in forming the First City Troop, and served with distinguished gallantry in the battles of Trenton and Princeton; united, after the war, with his warm personal friend, President Jefferson, in organizing the political party which looked to him for its leader; and as a zealous advocate of public improvements, laid down the first experimental railway constructed in the United States. He married Miss Elizabeth Coltas Gray, the daughter of the Hon. George Gray, of Gray's Ferry, and of Martha Ibbetson Gray, whose generous services in nursing the sick and wounded prisoners during the occupation of Philadelphia by Lord Howe, attracted public testimonials from both parties. Their daughter, Jane Duval Leiper, as Mrs. Kane, illustrated the traits proverbial in the mothers of great men by combining with the virtues of the Spartan

matron, that energy, nerve, elasticity, and warm-heartedness which became famous in her son.

On both sides, his ancestry in this country, it will be seen, dates before the American Revolution, being derived in the paternal line from Ireland, Holland, and England, and in the maternal line from Scotland, England, and France, while the corresponding religions blended in it were the Episcopalian, Dutch Reformed, and Congregational, with the Presbyterian, Quaker, Methodist, and Moravian. And the names which it embraces are here mentioned, not merely because he has himself written them, with a just pride, upon the map of the Arctic seas, but also as serving to explain that rare combination of varied and even opposite elements of race, of creed, and of culture, which entered into the formation of his character.

When Mr. Kane and Miss Leiper first met, they were in the prime of youthful strength and beauty; and after a courtship, the romance of which has become a family tradition, they were married, April 20, 1819. Elisha was the eldest of their children. Three other sons and a married daughter are still living.

In Dr. Kane, as in most men who achieve greatness, the boy foreshadowed the man. Arctic explorations were prefigured by juvenile feats of daring and contrivance. His biographer relates that when but a child, he scaled the roof by moonlight with his younger brother, while the family were asleep, feeling repaid for the perilous adventure by the "grand view" from the chimney-top. Traits which afterwards shone out before the world, already appeared in the school-room and on the playground, where he became a spirited little champion of the weak and oppressed, repelling imposition from any quarter with uncalculating courage, and yet as quick to forgive as to resent an injury. His tastes, too, began to show the bias of coming years. He had his own small cabinet of minerals, birds, and insects, and his chemical laboratory, the latter to the frequent alarm of the household—and his favorite books were Robinson Crusoe and Pilgrim's Progress.

But if it is easy now to trace the beginnings of his career, it was not so easy then to forecast it. Fonder of sports than of books, full of generous but ill-regulated impulses, and impatient of control, his course as yet was like that of a mountain torrent which has not found and made its channel; and it was only when he began by his own efforts to retrieve his neglected education, that parental anxiety was relieved.

His father would have had him follow in his own footsteps at Yale; but his inclination was more towards science than learning, and the

optional course of study which the University of Virginia allowed, was found better adapted to his somewhat exceptional genius. He was in his seventeenth year when he entered the university, and during the year and a half that he studied there, made good progress in the classical and mathematical course prescribed, as well as in his own chosen sciences of chemistry, mineralogy, geology, and civil engineering. It was at this time he said to his cousin that he "intended to make his mark in the world." And the resolution seems to have derived impulse from an event which abruptly ended his collegiate course a little before the time of graduation. Prostrated by an acute rheumatism of the heart, he was wrapped in a blanket and taken by slow journeys home to Philadelphia, where he endured frightful paroxysms of pain, and for days appeared to be on the brink of death. He recovered, to learn from his physicians that he might fall as suddenly as by a musket shot. The decision with which he went back to the duties of life was only anticipated by his father's counsel: "Elisha, if you must die, die in harness."

Turning from the profession of a civil engineer to that of a physician, in his nineteenth year, he was matriculated in the Medical Department of the University of Pennsylvania, and after attending one course of lectures, while yet an undergraduate, he was elected one of the Resident Physicians in the Hospital at Blockley. His preceptors and associates have all publicly spoken of the remarkable zeal and success with which he prosecuted his studies and performed his duties in these positions. Indeed his graduating thesis on the subject of "Kyestein" was so highly esteemed that it was published by a vote of the Faculty, and attracted the general notice of the profession. It is still quoted as an authority both in this country and abroad.

