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IN THE ARCTIC ICE PACK

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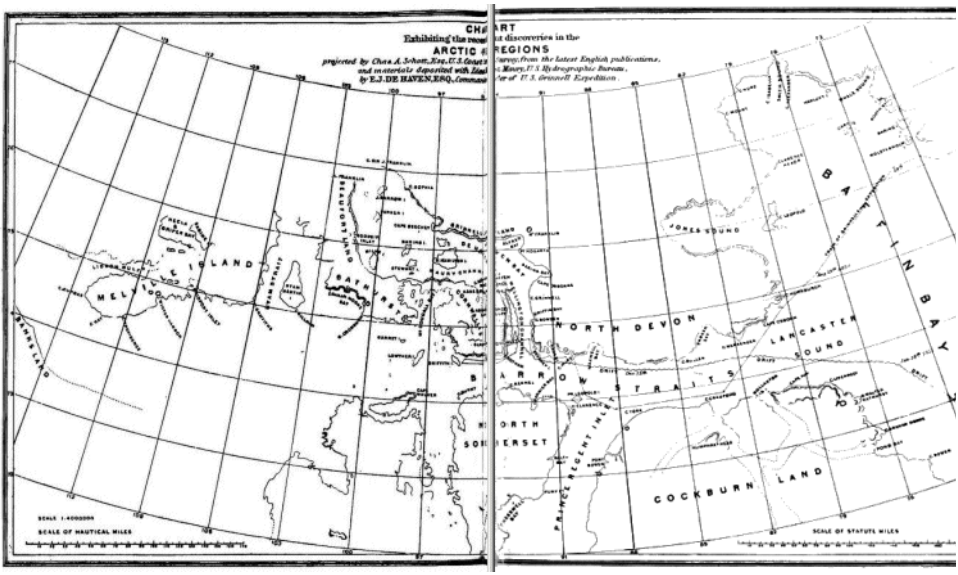

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ADRIFT

IN THE ARCTIC ICE PACK

From the History of the First
U. S. Grinnell Expedition in
Search of Sir John Franklin

By ELISHA KENT KANE, M.D.

EDITED BY
HORACE KEPHART

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INTRODUCTION

IT was in the summer of 1845 that Sir John Franklin undertook his fourth voyage into the Arctic regions, in search of a northwest passage, and disappeared forever in that icy waste.

Franklin's two ships, the *Erebus* and the *Terror*, were supposed to be provisioned for three years. When this interval had passed without word of the daring navigator there was grave fear that he had met with disaster. Then began an unparalleled series of search and relief expeditions, public and private, English and American: five separate ones in 1848, three in 1849, ten in 1850, two in 1851, nine in 1852, five in 1853, two in 1854, one in 1855, and one in 1857.

Among the earliest of these was one from the United States, known as the first Grinnell expedition, which left New York in May, 1848. Lady Franklin had appealed to the President of the United States to enlist his countrymen as a "kindred people, to join heart and hand in the enterprise of snatching the lost navigators from a dreary grave." Accordingly a bill was introduced in Congress to fit out an expedition for this purpose; but the process of legislation was too slow to provide vessels and equipment in the short time that was left for such a venture.

At this juncture a New York merchant, Henry Grinnell, outfitted two of his own vessels for the service and proffered them gratuitously to our government. They were at once accepted under a joint resolution of Congress, and the President was authorized to detail officers and men from the navy to man the ships.

This little squadron comprised the *Advance*, of 144 tons, and the *Rescue*, of 91 tons, carrying, respectively, seventeen and sixteen officers and crew. The expedition was under command of Lieut. Edwin J. De Haven.

The senior medical officer was Dr. Elisha Kent Kane, who was destined later (1853) himself to lead a second Grinnell expedition on this same quest. In the present instance, Dr. Kane states that "while bathing in the tepid waters of the Gulf of Mexico" he received a telegram from Washington detaching him from the Coast Survey and ordering him to proceed forthwith to New York for duty upon the Arctic expedition. Although he made the overland trip of thirteen hundred miles with all possible despatch, he had only a fraction of a day left in New York in which to equip himself for service in the polar seas. It fell to him to be not only chief surgeon and scientific observer of the expedition, but also its historian.

In view of the elaborate scientific methods of outfitting for arctic exploration in our own day, it is interesting to contrast the vessels and equipment hurriedly assembled for a venture into the Far North at a time when so little was known of that inhospitable region. Dr. Kane says: "It was not, perhaps, to be expected that an expedition equipped so hastily as ours, and with one engrossing object, should have facilities for observing very accurately, or go out of its way to find matters for curious research. But even the routine of a national ship might, I was confident, allow us to gather something for the stock of general knowledge. With the assistance of Professor Loomis, I collected as I could some simple instruments for thermal and magnetic registration, which would have been of use if they had found their way on board. A very few books for the dark hours of winter, and a stock of coarse woolen clothing, re-enforced by a magnificent robe of wolf-skins, that had wandered down to me from the snow-drifts of Utah, constituted my entire outfit; and with these I made my report to Commodore Salter at the Brooklyn Navy Yard.

"Almost within the shadow of the line-of-battle ship *North Carolina*, their hulls completely hidden beneath a projecting wharf, were two little hermaphrodite brigs. Their spars had no man-of-war trigness; their decks were choked with half-stowed cargo; and for size, I felt as if I could straddle from the main hatch to the bulwarks.

"At this first sight of the Grinnell Expedition, I confess that the fastidious experience of naval life on board frigates and corvettes made me look down on these humble vessels. They seemed to me more like a couple of coasting schooners than a national squadron bound for a perilous and distant sea. Many a time afterward I recalled the short-sighted ignorance of these first impressions, when some rude encounter with the ice made comfort and dignity very secondary thoughts.

"The *Advance*, my immediate home, had been originally intended for the transport of machinery. Her timbers were heavily moulded, and her fastenings of the most careful sort. She was fifty-three tons larger than her consort, the *Rescue*; yet both together barely equaled two hundred and thirty-five tons.

"To navigate an ice-bound sea, speed, though important, is much less so than strength. Extreme power of resistance to pressure must be combined with facility of handling, adequate stowage, and a solidity of frame that may encounter sudden concussions fearlessly; and it seemed to both Mr. Grinnell and Lieutenant De Haven that these qualities might be best embodied in such small vessels as the Advance and *Rescue*. It was, indeed, something like a return to the dimensions of our predecessors of the olden time; for the three vessels of Frobisher summed up only seventy-five tons, and Baffin's largest was ten tons less in burden than the *Rescue*. As the vessels of our expedition were more thoroughly adapted, perhaps, for this dangerous service than any that had been fitted out before for the Arctic seas, I will describe them in detail.

"Commencing with the outside: the hull was literally double, a brig within a brig. An outer sheathing of two and a half inch oak was covered with a second of the same material; and strips of heavy sheet-iron extended from the bows to the beam, as a shield against the cutting action of the new ice. The decks were double, made water-tight by a packing of tarred felt between them. The entire interior was lined, *ceiled*, with cork; which, independently of its low conducting power, was a valuable protection against the condensing moisture, one of the greatest evils of the polar climate.

"The strengthening of her skeleton, her wooden frame-work, was admirable. Forward, from kelson to deck, was a mass of solid timber, clamped and dove-tailed with nautical wisdom, for seven feet from the cut-water; so that we could spare a foot or two of our bows without springing a leak. To prevent the ice from forcing in her sides, she was built with an extra set of beams running athwart her length at intervals of four feet, and so arranged as to ship and unship at pleasure. From the Samson-posts, strong radiating timbers, called shores, diverged in every direction; and oaken knees, hanging and oblique, were added wherever space permitted.

“Looking forward to the hampering ice fields, our rudder was so constructed that it could be taken on board and replaced again in less than four minutes. Our winch, capstan, and patent windlass were of the best and newest construction.

“A little hurricane-house amidships contained the one galley that cooked for all hands, and a large funnel of galvanized iron was connected with the chimney, in such a way that the heat circulating round it might supply us with melted snow. An armorer’s forge, a full set of ice anchors, a couple of well-built whale-boats, and three anthracite stoves, made part of the outfit.

“In a word, every thing about the two vessels bore the marks of intelligent foresight and unsparing expenditure.

“With the governmental arrangements we were not so fortunate. It seems to be inseparable from national as well as corporate administration, that it is less effective than the action of individuals. Neither our own navy nor that of Great Britain attains results so cheaply, promptly, or well, as the commercial marine; and it is a fact, only expressed from a sad conviction of its truth, that, in spite of the disciplined intelligence of many of our officers, the naval service of the public is regarded among our merchant brethren, and by the community they belong to, as non-progressive and old-fashioned in all that admits of comparison between the two. They excel us in equipment, and speed, and substantial economy.

“I can not, then, say much in praise of either the dispatch or excellence of our strictly naval equipment. There were other things, besides the diminutive size of our brigs, to remind one of the days of the ancient mariners. Some that were matters of serious vexation at the moment may be forgotten now, or remembered with a smile. Our heterogeneous collection of obsolete old carbines, with the impracticable ball-cartridges that accompanied them, gave us many a laugh before we got home. Thanks to the incessant labors of our commander, and the exhaustless liberality of Mr. Grinnell, most of our deficiencies were made up, and we effected our departure in time for the navigation of Baffin’s Bay.

“Our crews consisted of man-of-war’s-men of various climes and habitudes, with constitutions most of them impaired by disease, temporarily broken by the excesses of shore life. But this original defect of material was in a great degree counteracted by the strict and judicious discipline of our executive officers. The crews proved in the end willing and reliable; and, in the midst of trials which would have tested men of more pretension, were never found to waver. I record, in the commencement of this narrative, how much respect and kindly feeling I, as one of their little body, entertain for their essential contribution to the ends of the expedition."

Speaking of the quick transition from harbor life and home associations to the discomforts of arctic voyaging in these tiny ships, he continues:

“The difference struck me, and not quite pleasantly, as I climbed over straw and rubbish into the little peculium which was to be my resting-place for so long a time. The cabin, which made the homestead of four human beings, was somewhat less in dimensions than a penitentiary cell. There was just room enough for two berths of six feet each on a side; and the area between, which is known to naval men as ‘the country,’ seemed completely filled up with the hinged table, the four camp-stools, and the lockers. A hanging lamp, that creaked uneasily on its gimbals, illustrated through the mist some long rows of crockery shelves and the dripping step-ladder that led directly from the wet deck above. Everything spoke of cheerless discomfort and narrow restraint....

“I now began, with an instinct of future exigencies, to fortify my retreat. The only spot I could call my own was the berth I have spoken of before. It was a sort of *bunk*—a right-angled excavation, of six feet by two feet eight in horizontal dimensions, let into the side of the vessel, with a height of something less than a yard. My first care was to keep water out, my second to make it warm. A bundle of tacks, and a few yards of India-rubber cloth, soon made me an impenetrable casing over the entire wood-work. Upon this were laid my Mormon wolf-skin and a somewhat ostentatious Astracan fur cloak, a relic of former travel. Two little wooden shelves held my scanty library; a third supported a reading lamp, or, upon occasion, a Berzelius’ argand, to be lighted when the dampness made an increase of heat necessary. My watch ticked from its particular nail, and a more noiseless monitor, my thermometer, occupied another. My ink-bottle was suspended, pendulum fashion, from a hook, and to one long string was fastened, like the ladle of a street-pump, my entire toilet, a tooth-brush, a comb, and a hair-brush.

“Now, when all these distributions had been happily accomplished, and I crawled in from the wet, and cold, and disorder of without, through a slit in the India-rubber cloth, to the very centre of my complicated resources, it would be hard for any one to realize the quantity of comfort which I felt I had manufactured. My lamp burned brightly; little or no water distilled from the roof; my furs warmed me into satisfaction; and I realized that I was sweating myself out of my preliminary cold, and could temper down at pleasure the abruptness of my acclimation.”

The expedition progressed northward without special incident until the 8th of July, when, having passed Uppernavik, “the jumping-off place of Arctic navigators,” the two vessels became locked fast in the ice. Then began a heart-breaking task of warping through the pack with ice-anchor, cable and winch. It was “all hands” at this heave and haul, from captain to cook, and the doctor too. “We were twenty-one days thus imprisoned, never leaving a little circle of some six miles radius.” Then they struck open water-leads, and made fair progress for sailing vessels under such circumstances, but “how often when retarded by baffling winds or unfavorable leads, have I wished for a few hours of steam!”

On August 18th they passed the ice barrier of Baffin Bay, and bore away southwesterly towards Lancaster Sound, in more open water than they had seen for weeks. Several British rescue squadrons were known to be somewhere in these waters, including a number of steamers, but De Haven and his associates were ignorant of their course and intended scheme of search.

“We had dreamed before this, and pleasantly enough, of fellowship with them in our efforts, dividing between us the hazards of the way, and perhaps in the long winter holding with them the cheery intercourse of kindred sympathies. We waked now to the probabilities of passing the dark days alone. Yet fairly on the way, an energetic commander, a united ship’s company, the wind freshening, our well-tried little ice-boat now groping her way like a blind man through fog and bergs, and now dashing on as if reckless of all but success—it was impossible to repress a sentiment almost akin to the so-called joyous excitement of conflict.

“We were bidding good-by to ‘ye goode baye of old William Baffin’; and as we looked round with a farewell remembrance upon the still water, the diminished icebergs, and the constant sun which had served us so long and faithfully, we felt that the Bay had used us kindly.”

On August 19th they fell in with two of the British vessels,—and now begins the interesting part of Kane’s narrative: the discovery of the site of Franklin’s first winter encampment, then of three head-stones marking the graves of men belonging to his expedition, and finally the separation of the American squadron from their English allies, the freezing-in of the two ships, and their drifting helplessly in the ice pack, month after month, through the long Arctic night, where no vessel ever had wintered before—drifting “toward God knows where!”

The following pages comprise chapters XX to XLVI of Dr. Kane’s work “The U. S. Grinnell Expedition in search of Sir John Franklin: a Personal Narrative” (London and New York, 1854), omitting nothing but some scientific observations that do not add to the interest of the book as a record of heroic adventure.

In this narrative Dr. Kane tells of the first discovery of traces of the Franklin expedition—the winter encampment on Beechey Island, and the three graves. No more was learned of the ill-starred navigators until 1854, when Dr. Rae, of the Hudson's Bay Company heard that a party of white men had been seen, four winters before, on King William's Land, and that their bodies had been afterwards found on the mainland. From the Eskimos who gave him this report he obtained various relics of the Franklin expedition that were unquestionably authentic.

In 1859 numerous other relics were found, including a paper on which was the following memorandum.—

"25 April, 1848.—H. M. ships *Terror* and *Erebus* were deserted on 22 April, 5 leagues N.N.W. of this, having been beset since 12 Sept., 1846. The officers and crews, consisting of 105 souls, under the command of Captain F. R. M. Crozier, landed here in lat. 69° 37′ 42″ N., long. 98° 41′ W. Sir John Franklin died on 11 June, 1847, and the total loss by deaths in the expedition has been to this date 9 officers and 15 men.

"And start on to-morrow, 26th, for Back's Fish River."

Nothing further has ever been heard of the discoverers of the northwest passage. They vanished in the great white silence.

Horace Kephart.

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CHAPTER I

"A*ugust* 19. The wind continued freshening, the aneroid falling two tenths in the night. About eight I was called by our master, with the news that a couple of vessels were following in our wake. We were shortening sail for our consort; and by half past twelve, the larger stranger, the *Lady Franklin*, came up along side of us. A cordial greeting, such as those only know who have been pelted for weeks in the solitudes of Arctic ice—and we learned that this was Captain Penny's squadron, bound on the same pursuit as ourselves. A hurried interchange of news followed. The ice in Melville Bay had bothered both parties alike; Commodore Austin, with his steamer tenders, was three days ago at Carey's Islands, a group nearly as high as 77° north latitude; the *North Star*, the missing provision transport of last summer, was safe somewhere in Lancaster Sound, probably at Leopold Island. For the rest, God speed!

"As she slowly forged ahead, there came over the rough sea that good old English hurrah, which we inherit on our side the water. 'Three cheers, hearty, with a will!' indicating as much of brotherhood as sympathy. 'Stand aloft, boys!' and we gave back the greeting. One cheer more of acknowledgment on each side, and the sister flags separated, each on its errand of mercy.

"8 P.M. The breeze has freshened to a gale. Fogs have closed round us, and we are driving ahead again, with look-outs on every side. We have no observation; but by estimate we must have got into Lancaster Sound.

"The sea is short and excessive. Every thing on deck, even anchors and quarter-boats, have 'fetched away,' and the little cabin is half afloat. The *Rescue* is staggering under heavy sail astern of us. We are making six or seven knots an hour. Murdaugh ahead, looking out for ice and rocks; De Haven conning the ship.

"All at once a high mountain shore rises before us, and a couple of isolated rocks show themselves, not more than a quarter of a mile ahead, white with breakers. Both vessels are laid to."

The storm reminded me of a Mexican "norther." It was not till the afternoon of the next day that we were able to resume our track, under a double-reefed top-sail, stay-sail, and spencer. We were, of course, without observation still, and could only reckon that we had passed the Cunningham Mountains and Cape Warrender.

About three o'clock in the morning of the 21st, another sail was reported ahead, a top-sail schooner, towing after her what appeared to be a launch, decked over.

"When I reached the deck, we were nearly up to her, for we had shaken out our reefs, and were driving before the wind, shipping seas at every roll. The little schooner was under a single close-reefed top-sail, and seemed fluttering over the waves like a crippled bird. Presently an old fellow, with a cloak tossed over his night gear, appeared in the lee gangway, and saluted with a voice that rose above the winds.

"It was the *Felix*, commanded by that practical Arctic veteran, Sir John Ross. I shall never forget the heartiness with which the hailing officer sang out, in the midst of our dialogue, 'You and I are ahead of them all' It was so indeed. Austin, with two vessels, was at Pond's Bay; Penny was somewhere in the gale; and others of Austin's squadron were exploring the north side of the Sound. The *Felix* and the *Advance* were on the lead.

"Before we separated, Sir John Ross came on deck, and stood at the side of his officer. He was a square-built man, apparently very little stricken in years, and well able to bear his part in the toils and hazards of life. He has been wounded in four several engagements—twice desperately—and is scarred from head to foot. He has conducted two Polar expeditions already, and performed in one of them the unparalleled feat of wintering four years in Arctic snows. And here he is again, in a flimsy cockle-shell, after contributing his purse and his influence, embarked himself in the crusade of search for a lost comrade. We met him off Admiralty Inlet, just about the spot at which he was picked up seventeen years before."

Soon after midnight, the land became visible on the north side of the Sound. We had passed Cape Charles Yorke and Cape Crawfurd, and were fanning along sluggishly with all the sail we could crowd for Port Leopold.

It was the next day, however, before we came in sight of the island, and it was nearly spent when we found ourselves slowly approaching Whaler Point, the seat of the harbor. Our way had been remarkably clear of ice for some days, and we were vexed to find, therefore, that a firm and rugged barrier extended along the western shore of the inlet, and apparently across the entrance we were seeking.

It was a great relief to us to see, at half past six in the evening, a top-sail schooner working toward us through the ice. She boarded us at ten, and proved to be Lady Franklin's own search-vessel, the *Prince Albert*.

This was a very pleasant meeting. Captain Forsyth, who commanded the *Albert*, and Mr. Snow, who acted as a sort of adjutant under him, were very agreeable gentlemen. They spent some hours with us, which Mr. Snow has remembered kindly in the journal he has published since his return to England. Their little vessel was much less perfectly fitted than ours to encounter the perils of the ice; but in one respect at least their expedition resembled our own. They had to rough it: to use a Western phrase, they had no fancy fixings—nothing but what a hasty outfit and a limited purse could supply. They were now bound for Cape Rennell, after which they proposed making a sledge excursion over the lower Boothian and Cockburne lands.

The *North Star*, they told us, had been caught by the ice last season in the neighborhood of our own first imprisonment, off the Devil's Thumb. After a perilous drift, she had succeeded in entering Wolstenholme Sound, whence, after a tedious winter, she had only recently arrived at Port Bowen.

They followed in our wake the next day as we pushed through many streams of ice across the strait. We sighted the shore about five miles to the west of Cape Hurd very closely; a miserable wilderness, rising in terraces of broken-down limestone, arranged between the hills like a vast theatre.

On the 25th, still beating through the ice off Radstock Bay, we discovered on Cape Riley two cairns, one of them, the most conspicuous, with a flag-staff and ball. A couple of hours after, we were near enough to land. The cape itself is a low projecting tongue of limestone, but at a short distance behind it the cliff rises to the height of some eight hundred feet. We found a tin canister within the larger cairn, containing the information that Captain Ommanney had been there two days before us, with the *Assistance* and *Intrepid*, belonging to Captain Austin's squadron, and had discovered traces of an encampment, and other indications "that some party belonging to her Britannic majesty's service had been detained at this spot." Similar traces, it was added, had been found also on Beechy Island, a projection on the channel side some ten miles from Cape Riley.

Our consort, the *Rescue*, as we afterward learned, had shared in this discovery, though the British commander's inscription in the cairn, as well as his official reports, might lead perhaps to a different conclusion. Captain Griffin, in fact, landed with Captain Ommanney, and the traces were registered while the two officers were in company.

I inspected these different traces very carefully, and noted what I observed at the moment. The appearances which connect them with the story of Sir John Franklin have been described by others; but there may still be interest in a description of them made while they were under my eye. I transcribe it word for word from my journal.

"On a tongue of fossiliferous limestone, fronting toward the west on a little indentation of the water, and shielded from the north by the precipitous cliffs, are five distinct remnants of habitation.

"Nearest the cliffs, four circular mounds or heapings-up of the crumbled limestone, aided by larger stones placed at the outer edge, as if to protect the leash of a tent. Two larger stones, with an interval of two feet, fronting the west, mark the places of entrance.

"Several large square stones, so arranged as to serve probably for a fire-place. These have been tumbled over by parties before us.

"More distant from the cliffs, yet in line with the four already described, is a larger inclosure; the door facing south, and looking toward the strait: this so-called door is simply an entrance made of large stones placed one above the other. The inclosure itself triangular; its northern side about eighteen inches high, built up of flat stones. Some bird bones and one rib of a seal were found exactly in the centre of this triangle, as if a party had sat round it eating; and the top of a preserved-meat case, much rusted, was found in the same place. I picked up a piece of canvas or duck on the cliff side, well worn by the weather: the sailors recognized it at once as the gore of a pair of trowsers.

"A fifth circle is discernible nearer the cliffs, which may have belonged to the same party. It was less perfect than the others, and seemed of an older date.

"On the beach, some twenty or thirty yards from the triangular inclosure, were several pieces of pine wood about four inches long, painted green, and white, and black, and, in one instance, puttied; evidently parts of a boat, and apparently collected as kindling wood."

The indications were meagre, but the conclusion they led to was irresistible. They could not be the work of Esquimaux: the whole character of them contradicted it: and the only European who could have visited Cape Riley was Parry, twenty-eight years before; and we knew from his journal that he had not encamped here. Then, again, Ommanney's discovery of like vestiges on Beechy Island, just on the track of a party moving in either direction between it and the channel: all these speak of a land party from Franklin's squadron.

Our commander resolved to press onward along the eastern shore of Wellington Channel. We were under weigh in the early morning of the 26th, and working along with our consort toward Beechy—I drop the "Island," for it is more strictly a peninsula or a promontory of limestone, as high and abrupt as that at Cape Riley, connected with what we call the main by a low isthmus. Still further on we passed Cape Spencer; then a fine bluff point, called by Parry Point Innes; and further on again, the trend being to the east of north, we saw the low tongue, Cape Bowden. Parry merely sighted these points from a distance, so that the shore line has never been traced. I sketched it myself with some care; but the running survey of this celebrated explorer had left nothing to alter. To the north of Cape Innes, though the coast retains the same geognostical character, the bluff promontories subside into low hills, between which the beach, composed of coarse silicious limestone, sweeps in long curvilinear terraces. Measuring some of these rudely afterward, I found that the elevation of the highest plateau did not exceed forty feet.

Our way northward was along an ice channel close under the eastern shore, and bounded on the other side by the ice-pack, at a distance varying from a quarter of a mile to a mile and three quarters. Off Cape Spencer the way seemed more open, widening perhaps to two miles, and showing something like continued free water to the north and west. Here we met Captain Penny, with the *Lady Franklin* and *Sophia*. He told us that the channel was completely shut in ahead by a compact ice barrier, which connected itself with that to the west, describing a horseshoe bend. He thought a south wester was coming on, and counseled us to prepare for the chances of an impactment. The go-ahead determination which characterized our commander made us test the correctness of his advice. We pushed on, tracked the horseshoe circuit of the ice without finding an outlet, and were glad to labor back again almost in the teeth of a gale.

Captain Penny had occupied the time more profitably. In company with Dr. Goodsir, an enthusiastic explorer and highly educated gentleman, whose brother was an assistant surgeon on board the missing vessels, he had been examining the shore. On the ridge of limestone, between Cape Spencer and Point Innes, they had come across additional proofs that Sir John's party had been here—very important these proofs as extending the line along the shore over which the party must have moved from Cape Riley.

Among the articles they had found were tin canisters, with the London maker's label; scraps of newspaper, bearing the date 1844; a paper fragment, with the words "until called" on it, seemingly part of a watch order; and two other fragments, each with the name of one of Franklin's officers written on it in pencil. I annex a fac-simile of one of these, the assistant surgeon of the *Terror*. They told us, too, that among the articles found by Captain Penny's men was a dredge, rudely fashioned of iron hoops beat round, with spikes inserted in them, and arranged for a long handle, as if to fish up missing articles; besides some footless stockings, tied up at the lower end to serve as socks, an officer's pocket, velvet-lined, torn off from the dress, &c., &c.; all of which, they thought, spoke of a party that had suffered wreck, and were moving eastward. Acting on this impression. Captain Penny was about to proceed toward Baffin's Bay, along the north shore of Lancaster Sound, in the hope of encountering them, or, more probably, their bleached remains.

For myself, looking only at the facts, and carefully discarding every deduction that might be prompted by sympathy rather than reason, my journal reminds me that I did not see in these signs the evidence of a lost party. The party was evidently in motion; but it might be that it was a detachment, engaged in making observations, or in exploring with a view to the operations of the spring, while the ships were locked in winter quarters at Cape Riley or Beechy, which had returned on board before the opening of the ice.

I may add, as not without some bearing on the fortunes of this party, whatever may have been its condition or purposes, that the vacant water-spaces around us at this time were teeming with animal life. After passing Beechy, we saw seal disporting in great flocks, rising out of the water as high as their middle, like boys in swimming; the white whale, the first we had seen, to the extent of thirty-eight separate shoals; the narwhal, or sea-unicorn; and, finally, that marine pachyderm, the tusky walrus. These last were always crowded on small tongues of ice, whose purity they marred not a little—grim-looking monsters, reminding me of the stage hobgoblins, something venerable and semi-Egyptian withal. We passed so close as to have several shots at them. They invariably rose after plunging, and looked snortingly around, as if to make fight. Polar bears were numerous beyond our previous experience, and the Arctic fox and hare abounded. If we add to these the crowding tenants of the air, the Brent goose, which now came in great cunoid flocks from the north and north by east, the loons, the mollemokes, and the divers, we may form an estimate of the means of human subsistence in these seas.

CHAPTER II

ON the 27th, the chances of this narrow and capricious navigation had gathered five of the searching vessels, under three different commands, within the same quarter of a mile—Sir John Ross', Penny's, and our own. Both Ross and Penny had made the effort to push through the sound to the west, but found a great belt of ice, reaching in an almost regular crescent from Leopold's Island across to the northern shore, about half a mile from the entrance of the channel. Captain Ommanney, with the *Intrepid* and *Assistance*, had been less fortunate. He had attempted to break his way through the barrier, but it had closed on him, and he was now fast, within fifteen miles of us, to the west.

After breakfast, our commander and myself took a boat to visit the traces discovered yesterday by Captain Penny. Taking the *Lady Franklin* in our way, we met Sir John Ross and Commander Phillips, and a conference naturally took place upon the best plans for concerted operations. I was very much struck with the gallant disinterestedness of spirit which was shown by all the officers in this discussion. Penny, an energetic, practical fellow, sketched out at once a plan of action for each vessel of the party. He himself would take the western search; Ross should run over to Prince Regent's Sound, communicate the news to the *Prince Albert*, and so relieve that little vessel from the now unnecessary perils of her intended expedition; and we were to press through the first openings in the ice by Wellington Channel, to the north and east.

It was wisely determined by brave old Sir John that he would leave the *Mary*, his tender of twelve tons, at a little inlet near the point, to serve as a fallback in case we should lose our vessels or become sealed up in permanent ice, and De Haven and Penny engaged their respective shares of her outfit, in the shape of some barrels of beef and flour. Sir John Ross, I think, had just left us to go on board his little craft, and I was still talking over our projects with Captain Penny, when a messenger was reported, making all speed to us over the ice.

The news he brought was thrilling. "Graves, Captain Penny! graves! Franklin's winter quarters!" We were instantly in motion. Captain De Haven, Captain Penny, Commander Phillips, and myself, joined by a party from the *Rescue*, hurried on over the ice, and, scrambling along the loose and rugged slope that extends from Beechy to the shore, came, after a weary walk, to the crest of the isthmus. Here, amid the sterile uniformity of snow and slate, were the head-boards of three graves, made after the old orthodox fashion of gravestones at home. The mounds which adjoined them were arranged with some pretensions to symmetry, coped and defended with limestone slabs. They occupied a line facing toward Cape Riley, which was distinctly visible across a little cove at the distance of some four hundred yards.

The first, or that most to the southward, is nearest to the front in the accompanying sketch. Its inscription, cut in by a chisel, ran thus;

"Sacred
to the
memory
of
W. Braine, R. M.,
H. M. S. *Erebus*.
Died April 3d, 1846,
aged 32 years.
'Choose ye this day whom ye will serve.'
Joshua, ch. xxiv., 15."

The second was:

"Sacred to the memory of
John Hartnell, A. B. of H. M. S.
Erebus,

aged 23 years.
‘Thus saith the Lord, consider your ways.’
Haggai, i., 7.”

The third and last of these memorials was not quite so well finished as the others. The mound was not of stone-work, but its general appearance was more grave-like, more like the sleeping-place of Christians in happier lands. It was inscribed:

“Sacred
to
the memory
of
John Torrington,
who departed this life
January 1st, A.D. 1846,
on board of
H. M. ship *Terror*,
aged 20 years.“

“Departed this life *on board* the *Terror*, 1st January, 1846!” Franklin’s ships, then, had not been wrecked when he occupied the encampment at Beechy!

Two large stones were imbedded in the friable limestone a little to the left of these sad records, and near them was a piece of wood, more than a foot in diameter, and two feet eight inches high, which had evidently served for an anvil-block: the marks were unmistakable. Near it again, but still more to the east, and therefore nearer the beach, was a large blackened space, covered with coal cinders, iron nails, spikes, hinges, rings, clearly the remains of the armorer’s forge. Still nearer the beach, but more to the south, was the carpenter’s shop, its marks equally distinctive.

Leaving “the graves,” and walking toward Wellington Straits, about four hundred yards, or perhaps less, we came to a mound, or rather a series of mounds, which, considering the Arctic character of the surface at this spot, must have been a work of labor. It inclosed one nearly elliptical area, and one other, which, though separated from the first by a lesser mound, appeared to be connected with it. The spaces thus inclosed abounded in fragmentary remains. Among them I saw a stocking without a foot, sewed up at its edge, and a mitten not so much the worse for use as to have been without value to its owner. Shavings of wood were strewed freely on the southern side of the mound, as if they had been collected there by the continued labor of artificers, and not far from these, a few hundred yards lower down, was the remnant of a garden. Weighing all the signs carefully, I had no doubt that this was some central shore establishment, connected with the squadron, and that the lesser area was used as an observatory, for it had large stones fixed as if to support instruments, and the scantling props still stuck in the frozen soil.

Travelling on about a quarter of a mile further, and in the same direction, we came upon a deposit of more than six hundred preserved-meat cans, arranged in regular order. They had been emptied, and were now filled with limestone pebbles, perhaps to serve as convenient ballast on boating expeditions.

These were among the more obvious vestiges of Sir John Franklin’s party. The minor indications about the ground were innumerable: fragments of canvas, rope, cordage, sail-cloth, tarpaulins; of casks, iron-work, wood, rough and carved; of clothing, such as a blanket lined by long stitches with common cotton stuff, and made into a sort of rude coat; paper in scraps, white, waste, and journal; a small key; a few odds and ends of brass-work, such as might be part of the furniture of a locker; in a word, the numberless reliquiæ of a winter resting-place. One of the papers, which I have preserved, has on it the notation of an astronomical sight, worked out to Greenwich time.

With all this, not a written memorandum, or pointing cross, or even the vaguest intimation of the condition or intentions of the party. The traces found at Cape Riley and Beechy were still more baffling. The cairn was mounted on a high and conspicuous portion of the shore, and evidently intended to attract observation; but, though several parties examined it, digging round it in every direction, not a single particle of information could be gleaned. This is remarkable; and for so able and practiced an Artie commander as Sir John Franklin, an incomprehensible omission.

In a narrow interval between the hills which come down toward Beechy Island, the searching parties of the *Rescue* and Mr. Murdaugh of our own vessel found the tracks of a sledge clearly defined, and unmistakable both as to character and direction. They pointed to the eastern shores of Wellington Sound, in the same general course with the traces discovered by Penny between Cape Spencer and Point Innes.

Similar traces were seen toward Caswell’s Tower and Cape Riley, which gave additional proofs of systematic journeyings. They could be traced through the comminuted limestone shingle in the direction of Cape Spencer; and at intervals further on were scraps of paper, lucifer matches, and even the cinders of the temporary fire. The sledge parties must have been regularly organized, for their course had evidently been the subject of a previous reconnoissance. I observed their runner tracks not only in the limestone crust, but upon some snow slopes further to the north. It was startling to see the evidences of a travel nearly six years old, preserved in intaglio on a material so perishable.

The snows of the Arctic regions, by alternations of congelation and thaw, acquire sometimes an ice-like durability; but these traces had been covered by the after-snows of five winters. They pointed, like the Sastrugi, or snow-waves of the Siberians, to the marchers of the lost company.

Mr. Griffin, who performed a journey of research along this coast toward the north, found at intervals, almost to Cape Bowden, traces of a passing party. A corked bottle, quite empty, was among these. Reaching a point beyond Cape Bowden, he discovered the indentation or bay which now bears his name, and on whose opposite shores the coast was again seen.

It is clear to my own mind that a systematic reconnoissance was undertaken by Franklin of the upper waters of the Wellington, and that it had for its object an exploration in that direction as soon as the ice would permit.

There were some features about this deserted homestead inexpressibly touching. The frozen trough of an old water channel had served as the wash-house stream for the crews of the lost squadron. The tubs, such as Jack makes by sawing in half the beef barrels, although no longer fed by the melted snows, remained as the washers had left them five years ago. The little garden, too: I did not see it; but Lieutenant Osborn describes it as still showing the mosses and anemones that were transplanted by its farmers. A garden implies a purpose either to remain or to return: he who makes it is looking to the future. The same officer found a pair of cashmere gloves, carefully “laid out to dry, with two small stones upon the palms to keep them from blowing away.” It would be wrong to measure the value of these gloves by the price they could be bought in Bond Street or Broadway. The Arctic traveler they belonged to intended to come back for them, and did not probably forget them in his hurry.

The facts I have mentioned, almost all of them, have been so ably analyzed already, that I might be excused from venturing any deductions of my own. But it was impossible to review the circumstances as we stood upon the ground without forming an opinion; and such as mine was, it is perhaps best that I should express it here.

In the first place, it is plain that Sir John Franklin's consort, the *Terror*, wintered in 1845-6 at or near the promontory of Beechy; that at least part of her crew remained on board of her; and that some of the crew of the flag-ship, the *Erebus*, if not the ship herself, were also there. It is also plain that a part of one or both these crews was occupied during a portion of the winter in the various pursuits of an organized squadron, at an encampment on the isthmus I have described, a position which commanded a full view of Lancaster Sound to the east of south, and of Wellington Channel extending north. It may be fairly inferred, also, that the general health of the crews had not suffered severely, three only having died out of a hundred and thirty odd; and that in addition to the ordinary details of duty, they were occupied in conducting and computing astronomical observations, making sledges, preparing their little anti-scorbutic garden patches, and exploring the eastern shore of the channel. Many facts that we ourselves observed made it seem probable that Franklin had not, in the first instance, been able to prosecute his instructions for the Western search; and the examinations made so fully since by Captain Austin's officers have proved that he never reached Cape Walker, Banks' Land, Melville Island, Prince Regent's Inlet, or any point of the sound considerably to the west or southwest. The whole story of our combined operations in and about the channel shows that it is along its eastern margin that the water-leads occur most frequently: natural causes of general application may be assigned for this, some of which will readily suggest themselves to the physicist; but I have only to do here with the recognized fact.

So far I think we proceed safely. The rest is conjectural. Let us suppose the season for renewed progress to be approaching; Franklin and his crews, with their vessels, one or both, looking out anxiously from their narrow isthmus for the first openings of the ice. They come: a gale of wind has severed the pack, and the drift begins. The first clear water that would meet his eye would be close to the shore on which he had his encampment. Would he wait till the continued drift had made the navigation practicable in Lancaster Sound, and then retrace his steps to try the upper regions of Baffin's Bay, which he could not reach without a long circuit; or would he press to the north through the open lead that lay before him? Those who know Franklin's character, his declared opinions, his determined purpose, so well portrayed in the lately published letters of one of his officers, will hardly think the question difficult to answer: his sledges had already pioneered the way. We, the searchers, were ourselves tempted, by the insidious openings to the north in Wellington Channel, to push on in the hope that some lucky chance might point us to an outlet beyond. Might not the same temptation have had its influence for Sir John Franklin? A careful and daring navigator, such as he was, would not wait for the lead to close. I can imagine the dispatch with which the observatory would be dismantled, the armorer's establishment broken up, and the camp vacated. I can understand how the preserved-meat cans, not very valuable, yet not worthless, might be left piled upon the shore; how one man might leave his mittens, another his blanket coat, and a third hurry over the search for his lost key. And if I were required to conjecture some explanation of the empty signal cairn, I do not know what I could refer it to but the excitement attendant on just such a sudden and unexpected release from a weary imprisonment, and the instant prospect of energetic and perilous adventure.

CHAPTER III

"A*UGUST* 28. Strange enough, during the night. Captain Austin, of her majesty's search squadron, with his flag-ship the *Resolute*, entered the same little indentation in which five of us were moored before. His steam-tender, the *Pioneer*, grounded off the point of Beechy Island, and is now in sight, canted over by the ice nearly to her beam ends. He has come to us not of design, but under the irresistible guidance of the ice. We are now seven vessels within hailing distance, not counting Captain Ommanney's, imbedded in the field to the westward.

"I called this morning on Sir John Ross, and had a long talk with him. He said that, as far back as 1847, anticipating the 'detention' of Sir John Franklin—I use his own word—he had volunteered his services for an expedition of retrieve, asking for the purpose four small vessels, something like our own; but no one listened to him. Volunteering again in 1848, he was told that his nephew's claim to the service had received a recognition; whereupon his own was withdrawn. 'I told Sir John,' said Ross, 'that my own experience in these seas proved that all these sounds and inlets may, by the caprice or even the routine of seasons, be closed so as to prevent any egress, and that a missing or shut-off party must have some means of falling back. It was thus I saved myself from the abandoned *Victory* by a previously constructed house for wintering, and a boat for temporary refuge.' All this, he says, he pressed on Sir John Franklin before he set out, and he thinks that Melville Island is now the seat of such a house-asylum. 'For, depend upon it,' he added, 'Franklin will be expecting some of us to be following on his traces. Now, may it be that the party, whose winter quarters we have discovered, sent out only exploring detachments along Wellington Sound in the spring, and then, when themselves released, continued on to the west, by Cape Hotham and Barrow's Straits?' I have given this extract from my journal, though the theory it suggests has since been disproved by Lieutenant M'Clintock, because the tone and language of Sir John Ross may be regarded as characteristic of this manly old seaman.

"I next visited the *Resolute*. I shall not here say how their perfect organization and provision for winter contrasted with those of our own little expedition. I had to shake off a feeling almost of despondency when I saw how much better fitted they were to grapple with the grim enemy, Cold. Winter, if we may judge of it by the clothing and warming appliances of the British squadron, must be something beyond our power to cope with; for, in comparison with them, we have nothing, absolutely nothing.

"The officers received me, for I was alone, with the cordiality of recognized brotherhood. They are a gentlemanly, well-educated set of men, thoroughly up to the history of what has been done by others, and full of personal resource. Among them I was rejoiced to meet an old acquaintance. Lieutenant Brown, whose admirably artistic sketches I had seen in Haghe's lithotints, at Mr. Grinnell's, before leaving New York. When we were together last, it was among the tropical jungles of Luzon, surrounded by the palm, the cycas, and bamboo, in the glowing extreme of vegetable exuberance: here we are met once more, in the stinted region of lichen and mosses. He was then a junior, under Sir Edward Belcher: I—what I am yet. The lights and shadows of a naval life are nowhere better, and, alas! nowhere worse displayed, than in these remote accidental greetings.

"Returning, I paid a visit to Penny's vessels, and formed a very agreeable acquaintance with the medical officer. Dr. R. Anstruther Goodsir, a brother of assistant surgeon Goodsir of Franklin's flag-ship.

"In commemoration of the gathering of the searching squadrons within the little cove of Beechy Point, Commodore Austin has named it, very appropriately, Union Bay. It is here the *Mary* is deposited as an asylum to fall back upon in case of disaster.

"The sun is traveling rapidly to the south, so that our recently glaring midnight is now a twilight gloom. The coloring over the hills at Point Innes this evening was sombre, but in deep reds; and the sky had an inhospitable coldness. It made me thoughtful to see the long shadows stretching out upon the snow toward the isthmus of the Graves.

“The wind is from the north and westward, and the ice is so driven in around us as to grate and groan against the sides of our little vessel. The masses, though small, are very thick, and by the surging of the sea have been rubbed as round as pebbles. They make an abominable noise.”

The remaining days of August were not characterized by any incident of note. We had the same alternations of progress and retreat through the ice as before, and without sensibly advancing toward the western shore, which it was now our object to reach. The next extracts from my journal are of the date of September 3.

“After floating down, warping, to avoid the loose ice, we finally cast off in comparatively open water, and began beating toward Cape Spencer to get round the field. Once there, we got along finely, sinking the eastern shore by degrees, and nearing the undelineated coasts of Cornwallis Island. White whales, narwhals, seals—among them the Phoca leonina with his puffed cheeks—and two bears, were seen.

“The ice is tremendous, far ahead of anything we have met with. The thickness of the upraised tables is sometimes fourteen feet; and the hummocks are so ground and distorted by the rude attrition of the floes, that they rise up in cones like crushed sugar, some of them forty feet high. But that the queer life we are leading—a life of constant exposure and excitement, and one that seems more like the ‘roughing it’ of a land party than the life of shipboard—has inured us to the eccentric fancies of the ice, our position would be a sleepless one.

“*September* 4, 2 A.M. Was awakened by Captain De Haven to look at the ice: an impressive sight. We were fast with three anchors to the main floe; and now, though the wind was still from the northward, and therefore in opposition to the drift, the floating masses under the action of the tide came with a westward trend directly past us. Fortunately, they were not borne down upon the vessels; but, as they went by in slow procession to the west, our sensations were, to say the least, sensations. It was very grand to see up-piled blocks twenty feet and more above our heads, and to wonder whether this fellow would strike our main-yard or clear our stern. Some of the moving hummocks were thirty feet high. They grazed us; but a little projection of the main field to windward shied them off.

“I killed to-day my first polar bear. We made the animal on a large floe to the northward while we were sighting the western shores of Wellington, and of course could not stop to shoot bears. But he took to the water ahead of us, and came so near that we fired at him from the bows of the vessel. Mr. Lovell and myself fired so simultaneously, that we had to weigh the ball to determine which had hit. My bullet struck exactly in the ear, the mark I had aimed at, for he had only his head above water. The young ice was forming so rapidly around us that it was hard work getting him on board. I was one of the oarsmen, and sweated rarely, with the thermometer at 25°.

“On the way back I succeeded in hitting an enormous seal; but, much to my mortification, he sunk, after floating till we nearly reached him.

“Without any organization, and with very little time for the hunt, the Advance now counts upon her game list two polar bears, three seals, a single goose, and a fair table allowance of loons, divers, and snipes. The *Rescue* boasts of four bears, and, in addition to the small game, a couple of Arctic hares. Our solitary goose was the Anas bernicla, crowds of which now begin to fly over the land and ice in cunoid streams to the east of south. It was killed by Mr. Murdaugh with a rifle, on the wing.

“How very much I miss my good home assortment of hunting materials! We have not a decent gun on board; as for the rifle I am now shooting, it is a flintlock concern, and half the time hangs fire.”

The next morning found me at work skinning my bear, not a pleasant task with the thermometer below the freezing point. He was a noble specimen, larger than the largest recorded by Parry, measuring eight feet eight inches and three quarters from tip to tip. I presented the skin, on my return home, to the Academy of Natural Sciences at Philadelphia.

The carcass was larger than that of an ordinary ox fatted for market. We estimated his weight at nearly sixteen hundred pounds. In build he was very solid, and the muscles of the arms and haunch fearfully developed. I once before compared the posterior aspect of the Arctic bear to an elephant’s. All my mess-mates used the same comparison. The extreme roundness of his back and haunches, with the columnar character of the legs, and the round expansion of the feet, give you the impression of a small elephant. The plantigrade base of support overlapped by long hair heightens the resemblance. The head and neck, of course, are excluded from the comparison.

At five in the afternoon we succeeded in reaching within a quarter of a mile of the shore off Barlow’s Inlet, and made fast there to the floe. This inlet is but a few miles from Cape Hotham, and is marked on the charts as a mere interruption of the coast line. Parry, who named it, must have had wonderfully favoring weather to sight so accurately an insignificant cove. He was a practiced hydrographer.