It had become plain that Dr. Kane's cardiac disorder combined with his scientific tastes and aspirations to unfit him for the routine life of a practitioner, and that travel, adventure, and incessant activity were with him a physical need as well as a moral impulse. He had no taste for the social blandishments under which young men born to ease and elegance too often waste their prime, and the stagnant political condition of the country at that time afforded none of the generous careers which have since been opened to them. Neither could he accept for himself the fate of a mere invalid tourist or reckless adventurer, intent on crowding into a short lifetime the utmost amount of mere aimless diversion. There must, if possible, be a color of scientific enthusiasm to sanction his life of physical hardihood.

His father, acting upon this enlightened view of his case, applied for

him to the Secretary of the Navy for the post of surgeon in the service; and after passing the required examination so creditably that the disqualifying state of his health was overlooked by the Board of Examiners, he was appointed physician of the Chinese Embassy, which sailed in the frigate Brandywine, Commodore Parker, in May, 1843.

During the two years that he was absent upon this his first extended tour of travel, he made a complete circuit of the globe, sailing around the coast of South America, across the Pacific Ocean to Southern and Eastern Asia, and returning by the overland route through Europe, across the Atlantic to the United States. And that spirit of dauntless research which actuated him through life seems every where to have brought with it its own proper atmosphere of marvelous incident and peril.

While the vessel remained at Rio de Janeiro, after participating with the diplomatic corps in the coronation of the Emperor of Brazil, he visited the Eastern Andes for a geological survey of that region. At Bombay, where the legation awaited some months the arrival of its chief, Mr. Cushing, by the overland route, he seized the opportunity for similar inland journeys, exploring the caverned temples of Elephanta, traveling by palanquin to the less known ruins at Karli, passing over to Ceylon, and engaging, with some officers of the garrison, in the elephant hunt, and the other wild sports of the island. But it was at Luzon or Luconia, a Spanish possession in the China Sea, that this adventurous spirit, though under a scientific impulse, passed the limits of prudence in his far-famed exploration of the crater of Tael, a volcano on the Pacific coast of the island, in a region inhabited only by savages. Crossing over to the capital city of the island, during one of the long delays of Chinese diplomacy, he procured an escort of natives from the Archbishop of Manilla, (by means of letters from American prelates which he had secured before leaving home,) and in company with his friend Baron Loë, a relative of Metternich, penetrated across the country to the asphaltic lake in which the island volcano is situated. Both gentlemen at first descended together, until they reached a precipice overhanging the cavernous gulf of the crater, when the baron saw further progress to be impossible, but the doctor, in spite of the remonstrances of the whole party, insisted upon being lowered over the ledge by means of a rope made of bamboos, and held in the hands of the natives under the baron's direction, until he reached the bottom, two hundred feet below. Loosing himself from the cord, he forced his way downwards through the sulphurous vapors, over the hot

ashes, to the green, boiling lake, dipped his specimen-bottle into its waters, returned to the rope, several times stumbling, almost stifled, and with his boots charred, one of them to a coal, but succeeded in again fastening himself, and was hauled up by his assistants and received into their hands exhausted and almost insensible. Remedies brought from the neighboring hermitage were applied, and he was so far restored that they could proceed on their journey. But rumors spread before them among the pigmy savages on the island, of the profane invasion which had been made into the sacred mysteries of the Tael, and an angry mob gathered around them, which was only dispersed by one or two pistol shots and the timely arrival of the padres. The trophies of this expedition were some valuable mineral specimens, a bottle of sulphur water, a series of graphic views from recollection in his sketch-book, and a written description of the volcano by one of the friars, which, after many wanderings, was put in his hands as he sat at the home dinner-table, twelve years afterwards.

Resigning his post in the diplomatic mission, Dr. Kane practiced his profession in Whampoa, until he was sufficiently in funds to pursue his journey homeward through Calcutta by the overland route. After exploring the interior of India, including the Himalaya mountains, he was admitted with his friend, Mr. Dent, a British official, into the suite of Prince Tagore, one of the native Hindoo nobles, then on his way to the court of Queen Victoria, and traveled under this safe conduct through Persia and Syria, as far as Upper Egypt. At Alexandria he received, through an introduction by Prince Tagore to the Pasha Mehemet Ali, a special firman by which he was enabled safely to traverse the region of Egyptian ruins. But the journals of a large part of this expedition, as of the whole previous tour, were unfortunately lost by the upsetting of his boat in the Nile. In the ruined temple of Karnak he met with Professor Lepsius, the renowned Egyptologist, with whom he traveled some time, and at Luxor he proved that archæological research is sometimes more curious than effective, by climbing, as had never been done before, between the colossal knees of the statue of Memnon, in hopes of finding some hieroglyph on the under side of the tablet in the lap of the figure.