The limestone cliffs rise on each side, forming stupendous piers gnarled by frost degradation, between which is the entrance, about a quarter of a mile wide. The moment our little vessel entered the shadow of these cliffs, a quiet gloom took the place of bustling movement. We ground our way into the newly-formed ice, and, after making a couple of ships’ lengths, found ourselves within a sort of cape of land floe, surrounded by high hummocks and anchored bergs. It was a melancholy spot; not one warm sun tint; everything blank, repulsive sterility.

“*September* 6. The captain, Mr. Murdaugh, Mr. Carter, and myself started on a walk of exploration. The distance between the brig and the shore is not over three hundred yards, but the travel was arduous. The ice was eight and ten feet thick, studded with broken bergs and hummocks. These fragments were seldom larger than our Rensselaer dining-room, some twenty feet square, and, owing either to the rise and fall of the tides or the piling action of storms, deep crevices were formed around their edges, partially masked by the snow which had found its way into them, and by an icy crust over the surface. Alternately jumping these crevices and clambering up the hummocks between them made it a dangerous walk. We had some narrow escapes. Reaching the shore, we pushed forward about a mile and a quarter to the head of the inlet, and then crossed over on the ice to a cairn that stood near it. We found nothing but a communication from Captain Ommanney, whose vessels we saw as we entered the lead yesterday, informing the Secretary of the Admiralty that he had been off this place since the 24th, and that ‘no traces are to be found on Cornwallis Island of the party under Sir John Franklin’—a somewhat too confident assertion perhaps, seeing that the island, if it be one, is more than fifty miles across, and that the observations can hardly have extended beyond the coast line.

“*September* 7. The spot at which we have been lying is in front of Barlow’s Inlet. There is no barrier between it and our vessels but the young ice, which has now attained a thickness of three inches. On the east we have the drift plain of Wellington Channel, impacted with floes, hummocks, and broken bergs; and to the south we look out upon a wild aggregation of enormous hummocks. These hummocks are totally unlike anything we saw in Baffin’s Bay. They seem to have been so disintegrated by the conflicting forces that raised them as to have lost altogether the character of tables. If hogshead upon hogshead of crushed sugar had been emptied out at random, two or three in one pile, and two or three ship loads in another, and the summits of these irregular heaps were covered over with a succession of layers of snow, and the heaps themselves multiplied in number indefinitely, and crowded together in a disordered phalanx, they would look a good deal like the hummock field some twenty yards south of us. These fearful masses are all anchored, solid hills, rising thirty feet above the level from a bottom twenty-two feet below it.

"Our situation might be regarded as an ugly one in some states of the wind, but for the solid main floe to the north of us. This projected from the cliff, which served as an abutment for it; and, after forming a sort of cape outside of our position, extended with a horseshoe sweep to the northward and eastward, as far as the eye could reach, following the trend of the shore. It formed, of course, a reliable break-water. Commodore Austin's vessels were made fast to it some distance to the north and east of us.

"The barometer had given us, in the early morning of the 4th, 29.90, since when it rose steadily till the 5th, at 6 A.M., when it stood 30.38. For the next twenty-four hours it fluctuated between .33 and .37; but at 6 A.M. of the 6th, it again began to rise; by midnight, it had reached 30.44; and before ten o'clock P.M. of the 7th, it was at the unwonted height of 30.68. At 2 P.M. the wind had changed from S.S.E. to N.N.E., and went on increasing to a gale.

"We were seated cosily around our little table in the cabin, imagining our harbor of land ice perfectly secure, when we were startled by a crash. We rushed on deck just in time to see the solid floe to windward part in the middle, liberate itself from its attachment to the shore, and bear down upon us with the full energy of the storm. Our lee bristled ominously half a ship's length from us, and to the east was the main drift. The *Rescue* was first caught, nipped astern, and lifted bodily out of water; fortunately she withstood the pressure, and rising till she snapped her cable, launched into open water, crushing the young ice before her. The *Advance*, by hard warping, drew a little closer to the cove; and, a moment after, the ice drove by, just clearing our stern. Commodore Austin's vessels were imprisoned in the moving fragments, and carried helplessly past us. In a very little while they were some four miles off."

The summer was now leaving us rapidly. The thermometer had been at 21° and 23° for several nights, and scarcely rose above 32° in the daytime. Our little harbor at Barlow's Inlet was completely blocked in by heavy masses; the new ice gave plenty of sport to the skaters; but on shipboard it was uncomfortably cold. As yet we had no fires below; and, after drawing around me the India-rubber curtains of my berth, with my lamp burning inside, I frequently wrote my journal in a freezing temperature. "This is not very cold, no doubt"—I quote from an entry of the 8th—"not very cold to your forty-five minus men of Arctic winters; but to us poor devils from the zone of the liriodendrons and peaches, it is rather cold for the September month of water-melons. My bear with his arsenic swabs is a solid lump, and some birds that are waiting to be skinned are absolutely rigid with frost."

In the afternoon of this day, the 8th, we went to work, all hands, officers included, to cut up the young ice and tow it out into the current: once there, the drift carried it rapidly to the south. We cleared away in this manner a space of some forty yards square, and at five the next morning were rewarded by being again under weigh. We were past Cape Hotham by breakfast-time on the 9th, and in the afternoon were beating to the west in Lancaster Sound.

"The sound presented a novel spectacle to us; the young ice glazing it over, so as to form a viscid sea of sludge and *tickly-benders*, from the northern shore to the pack, a distance of at least ten miles. This was mingled with the drift floes from Wellington Channel; and in them, steaming away manfully, were the *Resolute* and *Pioneer*. The wind was dead ahead; yet, but for the new ice, there was a clear sea to the west. What, then, was our mortification, first, to see our pack-bound neighbors force themselves from their prison and steam ahead dead in the wind's eye, and, next, to be overhauled by Penny, and passed by both his brigs. We are now the last of all the searchers, except perhaps old Sir John, who is probably yet in Union Bay, or at least east of the straits.

"The shores along which we are passing are of the same configuration with the coast to the east of Beechy Island; the cliffs, however, are not so high, and their bluff appearance is relieved occasionally by terraces and shingle beach. The lithological characters of the limestone appear to be the same.

"We are all together here, on a single track but little wider than the Delaware or Hudson. There is no getting out of it, for the shore is on one side and the fixed ice close on the other. All have the lead of us, and we are working only to save a distance. Ommanney must be near Melville by this time: pleasant, very!

"Closing memoranda for the day: 1. I have the rheumatism in my knees; 2. I left a bag containing my dress suit of uniforms, and, what is worse, my winter suit of furs, and with them my double-barrel gun, on board Austin's vessel. The gale of the 7th has carried him and them out of sight.

"*September* 10. Unaccountable, most unaccountable, the caprices of this ice-locked region! Here we are again all together, even Ommanney with the rest. The *Resolute*, *Intrepid*, *Assistance*, *Pioneer*, *Lady Franklin*, *Sophia*, *Advance*, and *Rescue*; Austin, Ommanney, Penny, and De Haven, all anchored to the 'fast' off Griffith's Island. The way to the west completely shut out."

CHAPTER IV

THE succeeding pages are very little else than a transcript from my journal. It would have been easy to condense them into a more attractive form; but they relate to the furthest limits of our cruise, "*long arum meta viarum*" and some of the topics which they embrace may perhaps invite that sort of evidence which is best furnished by a contemporary record.

"*September* 11, Wednesday. Snow, light and fleecy, covering the decks, and carried by our clothes into our little cabin. The moisture of the atmosphere condenses over the beams, and trickles down over the lockers and bedding. We are still alongside of the fixed ice off Griffith's Island, and the British squadron under Commodore Austin are clustered together within three hundred yards of us. Penny, like an indefatigable old trump, as he is, is out, pushing, working, groping in the fog. The sludge ice, that had driven in around us and almost congealed under our stern, is now by the ebb of the tide, or at least its change, carried out again, although the wind still sets toward the floe.

"*September* 12, Thursday. We have had a rough night. About 4 P.M., the heavy snow which had covered our decks changed to a driving drift; the wind blew a gale from the northwest, and the thermometer fell as low as +16°. All the squadron of search, with the exception of Penny, were fastened by ice-anchors to the main ice; but the great obscurity made us invisible to each other.

"At three the *Rescue* parted her cable's hold, and was carried out to sea, leaving two men, her boat, and her anchors behind. We snapped our stern-cable, lost our anchor, swung out, but fortunately held by the forward line. All the English vessels were in similar peril, the *Pioneer* being at one time actually free; and Commodore Austin, who in the *Resolute* occupied the head of the line, was in momentary fear of coming down upon us. Altogether I have seldom seen a night of greater trial. The wind roared over the snow floes, and every thing about the vessel froze into heavy ice stalactites. Had the main floe parted, we had been carried down with the liberated ice. Fortunately, every thing held; and here we are, safe and sound. The *Rescue* was last

seen beating to windward against the gale, probably seeking a lee under Griffith's Island. This morning the snow continues in the form of a fine cutting drift, the water freezes wherever it touches, and the thermometer has been at no time above 17°.

"*September* 12, 10 P.M. Just from deck. How very dismal every thing seems! The snow is driven like sand upon a level beach, lifted up in long curve lines, and then obscuring the atmosphere with a white darkness. The wind, too, is howling in a shrill minor, singing across the hummock ridges. The eight vessels are no longer here. The Rescue is driven out to sea, and poor Penny is probably to the southward. Five black masses, however, their cordage defined by rime and snow, are seen with their snouts shoved into the shore of ice: cables, chains, and anchors are covered feet below the drift, and the ships adhere mysteriously, their tackle completely invisible. Should any of us break away, the gale would carry us into streams of heavy floating ice; and our running rigging is so coated with icicles as to make it impossible to work it. The thermometer stands at 14°.

"At this temperature the young ice forms in spite of the increasing movement of the waves, stretching out from the floe in long, zigzag lines of smoothness resembling watered silk. The loose ice seems to have a southerly and easterly drift; and, from the increasing distance of Griffith's Island, seen during occasional intervals, we are evidently moving *en masse* to the south.

"Now when you remember that we are in open sea, attached to precarious ice, and surrounded by floating streams; that the coast is unknown, and the ice forming inshore, so as to make harbors, if we knew of them, inaccessible, you may suppose that our position is far from pleasant. One harbor was discovered by a lieutenant of the Assistance some days ago, and named *Assistance* Harbor, but that is out of the question; the wind is not only a gale, but ahead. Had we the quarters of Capua before us, we should be unable to reach them. It is a windward shore.

"11 P.M. Captain De Haven reports ice forming fast: extra anchors are out; thermometer +8°. The British squadron, under Austin, have fires in full blast: we are without them still.

"12 M. In bed, reading or trying to read. The gale has increased; the floes are in upon us from the eastward; and it is evident that we are all of us drifting bodily, God knows where, for we have no means of taking observations.

"*September* 13, 10 A.M. Found, on waking, that at about three this morning the squadron commenced getting under weigh. The rime-coated rigging was cleared; the hawsers thashed;[A] the ice-clogged boats hauled in; the steamers steamed, and off went the rest of us as we might. This step was not taken a whit too soon, if it be ordained that we are yet in time; for the stream-ice covers the entire horizon, and the large floe or main which we have deserted is barely separated from the drifting masses. The *Rescue* is now the object of our search. Could she be found, the captain has determined to turn his steps homeward.

[A] So in the original. Evidently a misprint.—(*Ed.*)

"11:20 A.M. We are working, *i. e.*, beating our way in the narrow leads intervening irregularly between the main ice and the drift. We have gained at least two miles to windward of Austin's squadron, who are unable, in spite of steamers, to move along these dangerous passages like ourselves. Our object is to reach Griffith's Island, from which we have drifted some fifteen miles with the main ice, and then look out for our lost consort.

"The lowest temperature last night was +5°, but the wind makes it colder to sensation. We are grinding through newly-formed ice three inches thick; the perfect consolidation being prevented by its motion and the wind. Even in the little fireless cabin in which I now write, water and coffee are freezing, and the mercury stands at 29°.

"The navigation is certainly exciting. I have never seen a description in my Arctic readings of any thing like this. We are literally running for our lives, surrounded by the imminent hazards of sudden consolidation in an open sea. All minor perils, nips, humps, and sunken bergs are discarded; we are staggering along under all sail, forcing our way while we can. One thump, received since I commenced writing, jerked the time-keeper from our binnacle down the cabin hatch, and, but for our strong bows, seven and a half solid feet, would have stove us in. Another time, we cleared a tongue of the main pack by riding it down at eight knots. Commodore Austin seems caught by the closing floes. This is really sharp work.

"4 P.M. We continued beating toward Griffith's Island, till, by doubling a tongue of ice, we were able to force our way. The English seemed to watch our movements, and almost to follow in our wake, till we came to a comparatively open space, about the area of Washington Square, where we stood off and on, the ice being too close upon the eastern end of Griffith's Island to permit us to pass. Our companions in this little vacancy were Captain Ommanney's *Assistance*, Osborne's steam tender the *Pioneer*, and Kater's steamer the *Intrepid*. Commodore Austin's vessel was to the southward, entangled in the moving ice, but momentarily nearing the open leads.

"While thus boxing about on one of our tacks, we neared the north edge of our little opening, and were hailed by the Assistance with the glad intelligence of the *Rescue* close under the island. Our captain, who was at his usual post, conning the ship from the foretop-sail yard, made her out at the same time, and immediately determined upon boring the intervening ice. This was done successfully, the brig bearing the hard knocks nobly. Strange to say, the English vessels, now joined by Austin, followed in our wake—a compliment, certainly, to De Haven's ice-mastership.

"We were no sooner through, than signal was made to the *Rescue* to 'cast off,' and our ensign was run up from the peak: the captain had determined upon attempting a return to the United States."

It could not be my office to discuss the policy of this step, even if the question were one of policy alone. But it was one of instructions. The Navy Department, imitating in this the English Board of Admiralty, had, in its orders to our commander, marked out to him the course of the expedition, and had enjoined that, unless under special circumstances, he should "endeavor not to be caught in the ice during the winter, but that he should, after completing his examinations for the season, make his escape, and return to New York in the fall." In the judgment of Commodore De Haven, these special circumstances did not exist; and he felt himself, therefore, controlled by the general terms of the injunction. I believe that there was but one feeling among the officers of our little squadron, that of unmitigated regret that we were no longer to co-operate with our gallant associates under the sister flag. Our intercourse with them had been most cordial from the very first. We had interchanged many courtesies, and I should be sorry to think that there had not been formed on both sides some enduring friendships.

In a little while we had the *Rescue* in tow, and were heading to the east. She had had a fearful night of it after leaving us. She beat about, short-handed, clogged with ice, and with the thermometer at 8°. The snow fell heavily, and the rigging was a solid, almost unmanageable lump. Steering, or rather beating, she made, on the evening of the 12th, the southern edge of Griffith's Island, and by good luck and excellent management succeeded in holding to the land hummocks. She had split her rudder-post so as to make her *unworkable*, and now we have her in tow. An anchor with its fluke snapped—her best bower; and her little boat, stove in by the ice, was cut adrift.

"We were now homeward bound, but a saddened homeward bound for all of us. The vessels of our gallant brethren soon lost themselves in the mist, and we steered our course with a fresh breeze for Cape Hotham.

"As we passed the sweep of coast between Capes Martyr and Hotham, and were making the chord of the curve, our captain called my attention to a point of the coast line about six miles off. On looking without a glass, I distinctly saw the naked spars of a couple of vessels. 'Brigs!' said I. 'Undoubtedly,' said De Haven; and then both of us simultaneously, 'Penny!' On looking with the glass, the masts, yards, gaffs, every thing but the bowsprits, were made out distinctly. Lovell was called and saw the same. Murdaugh, who was half undressed, was summoned; and he, examining with the glass, saw a third, which De Haven, after a look, confirmed as a top-sail schooner, the *Felix* of old Sir John.

"We changed our course, ran in, and determined to convince ourselves of their character, and perhaps to speak them. The fog, however, closed around them. Still we stood on. Presently, a flaw of wind drove off the vapor; and upon eagerly gazing at the spot, now less than three miles off, no vessels were to be seen.

"I can hardly comment upon this strange circumstance. It was a complete puzzle to all of us. Refractive distortion plays strange freaks in these Arctic solitudes; but this could hardly be one of its illusions. Four persons saw the same image with the naked eye, and the glass confirmed the details. There was no disagreement. As plainly as I see these letters did I see those brigs; and although we supposed the *Lady Franklin* and *Sophia* to be ice-caught at or toward Cape Walker, I did not hesitate to name them as the vessels before us. Ten minutes of obscurity, we sailing directly toward them, a sudden interval of brightness—and they had passed away.

"Some large hummocks of grounded ice were near them, and we try to convince ourselves that they may have been closed in by changes in our relative positions; but this is hard to believe, for we should have seen their upper spars above the ice. I gazed long and attentively with our Fraünhofer telescope, at three miles' distance, but saw absolutely no semblance of what a few minutes before was so apparent."

We were obliged several times the next day to bore through the young ice; for the low temperature continued, and our wind lulled under Cape Hotham. The night gave us now three hours of complete darkness. It was danger to run on, yet equally danger to pause. Grim winter was following close upon our heels; and even the captain, sanguine and fearless in emergency as he always proved himself, as he saw the tenacious fields of sludge and pancake thickening around us, began to feel anxious. Mine was a jumble of sensations. I had been desirous to the last degree that we might remain on the field of search, and could hardly be dissatisfied at what promised to realize my wish. Yet I had hoped that our wintering would be near our English friends, that in case of trouble or disease we might mutually sustain each other. But the interval of fifty miles between us, in these inhospitable deserts, was as complete a separation as an entire continent; and I confess that I looked at the dark shadows closing around Barlow's Inlet, the prison from which we cut ourselves on the seventh, just six days before, with feelings as sombre as the landscape itself.

The sound of our vessel crunching her way through the new ice is not easy to be described. It was not like the grinding of the old formed ice, nor was it the slushy scraping of sludge. We may all of us remember, in the skating frolics of early days, the peculiar reverberating outcry of a pebble, as we tossed it from us along the edges of an old mill-dam, and heard it dying away in echoes almost musical. Imagine such a tone as this, combined with the whir of rapid motion, and the rasping noise of close-grained sugar. I was listening to the sound in my little den, after a sorrowful day, close upon zero, trying to warm up my stiffened limbs. Presently it grew less, then increased, then stopped, then went on again, but jerking and irregular; and then it waned, and waned, and waned away to silence.

Down came the captain: "Doctor, the ice has caught us: we are frozen up." On went my furs at once. As I reached the deck, the wind was there, blowing stiff, and the sails were filled and puffing with it. It was not yet dark enough to hide the smooth surface of ice that filled up the horizon, holding the American expedition in search of Sir John Franklin imbedded in its centre. There we were, literally frozen tight in the mid-channel of Wellington's Straits.

"*September* 15. The change of tide, or, rather, those diurnal changes in the movement of the ice which seem to be indirectly connected with it, gave us a little while before noon a partial opening in the solid ice around us. We made by hard work about a mile, and were then more fast than ever. The ice alongside will now bear a man: the wind, however, is hauling around to the westward. With a strong northwester, there might still be a hope for us.

"This afternoon, at 6h. 20m., a large spheroidal mass was seen floating in the air at an unknown distance to the north. It undulated for a while over the ice-lined horizon of Wellington Channel; and after a little while, another, smaller than the first, became visible a short distance below it. They receded with the wind from the southward and eastward, but did not disappear for some time. Captain De Haven at first thought it a kite; but, independently of the difficulty of imagining a kite flying without a master, and where no master could be, its outline and movement convinced me it was a balloon. The *Resolute* dispatched a courier balloon on the 2d; but that could never have survived the storms of the past week. I therefore suppose it must have been sent up by some English vessel to the west of us.

"I make a formal note of this circumstance, trivial as it may be; for at first Franklin rose to my mind, as possibly signalizing up Wellington Channel."

Cape Hotham was at this time nearly in range, from our position, with the first headland to the west of it; and our captain estimated that we were about thirty miles from the eastern side of the strait. The balloon was to leeward, nearly due north of us, more so than could be referred to the course of the wind as we observed it, supposing it to have set out from any vessel of whose place we were aware. It appeared to me, the principal one, about two feet long by eighteen inches broad; its appendage larger than an ordinary dinner-plate. The incident interested us much at the time, and I have not seen any thing in the published journals of the English searchers that explains it.

CHAPTER V

THE region, which ten days before was teeming with animal life, was now almost deserted. We saw but one narwhal and a few seal. The Ivory gull too, a solitary traveler, occasionally flitted by us; but the season had evidently wrought its change.

Several flocks of the snow bunting had passed over us while we were attached to the main ice off Griffith's Island, and a single raven was seen from the *Rescue* at her holding grounds. The Brent geese, however, the dovekies, the divers, indeed all the anatidæ, the white whales, the walrus, the bearded and the hirsute seal, the white bear, whatever gave us life and incident, had vanished.

The following Sunday, the 15th, was signalized by the introduction of a bright new "Cornelius" lard lamp into the cabin, a luxury which I had often urged before, but which the difficulties of opening the hold had compelled the captain to deny us. The condensation of moisture had been excessive; the beams had been sweating great drops, and my bedding and bunk-boards bore the look of having been exposed to a drizzling mist. The temperature

had been below the freezing point for a week before. The lamp gave us the very comfortable warmth of 44°, twelve degrees above congelation. It was a luxury such as few but Arctic travelers can apprehend.

For some days after this, an obscurity of fog and snow made it impossible to see more than a few hundred yards from the ship. This little area remained fast bound, the ice bearing us readily, though a very slight motion against the sides of the vessel seemed to show that it was not perfectly attached to the shores. But as I stood on deck in the afternoon of the 16th, watching the coast to the east of us, as the clouds cleared away for the first time, it struck me that its configuration was unknown to me. By-and-by. Cape Beechy, the isthmus of the Graves, loomed up; and we then found that we were a little to the north of Cape Bowden.

The next two days this northward drift continued without remission. The wind blew strong from the southward and eastward, sometimes approaching to a gale; but the ice-pack around us retained its tenacity, and increased rapidly in thickness.

Yet every now and then we could see that at some short distance it was broken by small pools of water, which would be effaced again, soon after they were formed, by an external pressure. At these times our vessels underwent a nipping on a small scale. The smoother ice-field that held us would be driven in, piling itself in miniature hummocks about us, sometimes higher than our decks, and much too near them to leave us a sense of security against their further advance. The noises, too, of whining puppies and swarming bees made part of these demonstrations, much as when the heavier masses were at work, but shriller perhaps, and more clamorous.

I was aroused at midnight of the 16th by one of these onsets of the enemy, crunching and creaking against the ship's sides till the masses ground themselves to powder. Our vessel was trembling like an ague-fit under the pressure; and when so pinched that she could not vibrate any longer between the driving and the stationary fields, making a quick, liberating jump above them that rattled the movables fore and aft. As it wore on toward morning, the ice, now ten inches thick, kept crowding upon us with increased energy; and the whole of the 17th was passed in a succession of conflicts with it.

The 18th began with a nipping that promised more of danger. The banks of ice rose one above another till they reached the line of our bulwarks. This, too, continued through the day, sometimes lulling for a while into comparative repose, but recurring after a few minutes of partial intermission. While I was watching this angry contest of the ice-tables, as they clashed together in the darkness of early dawn, I saw for the first time the luminous appearance, which has been described by voyagers as attending the collision of bergs. It was very marked ; as decided a phosphorescence as that of the fire-fly, or the fox-fire of the Virginia meadows.

Still, amid all the tumult, our drift was toward the north. From the bearings of the coast, badly obtained through the fogs, it was quite evident that we had passed beyond any thing recorded on the charts. Cape Bowden, Parry's furthest headland, was at least twenty-five miles south of us; and our old landmarks. Cape Hotham and Beechy, had entirely disappeared. Even the high bluffs of Barlow's Inlet had gone. I hardly know why it was so, but this inlet had somehow or other been for me an object of special aversion: the naked desolation of its frost-bitten limestone, the cavernous recess of its cliffs, the cheerlessness of its dark shadows, had connected it, from the first day I saw it, with some dimly-remembered feeling of pain. But how glad we should all of us have been, as we floated along in hopeless isolation, to find a way open to its grim but protecting barriers.

I return to my journal.

"*September* 19, Thursday. About five o'clock this morning the wind set in from the northward and eastward; but the ice was tightly compacted, and for a while did not budge. Presently, however, we could see the water-pools extending their irregular margins. Ahead of us, that is, still further to the north, was ice apparently more solid than the ten-inch field around us. It shot up into larger hummocks and heavier masses, and was evidently thicker and more permanent. It had been for the past two days not more than fifty yards ahead, and we called it in the log the 'fixed ice.' By breakfast-time this opened into two long pools on our right, and one on the left, which seemed to extend pretty well toward the western shore. It was evident that we were now drifting to the southward again.

"The sun, so long obscured, gave us to-day a rough meridian altitude. Murdaugh, always active and efficient, had his artificial horizon ready upon the ice, and gave us an approximate latitude. We were in 75° 20' 11″north. A large cape and several smaller headlands were seen, together with apparently an inlet or harbor, all on the western side. They remain unchristened. From our mast-head, no *positive* land was visible to the north. Tides we have not had the means of observing. Our soundings on the 17th gave us bottom at 110 fathoms, nearly in mid-channel.

"*September* 19, 11:20 P.M. The wind continued all day from the northward and westward, freshening gradually to a gale. The barometer fell from 29.73 to 32, and our maximum temperature was 26°. A heavy fall of snow covered the deck.

"*September* 20. I have been keeping the first watch and anxiously observing the ice; for I am no sailor, and in emergency can only wake my comrades. The darkness is now complete. The wind has changed again. At three A.M. it set in from the southward and eastward, increasing gradually to a fresh gale. Perhaps it may be the breaking up of the season, or some unusual premonition of stern winter; but certain it is that our experience of Lancaster Sound has given us anything but tranquillity of winds. We entered on the wings of a storm; and ever since, with the exception of about three days off Cape Riley, we have had nothing but gales, rising and falling in alternating series from the north to northward and westward, and from the south to southward and eastward. The day was as usual ushered in with snow, and the thermometer rose to the height of 29°; yet to sensation it was cold. There is something very queer about this discrepancy between the thermometrical register and the effects of heat. It thawed palpably to-day at 28°; and yet all complain of cold, even without the influence of the wind.

"We are now, poor devils! drifting northward again. Creatures of habit, those who were anxious have forgotten anxiety; glued fast here in a moving mass, we eat, and drink, and sleep, unmindful of the morrow. It is almost beyond a doubt that, if we find our way through the contingencies of this Arctic autumn, we must spend our winter in open sea. Many miles to the south. Captain Back passed a memorable term of vigil and exposure. Here, however, I do not anticipate such encounters with drifting floes as are spoken of in Hudson's Bay. The centre of greatest cold is too near us, and the communication with open sea too distant.—

"I was in the act of writing the above, when a startling sensation, resembling the spring of a well-drawn bow, announced a fresh movement. Running on deck, I found it blowing a furious gale, and the ice again in motion. I use the word motion inaccurately. The field, of which we are a part, is always in motion; that is, drifting with wind or current. It is only when other ice bears down upon our own, or our own ice is borne in against other floes, that pressure and resistance make us conscious of motion.

"The ice was again in motion. The great expanse of recently-formed solidity, already bristling with hummocks, had up to this moment resisted the enormous incidence of a heavy gale. Suddenly, however, the pressure increasing beyond its strength, it yielded. The twang of a bow-string is the only thing I can compare it to. In a single instant the broad field was rent asunder, cracked in every conceivable direction, tables ground against tables, and masses piled over masses. The sea seemed to be churning ice.

"By the time I had yoked my neck in its *serape*, and got up upon deck, the ice had piled up a couple of feet above our bulwarks. In less than another minute it had toppled over again, and we were floating helplessly in a confused mass of broken fragments. Fortunately the *Rescue* remained fixed; our hawser was fast to her stern, and by it we were brought side by side again. Night passed anxiously; *i. e.*, slept in my clothes, and dreamed of being presented to Queen Victoria.

"*September* 21, Saturday. We have drifted still more to the northward and eastward. An observation gave us latitude 75° 20′ 38″ N. We are apparently not more than seven miles from the shore. It is still of the characteristic transition limestone, very uninviting, snow-covered, and destitute; but we look at it longingly. It would be so comforting to have landed a small depôt of provisions, in case of accident or impaction further north.

"No snow until afternoon. Thermometer, maximum 22°, minimum 19°, mean 20° 35'. Wind gentle, and now nearly calm, from southward and eastward to southward.

"About tea-time (21st), the sun sufficiently low to give the effects of sunset, we saw distinctly to the north by west a series of hill-tops, apparently of the same configuration with those around us. The trend of the western coast extending northward from the point opposite our vessel receded westward, and a vacant space, either of unseen very low land or of water, separated it from the Terra Nova, which we see north of us. Whether this Grinnell Land, as our captain has named it, be a continuation of Cornwallis Island or a cape from a new northernland, or a new direction of the eastern coast of North Devon, or a new island, I am not prepared to say. We shall probably know more of each other before long.

"*September* 22, Sunday. A cloudless morning: no snow till afternoon. Our drift during the night has been to the northward; and, except an occasional crack or pool, our horizon was one mass of snow-covered ice.

"The beautifully clear sky with which the day opened gave us another opportunity of seeing the unvisited shores of Upper Wellington Sound. Our latitude by artificial horizon was 75° 24′ 21″ N., about sixty miles from Cape Hotham. Cape Bowden, on the eastern side, has disappeared; and on the west, Advance Bluff, a dark, projecting cape, from which we took sextant angles, was seen bearing to the west of south. To the northward and westward low land was seen, having the appearance of an island,[B] and mountain tops terminating the low strip ahead. The trend of the shore on our left, the western, is clearly to the westward since leaving Advance Bluff. It is rolling, with terraced shingle beach, and without bluffs. It terminates, or apparently terminates, abruptly, thus:

after which comes a strip without visible land, and then the mountain tops mentioned above. Beyond this western shore, distant only seven miles, we see mountain tops, distant and very high, rising above the clouds.

[B] I have followed my journal literally. I find, however, in my copy of the log-book, below the entry of the watch-officer which mentions this island, a note made by me at the time: "I can see no island, but simply this prolongation or tongue."

"*September* 25, Wednesday. The wind has changed, so that our helpless drift is now again to the north. The day was comparatively free from snow; but not clear enough to give us an observation, or to exhibit the more distant coast-lines. We can see the western shore very plainly covered with snow, and stretching in rolling hills to the north and west. A little indentation, nearly opposite the day before yesterday, is now in nearly the same phase—if any thing, a little to the southward. We have therefore changed our position by drift not so much as on the preceding days. The winds, however, have been very light. Advance Bluff is now shut in by 'Cape Rescue,' the westernmost point yet discovered of Cornwallis Island. This shows that we are nearing the shore.

"Toward the north and a little to the west is a permanent dark cloud, a line of stratus with a cumulated thickening at the western end. This is the same during sunshine and snow-storm, night and day. It is thought by Captain De Haven to be indicative of open water. It may be that Cornwallis Island ends there, and that this is a continuation of the present channel trending to the westward. Or this dark appearance may be merely the highland clouds over the mountains seen on Sunday; but De Haven suggests that it is rather a vacant space, or water free from ice; the exemption being due to the island and adjacent western shore (not more than seven miles from it), acting as a barrier to the northern drift of the present channel."

CHAPTER VI

I AM reluctant to burden my pages with the wild, but scarcely varied incidents of our continued drift through Wellington Channel. We were yet to be familiarized with the strife of the ice-tables, now broken up into tumbling masses, and piling themselves in angry confusion against our sides—now fixed in chaotic disarray by the fields of new ice that imbedded them in a single night—again, perhaps, opening in treacherous pools, only to close round us with a force that threatened to grind our brigs to powder. I shall have occasion enough to speak of these things hereafter. I give now a few extracts from my journal; some of which may perhaps have interest of a different character, though they can not escape the saddening monotony of the scenes that were about us.

I begin with a partial break-up that occurred on the 23d.

"*September* 23. How shall I describe to you this pressure, its fearfulness and sublimity! Nothing that I have seen or read of approaches it. The voices of the ice and the heavy swash of the overturned hummock-tables are at this moment dinning in my ears. 'All hands' are on deck fighting our grim enemy.

"Fourteen inches of solid ice thickness, with some half dozen of snow, are, with the slow uniform advance of a mighty propelling power, driving in upon our vessel. As they strike her, the semi-plastic mass is impressed with a mould of her side, and then, urged on by the force behind, slides upward, and rises in great vertical tables. When these attain their utmost height, still pressed on by others, they topple over, and form a great embankment of fallen tables. At the same time, others take a downward direction, and when pushed on, as in the other case, form a similar pile underneath. The side on which one or the other of these actions takes place for the time, varies with the direction of the force, the strength of the opposite or resisting side, the inclination of the vessel, and the weight of the superincumbent mounds; and as these conditions follow each other in varying succession, the vessel becomes perfectly imbedded after a little while in crumbling and fractured ice.

“Perhaps no vessel has ever been in this position but our own. With matured ice, nothing of iron or wood could resist such pressure. As for the British vessels, their size would make it next to impossible for them to stand. Back’s ‘Winter’ is the only thing I have read of that reminds me of our present predicament. No vessel has ever been caught by winter in these waters.

“We are lifted bodily eighteen inches out of water. The hummocks are reared up around the ship, so as to rise in some cases a couple of feet above our bulwarks—five feet above our deck. They are very often ten and twelve feet high. All hands are out, laboring with picks and crowbars to overturn the fragments that threaten to overwhelm us. Add to this darkness, snow, cold, and the absolute destitution of surrounding shores.

“This uprearing of the ice is not a slow work: it is progressive, but not slow. It was only at 4 P.M. that nips began, and now the entire plain is triangulated with ice-barricades. Under the double influence of sails and warping-hawsers, we have not been able to budge a hair’s-breadth. Yet, impelled by this irresistible, bearing-down floe-monster, we crush, grind, *eat* our way, surrounded by the ruins of our progress. In fourteen minutes we changed our position 80 feet, or 5.71 per minute.

“Sometimes the ice cracks with violence, almost explosive, throughout the entire length of the floe. Very grand this! Sometimes the hummock masses, piled up like crushed sugar around the ship, suddenly sink into the sea, and then fresh mounds take their place.

“Our little neighbor, the *Rescue*, is all this time within twenty yards of us, resting upon wedges of ice, and not subjected to movement or pressure—a fact of interest, as it shows how very small a difference of position may determine the differing fate of two vessels.

“*September* 24. The ice is kinder; no fresh movements; a little *whining* in the morning, but since then undisturbed. The ice, however, is influenced by the wind; for open water-pools have formed—three around the ship within eye distance. In one of these, the seals made their appearance toward noon; no less than five disporting together among the sludge of the open water. I started off on a perilous walk over the ruined barricades of last night’s commotion; and, after cooling myself for forty minutes in an atmosphere ten degrees above zero, came back without a shot. The condensed moisture had so affected my powder that I could not get my gun off.

“This condensation is now very troublesome, dripping down from our carlines, and sweating over the roof and berth-boards. When we open the hatchway, the steam rises in clouds from the little cabin below.

“We have as yet no fires; worse! the state of uncertainty in which we are placed makes it impossible to resort to any winter arrangements. Yet these lard lamps give us a temperature of 46°, which to men like ourselves, used to constant out-door exercise, exposure, and absence of artificial heat, is quite genial. But for the moisture—that wretched, comfortless, rheumatic drawback—we would be quite snug.

“Our captain is the best of sailors; but, intent always on the primary objects and duties of his cruise, he is apt to forget or postpone a provident regard for those creature-comforts which have interest for others. To-day, with the thermometer at 10°, we for the first time commenced the manufacture of stove-pipes. I need not say that the cold metal played hob with the tinkers. If they go on at the present rate, the pipes will be nearly ready by next summer.

“*September* 26. The hummocks around us still remain without apparent motion, heaped up like snow-covered barriers of street rioters. We are wedged in a huge mass of tables, completely out of water, cradled by ice. I wish it would give us an even keel. We are eighteen inches higher on one quarter than the other.

“The two large pools we observed yesterday, one on each side of us, are now coated by a thick film of ice. In this the poor seals sometimes show themselves in groups of half a dozen. They no longer sport about as they did three weeks ago, but rise up to their breasts through young ice, and gaze around with curiosity-smitten countenances.

“The shyness of the seal is proverbial. The Esquimaux, trained from earliest youth to the pursuit of them, regard a successful hunter as the great man of the settlement. If not killed instantaneously, the seal sinks and is lost. The day before yesterday, I adopted the native plan of silent watching beside a pool. Thus for a long time I was exposed to a temperature of +8°; but no shots within head-range offered; and I knew that, unless the spinal column or base of the brain was entered by the ball, it would be useless to waste our already scanty ammunition.

“To-day, however, I was more fortunate. A fine young seal rose about forty yards off, and I put the ball between the ear and eye. A boat was run over the ice, and the carcass secured. This is the second I have killed with this villainous carbine: it will be a valuable help to our sick. We are now very fond of seal-meat. It is far better than bear; and the fishiness, which at first disturbed us, is no longer disagreeable. I simply skin them, retaining the blubber with the pelt. The cold soon renders them solid. My bear, although in a barrel, is as stiff and hard as horn.

“Took a skate this morning over some lakelets recently frozen over. The ice was tenacious, but not strong enough for safety. As I was moving along over the *tickly-benders*, my ice-pole drove a hole, and came very near dropping through into the water.

“*September* 27. This evening the thermometer gave 3° above zero. A bit of ice, which I took into my mouth to suck, fastened on to my tongue and carried away the skin. When we open the cabin hatch now, a cloud of steam, visible only as the two currents meet, gives evidence of the Arctic condensation.

“Afar off, skipping from hummock to hummock, I saw a black fox. Poor desolate devil! what did he, so far from his recorded home, seven miles from even the naked snow-hills of this dreary wilderness? In the night-time I heard him bark. They set a trap for him; but I secretly placed a bigger bait outside, without a snare-loop or trigger. In the morning it was gone, and the dead-fall had fallen upon no fox. How the poor, hungry thing must have enjoyed his supper! half the guts, the spleen, and the pluck of my seal.

“Lovell raised a swing; cold work, but good exercise. He rigged it from the main studding-sail boom. Murdaugh and Carter are building a snow-house. The doctor is hard at work patching up materials for an overland communication with the English squadron—an enterprise fast becoming desperate. Yet, drifting as we are to unknown regions north, it is of vast importance that others should know of our position and prospects.”

Our position, however, at the end of September, thanks to the rapidly-increasing cold, gave promise of a certain degree of security and rest. The *Advance* had been driven, by the superior momentum of the floes that pressed us on one side, some two hundred and fifty feet into the mass of less resisting floes on the other; the *Rescue* meanwhile remaining stationary; and the two vessels were fixed for a time on two adjacent sides of a rectangle, and close to each other. The unseen and varying energies of the ice movements had occasionally modified the position of each; but their relation to each other continued almost unchanged.

We felt that we were fixed for the winter. We arranged our rude embankments of ice and snow around us, began to deposit our stores within them, and got out our felt covering that was to serve as our winter roof. The temperature was severe, ranging from 1°.5, and 4° to +10°; but the men worked with the energy, and hope too, of pioneer settlers, when building up their first home in our Western forests.

The closing day of the month was signalized by a brilliant meteor, a modification of the parhelion, the more interesting to us because the first we had seen.

"*October* 1, Tuesday. To-day the work of breaking hold commenced. The coal immediately under the main hatch was passed up in buckets, and some five tons piled upon the ice. The quarter-boats were hauled about twenty paces from our port-bow, and the sails covered and stacked; in short, all hands were at work preparing for the winter. Little had we calculated the caprices of Arctic ice.

"About ten o'clock A.M. a large crack opened nearly east and west, running as far as the eye could see, sometimes crossing the ice-pools, and sometimes breaking along the hummock ridges. The sun and moon will be in conjunction on the 3d; we had notice, therefore, that the spring tides are in action.

"Captain Griffin had been dispatched with Mr. Lovell before this, to establish on the shore the site for a depôt of provisions: at one o'clock a signal was made to recall them. At two P.M., seeing a seal, I ran out upon the ice; but losing him, was tempted to continue on about a mile to the eastward. The wind, which had been from the westward all the morning, now shifted to the southward, and the ice-tables began to be again in motion. The *humming of bees* and upheaving hummocks, together with exploding cracks, warned me back to the vessel.

"At 3:20, while we were at dinner, commenting with some anxiety upon the condition of things without, that unmistakable monitor, the '*young puppies*,' began. Running on deck, we found a large fissure, nearly due north and south, in line with the *Advance*. A few minutes after, the entire floe on our starboard side was moving, and the ice breaking up in every direction.

"The emergency was startling enough. All hands turned to, officers included. The poor land party, returning at this moment, tired and dinnerless, went to work with the rest. Vreeland and myself worked like horses. Before dark, every thing was on board except the coal; and of this, such were the unwearied efforts of our crew, that we lost but a ton or two.

"This ice-opening was instructive practically, because it taught those of us who did not understand it before how capriciously insecure was our position. It revealed much, too, in relation to the action of the ice.

"1. The first crack was nearly at right angles to the axis of the channel; the subsequent ones crossed the first; the wind being in the one case from the westward, and afterward changing to the southward.

"2. The next subject of note was the disintegration of the old floes. It took place almost invariably at their original lines of junction, well marked by the hummocky ridges. This shows that the cementation was imperfect after seventeen days of very low temperature; a circumstance attributable, perhaps, to the massive character of the up-piled tables, which protected the inner portion of them from the air, and to the constant infiltration (*endosmose*) of salt-water at the abraded margins.

"3. The extent to which the work of super and infra position had been carried during the actions may be realized, when I say that the floe-piece which separated from us to starboard retained the exact impression of the ship's side. There it was, with the gangway stairs of ice-block masonry, looking down upon the dark water, and the useless embankment embracing a sludgy ice-pool.

"We could see table after table, more properly layer after layer, each not more than seven inches thick, extending down for more than twenty feet. Thus, it is highly probable, may be formed many of those enormous ice-tables, attributed by authors to direct and uninterrupted congelation.

"The quantity of ice adhering to our port-side must be enormous; for although the starboard floe, in leaving us, parted a six-inch hawser, it failed to budge us one inch from the icy cradle in which we are set."

CHAPTER VII

THREE days after this entry the thermometer had fallen to 11° below zero. Our housings were not yet fixed, and we had no fires below; indeed, our position was so liable to momentary and violent change that it would have been impracticable to put up stoves. Still, our lard-lamp in the cabin gave us a temperature of +44°; and so completely were our systems accommodated to the circumstances in which we were, that we should have been quite satisfied but for the condensed moisture that dripped from every thing about us. Our commander had allowed me to place canvas gutters around the hatchways, and from these we emptied every day several tin cans full of water, that would otherwise have been added to the slop on our cabin floor. But the state of things was, on the whole, exceedingly comfortless, and, to those whom the scurvy had attacked, full of peril. I remember once, when the lard-lamp died out in the course of the night, the mercury sunk in the cabin to 16°. It was not till the 19th that we got up our stoves.

The adaptation of the human system to varying temperatures struck me at this time with great force. I had passed the three winters before within the tropics—the last on the plains of Mexico—yet I could now watch patiently for hours together to get a shot at seals, with the thermometer at +10°. I wrote my journal in imaginary comfort with a temperature of 40°, and was positively distressed with heat when exercising on the ice with the mercury at +19°.

I return to my diary.

"*October* 3. I write at midnight. Leaving the deck, where I have been tramping the cold out of my joints, I come below to our little cabin. As I open the hatch, every thing seems bathed in dirty milk. A cloud of vapor gushes out at every chink, and, as the cold air travels down, it is seen condensing deeper and deeper. The thermometer above is at 7° below zero.

"The brig and the ice around her are covered by a strange black obscurity—not a mist, nor a haze, but a peculiar, waving, palpable, unnatural darkness: it is the frost-smoke of Arctic winters. Its range is very low. Climbing to the yard-arm, some thirty feet above the deck, I looked over a great horizon of black smoke, and above me saw the heaven without a blemish.

"*October* 4. The open pools can no longer be called pools; they are great rivers, whose hummock-lined shores look dimly through the haze. Contrasted with the pure white snow, their waters are black even to inkyness; and the silent tides, undisturbed by ripple or wash, pass beneath a pasty film of constantly forming ice. The thermometer is at 10°. Away from the ship, a long way, I walked over the older ice to a spot where the open river was as wide as the Delaware. Here, after some crevice-jumping and *tickly-bender* crossing, I set myself behind a little rampart of hummocks, watching for seals.

"As I watched, the smoke, the frost-smoke, came down in wreaths, like the lambent tongues of burning turpentine seen without the blaze. I was soon enveloped in crapy mist.

"To shoot seal, one must practice the Esquimaux tactics of much patience and complete immobility. It is no fun, I assure you after full experience, to sit motionless and noiseless as a statue, with a cold iron musket in your hands, and the thermometer 10° below zero. But by-and-by I was rewarded by seeing some overgrown Greenland calves come within shot. I missed. After another hour of cold expectation, they came again. Very strange are these seal. A countenance between the dog and the mild African ape—an expression so like that of humanity, that it makes gun-murderers hesitate. At last, at long shot, I hit one. God forgive me!

"The ball did not kill outright. It was out of range, struck too low, and entered the lungs. The poor beast had risen breast-high out of water, like the treading-water swimmers among ourselves.

He was thus supported, looking about with curious, expectant eyes, when the ball entered his lungs.

"For a moment he oozed a little bright blood from his mouth, and looked toward me with a sort of startled reproachfulness. Then he dipped; an instant after, he came up still nearer, looked again, bled again, and went down. A half instant afterward, he came up flurriedly, looked about with anguish in his eyes, for he was quite near me; but slowly he sunk, struggling feebly, rose again, sunk again, struggled a very little more. The thing was drowning in the element of his sportive revels. He did drown finally, and sunk; and so I lost him.

"Have naturalists ever noticed the expression of this animal's phiz? Curiosity, contentment, pain, reproach, despair, even resignation I thought, I saw on this seal's face.

"About half an hour afterward, I killed another. Scurvy and sea-life craving for fresh meat led me to it; but I shot him dead.

"On returning to the ship, I found one toe frost-bitten—a tallow-looking dead man's toe—which was restored to its original ugly vitality by snow-rubbing. Served me right!