His sensitive organization, throughout life, seems to have reflected with peculiar intensity the disease of every country through which he traveled. As at Macao he had been prostrated by the rice-fever, so at Alexandria he was seized with an attack of the plague. When sufficiently recovered to pursue his journeyings, he set out for Greece, and made the tour of that classic land on foot. Athens, Platæa, Mount

Helicon, Thermopylæ, Parnassus, were successively visited, after which he passed to Trieste, and thence through Germany to Switzerland, where the glaciers of the Alps yielded him the ice-theories which he afterwards tested in the Arctic regions.

His design had been to return to Manilla, in the island of Luzon, with a license from the Spanish authorities to practice his profession; but failing in this, or relinquishing it, he at length yielded to urgent solicitations from home, and returned by way of Italy, France, and England, to the United States.

Dr. Kane was at this time twenty-four years of age, and had already developed the traits for which he was subsequently distinguished. The Reverend George Jones, chaplain to the Chinese Embassy, speaks of him as "then very youthful-looking, with a smooth face, a florid complexion, very delicate form, smaller than the common size; but with an elastic step, a bright eye, and great enthusiasm in manner, which also mixed itself with his conversation. He seemed to be all hope, all ardor, and his eye appeared already to take in the whole world as his own." And another of his associates in the diplomatic mission, Fletcher Webster, Esq., has said that "in social intercourse, although agreeable and very bright when called out, he still seemed to be thinking of something above and beyond what was present. To his great scientific taste and knowledge, and his energy and resolution, he added a courage of the most dauntless kind. The idea of personal apprehension seemed never to cross his mind. He was ambitious, not of mere personal distinction, but of achievements useful to mankind and promotive of science."

On his return to Philadelphia, he successfully devoted himself for a time to his profession, both as a teacher and practitioner of medicine, though being still a titular surgeon of the Navy, he had put his name on the roll as "waiting for orders." Accordingly, three weeks before the declaration of war against Mexico, in May, 1846, he was ordered to the coast of Africa, in the frigate United States, under Commodore Reed. When at Rio Janeiro in 1843, he had received, in return for professional services, from the famous Portuguese merchant, Da Sousa, introductory letters to his commercial representatives on the African coast, by means of which he now visited and examined the slave-factories; and while the frigate was in harbor, he also joined a caravan going to the interior, and was presented at the court of his savage majesty the king of Dahomey, where he became convinced that even the horrors of the middle passage were merciful compared with those from which its victims had been rescued.

From this comparatively inglorious field of the public service, Dr. Kane was transferred by a virulent attack of the coast-fever, which, after bringing him to the point of death, required his immediate return home. He reached Philadelphia utterly broken in health, but eager to mingle in the stirring scenes then passing in Mexico, from which he had been withheld during his ten months' absence. When scarcely yet convalescent, he hastened to Washington, obtained credentials as bearer of dispatches to General Scott, then in the Mexican capital, and after stopping in Kentucky to procure a horse, said by one of his colleagues to have been "the finest animal ever seen in Mexico," pursued his journey to New Orleans, and thence across the Gulf to Vera Cruz. It was while on his way to the interior that an affair occurred, the well-attested facts of which bring back the romance of chivalry as a reality.