"Spent the afternoon in unsuccessful seal stalking, and in rigging and contriving a spring-gun for the Arctic foxes: a blood-thirsty day. But we ate of fox to-day for dinner; and behold, and it was good.

"*October* 5, Saturday. The wind evidently freshens up. The day has been bitterly cold. Although our lowest temperature was zero and—1°, we felt it far more than the low temperature of yesterday. Our maximum was as high as 4°; yet, with this, it required active motion on deck to keep one's self warm.

"At 12h. 55m., we had an interval of clear sunshine. The utmost, however, to which it would raise one of the long register Smithsonian thermometers was 7°. The air was filled with bright particles of frozen moisture, which glittered in the sunshine—a shimmering of transparent dust.[C]

[C] Under the microscope these again showed obscure modifications of the hexagon.

"At the same time, we had a second exhibition of parhelia, not so vivid in prismatic tints as that of the 30th of September, but more complete. The sun was expanded in a bright glare of intensely white light, and was surrounded by two distinct concentric circles, delicately tinted on their inner margins with the red of the spectrum. The radius of the inner, as measured by the sextant, was 22° 04'; that of the outer, 40° 15'. The lowest portions of both were beneath the horizon, and of course not seen.

"From the central disk proceeded four radii, coincident with the vertical and the horizontal diameters of the circles.

"Their visible points of intersection were marked by bright parhelia; each parhelion having its circumference well defined, but compressed so as to have no resemblance to the solar disk.

"Six of these were visible at the same moment; those of the outer circle being fainter than the inner. Touching the upper circumference of this outer circle was the arc of a third, which extended toward the zenith. Indeed, at one time I thought I saw a luminosity overhead, which may have corresponded to its centre. The tints of this supplemental circle were very bright. The glowing atmosphere about the sun was very striking.

"The strange openings in the water of a few hours ago are now great rivers, lined by banks of hummocks, and wreathed in frost smoke. The continually increasing wind from the northward

explains this southern drift of the ice, and with it these unwelcome openings. We are stationary, and the detached ice is leaving us.

"The strong floe of ice-table under ice-table, and hummock upon hummock, makes our position one of nearly complete solidity. We are glued up in ice; and to liberate us, some fearful disruption must take place. Twenty-five feet of solid ice is no feeble matrix, for a brig drawing but ten. Yet the water is wider, and still widening around us; so that now we hold on—that is, our floe holds on, to the great mass to the north of us, like a little peninsular cape.

"To the south every thing is in drifting motion—water, sludge, frost-smoke—but no seals.

"We caught a poor little fox to-day in a dead-fall. We ate him as an anti-scorbutic.

"*October* 6, Sunday. A dismal day; the wind howling, and the snow, fine as flour, drifting into every chink and cranny. The cold quite a nuisance, although the mercury is up again to +6°. It is blowing a gale. What if the floe, in which we are providentially glued, should take it into its head to break off, and carry us on a cruise before the wind!

"8 P.M. Took a pole, and started off to make a voyage of discovery around our floe. After some weary walking over hummocks, and some uncomfortable sousings in the snow-dust, found that our cape has dwindled to an isthmus. In the midst of snow and haze, of course, I did not venture across to the other ice.

"We look now anxiously at the gale—turning in, clothes on, so as to be ready for changes.

"12 Midnight. They report us adrift. Wind, a gale from the northward and westward. An odd cruise this! The American expedition fast in a lump of ice about as big as Washington Square, and driving, like the shanty on a raft, before a howling gale.

"*October* 7, Monday. Going on deck this morning, a new coast met my eyes. Our little matrix of ice had floated at least twenty miles to the south from yesterday's anchorage. The gale continues; but the day is beautifully clear, and we have neared the western coast enough to recognize the features of the limestone cliffs, although many a wrinkle of them is now pearl-powdered with snow-drift.

"Prominent among these was Advance Bluff; and to the south of it, a great indentation in the limestone escarpment, which ran back into a gray distance—a sort of gorge, with a summer water-course. Further off. Point Innes again, and the shingle beach of 'the Graves'; and a high bluff-like cape or headland to the southward and westward, which the captain supposes to be Barlow's Inlet.

"10 P.M. Our master got an observation this evening of a Aquila (circum-meridian altitude), giving us a latitude of 74° 54′ 07″. The seat of our late resting place was in latitude 75° 24′ 52″ N. We have therefore voyaged 30 miles 45 seconds since this new start. At this rate, should the wind continue, another day will carry us again into Lancaster Sound.

"*October* 8. Still we drift. Barlow's Inlet is nearly abreast of us, and Cape Hotham seen distinctly. The broad, unterminated expanse of ice to the south is Lancaster Sound, sixty miles distant when we first began our prisoner's journey. Thermometer at +8°.

"To-day seemed like a wave of the handkerchief from our receding summer. Winter is in every thing. Yet the skies came back to us with warm ochres and pinks, and the sun, albeit from a lowly altitude, shone out in full brightness. It was a mockery of warmth, however, scarcely worthy the unpretending sincerity of the great planet; for the mercury, exposed to the full radiance of his

deceitful glare, rose but two degrees: from +7° to 9°. In spite of this, the day was beautiful to remember, as a type of the sort of thing which we once shared with the world from which we are shut out; a parting picture, to think about during the long night. These dark days, or rather the dark day, will soon be on us. The noon shadows of our long masts almost lose themselves in the distance.

"A little white fox was caught alive in a trap this morning. He was an astute-visaged little scamp; and although the chains of captivity, made of spun-yarn and leather, set hardly upon him, he could spare abundant leisure for bear bones and snow. He would drink no water. His cry resembled the inter-paroxysmal yell of a very small boy undergoing spanking. The note came with an impulsive vehemence, that expressed not only fear and pain, but a very tolerable spice of anger and ill-temper."

He was soon reconciled, however. The very next day he was tame enough to feed from the hand, and had lost all that startled wildness of look which is supposed to characterize his tribe. He was evidently unused to man, and without the educated instinct of flight. Twice, when suffered to escape from the vessel, he was caught in our traps the same night. Indeed, the white foxes of this region—we caught more than thirty of them—seemed to look at us with more curiosity than fear. They would come directly to the ship's side; and, though startled at first when we fired at them, soon came back. They even suffered us to approach them almost within reach of the hand, ran around us, as we gave the halloo, in a narrow circle, but stopped as soon as we were still, and stared us inquisitively in the face. One little fellow, when we let him loose on the ice after keeping him prisoner for a day or two, scampered back again incontinently to his cubby-hole on the deck. There may be matter of reflection for the naturalist in this. Has this animal no natural enemy but famine and cold? The foxes ceased to visit us soon after this, owing probably to the uncertain ice between us and the shore: they are shrewd ice-masters.

CHAPTER VIII

WE remained during the rest of this month ice-cradled, and drifting about near the outlet of Wellington Channel. Occasionally a strong southerly wind would set us back again to the north, as far, perhaps as Barlow's Inlet; but it was soon apparent that the greater compactness of the barrier that had come down after us, and the force of some unknown current, were resisting our progress in that direction. A northerly wind, on the other hand, seemed to have no counteracting influences. A little while after it began to blow, open leads would present themselves under our lee, and the floe which imbedded us moved gradually and without conflict through them toward the south. Our thoughts turned irresistibly to the broad expanse of Lancaster Sound, which lay wild and rugged before us, and to the increasing probability that it was to be our field of trial during the long, dark winter—perhaps our final home.

With this feeling came an increasing desire to communicate with our late associates of Union Bay. I had volunteered some weeks before to make this traverse, and had busied myself with arrangements to carry it out. The *Rescue's* India-rubber boat was to carry the party through the leads, and, once at the shore, three men were to press on with a light tent and a few days' provisions. The project, impracticable perhaps from the first, was foiled for a time by a vexatious incident. I had made my tent of thin cotton cloth, so that it weighed, when completed, but fourteen pounds, soaking it thoroughly in a composition of caoutchouc, ether, and linseed oil, the last in quantity. After it was finished and nearly dried, I wrapped it up in a dry covering of coarse muslin, and

placed it for the night in a locked closet, at some distance from the cook's galley, where the temperature was between 80° and 90°. In the morning it was destroyed. The wrapper was there, retaining its form, and not discolored; but the outer folds of the tent were smoking; and, as I unrolled it, fold after fold showed more and more marks of combustion, till at the centre it was absolutely charred. There was neither flame nor spark.

In a few days more the tumult of the ice-fields had made all chance of reaching the shore hopeless. But the meantime was not passed without efforts.

"*October* 23. I started with a couple of men on another attempt to reach the shore. After five miles of walking, with recurring alternations of climbing, leaping, rolling, and soaking, we found that the ice had driven out from the coast, and a black lane of open water stopped our progress. This is the seventh attempt to cross the ice, all meeting with failure from the same cause. The motion of ice, influenced by winds, tides, and currents, keeps constantly abrading the shore-line. Any outward drift, of course, makes an irregular lane of water, which a single night converts into ice; the returning floes heap this in tables one over another; and the next outward set carries off the floes again, crowned with their new increment.

"The haze gathered around us about an hour after starting, and the hummocks were so covered with snow that the chasms often received us middle deep. We walked five hours and a half, making in all but eleven miles; and even then were at least a mile from the beach.

"At one portion of our route, the ice had the crushed sugar character; the lumps varying in size from a small cantaloupe to a water-melon, but hard as frozen water at zero ought to be. Over this stuff we walked in tiptoe style—and a very miserable style it was.

"At another place, for a mile and a half, we trod on the fractured angles of upturned ice. Call these curbstones; toss them in mad confusion, always taking care that their edges shall be uppermost; dust them over with flour cooled down to zero; and set a poor wretch loose, in the centre of a misty circle, to try for a pathway over them to the shore!

"At another place, break-water stones, great quarried masses of ice, let you up and down, but down oftener than up. At another time, you travel over rounded dunes of old seasoned hummock, covered with slippery glaze. Again, it is over snow, recent and soft, or snow, recent and sufficiently crusty to bear you five paces and let you through the sixth—a trial alike to temper and legs.

"At last, to crown the *deliciæ* of our Arctic walk, we come to a long meadow of recent ice, just enough covered with snow to keep you from slipping, and just thin enough to make it elastic as a polka floor. Over this, with a fine bracing air, every nerve tingling with the exercise, and the hoary rime whitening your beard, you walk with a delightful sense of ease and enjoyment.

"One of my attendants had both ears frost-bitten; the whole external cartilage (*Pinna*) was of tallow, jaundiced. Snow-rubbing set him right. I have ordered the men to take ear-rings from their ears. Wilson, a Livournese, rejoiced in a couple of barbaric pendules, doubtless of bad gold, but good conducting power."

The indications of winter were still becoming more and more marked. On the 11th, the sun rose but 9° at meridian; on the 15th but 6°; and on the 7th of November, at the same hour, it almost rested on the horizon. The daylight, however, was sometimes strangely beautiful. One day in particular, the 8th, a rosy tint diffused itself over every thing, shaded off a little at the zenith, but passing down from pink to violet, and from violet to an opalescent purple, that banded the entire horizon.

The moon made its appearance on the 13th of October. At first it was like a bonfire, warming up the ice with a red glare; but afterward, on the 15th, when it rose to the height of 4°, it silvered the hummocks and frozen leads, and gave a softened lustre to the snow, through which our two little brigs stood out in black and solitary contrast. The stars seemed to have lost their twinkle, and to shine with concentrated brightness as if through gimlet-holes in the cobalt canopy. The frost-smoke scarcely left the field of view. It generally hung in wreaths around the horizon; but it sometimes took eccentric forms; and one night, I remember, it piled itself into a column at the west, and Aquila flamed above it like a tall beacon-light. We were glad to note these fanciful resemblances to the aspects of a more kindly region; they withdrew us sometimes from the sullen realities of the world that encompassed us—ice, frost-smoke, and a threatening sky.

We had parhelia again more than once, but developed imperfectly; a mass of incandescence 22° from the sun, with prismatic coloring, but without the circular and radial appearances that had characterized it before. On the 27th, a partial paraselene was visible, the first we observed—merely the limbs of two broken arcs, destitute of prismatic tint, stretching like circumflexes at about 23° distance on each side the moon; the moon about 20° high, thermometer -10°, barometer 30.55, atmosphere hazy. The sky clearing shortly afterward, it shone out with increased beauty for a while, but died away as the haze disappeared.

The thermometer was now generally below the zero point, sometimes rising for a little while about noon a few degrees above it, once only as high as +13°. When there was no wind, even the lowest of its range was quite bearable; and while we were exercising actively, it was difficult to believe that our sensations could be so strikingly in contrast with the absolute temperature. But a breeze, or a pause of motion till we could raise the sextant to a star or make out some changing phasis of the ice-field, never failed to persuade us, and that feelingly, that the mercury was honest. Night after night the bed-clothes froze at our feet; and a poor copy of the *New York Herald*, that lay at the head of the captain's bunk, was glazed with ice.

"*November* 8. Tempted by the overarching beauty of the sky, I started off this morning with Captain De Haven on a walk of inspection shoreward. The open water, frozen since October 2d, is now nearly two feet thick, and at this low temperature (-15°) it becomes hard and brittle as glass. Wherever the nipping has caught two of the floes, they have been driven with a force inconceivable one above the other, rising and falling until they now form a ridge fifteen or twenty feet high.

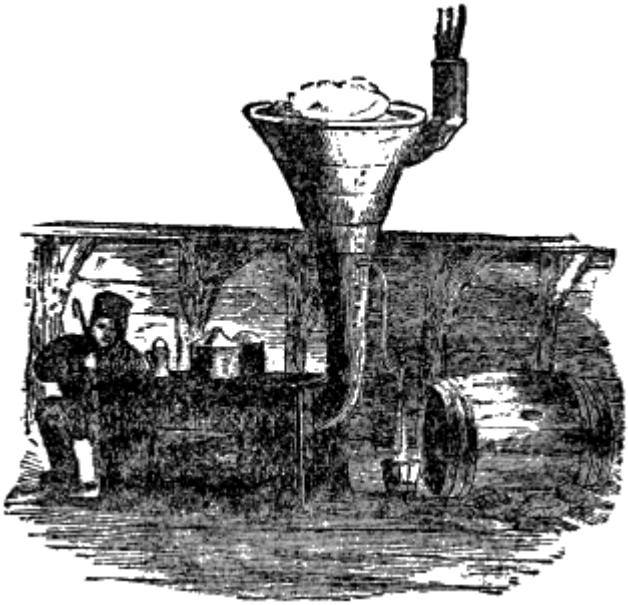
"The tension of the great field of ice over which we passed must have been enormous. It had a sensible curvature. On striking the surface with a walking-pole, loud reports issued like a pistol-shot, and lines of fissure radiated from the point of impact. It seemed as if the blow of an axe would sever the keystone, and break up by a shock the entire expanse. In one place the ice suddenly arched up like a bow while we were looking at it, burst into fragments, collapsed at the exterior margins of fracture, and by the work of a moment created a long barrier line of ruins ten feet high. Our position was one of peril. We had crossed two miles of ice. A change of tide relieved the strain, and we returned.

"The nearest break-up to our homestead floe is about one hundred and fifty yards off. It is now to the south; though our position, constantly changing, alters the bearing by the hour. Very many of the masses that compose it are as large as the grapery at home, two hundred feet long perhaps, and lifted up, barricade-fashion, as high as our second story windows."

The next day our winter arrangements were completed. They were simple enough, and hardly worth describing in detail. A housing of thick felt was drawn completely over the deck, resting on a sort of ridge-pole running fore and aft, and coming down close at the sides. The rime and snow-drift

in an hour or two made it nearly impervious to the weather. The cook's galley stood on the kelson, under the main hatch; its stove-pipe rising through the housing above, and its funnel-shaped apparatus for melting snow attached below. The bulkheads between cabin and forecastle had been removed; and two stoves, one at each end of the berth-deck, distributed their heat among officers and seamen alike. We had of course a community of all manner of odors; and as our only direct ventilation was by the gangway, we had the certainty of a sufficient diversity of temperatures.

The exemption from gales, that has attracted the notice of other travelers in this region, had not yet been confirmed by our experience. On the contrary, our approach to Lancaster Sound, and the earlier part of our drift after we entered it, were marked by frequent storms. Some of these had all the sublimity that could belong to a mingled sense of danger and discomfort. They reminded me of the sand-storms of the Sahara. "The fine particles of snow flew by us in a continuous stream. When they met the unprotected face, the sensation was like the puncture of needles. Standing under the lee of our brig, and watching the drift as it scudded on the wings of the storm through the interval between the two vessels, the lines of sweeping snow were so unbroken that its filaments seemed woven into a mysterious tissue. Objects fifty yards off were invisible: no one could leave the vessels."



STOVE IN COOK'S GALLEY WITH APPARATUS FOR MELTING SNOW.

The month of November found us oscillating still with the winds and currents in the neighborhood of Beechy Island. Helpless as we were among the floating masses, we began to look upon the floe that carried us as a protecting barrier against the approaches of others less friendly; and as the month advanced, and the chances increased of our passing into the sound, our apprehensions of being frozen up in the heart of the ice-pack gave place to the opposite fear of a continuous drift. We had seen enough, and encountered enough of the angry strife among the ice-floes in the channel, to assure us of disaster if we should be forced to mingle in the sterner conflicts of the older ice-fields of the sound. Yet, as the new fields continued forming about us, thickening gradually from inches to feet, and locking together the floes in one great amorphous expanse, we

retained a hope to the last that our island floe, thickening like the rest, and piling its wall of hummocks around us, would continue to ward us from attack, till the all-pervading frost had made it a stationary part of the great winter covering of the Arctic Sea. It encountered almost daily immense hummocks, some of them impinging against us while we were apparently at rest; some, apparently motionless, receiving the impact from us. At such times our floe would be deflected at an angle from its normal course, or would rotate slowly round its centre, and pass on—not, however, always in the same direction; sometimes nearing the western shore, sometimes closing in upon the beach of "the Graves," and sometimes fluctuating slowly to the northward.

But our general course was toward the south and east. On the 17th we were fairly in the sound. It welcomed us coldly. The mercury stood for a while at -19°, and sunk during the night to -27°.

The next day, however, a shift of wind, gradually increasing in force, combined with a tidal influence to drive us back to our old position. The thermometer was at this time lower than we had ever seen it, and the sky seemed to sympathize with the temperature. The moon had a solid look, resting upon the snow-hills of Cape Riley, like a great viscid globe of illumination. In the morning the sky combined all the tints of the spectrum in regular zones, a broad band of orange girding the horizon with an almost uniform intensity of color. The stars shone during the entire day. At daybreak on the 18th, Leopold's Island rose by refraction above the ice, standing with its unmistakable outline clearly black against the orange sky; but it went down as the sun neared the horizon, and passed to the south of his low circuit. My journal for the next two days shows the degree of illumination at the different hours.

"*November* 20, Wednesday. The winds are unlike those encountered by Parry, our only predecessor in this region at this season of the year. It has been very providential, and very unexpected for us, this predominance of breezes from the southward and eastward. It has prevented our drifting into the dreaded sound, there to be carried, if it pleased Fortune, into Baffin's Bay by the easterly current.

"We had a heavy gale from 2 P.M. of yesterday (19th) until this morning at 9 A.M., hauling round from southeast to east-south-east. After this last hour, it gradually died away; and now, at 3 P.M., we have a gentle breeze from the same quarter. The wind has left the north since the 18th.

"Our temperature, which on the 18th gave us -27°, the lowest we have yet recorded, was at the close of the next day but -6°; and to-day its extreme was -4°. Now, by gradual elevation, it has reached zero.

"Zero once more, and a positive sensation of warmth! There was no wind; and the haze vapors so softened this once greatest cold, that I walked about with bare hands and sweating body.

"The daylight is hardly now worthy of the name, according to the Philadelphia notions of the blessing; but to us it is the last leaf of the sibyl. Here is a little record of its incomings and outgoings.

"9 A.M. Breakfast over; furs on; deck covered in with black felt, the frozen condensation patching it with large white wafers of snow. A lantern makes it barely light enough to walk. No red streak to the east: one misty haze of visible darkness.

"10 A.M. A twilight gloom: can just see the Azimuth, with its tripod stand, thirty yards off on the ice. Snow whirling in drifts.

“11 A.M. Can read newspaper print by going to open daylight, *i. e.*, twilight—the twilight of a foggy sunrise at home.

“12 M. Noonday. A streak of brown red looms up above the mist to the south. Save a little more light from the ‘foggy sunrise’ of 11 A.M., no great perceptible difference; yet I can now read the finest print easily.

“1 P.M. Very decidedly more hazy than at 11, the corresponding hour before meridian. Can read with difficulty the newspaper—*London Illustrated News*.

“2 P.M. A hazy darkness, but so compounded with the fast-rising light of the dear moon, that it is far lighter than the corresponding hour before meridian.

“Day is over. Moonlight begins!

“This is a fair specimen of our usual day. The occasional clear day, such as we had the 18th, is far lighter, and full of variety and interest.

“*November* 21, Thursday. The day is clear; but the moonlight, an absolute *clair de lune*, so confounds itself with the day as to make a merely solar register impossible.

“8 A.M. The whole atmosphere bathed in pellucid clearness. The moon, like a luminous sphere, not a circle, as with us, is away up the straits in the northern sky. Not a speck betokens sunrise.

“9 A.M. The southeastern horizon is zoned with a mellow uniform band of light. Nothing we have seen has its extension or its uniformity. The visual angle is an unbroken tint, rising from the ice with a raw sienna, mellowing into pink, and softened again into an orange yellow, which runs sometimes through a gradation of green into the clear blue sky. The moon absorbs all perception of other light.

“10 A.M. The light of dawn begins to mingle with the moon-light; I can not say where or how, but I am conscious of an interfering light. To the southward all is orange, and red, and solar. To the northward, from a cobalt sky of even tint, the moon ‘shineth down alone’—alone, save the bright planet Saturn to the northward, and the broad zone of red sunrise at the south.

“11 A.M. Day upon us on one side, and moon bright on the other: moon-light and sunlight blend overhead. To the north and south, each keeps its separate dominion. I read the finest print readily.

“12 M. Walked out to see the ice. I have no change of words left to describe noonday. The sunlight zone of color was more light and less bright, perhaps—and the moon was more bright and less light, perhaps; but both were there.

“1 P.M. The light hardly dimmed; but the moon shines out so emulously, that it is hard to measure the sunlight.

“2 P.M. It is evidently no longer day, although the southwestern horizon is flared with red streaks, and a softening of yellow into the blue of heaven says that the sun is somewhere below it. The moon has confused the day; and coming as she does at this commencement of our long night, I bless her for the grateful service. I make my four to six hours of daily walk, and hardly miss the guidance of day.

“3 P.M. Moonlight!"

CHAPTER IX

"N*OVEMBER* 22. I walked yesterday, and to-day again, to the open water that separates us from Wellington Channel. It is a bold and rapid river, as broad as the Delaware at Trenton or the Schuylkill at Philadelphia, rolling wildly between dislocated hummock crags, and whirling along in its black current the abraded fragments of its shores. Ice of recent growth had cemented the gnarled masses about its margin into a ragged wall some twenty feet high, and perhaps thirty paces wide. I stood with perfect safety on a tall, spire-like pinnacle, and endeavored to trace its course. It could be seen reaching from a remote point in the southeastern part of the channel, and is probably connected with the open shore leads that stretch from Cape Riley past Cape Spencer toward the further coasts of North Devon. It passed about a mile and a half to the northwest of our vessels, and was lost in the distant ice-fields to the east.

"Returning with Captain De Haven, we saw the recent prints of a bear and two cubs, that had evidently been scenting our footmarks of the day before. The old bear was not large, measuring by her tail only six feet four inches; the young ones so small as to surprise us, their track not much bigger than that of a Newfoundland dog. At what breeding season were these cubs produced?

"I have been for some evenings giving lectures on topics of popular science, the atmosphere, the barometer, &c., to the crew. They are not a very intellectual audience, but they listen with apparent interest, and express themselves gratefully.

"*November* 25. Great clouds of dark vapor were seen to the southward to-day, the crape-wreaths of our first imprisonment. This frost-smoke is an unfailing indication of open water, and to us, poor prison-bound vagrants, is suggestive of things not pleasant to think about. It streamed away on the wind in black drifts.

"Our daylight to-day was a mere name, three and a half hours of meagre twilight. I was struck for the first time with the bleached faces of my mess-mates. The sun left us finally only sixteen days ago; but for some time before he had been very chary of his effective rays; and our abiding-place below has a smoky atmosphere of lamplit uncomfortableness. No wonder we grow pale with such a cosmetic. Seventy-seven days more without a sunrise! twenty-six before we reach the solstitial point of greatest darkness!

"The temperature continues singularly mild. Parry, at Melville Island, had -47° before this, twenty degrees lower than our minimum; and even in the more southern regions of Port Bowen and Prince Regent's Straits, the cold was much greater. For some days now, zero has not been an uncommon temperature; and to-day we are in -14°, here far from unpleasantly cold. May not much of this moderated intensity of the weather be referred to the influence of the open water around us?

"We are still in our old neighborhood, at the brink of the channel, a mile or so from Cape Riley, and both shores in view.

"*November* 28. The sunlight, a mere band of red cloud; the day, a poor apology. Walked eastward toward Beechy Island, dimly seen. The ice river is clogged with ground masses of granular ice: toward the south it is more open.

"The wind to-day is getting stronger from the west, with some northing, of all winds the most to be feared: the north drives us into Lancaster; the west comes in aid of the current to keep us there, and speed us back toward Baffin.

“Our thermometer does not fall below -11°. The frost-smoke is all around us in bistre-colored vapor. Can it be that we are again detached, our floe independent altogether of the field? We have heard noises of grinding ice, distant, but bodingly distinct.

“In my walks for some days past, I have been studying the topography of our ice-island residence. Here are my elements:

“1. To the north; over broken ice and edge-hummocks, that is to say, hummocks formed at the margin of floes and afterward cemented there, all of this season’s growth. Several large masses, resembling berg-ice; one, the largest, twenty-seven feet high. The water-lead margined by rude hummocky crags trending to the westward and southward from the southward and eastward, forming a rude, broken horseshoe. Distance to water, one mile.

“2. To the south; over long floes of recent ice, young snow-covered, and smooth, with few indications of heavy pressure at their junctions. Distance to open water, glazed over with young ice, two miles: trend of this lead east and west. The diameter of the floe, north and south, is three miles from water to water.

“3. To the east, *i. e.*, northeast by east; rough, mixed ice, with lines of recent heavy hummocks. Thickness of ice, averaging four feet to five feet eight inches; ice of the early part of last August. Distance to open river, one and three fourths to two miles. Marks of recent action excessive here; hummock banks massive; and tables sometimes five feet thick, rising to a height of eighteen feet. From the east and northeast, the trend of the break is to the southward at first, and some two miles below to the westward.

“4. To the west; over the broken region of varied ice, traveled over in my attempts to reach Barlow’s Inlet some days ago. Distance to lead, one mile. Chasm very irregular; but from the point I visited at the north and east, trending nearly due west, and pointing to the southward of Cape Hotham.

“From all this it is clear enough that we are a moving floe, comparatively isolated. The only point of our circumscribed horizon I have not visited, and where no frost-smoke asserts the near proximity of water, is the northwest. Whether on that side the ice of Lancaster is blocked against us by the easterly current, or whether the frost has made our floe one more speck in the massive field, is the only question remaining.

“*November* 29. The doubt is gone. Our floe, ice-cradle, safeguard, has been thrown round. Its eastern margin is grinding its way to the northward, and the west is already pointing to the south. Our bow is to Baffin’s Bay, and we are traveling toward it. So far, ours has been a mysterious journeying. For two months and more, not a sail has fluttered from our frozen spars; yet we have passed from Lancaster Sound into the highest latitude of Wellington Channel, one never attained before, and have been borne back again past our point of starting, along a capriciously varied line of drift. Cape Riley is bearing, by compass, S. ½ E., N.N.E. ½ E. (true); and Beechy Head, by compass, S.E. ½ E., N. ½ E. (true). Cape Hurd is visible to the northward and eastward, and to the east are the ice-clogged waters of Lancaster Sound.

“*November* 30. When I came on deck this morning, the lanterns were burning at ten o’clock, and the southern sky had not even a trace of red. Our head had slewed rather more to the southward; and off on our starboard beam sundry dark lines on the ice had a suspicious look. I walked toward them with some of our officers. After sundry groping tumbles, we came, sure enough, upon open water, one hundred yards to the south of the brig. Returning on our track, and taking a new

departure toward the east—open water again. Off to the dim, hazy north—still open water. Off to the hummocky west, feeling our way with walking-poles—open water all round us. Once more, then, we are launched on a little ice-island, to float wherever God's mercy may guide us.

"The India-rubber boat inflated, and a few clothes stowed away, ready for a sudden break out; and all hands turn in for the night.

"*December* 1. There was a rude murmur in the night, that mingled its tones of admonition with the wind. But we are habituated pretty thoroughly to sounds of this sort, and they have ceased to disturb us. Walking after breakfast toward the northeast, to an ice-quarry, from which we have obtained our fresh water of late, we found that a water-crack we observed yesterday had undergone severe pressure during the night, and that the action was still going on. A low, hazy twilight just allowed us to distinguish near objects. A level, snow-covered surface was rising up in inclined planes or rudely undulating curves. These, breaking at their summits, fell off on each side in masses of twenty tons' weight. Tables of six feet in thickness by twenty of perpendicular height, and some of them fifteen yards in length, surging up into the misty air, heaving, rolling, tottering, and falling with a majestic deliberation worthy of the forces that impelled them. When a huge block would rise vertically, tremble for a moment, and topple over, you heard the heavy *sough* of the snow-padding that received it; but this was only the deep bass accompaniment to a wild, yet not unmusical chorus. I can not attempt to describe the sounds. There was the ringing clatter of ice, made friable by the intense cold and crumbling under lateral force; the low whine which the ice gives out when we cut it at right angles with a sharp knife, rising sometimes into a shriek, or sinking to the plaintive outcry of our night-hawk at home; the whirr of rapidly-urged machinery; the hum of multitudes: and all these mingled with tones that have no analogy among the familiar ones of unadventurous life.

"So slowly and regularly did these masses roll, rise, break, and fall, that, standing upon a broad table, ice-pole in air, we rolled when it rolled, rose when it rose, balanced when it broke, and jumped as it fell. What would our quiet people in brick houses say to such a ride? Temperature at 30° below zero.

"On deck; looming up in the very midst of the haze, land! so high and close on our port beam, that we felt like men under a precipice. We could see the vertical crevices in the limestone, the recesses contrasting in black shadow. What land is this? Is it the eastern line of Cape Riley, or have we reached Cape Ricketts?

"There is one thing tolerably certain: the Grinnell expedition is quite as likely to be searched for hereafter as to search. Poor Sir John Franklin! this night drift is an ugly omen.

"Do you remember, in the Spanish coasting craft, down about Barcelona and the Balearies, the queer little pictures of Saint Nicholas we used to see pasted up over the locker—a sort of mythic effigy, which the owner looked upon pretty much as some of our old commodores do the barometer, a mysterious something, which he sneers at in fair weather, but is sure, in the strong faith of ignorance, to appeal to in foul! Well, very much such a Saint Anthony have we down in the cabin here, staring us always in the face. Not a vermilion-daubed puerility, with a glory in Dutch leaf stretching from ear to ear; but a good, genuine, hearty representative of English flesh and blood, a mouth that speaks of strong energies as well as a kindly heart, and an eye—the other one is spoiled in the lithography—that looks stern will. Many a time in the night have I discoursed with him, as he looked out on me from his gutta percha frame—'Sir John Franklin; presented by his wife;' and sometimes I have imagined how and where I was yet to shake the glorious old voyager by the hand. I see him now while I am writing; his face is darkened by the lamp-smoke that serves us for

daylight and air, and he seems almost disheartened. So far as help and hope of it are afloat in this little vessel, Sir John, well you may be!

"It is Sunday: we have had religious service as usual, and after it that relic of effete absurdity, the reading of the 'Rules and Regulations.'

"We had the aurora about 7 P.M. The thermometer at -33° and falling; barometer, aneroid, 30°. 74; attached thermometer, 86°. Wind steady, W.N.W. The meteor resembled an illuminated cloud; illuminated, because seen against the deep blue night sky; otherwise it resembled the mackerel fleeces and mare's tails of our summer skies at home.

"It began toward the northwestern horizon as an irregular flaring cloud, sometimes sweeping out into wreaths of stratus; sometimes a condensed opaline nebulosity, rising in a zone of clearly-defined whiteness, from 3° to 5° in breadth up to the zenith, and then arching to the opposite horizon. This zone resembled more a long line of white cirro-stratus than the auroral light of the systematic descriptions. There was no approach to coruscations, or even rectangular deviations from the axis of the zone. When it varied from a right line, its curvatures were waving and irregular, such as might be produced by wind, but having no relation to the observed air-currents at the earth's surface. It passed from the due northwest, between the Pleiades and the Corona Borealis; the star of greatest magnitude in the latter of these constellations remaining in the centre, although its waving curves sometimes reached the Pleiades. At the zenith, its mean distance from the Polar Star was 7° south, and it passed down, increasing in intensity, near Vega, in Lyra, to the southeast.

"There was throughout the arc no marked seat of greatest intensity. Around the Corona of the north, its light was more diffused. The zone appeared narrowed at the zenith, and bright and clear, without marked intermission, to the southeast. The frost-smoke was in smoky banks to the northwest; but the aurora did not seem to be affected by it, and the compass remained constant.

"*December* 2. Drifting down the sound. Every thing getting ready for the chance of a hurried good-by to our vessels. Pork, and sugar, and bread put up in small bags to fling on the ice. Every man his knapsack and change of clothing. Arms, bear-knives, ammunition out on deck, and sledges loaded. Yet this thermometer, at -30°, tells us to stick to the ship while we can.

"This packing up of one's carpet-bag in a hurry requires a mighty discreet memory. I have often wondered that seamen in pushing off from a wreck left so many little wants unprovided for; but I think I understand it now. After bestowing away my boots, with the rest of a walking wardrobe, in a snugly-lashed bundle, I discovered by accident that I had left my stockings behind.

"4 P.M. Brooks comes down while we are dining to say we are driving east like a race-horse, and a crack ahead: 'All hands on deck!' We had heard the grindings last night, and our floe in the morning was cut down to a diameter of three hundred yards: we had little to spare of it. But the new chasm is there, already fifteen feet wide, and about twenty-five paces from our bows, stretching across at right angles with the old cleft of October the 2d.

"Our floe, released from its more bulky portion, seems to be making rapidly toward the shore. This, however, may be owing to the separated mass having an opposite motion, for the darkness is intense. Our largest snow-house is carried away; the disconsolate little cupola, with its flag of red bunting, should it survive the winter, may puzzle conjectures for our English brethren.

"Mr. Griffin and myself walked through the gloom to the seat of hummock action abeam of the *Rescue*. A dark, hard walk: no changes. The crack, noticed some time ago as parallel to and

alongside of the *Rescue*, has not opened. Her officers have brought their private papers on board the *Advance*, and such indispensable articles as may be needed in case of her destruction.

“Our ship’s head is toward a point of land to the northeastward, but her position changes so constantly that there is little use of recording it. Caught a fox this morning; have now two on board.

“Our bearings, taken by azimuth compass this morning at eleven, gave Cape Hurd, S. by W. ¼ W.; Western Bluff, of Rigsby’s Inlet, S.E. ¼ S.; Table-hill of Parry, S.E. by S. ½ S.; Cape Ricketts, E. by N.

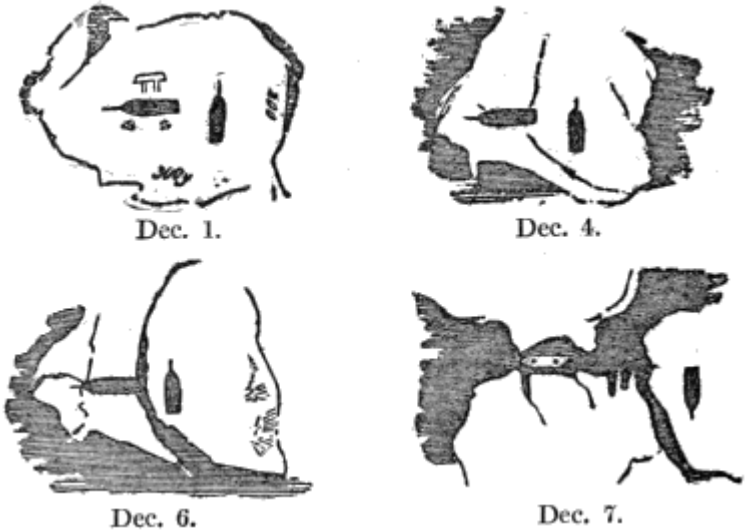
“Wind changed at 9 P.M. to N.N.W.; thermometer, minimum, -26°; maximum, 22°; mean, 23° 82'.

“*December* 4, Wednesday. This morning showed us an interval of over two hundred yards already covered with stiff ice: so much for our chasm of last night! All around us is a moving wreck of ice-fields.

“Our drift seems to have been to the westward. We have certainly left the coast, which yesterday seemed almost over us, though it is still too near for good fellowship.

“This is the first clear day—truly clear, that we have had since my record of the changing daylight. Compared with the gloomy haziness of its predecessors, it was cheering. The southern horizon was a zone of red light; and although the clear blue soon absorbed it, we could read small print with a little effort at noonday by turning the book to the south. The stars were visible all the time, except where the horizon was lighted up."

The next four days were full of excitement and anxiety. One crack after another passed across our floe, still reducing its dimensions, and at one time bringing down our vessel again to an even keel. An hour afterward, the chasms would close around us with a sound like escaping steam. Again they would open under some mysterious influence; a field of ice from two to four inches thick would cover them; and then, without an apparent change of causes, the separated sides would come together with an explosion like a mortar, crunching the newly-formed field, and driving it headlong in fragments for fifty feet upon the floe till it piled against our bulwarks. Every thing betokened a crisis. Sledges, boats, packages of all sorts, were disposed in order; contingencies were met as they approached by new delegations of duty; every man was at work, officer and seaman alike; for necessity, when it spares no one, is essentially democratic, even on shipboard. The *Rescue*, crippled and thrown away from us to the further side of a chasm, was deserted, and her company consolidated with ours. Our own brig groaned and quivered under the pressure against her sides. I give my diary for December 7.



ILLUSTRATING THE CHANGES IN THE POSITIONS OF THE SHIPS FROM DAY TO DAY.

"*December* 7, Saturday. The danger which surrounds us is so immediate, that in the bustle of preparation for emergency I could not spend a moment upon my journal. Now the little knapsack is made up again, and the blanket sewed and strapped. The little home Bible at hand, and the ice-clothes ready for a jump.

"The above is a rough idea of our last three days' positions and changes.

"From this it is evident that a gradual process of breaking up has taken place. We are afloat.

"The ice, as I have sketched it, December 7, began to close at 11 A.M., and, at the same time, the brig was driven toward the open crack of December 4 (*c*). At 1 P.M. this closed on us with fearful nipping.

"1 P.M. Ran on deck. The ice was comparatively quiescent when I attempted to write; but it recommenced with a steady pressure, which must soon prove irresistible. It catches against a protruding tongue forward, and is again temporarily arrested.

"4 P.M. Up from dinner—'all hands!' The ice came in, with the momentum before mentioned as 'irresistible,' progressive and grand. All expected to betake ourselves sledgeless to the ice, for the open space around the vessel barely admits of a foot-board. The timbers, and even cross-beams protected by shores, vibrated so as to communicate to you the peculiar tremor of a cotton-factory. Presently the stern of the brig, by a succession of jerking leaps, began to rise, while her bows dipped toward the last night's ice ahead. Everybody looked to see her fall upon her beam-ends, and rushed out upon the ice. After a few anxious breath-compressed moments, our nobly-strengthened little craft rose up upon the encroaching floes bodily. Her dolphin-striker struck the ice ahead; her bows began to feel the pressure; and thus lifted up upon the solid tables, we have a temporary respite again.

"Stores are now put out upon the ice, and we await—time. Cape Fellfoot, S. by W. ¼ W. Remarkable perpendicular bluff, S.S.E. Cape Hurd, E.N.E. ½ E., by compass; Cape Hurd, N.W. by

W. ½ W. (true).

"We are at least fifty miles from Beechy Island and Union Bay—about forty-five miles from Leopold Harbor stores. Leopold Harbor, or our more distant English friends, about one hundred and twenty miles off, are our only places of refuge. We are daily, hourly, drifting further from both. It is this nakedness of resources, even more than perpetual darkness and unendurable cold, that makes our position one of bitterness. Drift a little westward; thermometer 17°."

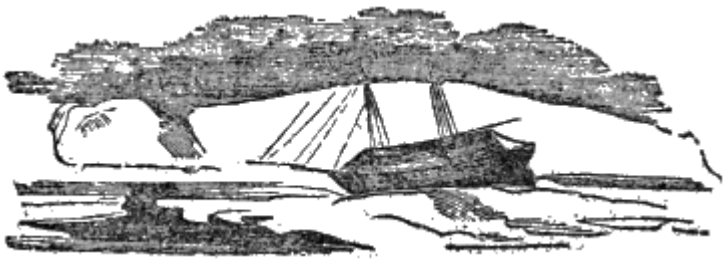
My journal does not tell the story; but it is worth noting, as it illustrates the sedative effect of a protracted succession of hazards. Our brig had just mounted the floe, and as we stood on the ice watching her vibration, it seemed so certain that she must come over on her beam-ends, that our old boatswain, Brooks, called out to "stand from under." At this moment it occurred to one of the officers that the fires had not been put out, and that the stores remaining on board would be burned by the falling of the stoves. Swinging himself back to the deck, and rushing below, he found two persons in the cabin; the officer who had been relieved from watch-duty a few minutes before, quietly seated at the mess-table, and the steward as quietly waiting on him. "You are a meal ahead of me," he said; "you didn't think I was going out upon the ice without my dinner."

"*December* 8, Sunday, 8 P.M. This has thus far been a day of rest. Our vessel, lifted up upon the heavy ice, has borne without injury a few fresh pressures. The wind has been still from the eastward, and we have drifted about six miles to the westward again. This wind was almost a gale; yet its influence upon the eastern drift is barely able to produce this limited westing. I now regard it as past a doubt, that should we survive the collisions of the journey, we must float into Baffin's Bay.

"A small auroral light was seen to the northwest at 9 A.M., the second within two days. Its axis was 16° W. of the magnetic meridian. The mean temperature of the day has been -12° 70'. Wind more gentle from the eastward.

"Mr. Griffin, who is now the executive officer of our consolidated squadron, has undertaken a systematic drill of the crew. He has mustered them for an ice-march, with knapsacks fitted to their backs, and sledge equipments, just such as will be required when the worst comes. Everything is rigorously inspected; the provisions and stores of all sorts are packed snug, and have their places marked; and the men are instructed as to their course in the moment of emergency.

"Here is a sketch of the present position of our vessel. It looks extravagant, but it is in truth the very opposite. Every thing like locomotion on board is up and down hill.



"*December* 9, Monday. Like its three predecessors, clear; that is to say, for three scanty hours of scanty twilight, you see the skeleton shore cliffs, and the bright stars, a little paled, but bright. The moon, a second-quarter crescent, was for a while on the northern and western horizon, distorted and flaming like a crimson lamp.

“Last night, mounted as we are, the nipping caused our timbers to complain sadly. We had to send out parties to crowbar away the ice from our bowsprit. The bob-stays were forced up and broken. Our floe movement continued to the southeast, driving the heavy ice in upon the *Rescue*. She rose up under the pressure, and is now surrounded by hummock ruins like ourselves. She is not more than fifty yards distant from us, astern.”

From this time to the 21st our drift was without intermission. As one headland after another defined itself against the horizon, it was apparent that we were skirting the northern coast of the sound. At first this gave us some anxiety, when our floe, pressing hard against the shore-ice as we doubled some projecting point, threatened to wreck us among its fragments. But as we drew nearer to the outlet, and began to compute the new hazards of entering Baffin’s Bay, this very circumstance became for us an important ground of hope. Theory, as well as the accounts of the whalers, made the southeastern cape of Lancaster Sound the seat of intense hummock action. The greater the distance from that point, the broader must be the curvature of the meeting currents, and the less perilous the conflict of the ice-masses in their rotation. There was, of course, no escape for us from this encounter; and the only question was of the degrees of hazard it must involve.

On the 19th, the tall, mural precipices to the northward, and the cape in which they terminated toward the east, convinced us that we had almost reached the western headland of Croker’s Bay. We had drifted one hundred and eleven miles since the beginning of the month. Our course had been without any cheering incident. There was the same wretched succession of openings and closings about our floe, somewhat dangerous, but too uniform to be exciting; and we had drilled with knapsack and sledge, till we were almost martinets in our evolutions on the ice. I group the few entries of my journal that have any interest.

“*December* 11. Wind last night fierce from the north; to-day as fierce from the west. It has carried us clear of the great cape that stretches out east of Maxwell’s Bay, and that threatened us with the variety of a lee shore. The *Rescue* has had another trial: her stern-post is carried away, her pintle and gudgeon wrenched off. A party of officers and men are out, trying the experiment of a night upon the ice, tented and bag-bedded. I wish them luck; but the thermometer fifty-seven degrees below freezing is unfavorable to a *fête chainpêtre*.

“*December* 12. Every thing solid, and looking as if it had always been so; yet, a few days ago, I had this journal of mine stitched up in its tarred canvas-bag, and ready for a fling upon the ice four times in the twenty-four hours. The floes have stopped abrading each other, and are driving ahead right peacefully, with our brig mounted on top: how far we are from the edges, it is too dark to see.

“*December* 13. A little clearer than yesterday, but too dark to read small print at noon. Something like a long reach of land looming up to southward: it can not be Croker’s Bay?

“All our mess took our tour of practice to-day, with a sledge and four hundred pounds of provender. Hard work, and sweating abundantly; but we feel already the good effects of this sort of exercise. Thermometer at -11°.

“*December* 14. A quiet day; the winds at rest, and the stars twinkling through the lazy sky as I never saw them before. The moon, too, is in high heaven, almost a three-quarter disk. She is a great comfort to us; her high northern declination makes her visible all the time. It looks strangely this undying fortnight moon. The frost-smoke is wreathing the red zone of our southern horizon. It would be a good night-scene for a painter.