Dr. Kane, having been unable to procure an American escort, had intrusted himself to a Mexican spy-company, under Colonel Domingues, and was approaching Nopaluca, when they encountered a body of contra-guerrillas, escorting Generals Gaona and Torrejon, with other Mexican officers. A short and severe contest ensued, resulting in the capture of most of the Mexican party. During the fray, the doctor's charger carried him between young Colonel Gaona and his orderly, who both fell upon him at the same moment. Receiving only a slight flesh hurt from the lance of the latter, he parried the sabre-cut of the former and unhorsed him with a wound in the chest. Soon afterwards cries came from young Gaona to save his father, the aged general, whom, together with the other Mexican prisoners, the renegade Domingues and his bandits were about to butcher in cold blood. Dr. Kane instantly charged among them with his six-shooter, and succeeded at length in enforcing humanity to the vanquished, though only after himself receiving a lance-thrust in the abdomen and a blow which cost him the loss of his horse. But still another act of mercy remained to be performed. As the old General sat beside his son, who was bleeding to death from his wound, the doctor, with no better surgical implements than a table-fork and a piece of pack-thread, succeeded in taking up and tying the artery, and thus saving the life which he had endangered.

The gratitude of the rescued Mexicans knew no bounds, and when it was found that their deliverer was himself suffering from his wounds, he was taken by General Gaona to his own residence, and there nursed for weeks by the ladies of the family, with every attention that wealth and refinement could suggest. A tissue of circumstantial as well as personal evidence has saved the chronicler of this incident the risk of

seeming a romancer. The published letters which passed between the American and Mexican governors of Puebla in regard to Dr. Kane, interchanged his praises; and on his return to Philadelphia, more than seventy of the most distinguished gentlemen of the city united in presenting him with a sword, as a memorial of "an incidental exploit which was crowned with the distinction due to gallantry, skill, and success, and was hallowed in the flush of victory by the noblest humanity to the vanquished."

After the Mexican war, in January, 1849, Dr. Kane was attached to the storeship Supply, Commander Arthur Sinclair, bound for Lisbon, the Mediterranean, and Rio Janeiro. The diseases which he had successively contracted in China, Egypt, Africa, and Mexico, had made sad inroads upon his health, and the voyage, though without much of incident, at least served to recruit his strength. He was next assigned to the Coast Survey, and had settled into its round of duty, when he was suddenly called to the great work of his life.

"On the 12th of May," he writes, "while bathing in the tepid waters of the Gulf of Mexico, I received one of those courteous little epistles from Washington which the electric telegraph has made so familiar to naval officers. It detached me from the coast-survey, and ordered me to proceed forthwith to New York for duty upon the Arctic expedition." For months before, the civilized world had resounded with the cry to the rescue of Sir John Franklin, and the Government, moving in sympathy with the whole country, had resolved upon sending in search of the lost navigator the two vessels, the "Advance" and "Rescue," under Commander De Haven. Dr. Kane, who had repeatedly volunteered his services, was made senior medical officer and naturalist of the expedition, and on his return, published its history in the form of a "Personal Narrative," collected from his private journals. The cruise lasted during sixteen months, but resulted in little more than the discovery of Sir John Franklin's first winter quarters and the graves of three of his men.

In proceeding to organize the second United States Grinnell Expedition under his own command, Dr. Kane had before him an object worthy of his matured powers and noblest aims, and gave himself to the task with the zeal of a votary. But what discouragements, what disappointments, and what difficulties entered into that great undertaking from its outset to its close, can be but partially seen through the veil of delicate reserve which he has thrown over them. Something, however, may be learned in regard to them from another source, and upon authority as competent as it is disinterested and honorable.

Captain Sherard Osborne, of Her Majesty's Navy, in a paper advocating further polar exploration, holds the following language :—

"It is only fair to Dr. Kane to say, that never in our times has a navigator entered the ice so indifferently prepared for a Polar winter. With only seventeen followers, two of them mutineers, without a steam-power for his solitary vessel, without proper sledge-equipment, without any preserved fresh meat, and a great insufficiency of preserved vegetables, and with only coals enough to serve for twelve months' fuel, the only marvel to me is, that he ever returned to relate his sufferings. They are only to be equaled by those of the navigator "James," in Hudson Bay, two centuries earlier. God forbid that I should be thought to cast one reflection upon those warm-hearted Americans who came nobly forward and said, "We too will aid in Arctic enterprise;" but the fact is that enthusiasm and high courage, without proper knowledge and equipment, on such service, infallibly lead to the suffering which Dr. Kane's followers endured; and it is *that* which best explains how it was, that whilst our sailors, far beyond the Esquimaux, waxed fat and fastidious, Kane's poor followers had to eat the raw flesh of animals to avert the ravages of scurvy, brought on by a poisonous dietary of salt meat. This much to meet the objections of those who point to Dr. Kane's thrilling narrative with a view to frighten us from Arctic exploration; and I may add, that I know well that chivalrous man never penned those touching episodes to frighten men from high enterprise, but rather to caution us to avoid his mistakes, and to show us how nobly the worst evils may be borne when the cause is a good one."*

The narrative of that expedition is before the reader in this volume. When first given to the world, it excited an intense interest and drew forth universal eulogy. All classes were penetrated and touched by the story so simply, so modestly, so eloquently told. Autograph letters from the most eminent names in every walk of life were written in its praise. Medals and other costly testimonials were sent by the Queen of England, by different Legislatures in our own country, and by scientific associations throughout the world. The mere casual notices of the press, as collected by his friend Mr. Childs, the publisher, fill several albums of folio size.

But the recipient of these honors was not destined himself long to enjoy them. To the seeds of former diseases never fully eradicated, had been added that terrible scourge of Arctic life, the scurvy, together

* Paper on the Exploration of the North Polar Region, read before the Royal Geographical Society, Jan. 23d, 1865, by Captain Sherard Osborne, R. N., C. B.

with the exhausting literary labors incident to the publication of this narrative. Entirely underestimating those labors, (of which indeed but few can form an adequate conception,) he had been quite too thoughtless of the claims of a body he had so long been accustomed to subject to his purpose, and only awoke to a discovery of the error when it was too late. With this melancholy conviction, he announced the completion of the work to a friend in the modest and touching sentence :— "The book, poor as it is, has been my coffin."

He left the country for England under a presentiment that he should never return. For the first time in his life, departure was shaded with foreboding. It was indeed an alarming symptom to find that iron nerve which hitherto had sustained him under shocks apparently not less severe, thus beginning to falter; and yet even then the great purpose of his life he had not wholly abandoned, but, in spite of the most serious entreaties, was already projecting another Arctic Expedition of research and rescue.* Before, however, he could make known his plans, or even receive the honors awaiting him, successive and more virulent attacks of disease obliged him, under medical advice, to seek the last resorts of the invalid. Attended by his faithful friend Morton, he sailed for Cuba, where he was joined by his mother and two of his brothers, and devotedly nursed during a lingering and painful illness, until his death on the 16th of February, 1857.

No man of his age was ever more proudly and tenderly lamented. The journey with his remains from Havana to New Orleans, and thence through the Western States to Philadelphia, became but one long funeral triumph, with the learned, the noble, and the good mingling in its train. State and civic authorities, literary, scientific, and religious bodies, followed his bier from city to city with lavish shows of grief, until at length the national obsequies were completed in the Hall of Independence, in the church of his childhood, and at the grave of his kindred.

Dr. Kane, so far from being one of those mere personages who move in a halo of applause, had only to be known in order to convert the coldest criticism into sympathy with the popular feeling. Whatever faults belonged to him—and his nature was too rich and strong to be without them—yet the man himself was fully worthy of his mission, and had been actually endowed with gifts and traits quite as remark-

*The particular project to which he then reverted with special interest, was one which he had entertained in 1852, looking to a combined land and sea expedition down Mackenzie's River, and through Behring's Straits. See Paper on Alaski, lately read by his brother and literary executor, General T. L. Kane, before the American Geographical Society.

able as any of the circumstances which conspired to make him an object of such general admiration.

When at his prime, before disease had begun to waste his frame, his personal appearance was extremely youthful and handsome, almost to the degree of a feminine delicacy of form and feature, with an air of elegance and fashion, suggestive at first sight of anything but hardy exploits and physical endurance. But as his character matured, the lines of his face revealed the energy and purpose within. There was a certain *presence* which diverted attention from his deficient stature.

Temperate in meat and drink, he had none of the small vices which deprave the body, but was rather in danger of neglecting, or overtasking it, by the reckless energy with which he subjected it to his behests. The stimulus with which he repaired the waste of mental application was natural rather than artificial. He would leave the manuscripts of his book, to seek relaxation in a midnight ride upon his favorite stallion "Gaona," or in a rapid walk before breakfast. He was a splendid horseman and marksman. In the excitements of the chase he had the keenest relish, and yet for suffering animal creatures often showed a tenderness that in another might have seemed sentimental.