“At 7 P.M. the thermometer rose from -3° to -1°. At 10 o’clock it was -4°. Its maximum was +10°, a temperature mild and comfortable. The wind changed from west by south to west by north, and the ice and the drift are as yesterday.

“A poor bear, fired at last night by Mr. Carter, was found this morning, about three hundred yards from the ship, dead. He was wedged between two slabs of ice, and in his agony had rubbed his muzzle deep into the frozen snow. Twice he had stopped to lie down during his death-walk, marking each place with a large puddle of blood, which branched out over the floe like crimson-streaked marble. He measured eight feet four inches from tip to tip. I killed a fox; but missing his head, opened the large arteries of the neck, and spoiled his pelt. The temperature at the orifice of the ball was +92°. The crew were at work till eleven, leveling our rugged floe, and heaping up snow against the sides of the brig. The position of our vessel, high perched in air, and dipping head foremost in a way most Arctic and uncomfortable, makes the protection of snow very desirable. We feel the cold against her walls. The crew had an hour of sledging, as well by way of exercise as of preparation for their expected trials.

“A point supposed to be Cape Crawfurd bore, by compass, west. Our distance from the north shore is about five miles.”

CHAPTER X

I EMPLOYED the dreary intervals of leisure that heralded our Christmas in tracing some Flemish portraitures of things about me. The scenes themselves had interest at the time for the parties who figured in them; and I believe that is reason enough, according to the practice of modern academics, for submitting them to the public eye. I copy them from my scrapbook, expurgating only a little.

“We have almost reached the solstice; and things are so quiet that I may as well, before I forget it, tell you something about the cold in its sensible effects, and the way in which as sensible people we met it.

“You will see, by turning to the early part of my journal, that the season we now look back upon as the perfection of summer contrast to this outrageous winter was in fact no summer at all. We had the young ice forming round us in Baffin’s Bay, and were measuring snow-falls, while you were sweating under your grass-cloth. Yet I remember it as a time of sunny recreation, when we shot bears upon the floes, and were scrambling merrily over glaciers and murdering rotges[D] in the bright glare of our day-midnight. Like a complaining brute, I thought it cold then—I, who am blistered if I touch a brass button or a ramrod without a woolen mitt.

[D] Little auk. Commonly spelled rotche.

“The cold came upon us gradually. The first thing that really struck me was the freezing up of our water-casks, the drip-candle appearance of the bung-holes, and our inability to lay the tin cup down for a five-minutes' pause without having its contents made solid. Next came the complete inability to obtain drink without manufacturing it. For a long time we had collected our water from the beautiful fresh pools of the icebergs and floes; now we had to quarry out the blocks in flinty, glassy lumps, and then melt it in tins for our daily drink.

“By-and-by the sludge which we passed through as we traveled became pancakes and snow-balls. We were glued up. Yet, even as late as the 11th of September, I collected a flowering Potentilla from Barlow’s Inlet. But now any thing moist or wet began to strike me as something to be looked at—a curious, out-of-the-way production, like the bits of broken ice round a can of mint-julep. Our decks became dry, and studded with botryoidal lumps of dirty foot-trodden ice. The rigging had nightly accumulations of rime, and we learned to be careful about coiled ropes and iron work. On the 4th of October we had a mean temperature below zero.

“By this time our little entering hatchway had become so complete a mass of icicles, that we had to give it up, and resort to our winter door-way. The opening of a door was now the signal for a gush of smoke-like vapor: every stove-pipe sent out clouds of purple steam; and a man’s breath looked like the firing of a pistol on a small scale.

“All our eatables became laughably consolidated, and after different fashions, requiring no small experience before we learned to manage the peculiarities of their changed condition. Thus, dried apples became one solid breccial mass of impacted angularities, a conglomerate of sliced chalcedony. Dried peaches the same. To get these out of the barrel, or the barrel out of them, was a matter impossible. We found, after many trials, that the shortest and best plan was to cut up both fruit and barrel by repeated blows with a heavy axe, taking the lumps below to thaw. Saur-kraut resembled mica, or rather talcose slate. A crowbar with chiseled edge extracted the *laminæ* badly; but it was perhaps the best thing we could resort to.

“Sugar formed a very funny compound. Take *q. s.* of cork raspings, and incorporate therewith another *q. s.* of liquid gutta percha or caoutchouc, and allow to harden: this extemporaneous formula will give you the brown sugar of our winter cruise. Extract with the saw; nothing but the saw will suit. Butter and lard, less changed, require a heavy cold chisel and mallet. Their fracture is conchoidal, with hæmatitic (iron-ore pimpled) surface. Flour undergoes little change, and molasses can at -28° be half scooped, half cut by a stiff iron ladle.

“Pork and beef are rare specimens of Florentine mosaic, emulating the lost art of petrified visceral monstrosities seen at the medical schools of Bologna and Milan: crowbar and handspike! for at -30° the axe can hardly chip it. A barrel sawed in half, and kept for two days in the caboose house at +76°, was still as refractory as flint a few inches below the surface. A similar bulk of lamp oil, denuded of the staves, stood like a yellow sandstone roller for a gravel walk.

“Ices for the dessert come of course unbidden, in all imaginable and unimaginable variety. I have tried my inventive powers on some of them. A Roman punch, a good deal stronger than the noblest Roman ever tasted, forms readily at -20°. Some sugared cranberries, with a little butter and scalding water, and you have an impromptu strawberry ice. Many a time at those funny little jams, that we call in Philadelphia ‘parties,’ where the lady-hostess glides with such nicely-regulated indifference through the complex machinery she has brought together, I have thought I noticed her stolen glance of anxiety at the cooing doves, whose icy bosoms were melting into one upon the supper-table before their time. We order these things better in the Arctic. Such is the ‘composition and fierce quality’ of our ices, that they are brought in served on the shaft of a hickory broom; a transfixing rod, which we use as a stirrer first and a fork afterward. So hard is this terminating cylinder of ice, that it might serve as a truncheon to knock down an ox. The only difficulty is in the processes that follow. It is the work of time and energy to impress it with the carving-knife, and you must handle your spoon deftly, or it fastens to your tongue. One of our mess was tempted the other day by the crystal transparency of an icicle to break it in his mouth; one piece froze to his tongue, and two others to his lips, and each carried off the skin: the thermometer was at -28°.

“Thus much for our Arctic grub. I need not say that our preserved meats would make very fair cannon-balls, canister shot!

“Now let us start out upon a walk, clothed in well-fashioned Arctic costume. The thermometer is, say -25°, not lower, and the wind blowing a royal breeze, but gently.

“Close the lips the first minute or two, and admit the air suspiciously through nostril and mustache. Presently you breathe in a dry, pungent, but gracious and agreeable atmosphere. The beard, eyebrow, eye-lashes, and the downy pubescence of the ears, acquire a delicate, white, and perfectly-enveloping cover of venerable hoar-frost. The mustache and under lip form pendulous beads of dangling ice. Put out your tongue, and it instantly freezes to this icy crusting, and a rapid effort and some hand aid will be required to liberate it. The less you talk, the better. Your chin has a trick of freezing to your upper jaw by the luting aid of your beard; even my eyes have often been so glued, as to show that even a wink may be unsafe. As you walk on, you find that the iron-work of your gun begins to penetrate through two coats of woolen mittens, with a sensation like hot water.

“But we have been supposing your back to the wind; and if you are a good Arcticized subject, a warm glow has already been followed by a profuse sweat. Now turn about and face the wind; what a devil of a change! how the atmospheres are wafted off! how penetratingly the cold trickles down your neck, and in at your pockets! Whew! a jack-knife, heretofore, like Bob Sawyer’s apple, ‘unpleasantly warm’ in the breeches pocket, has changed to something as cold as ice and hot as fire: make your way back to the ship! I was once caught three miles off with a freshening wind, and at one time feared that I would hardly see the brig again. Morton, who accompanied me, had his cheeks frozen, and I felt that lethargic numbness mentioned in the story books.

“I will tell you what this feels like, for I have been twice ‘caught out.’ Sleepiness is not the sensation. Have you ever received the shocks of a magneto-electric machine, and had the peculiar benumbing sensation of ‘can’t let go,’ extending up to your elbow-joints? Deprive this of its paroxysmal character; subdue, but diffuse it over every part of the system, and you have the so-called pleasurable feelings of incipient freezing. It seems even to extend to your brain. Its inertia is augmented; every thing about you seems of a ponderous sort; and the whole amount of pleasure is in gratifying the disposition to remain at rest, and spare yourself an encounter with these latent resistances. This is, I suppose, the pleasurable sleepiness of the story books.

“I could fill page after page with the ludicrous miseries of our shipboard life. We have two climates, hygrometrically as well as thermometrically at opposite ends of the scale. A pocket-handkerchief, pocketed below in the region of stoves, comes up unchanged. Go below again, and it becomes moist, flaccid, and almost wet. Go on deck again, and it resembles a shingle covered with linen. I could pick my teeth with it.

“You are anxious to know how I manage to stand this remorseless temperature. It is a short story, and perhaps worth the telling. ‘The Doctor’ still retains three luxuries, remnants of better times—silk next his skin, a tooth-brush for his teeth, and white linen for his nose. Everything else is Arctic and hairy—fur, fur, fur. The silk is light and washable, needing neither the clean dirt of starch nor the uncomfortable trouble of flat-irons. It secures to me a clean screen between my epidermoid and seal-skin integuments.

“I try to be a practical man as to clothing and the et ceteras of a traveler. All baggage beyond the essential I regard as *impedimenta*, and believe in the wisdom of Titian Peale, who, when preparing for an exploring tour around the world, purchased—a tin cup. For the sake of poor devils

condemned to cold winters, I give in detail my dress, the result of much trial, and, I think, nearly perfect. Here it is, from tip to toe.

“1. Feet. A pair of cotton socks (Lisle thread) covered by a pair of ribbed woolen stockings, rising above the knee and half way up the thigh. Over these a pair of Esquimaux water-proof boots, lined by a sock of dog-skin, the hair inside; the leg of dressed seal-hide; a sole with the edges turned up, and crimped so as to form a water-tight cup; the furred edge of a dog-skin sock inserted as a lining; and some clean straw laid smoothly at the bottom, which forms the elastic cushion on which you tread.

“2. Legs. A pair of coarse woolen drawers, and a pair of seal-skin breeks over them, stitched with reindeer tendon.

“3. Chest. A jumper or short coat, double, of seal-skin and reindeer fur. This invaluable article I got at Disco on my fur journey, obtaining a good number besides for men and officers. It consists of an inner-hooded shirt of reindeer-skin with the hair inside, reaching as far as the upper ridge of the hips, so as to allow free swing to the legs, and fitting about the throat very closely. It is drawn on like the shirt, and, except at the neck, is perfectly loose and unbinding.

“4. Head. Our people generally wear fur caps. I wear an ear-ridge, a tiara, to speak heroically, of wolf-skin. Excellent is this Mormon fur! Leaving the entire poll bare to the elements, it guards the ears and forehead effectually: in any ordinary state of the wind above -15°, I am not troubled with the cold. Before I resorted to this, my cap was full of frozen water, stiff and uncomfortable, all the condensation turning to ice the moment I uncovered. When the weather is very cold, I up hood; when colder, say -40°, with a middling breeze—quite cold enough, I assure you—I wear an elastic silk night-cap in addition, one of a pair forced on me by a certain brother of mine as I was leaving New York, drawn over my head and face, and lined with a mask of wolf-skin. To prevent excessive condensation, I cut only two eye-holes, and leave a large aperture below the point of the nose for talking and breathing. A grim-looking object is this wolf-skin mask, its openings lined with water-proof oiled silk.

“The only changes in the above are a pair of cloth pants for fur, when the thermometer strays above -15°, and a pair of heavy woolen wad-mail leggins, drawn over my fur pants, and worn, stocking fashion, within my boots, in windy weather, when we get down to -30° or thereabouts. A long waist-scarf, worn like the kummerbund of the Hindoos, is a fine protection while walking, to keep the cold from intruding at the pockets and waist: it consummates, as it floats martially on the breeze, the grotesque harmonies of my attire."

CHAPTER XI

"D*ECEMBER* 21, Saturday. To-day at noon we saw, dimly looming up from the redness of the southern horizon, a low range of hills; among them some cones of great height, mountains of a character differing from the naked table-lands of the northern coast. The land on the other side of Croker’s Bay, with one high headland, supposed to be Cape Warrender, is in view. From all of which it is clear that we are drifting regularly on toward Baffin’s Bay.

“An opening occurred last night in the ice to the northward. It is not more than a hundred yards from us, and it is already seventy wide. It was explored for about a mile in a northwest and

southeast course. Another of the same character is about half a mile to the south of us.

"Our floe has now remained in peace for nearly three weeks; and, with the happy indifference of sailors' human nature, we are beginning to forget the driving ice and the groaning pressures which have perched us thus upon a lump of drift. I look, however, to the spring-tides for a renewal of the trouble. The ice about us is apparently as strong and solid as the slow growth of Wellington Channel; but we know it to be recent, and less able to withstand pressure. Every thing now depends upon preserving our vessel and stores. A breaking up must take place, and for us the later in the spring the better. At the present rate of progress, we shall be in Baffin's Bay by the latter end of January. There the daylight will be with us again; most providentially, for the icebergs are wretched enemies in darkness. Thirty more days, and we may take a noonday walk; forty-four, and the sun comes back.

"Our men are hard at work preparing for the Christmas theatre, the arrangements exclusively their own. But to-morrow is a day more welcome than Christmas—the solstitial day of greatest darkness, from which we may begin to date our returning light. It makes a man feel badly to see the faces around him bleaching into waxen paleness. Until to-day, as a looking-glass does not enter into an Arctic toilet, I thought I was the exception, and out of delicacy said nothing about it to my comrades. One of them, introducing the topic just now, told me, with an utter unconsciousness of his own ghostliness, that I was the palest of the party. So it is, 'All men think all men,' &c. Why, the good fellow is as white as a cut potato!"

In truth, we were all of us at this time undergoing changes unconsciously. The hazy obscurity of the nights we had gone through made them darker than the corresponding nights of Parry. The complexions of my comrades, and my own too, as I found soon afterward, were toned down to a peculiar waxy paleness. Our eyes were more recessed, and strangely clear. Complaints of shortness of breath became general. Our appetite was almost ludicrously changed: ham-fat frozen, and saur-kraut swimming in olive-oil were favorites; yet we were unconscious of any tendency toward the gross diet of the Polar region. Most of my companions would not touch bear; indeed, I was the only one, except Captain De Haven, that still ate it. Fox, on the other hand, was a favorite. Things seemed to have changed their taste, and our inclination for food was at best very slight.

Worse than this, our complete solitude, combined with permanent darkness, began to affect our *morale*. Men became moping, testy, and imaginative. In the morning, dreams of the night—we could not help using the term—were narrated. Some had visited the naked shores of Cape Warrender, and returned laden with water-melons. Others had found Sir John Franklin in a beautiful cove, lined by quintas and orange-trees. Even Brooks, our hard-fisted, unimaginative boatswain, told me, in confidence, of having heard three strange groans out upon the ice. He "thought it was a bear, but could see nothing!" In a word, the health of our little company was broken in upon. It required strenuous and constant effort at washing, diet, and exercise to keep the scurvy at bay. Eight cases of scorbutic gums were already upon my black-list. One severe pneumonia left me in anxious doubt as to its result. There was, however, little bronchitis.

"*December* 22, Sunday. The solstice!—the midnight of the year! It commences with a new movement in the ice, the open lead of yesterday piling up into hummocks on our port-beam. No harm done.

"The wind is from the west, increasing in freshness since early in the morning. The weather overcast; even the moon unseen, and no indications of our drift. We could not read print, not even large newspaper type, at noonday. We have been unable to leave the ship unarmed for some time on account of the bears. We remember the story of poor Barentz, one of our early predecessors. One of

our crew, Blinn, a phlegmatic Dutchman, walked out to-day toward the lead, a few hundred yards off, in search of a seal-hole. Suddenly a seal rose close by him in the sludge-ice: he raised his gun to fire; and, at the same instant, a large bear jumped over the floe, and by a dive followed the seal. Blinn's musket snapped. He was glad to get on board again, and will remember his volunteer hunt. Thermometer, minimum, -18°; maximum, -6°. A beautiful paraselene yesterday!

"*December* 23, Monday. Perfect darkness! Drift unknown. Winds nearly at rest, with the exception of a little gasp from the westward. Thermometer never below -12°, nor above -7°.

"*December* 24, Tuesday. 'Through utter darkness borne!'

"*December* 25. 'Y^{e} Christmas of ye Arctic cruisers!' Our Christmas passed without a lack of the good things of this life. 'Goodies' we had galore; but that best of earthly blessings, the communion of loved sympathies, these Arctic cruisers had not. It was curious to observe the depressing influences of each man's home thoughts, and absolutely saddening the effort of each man to impose upon his neighbor and be very boon and jolly. We joked incessantly, but badly, and laughed incessantly, but badly too; ate of good things, and drank up a moiety of our Heidsiek; and then we sang negro songs, wanting only tune, measure, and harmony, but abounding in noise; and after a closing bumper to Mr. Grinnell, adjourned with creditable jollity from table to the theatre.

"It was on deck, of course, but veiled from the sky by our felt covering. A large ship's ensign, stretched from the caboose to the bulwarks, was understood to hide the stage, and certain meat-casks and candle-boxes represented the parquet. The thermometer gave us -6° at first; but the favoring elements soon changed this to the more comfortable temperature of -4°.

"Never had I enjoyed the tawdry quackery of the stage half so much. The theatre has always been to me a wretched simulation of realities; and I have too little sympathy with the unreal to find pleasure in it long. Not so our Arctic theatre: it was one continual frolic from beginning to end.

"The 'Blue Devils:' God bless us! but it was very, very funny. None knew their parts, and the prompter could not read glibly enough to do his office. Every thing, whether jocose, or indignant, or commonplace, or pathetic, was delivered in a high-tragedy monotone of despair; five words at a time, or more or less, according to the facilities of the prompting. Megrim, with a pair of seal-skin boots, bestowed his gold upon the gentle Annette; and Annette, nearly six feet high, received it with mastodonic grace. Annette was an Irishman named Daly; and I might defy human being to hear her, while balanced on the heel of her boot, exclaim, in rich masculine brogue, 'Och, feather!' without roaring. Bruce took the Landlord, Benson was James, and the gentle Annette and the wealthy Megrim were taken by Messrs. Daly and Johnson.

"After this followed the Star Spangled Banner; then a complicated Marseillaise by our French cook, Henri; then a sailor's horn-pipe by the diversely-talented Bruce; the orchestra—Stewart, playing out the intervals on the Jew's-harp from the top of a lard-cask. In fact, we were very happy fellows. We had had a foot-race in the morning over the midnight ice for three purses of a flannel shirt each, and a splicing of the main-brace. The day was night, the stars shining feebly through the mist.

"But even here that kindly custom of Christmas-gifting was not forgotten. I found in my morning stocking a jack-knife, symbolical of my altered looks, a piece of Castile soap—this last article in great request—a Jew's-harp, and a string of beads! On the other hand, I prescribed from the medical stores two bottles of Cognac, to protect the mess from indigestion.[E] So passed Christmas. Thermometer, minimum, -16°; maximum, -7°. Wind west.

[E] An offense which I thus publicly acknowledge in advance of the court-martial, to which this illegal dispensation of the public stores may subject me.

"*December* 26, Thursday. To-day, looming up high in the air, we catch a sight of new unknown land. Of our drift, save by analogy, we know nothing.

"*December* 27, Friday. The shores of this coast seem to have changed their scale. At Cape Riley, as my sketches show, the limestone rises in a mural face, based by a deposit of detritus, which extends out in tongues, indentations, and salient capes; and between these, a cemented shingle, full of corallines and encrinites, forms a beach of varying extent.

"Sometimes this beach is backed by rolling dune-like hills of the scaly mountain limestones; but after a mile or two of intermission, the high cliffs rise up again in abutments, and continue unbroken until another interval occurs. As we proceeded east, these escarped masses became more buttress-like and monumental, rising up into plateau-topped masses, separated by chasms, which seem mere ruptures in the continuous hill-line. Now, however, a trace is seen in the clouds indicative of distant land, higher, more mountainous, rolling, and broken. It may be the Cunninghame Mountains toward Cape Warrender.

"The wind is quietly blowing from the west, and the misty haze gives us barely a vestige of daylight.

"*December* 28, Saturday. From my very soul do I rejoice at the coming sun. Evidences not to be mistaken convince me that the health of our crew, never resting upon a very sound basis, must sink under the continued influences of darkness and cold. The temperature and foulness of air in the between-deck Tartarus can not be amended, otherwise it would be my duty to urge a change. Between the smoke of lamps, the dry heat of stoves, and the fumes of the galley, all of them unintermitting, what wonder that we grow feeble. The short race of Christmas-day knocked up all our officers except Griffin. It pained me to see my friend Lovell, our strongest man, fainting with the exertion. The symptoms of scurvy among the crew are still increasing, and becoming more general. Faces are growing pale; strong men pant for breath upon ascending a ladder; and an indolence akin to apathy seems to be creeping over us. I long for the light. Dear, dear sun, no wonder you are worshiped!

"Our drift is still eastward, with a slow but unerring progress. The high land mentioned yesterday took, in spite of the obscuring haze, a distinguishable outline. It is not more than eight miles off, and so high that, with its retiring flanks on either side, it can be none other than the projecting Cape Warrender. Its structure is unmistakably gneissoid. We have now left the limestones.

"This cape is the great entering landmark of the northern shores of Lancaster Sound. Just one hundred days ago we passed it, urged by the wings of the storm; our errand of mercy filling us with hope, and the gale calling for our best energies. We were then but a few hours from Baffin's Bay, and not over twenty-four from the coast of Greenland. How differently are we journeying now!

"The Bay of Baffin, with its moving ice and opposing icebergs, bathed in foggy darkness and destitute of human fellowship or habitable asylum, is before us; and we, so utterly helpless, hampered, and nonresistant, must await the inevitable action of the ice. This nearness to Cape Warrender makes us feel that our silent marches have brought us near to another conflict.

"*December* 29, Sunday. The drift shows an indent of the cape now abaft our beam. We are slowly making easting. The day is one of the same obscure and dimmed fog which for the past

week has wrapped us in darkness. The ice gives no change as yet: the same great field of moving whiteness.

"*December* 30, Monday. By a comparison of our several days' positions, I find that from the 18th to the 28th we have drifted fifty-two miles and a half, something over five miles a day. The winds during this period have been from the westward, constant though gentle; and our progress has been of the same steady but gentle sort. At this rate, we will in a few days more be within the Baffin's Bay incognita.

"Looking round upon my mess-mates with that sort of scrutiny that belongs to my craft and my position, I am startled at the traces, moral and physical, of our Arctic winter life. Those who con it over theoretically can hardly realize the operation of the host of retarding influences that belong to a Polar night. If I were asked to place in foremost rank the item that has been most trying, it would be neither the perpetual cold, nor the universal sameness, nor our complete exclusion from the active world of our brother men, but this constant and oppressing gloom, this unvaried darkness.

"To-day was clear toward the south, so that the blessing of light came to us more largely than of late. I walked about a mile on the recent lead, now frozen to a level meandering lane. We see to the north the Cunninghame Mountains of Cape Warrender, but can not make out our change of position definitely. To the south, an outlined ridge of doubtful mountain land shows itself high in the clouds; probably a part of the high ridges east of Admiralty Inlet.