Natural scenery and objects he surveyed with the eye of an artist as well as that of trained scientific observation. His journals in all parts of the world were filled with sketches, some of them finished pictures, others mere pen-and-ink outlines with verbal notes. "Could they be placed before the public," says the artist who illustrated this work, "they would add still further, if that were possible, to his reputation as an Arctic explorer."

His affections for home and kindred were absolute passions. In his love for his mother especially, he was a child to the last. His imagination strove to brighten even the Arctic waste with dear and familiar associations. The ice-bound harbor in which he was imprisoned was made to echo with names oftenest heard at home. He was really prouder to call a new land or river after one of his own kinsmen, than to christen it for a Washington or a Tennyson; and the sledge in which he sought the object of a world-wide fame was most precious in his eyes as a memorial of his brother "Little Willie."

His heart, indeed, was as warm as it was large and noble. No elevation and vastness in his schemes of philanthropy, no absorption in their pursuit, and no reputation gained by their success, ever made him insensible to the claims of the humblest upon its regards. Throughout life he had numerous dependants who looked to him for relief and maintenance, and at every step he performed acts of kindness with an

uncalculating generosity. In one of his voyages he saved the life of an infant whose mother was too ill to nurse it, by himself taking entire charge of the little sufferer. A young orphaned midshipman, with whom he read the Bible and Shakspeare on the voyage to Brazil, when found to be dying of consumption, was taken home with him and tenderly nursed until his death as one of the family. It would have been strange if such affluent affection had not been, in some instances, lavished upon an unworthy object, as when a young culprit whom he sought to reform by bringing him under the home influences, was suddenly missing with some valuable jewelry. But that knightly romance and simplicity tinging his ardent nature, if ever quixotic in the eyes of the prudent, could never have exposed him to the serious misapprehension of any but inferior souls.

The writer of this sketch, as the eulogist at the obsequies of Dr. Kane, gave an expression of the public estimate which has since been only confirmed by his more intimate knowledge, and he can not now do better than here to reproduce so much of it as relates to his moral traits and achievements.*

"As a votary of science, he will indeed receive fitting tributes. There will not be wanting those who shall do justice to that ardent thirst for truth, which in him amounted to one of the controlling passions; to that intellect so severe in induction, yet sagacious in conjecture; and to those contributions, so various and valuable, to the existing stock of human knowledge. But his memory will not be cherished alone in philosophic minds. His is not a name to be honored only within the privileged circles of the learned. There is for him another laurel, greener even than that which science weaves for her most gifted sons. He is endeared to the popular heart as its chosen ideal of the finest sentiment that adorns our earthly nature.

"Philanthropy, considered as among things which are lovely and of good report, is the flower of human virtue. Of all the passions that have their root in the soil of this present life, there is none which, when elevated into a conscious duty, is so disinterested and pure. In the domestic affections, there is something of mere blind instinct; in friendship, there is the limit of congeniality; in patriotism, there are the restrictions of local attachment and national antipathy; but in that love of race which seeks its object in man as man, of whatever kindred, creed, or clime, earthly morality appears divested of the last dross of selfishness, and challenges our highest admiration and praise.

* See Report of the Joint Committee appointed to receive the remains and conduct the obsequies of the late Elisha Kent Kane, in Dr. Elder's Biography. Funeral Discourse delivered in the Second Presbyterian Church.

"Providence, who governs the world by ideas, selects the fit occasions and men for their illustration. In an age when philanthropic sentiments, through the extension of Christianity and civilization, are on the increase, a fit occasion for their display is offered in the perils of a bold explorer, for whose rescue a cry of anguished affection rings in the ears of the nations; and the man found adequate to that occasion is he whose death we mourn.

"If there was every thing congruous in the scene of the achievement,—laid, as it was, in those distant regions where the lines of geography converge beyond all the local distinctions that divide and separate man from his fellow, and among regions of cold and darkness, and disease and famine, that would task to their utmost the powers of human endurance—not less suited was the actor who was to enter upon that scene and enrich the world with such a lesson of heroic beneficence. Himself of a country estranged from that of the imperiled explorers, the simple act of assuming the task of their rescue was a beautiful tribute to the sentiment of national amity; while, as his warrant for undertaking it, he seemed wanting in no single qualification. To a scientific education and the experience of a cosmopolite, he joined an assemblage of moral qualities so rich in their separate excellence, and so rare in their combination, that it is difficult to effect their analysis.

"Conspicuous among them was an exalted, yet practical *benevolence.* It was the crowning charm of his character, and a controlling motive in his perilous enterprise. Other promptings indeed there were, neither suppressed, nor in themselves to be depreciated. But that passion for adventure, that love of science, that generous ambition, which stimulated his youthful exploits, appear now under the check and guidance of a still nobler impulse. It is his sympathy with the lost and suffering, and the duteous conviction that it may lie in his power to liberate them from their icy dungeon, which thrill his heart and nerve him to his hardy task. In his avowed aim, the interests of geography were to be subordinate to the claims of humanity. And neither the entreaties of affection, nor the imperiling of a fame, which to a less earnest spirit might have seemed too precious to hazard, could swerve him from the generous purpose.

"And yet this was not a benevolence which could exhaust itself in any mere dazzling, visionary project. It was as practical as it was comprehensive. It could descend to all the minutiæ of personal kindness, and gracefully disguise itself even in the most menial offices. When defeated in its great object,, and forced to resign the proud hope of a

philanthropist, it turns to lavish itself on his suffering comrades, whom he leads almost to forget the commander in the friend. With unselfish assiduity and cheerful patience he devotes himself as a nurse and counsellor to relieve their wants, and buoy them up under the most appalling misfortunes; and, in those still darker seasons, when the expedition is threatened with disorganization, conquers them, not less by kindness than by address. Does a party withdraw from him under opposite counsels, they are assured, in the event of their return, of a "brother's welcome." Are tidings brought him that a portion of the little band are forced to halt, he knows not where in the snowy desert, he is off through the midnight cold for their rescue, and finds his reward in the grateful assurance, "They knew that he would come." In sickness he tends them like a brother, and at death drops a tear of manly sensibility on their graves. Even the wretched savages, who might be supposed to have forfeited the claim, share in his kindly attentions; and it is with a touch of true human feeling that he parts from them at last, as 'children of the same Creator.'

"Then, as the fitting support of this noble quality, there was also an indomitable *energy*. It was the iron column, around whose capital that delicate lily-work was woven. His was not a benevolence which must waste itself in mere sentiment, for want of a power of endurance adequate to support it through hardship and peril. In that slight physical frame, suggestive only of refined culture and intellectual grace, there dwelt a sturdy force of will, which no combination of material terrors seemed to appall, and, by a sort of magnetic impulse, subjected all inferior spirits to its control. It was the calm power of reason and duty asserting their superiority over mere brute courage, and compelling the instinctive homage of Herculean strength and prowess.

"With what firm yet conscientious resolve does he quell the rising symptoms of rebellion which threaten to add the terrors of mutiny to those of famine and disease! And all through that stern battle with Nature in her most savage haunts, how he ever seems to turn his mild front toward her frowning face, if in piteous appealing, yet not less in fixed resignation!

"But while in that character, benevolence appeared supported by energy and patience, so, too, was it equipped with a most *marvelous tact*. He brought to his beneficent task not merely the resources of acquired skill, but a native power of adapting himself to emergencies, and a fertility in devising expedients, which no occasion ever seemed to baffle. Immured in a dreadful seclusion, where the combined terrors of Nature forced him into all the closer contact with the passions of

man, he not only rose, by his energy, superior to them both, but, by his ready executive talent, converted each to his ministry. Even the wild inmates of that icy world, from the mere stupid wonder with which at first they regarded his imported marvels of civilization, were, at length, forced to descend to a genuine respect and love, as they saw him compete with them in the practice of their own rude, stoical virtues.

"To such more sterling qualities were joined the graces of an affluent *cheerfulness*, that never deserted him in the darkest hours—a delicate and capricious *humor*, glancing among the most rugged realities like the sunshine upon the rocks—and, above all, that invariable stamp of true greatness, a beautiful *modesty*, ever sufficiently content with itself to be above the necessity of pretension. These were like the ornaments of a Grecian building, which, though they may not enter into the effect of the outline, are found to impart to it, the more nearly it is surveyed, all the grace and finish of the most exquisite sculpture.

"And yet strong and fair as were the proportions of that character in its more conspicuous aspects, we should still have been disappointed did we not find albeit hidden deep beneath them, a firm basis of *religious sentiment*. For all serious and thoughtful minds this is the purest charm of those graphic volumes in which he has recorded the story of his wonderful escapes and deliverances. There is every where shining through its pages a chastened spirit, too familiar with human weakness to overlook a Providence in his trials, and too conscious of human insignificance to disdain its recognition. Now, in his lighter, more pensive moods, we see it rising, on the wing of a devout fancy, into that region where piety becomes also poetry:

'I have trodden the deck and the floes, when the life of earth seemed suspended, its movements, its sounds, its colorings, its companionships; and as I looked on the radiant hemisphere, circling above me, as if rendering worship to the unseen centre of light, I have ejaculated in humility of spirit, 'Lord, what is man, that thou art mindful of him?' And then I have thought of the kindly world we had left, with its revolving sunlight and shadow, and the other stars that gladden it in their changes, and the hearts that warmed to us there, till I lost myself in the memories of those who are not; and they bore me back to the stars again.'

"Then, in graver emergencies, it appears as a habitual resource, to which he has come in conscious dependence:

'A trust, based on experience as well as on promises, buoyed me up

at the worst of times. Call it fatalism, as you ignorantly may, there is that in the story of every eventful life which teaches the inefficiency of human means, and the present control of a Supreme Agency. See how often relief has come at the moment of extremity, in forms strangely unsought, almost at the time unwelcome; see, still more, how the back has been strengthened to its increasing burdens, and the heart cheered by some conscious influence of an unseen Power.'

"And, at length, we find it settling into that assurance which belongs to an experienced faith and hope:—

'I never doubted for an instant, that the same Providence which had guarded us through the long darkness of winter was still watching over us for good, and that it was yet in reserve for us—for some; I dared not hope for all—to bear back the tidings of our rescue to a Christian land.'

"We hear no profane oath vaunted from that little ice-bound islet of human life, where man has been thrown so helplessly into the hands of God; but rather in its stead, murmured amid the wild uproar of the storm, the daily prayer, 'Accept our thanks and restore us to our homes.' Let us believe that a faith which supported him through trials worse than death, did not fail him when death itself came.

"In the near approach of that last moment, he was tranquil and composed. With too little strength either to support or indicate any thing of rapture, he was yet sufficiently conscious of his condition to perform some final acts befitting the solemn emergency. In reference to those who had deeply injured him, he enjoined cordial forgiveness. To each of the watching group around him, his hand is given in the fond pressure of a final parting; and then, as if sensible that his ties to earth are loosening, he seeks consolation from the requested reading of such Scripture sentences as had been the favorite theme of his thoughtful hours.

"Now he hears those soothing beatitudes which fell from the lips of the Man of Sorrows in successive benediction. Then he will have repeated to him that sweet, sacred pastoral—

'The Lord is my Shepherd; I shall not want. He maketh me to lie down in green pastures: he leadeth me beside the still waters. Yea, though I walk through the valley of the shadow of death, I will fear no evil; for Thou art with me: Thy rod and Thy staff, they comfort me.'

"At length are recited the consolatory words with which the Saviour took leave of his weeping disciples:—

'Let not your heart be troubled: ye believe in God, believe also in

me. In my Father's house are many mansions; if it were not so, I would have told you. I go to prepare a place for you.'

"And at last, in the midst of this comforting recital, he is seen to expire—so gently that the reading still proceeds some moments after other watchers have become aware that he is already beyond the reach of any mortal voice. Thus, in charity with all mankind, and with words of the Redeemer in his ear, conveyed by tones the most familiar and beloved on earth, his spirit passed from the world of men."

With these last and sublimest lessons of his life, it is fitting that this sketch should close. Let every American youth, who reads his story, remember that, in an age of materialism when old faiths seem to be decaying, he illustrated, as no man ever did before, the spiritual elements of our nature, and the entire compatibility of deep religious conviction, not only with humane efforts, but with physical researches and with earthly toils, successes, and honors. He will not indeed have lived in vain should history hereafter rank him among the harbingers of that peaceful era when charity shall become heroic, and science be reconciled to religion.

RB&J