"The thermometer fell at eight this morning to -21°. By noonday it gave us -26° and -27°. It is now -22°. The wind is gentle and cold, but not severe.

"*December* 31, Tuesday. The ending day of 1850! So clear and beautiful is this parting day, that I must take it as a happy omen. Pellucid clearness, and a sky of deep ultra-marine, brought back the remembrance of daylight. I give the record of the day.

"9 A.M. The stars visible even to the lesser groups; but a deep zone of Italian pink rises from the south, and passes by prismatic gradations into the clear blue. The outline of the shore to the northward is well defined.

"10. The day is growing into clearness. The thermometer is at twenty-seven degrees below zero. Your lungs tingle pleasantly as you draw it in.

"11. Can read ordinary over-sized print. Started on a walk, the first time for twenty-odd days. Saw the great lead, and traveled it for a couple of miles, expanding into a plain of recent ice.

"M. Passed noon on the ice. Can read diamond type. Stars of the first magnitude only visible. Saturn magnificent!

"1 P.M. With difficulty read large type. The clouds gathering in black stratus over the red light to the south.

"2. The heavens studded with stars in their groupings. Night is again over every thing, although the minor stars are not yet seen.

"Since the first of this month, we have drifted in solitude one hundred and seventy miles, skirting the northern shores of Lancaster Sound. Baffin's Bay is ahead of us, its current setting strong toward the south. What will be the result when the mighty masses of these two Arctic seas come together!"

CHAPTER XII

1851, *January* 1, Wednesday. The first day of 1851 set in cold, the thermometer at -28°, and closing at -31°. We celebrated it by an extra dinner, a plumcake unfrosted for the occasion, and a couple of our residuary bottles of wine. But there was no joy in our merriment: we were weary of the night, as those who watch for the morning.

It was not till the 3d that the red southern zone continued long enough to give us assurance of advancing day. Then, for at least three hours, the twilight enabled us to walk without stumbling. I had a feeling of racy enjoyment as I found myself once more away from the ship, ranging among the floes, and watching the rivalry of day with night in the zenith. There was the sunward horizon, with its evenly-distributed bands of primitive colors, blending softly into the clear blue overhead; and then, by an almost magic transition, night occupying the western sky. Stars of the first magnitude, and a wandering planet here and there, shone dimly near the debatable line; but a little further on were all the stars in their glory. The northern firmament had the familiar beauty of a pure winter night at home. The Pleiades glittered "like a swarm of fire-flies tangled in a silver-braid," and the great stars that hang about the heads of Orion and Taurus were as intensely bright as if day was not looking out upon them from the other quarter of the sky. I had never seen night and day dividing the hemisphere so beautifully between them.

On the 8th we had, of course, our national festivities, and remembered freshly the hero who consecrated the day in our annals. The evening brought the theatricals again, with extempore interludes, and a hearty splicing of the main-brace. It was something new, and not thoroughly gladsome, this commemoration of the victory at New Orleans under a Polar sky. There were men not two hundred miles from us, now our partners in a nobler contest, who had bled in this very battle. But we made the best of the occasion; and if others some degrees further to the south celebrated it more warmly, we had the thermometer on our side, with its -20°, a normal temperature for the "laudatur et alget."

But the sun was now gradually coming up toward the horizon: every day at meridian, and for an hour before and after, we were able to trace our progress eastward by some known headland. We had passed Cape Castlereagh and Cape Warrender in succession, and were close on the meridian of Cape Osborn. The disruptions of the ice which we had encountered so far, had always been at the periods of spring-tide. The sun and moon were in conjunction on the 21st of December; and, adopting Captain Parry's observation, that the greatest efflux was always within five days after the new moon, we had looked with some anxiety to the closing weeks of that month. But they had gone by without any unusual movement; and there needed only an equally kind visitation of the January moon to give us our final struggle with the Baffin's Bay ice by daylight.

Yet I had remarked that the southern shore of Lancaster Sound extended much further out to the eastward than the northern did; and I had argued that we might begin to feel the current of Baffin's Bay in a very few days, though we were still considerably to the west of a line drawn from one cape to the other. The question received its solution without waiting for the moon.

I give from my journal our position in the ice on the 11th of January:

"*January* 11, Saturday. The floe in which we are now imbedded has been steadily increasing in solidity for more than a month. Since the 8th of December, not a fracture or collision has occurred

to mar its growth. The eye can not embrace its extent. Even from the mast-head you look over an unbounded expanse of naked ice, bristling with contorted spires, and ridged by elevated axes of hummocks. The land on either side rises above our icy horizon; but to the east and west, there is no such interception to our winteryness.

"The brig remains as she was tossed at our providential escape of last month, her nose burrowing in the snow, and her stern perched high above the rubbish. Walking deck is an up and down hill work. She retains, too, her list to starboard. Her bare sides have been banked over again with snow to increase the warmth, and a formidable flight of nine ice-block steps admits us to the door-way of her winter cover. The stores, hastily thrown out from the vessel when we expected her to go to pieces, are still upon the little remnant of old floe on our port or northern side. The *Rescue* is some hundred yards off to the south of east."

The next day things underwent a change. The morning was a misty one, giving us just light enough to make out objects that were near the ship; the wind westerly, as it had been for some time, freshening perhaps to a breeze. The day went on quietly till noon, when a sudden shock brought us all up to the deck. Running out upon the ice, we found that a crack had opened between us and the *Rescue*, and was extending in a zigzag course from the northward and eastward to the southward and westward. At one o'clock it had become a chasm eight feet in width; and as it continued to widen, we observed a distinct undulation of the water about its edges. At three, it had expanded into a broad sheet of water, filmed over by young ice, through which the portions of the floe that bore our two vessels began to move obliquely toward each other. Night closed round us, with the chasm reduced to forty yards and still narrowing; the *Rescue* on her port-bow, two hundred yards from her late position; the wind increasing, and the thermometer at -19°.

My journal for the next day was written at broken intervals; but I give it without change of form:

"*January* 13, 4 A.M. All hands have been on deck since one o'clock, strapped and harnessed for a farewell march. The water-lane of yesterday is covered by four-inch ice; the floes at its margin more than three feet thick. These have been closing for some time by a sliding, grinding movement, one upon the other; but every now and then coming together more directly, the thinner ice clattering between them, and marking their new outline with hummock ridges. They have been fairly in contact for the last hour: we feel their pressure extending to us through the elastic floe in which we are cradled. There is a quivering, vibratory hum about the timbers of the brig, and every now and then a harsh rubbing creak along her sides, like waxed cork on a mahogany table. The hummocks are driven to within four feet of our counter, and stand there looming fourteen feet high through the darkness. It has been a horrible commotion so far, with one wild, booming, agonized note, made up of a thousand discords; and now comes the deep stillness after it, the mysterious ice-pulse, as if the energies were gathering for another strife.

"6½ A.M. Another pulse! the vibration greater than we have ever yet had it. If our little brig had an animated centre of sensation, and some rude force had torn a nerve-trunk, she could not feel it more—she fairly shudders. Looking out to the north, this ice seems to heave up slowly against the sky in black hills; and as we watch them rolling toward us, the hills sink again, and a distorted plain of rubbish melts before us into the night. Ours is the contrast of utter helplessness with illimitable power.

"9:50 A.M. Brooks and myself took advantage of the twilight at nine o'clock to cross the hummocky fields to the *Rescue*. I can not convey an impression of the altered aspects of the floe. Our frozen lane has disappeared, and along the line of its recent course the ice is heaped up in

blocks, tables, lumps, powder, and rubbish, often fifteen feet high. Snow covered the decks of the little vessel, and the disorder about it spoke sadly of desertion. Foot-prints of foxes were seen in every imaginable corner; and near the little hatchway, where we had often sat in comfortable good-fellowship, the tracks of a large bear had broken the snow crust in his efforts to get below.

"The *Rescue* has met the pressure upon her port-bow and fore-foot. Her bowsprit, already maimed by her adventure off Griffith's Island, is now completely forced up, broken short off at the gammoning. The ice, after nipping her severely, has piled up round her three feet above the bulwarks. We had looked to her as our first asylum of retreat; but that is out of the question now; she can not rise as we have done, and any action that would peril us again must bear her down or crush her laterally.

"The ice immediately about the *Advance* is broken into small angular pieces, as if it had been dashed against a crag of granite. Our camp out on the floe, with its reserve of provisions and a hundred things besides, memorials of scenes we have gone through, or appliances and means for hazards ahead of us, has been carried away bodily. My noble specimen of the Arctic bear is floating, with an escort of bread barrels, nearly half a mile off.

"The thermometer records only—17°; but it blows at times so very fiercely that I have never felt it so cold: five men were frost-bitten in the attempt to save our stores.

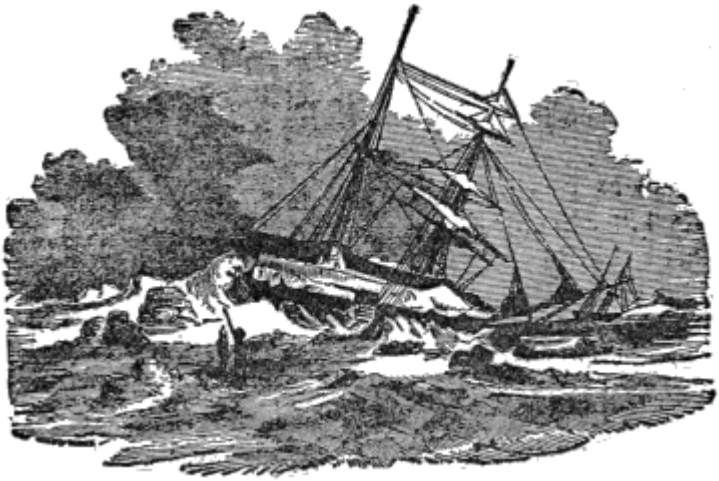
"9 P.M. We have had no renewal of the pressure since half past six this morning. We are turning in; the wind blowing a fresh breeze, weather misty, thermometer at -23°."

The night brought no further change; but toward morning the cracks, that formed before this a sort of net-work all about the vessel, began to open. The cause was not apparent: the wind had lulled, and we saw no movement of the floes. We had again the same voices of complaint from the ship, but they were much feebler than yesterday; and in about an hour the ice broke up all round her, leaving an open space of about a foot to port, indented with the mould of her form. The brig was loose once more at the sides; but she remained suspended by the bows and stern from hummocks built up like trestles, and canted forward still five feet and a quarter out of level. Every thing else was fairly afloat: even the India-rubber boat, which during our troubles had found a resting-place on a sound projection of the floe close by us, had to be taken in.

This, I may say, was a fearful position; but the thermometer, at a mean of -23° and -24°, soon brought back the solid character of our floating raft. In less than two days every thing about us was as firmly fixed as ever. But the whole topography of the ice was changed, and its new configuration attested the violence of the elements it had been exposed to. Nothing can be conceived more completely embodying inhospitable desolation. From mast-head the eye traveled wearily over a broad champaigne of modulating ice, crowned at its ridges with broken masses, like breakers frozen as they rolled toward the beach. Beyond these, you lost by degrees the distinctions of surface. It was a great plain, blotched by dark, jagged shadows, and relieved only here and there by a hill of upheaved rubbish. Still further in the distance came an unvarying uniformity of shade, cutting with saw-toothed edge against a desolate sky.

Yet there needed no after-survey of the ice-field to prove to us what majestic forces had been at work upon it. At one time on the 13th, the hummock-ridge astern advanced with a steady march upon the vessel. Twice it rested, and advanced again—a dense wall of ice, thirty feet broad at the base and twelve feet high, tumbling huge fragments from its crest, yet increasing in mass at each new effort. We had ceased to hope; when a merciful interposition arrested it, so close against our counter that there was scarcely room for a man to pass between. Half a minute of progress more,

and it would have buried us all. As we drifted along five months afterward, this stupendous memento of controlling power was still hanging over our stern. The sketch at the head of the next chapter represents its appearance at the close of the month.



THE ADVANCE, FEBRUARY, 1851.

CHAPTER XIII

WE had lost all indications of a shore, and had obviously passed within the influences of Baffin's Bay. We were on the meridian of 75°; yet, though the recent commotions could be referred to nothing else but the conflict of the two currents, we had made very little southing, if any, and had seen no bergs. But on the 14th the wind edged round a little more to the northward, and at six o'clock in the morning of the 15th we could hear a squeezing noise among the ice-fields in that direction. By this time we had become learned interpreters of the ice-voices. Of course, we renewed our preparations for whatever might be coming. Every man arranged his knapsack and blanket-bag over again with the practiced discretion of an expert. Our extra clothing sledge, carefully repacked, was made free on deck. The India-rubber boat, only useful in this solid waste for crossing occasional chasms, was launched out upon the ice for the third time. Our former depôts on the floe had fared so badly that we were reluctant to risk another; but our stores were ready to be got out at the moment.[F]

[F] I have avoided speaking of my brother officers. From myself, a subordinate, only accidentally recording their exertions, it would be out of place; yet I should speak the sentiment of all on board were I to recognize how much we owed to our executive officer, Mr. Griffin. All our systematized preparation for the contingencies which threatened us, the sledges, the knapsacks, the daily training, and the provision depôts, were due to him. Our commander, then so ill with scurvy that we feared for his recovery, was compelled to delegate to his second in command many executive duties which he would otherwise have taken on himself.

Now began, with every one after his own fashion, the discussion what was best to be done in case of a wreck. Should we try our fortunes for the while on board the *Rescue*? She would probably be the first to go, and could hardly hope for a more protracted fate than her consort. Or should we

try for the shore, and what shore? Admiralty Inlet, or Pond's Bay, or the River Clyde? We have no reason to suppose the Esquimaux are accessible on the coast in winter; and if they are, they can not have provisions for such a hungry re-enforcement as ours; besides, the chance of reaching land from the drift-field through the broken ice between them is slender at the best for men worn down and sick; much more if they should attempt to carry two months' stores along with them. There was only one other resort, to camp out on the floe, if it should kindly offer us a foothold, and then move as best we might from one failing homestead to another, like a band of Arabs in the desert. Happily, Captain De Haven was spared the necessity of choosing between the alternatives: the ice-storm did not reach us.

"*January* 15. The moon is now nearly full. Her light mingles so with the twilight of the sun that the stars are quite sobered down. Walking out at 4 P.M., with the thermometer at -24°, to find, if I could, the cause of a sound a good deal like that of the surf, I was startled by a noise like a quarry blast, explosive and momentary, followed by a clatter like broken glass. Some ten minutes afterward, it was repeated, and a dark smoke-like vapor rose up in the moon-light from the same quarter. These things keep us on the *qui vive*.

"*January* 16. In the course of a tramp to-day about noon, the thermometer standing at -18°, I came across a wonderful instance of the yielding elasticity of ice under intense pressure. About two hundred yards from the brig, on her starboard quarter, was an unbroken plain of level ice, which before our recent break-up used to form one of my daily walks. It measured one hundred and thirty paces in its longer diameter and eighty-five in its shorter, and its thickness I ascertained this morning was over five feet. I found in crossing it to-day that the surface presented a uniform curve, a segment whose versed sine could not have been less than eight feet, abutted on each side by a barricade of rubbish. It strikes me that the dehiscence, lady's slipper or Rupert's drop fashion, of such tensely-compressed floes, must be the cause of the loud explosions we have heard lately. At -30° or -40° the ice is as friable and brittle as glass itself; besides, one of those yesterday was followed by a ringing clatter.

"*January* 18. The extreme stillness, and the facility with which sound travels over these Polar ice-plains, make us err a good deal in our estimates of distance at night. I went out to-day with Dr. Vreeland in search of a violent disruption of the ice, which our look-outs declared they had heard at the very side of the brig. We had some difficulty in finding it: it was the closing of a fissure considerably more than half a mile off.

"As we were returning we noticed some additional results of the ice action of the 13th. Among them was a table of ice, four feet thick, eighteen long, and fifteen broad, so curved without destroying its integrity as to form a well-arched bridge across a water chasm. It had evidently reared up high in air, and then, toppling over, bent into its present form—a marked instance of the semi-solid or viscous character which forms the basis of Professor Forbes's glacial theory. It is not, however, the first extreme change of form that I have noticed in apparently matured ice at a low temperature: its plasticity at +32° must be much greater.

AN ICE-BRIDGE FORMED BY PRESSURE.

"Observations by meridian altitudes of Saturn and Aldebaran give us to-day a latitude of 73° 47′ north. Yesterday we were at 73° 5\ This progress to the south is shown also by the bearing of the Walter Bathurst coast in the neighborhood of Possession Bay. We are fully inside of Baffin's Bay, and with the wind at northwest. There are some signs of ice trouble ahead; a crack has been gradually opening toward our quarter, and has got within eight hundred yards of us."

The day after this the crack approached us till it was only about three hundred yards off, and then began closing again, with the usual accompanying phenomena. The ice between it and us was apparently quiescent; but our ship quivered and jumped under the transmitted pressure. Soon after, in the midst of a heavy snow-drift, and with a temperature of -30°, another crack showed itself close upon our cut-water. The shocks which reached us during these commotions are noted in the log-book as "apparently lifting the vessel aft:" the feeling was, indeed, not unlike that which has been observed during an earthquake, immediately before and sometimes during a vibration.

"*January* 20. The ice sounded last night like some one hammering a nail against the ship's side, clicking at regular intervals. Another crack on the other side of the *Rescue*, now showing open water, was perhaps the cause.

"We already begin to experience the change in our axis of drift. The changes of the wind and the currents of Baffin's Bay have impressed the great system which surrounds us with a marked progress to the south.

"Throughout last night, and until nine o'clock this morning, a column of illumination depended from the moon. Viewing it obliquely, its penciled rays could be seen reaching nearly to the horizon; while in its direct aspect a manifest but intermitting interval was apparent. It struck me as an illustration, perhaps, of Sir John Herschell's remark when observing the Pleiades, that the centre of the retina is not the seat of greatest sensibility.

"Our snow-water has been infected for the past month by a very perceptible flavor and odor of musk, to such a degree sometimes that we could hardly drink it. After many attempts to find out its cause, and at least as many philosophical disquisitions to account for it without one, I accidentally saw to-day a group of foxes on the floes about our brig, who resolved our doubts by an illustration altogether simple and natural.

"*January* 22. On reaching the deck at half past eight this morning, after my usual sleepless night in the murky den below, I found the horizon free from cloud stratus, and the feeble foreshadowings

of day bathing the snow with a neutral tint. By nine we could see to walk; and as late as five in the afternoon, the refracted twilights hung about the western sky. How delicious is this sensation of coming day! In less than a fortnight the great planet will be lifted by the bountiful refraction of the Arctic circle into clear eye presence.

"I long for day. The anomalous host of evils which hang about this vegetation in darkness are showing themselves in all their forms. My scurvy patients, those I mean on the sick-list, with all the care that it is possible to give them, are perhaps no worse; but pains in the joints, rheumatisms, coughs, loss of appetite, and general debility, extend over the whole company. Fifteen pounds of food per diem are consumed reluctantly now, where thirty-two were taken with appetite on the 20th of October. We are a ghastly set of pale faces, and none paler than myself. I find it a labor to carry my carbine. My fingers cling together in an ill-adjusted *plexus*, like the toes in a tight boot, and my long beard is becoming as rough and rugged as Humphrey of Gloster's in the play.

"12 M. The thermometer keeps steadily at -20°, but to-day is the coldest I have ever felt. It blows a young gale. Brooks and myself have been flying kites. The wind was like prickling needles, and the snow smoked over the moving drifts.

"I am struck more and more with the evidences of gigantic force in the phases of our frozen *pedragal*. Returning from a chase after an imaginary bear, we came across, yesterday, a suspended hummock, so imposing in its form, that, half frozen as we were, we stopped to measure it. It was a single table of massive ice, supported upon a pile of rubbish, and inclined about 15° to the horizon. Its length was ninety-one feet six inches, its breadth fifty-one feet, and its average solid thickness eight feet. At its lower end it was seven feet above the level of the adjacent floe; at its upper, twenty-seven. The weight of such a mass, allowing 113 lbs. to the cubic foot, would be 1883 tons. I almost begin to realize Baron Wrangell's account of the hummocks on the coast of Siberia. We have here, perhaps, some five hundred fathoms of water: the six, or twelve, or twenty fathoms of slimy mud, that he speaks of as forming the inclined plane of the shore, must facilitate very much the upheaval of ice-tables.

"10 P.M. The wind has freshened to a gale of the first order, and it howls outside like the dog-chorus of outer Constantinople. But cheerless as these heavy winds are in all out-of-the-way, undefended places, it is only when they announce or accompany a change of direction that we fear them. So stable and so elastic withal is the cementing effect of the cold here, that the strongest gales do not break up the ice after it has been once set in the line of the wind. On the other hand, a trifling breeze, if it deviates a very few points from the axis of the last set, puts every thing into commotion.

"*January* 23. The gale of last night subsided into the usual quiet but fresh westerly breeze, sometimes inclining to the W.N.W. To-day is very clear; the stars, except one or two of the northern magnates, invisible at noonday; and two or three well-marked crimson lines streaking the dawning zone above the sun. The hills around Walter Bathurst and Possession Bay, the entering southern headlands of Lancaster Sound, have sunk in the distance. Two summits, bearing southwest by west, probably belonging to Possession Mount, are all that remains of the coast. We are more than fifty miles from land, and still drifting rapidly to the east. To the southwest, by compass (true S.E. ½ E.), little volumes of smoke have been rising; but after a tolerably long walk, I could not find any further signs of the open water. We are now in latitude 73° 10'.

"The daylight is very sensibly longer: the moon was quite joyous with its little crimson flocculi; and five, or even five and a half hours afterward, when we looked toward the day quarter, instead of a grim blackness, or, as we had it more recently, a stain of Indian-red, we saw the pale bluish light, so gratefully familiar at home."

The appearances which heralded the sun's return had a degree of interest for us which it is not easy to express in words. I have referred more than once already to the effects of the long-continued night on the health of our crowded ship's company. It was even more painful to notice its influence on their temper and spirits. Among the officers this was less observable. Our mess seemed determined, come what might, to maintain toward each other that honest courtesy of manner, which those who have sailed on long voyages together know to be the rarest and most difficult proof of mutual respect. There were of course seasons when each had his home thoughts, and revolved perhaps the growing probabilities that some other Arctic search party might seek in vain hereafter for a memorial of our own; yet these were never topics of conversation. I do not remember to have been saddened by a boding word during all the trials of our cruise.

With the men, however, it was different. More deficient in the resources of education, and less restrained by conventional usages or the principle of honor from communicating to each other what they felt, all sympathized in the imaginary terrors which each one conjured up. The wild voices of the ice and wind, the strange sounds that issued from the ship, the hummocks bursting up without an apparent cause through the darkness, the cracks and the dark rushing water that filled them, the distorted wonder-workings of refraction; in a word, all that could stimulate, or sicken, or oppress the fancy, was a day and nightmare dream for the forecastle.

We were called up one evening by the deck-watch to see for ourselves a "ball of fire floating up and down above the ice-field." It was there sure enough, a disk of reddish flame, varying a little in its outline, and flickering in the horizon like a revolving light at a distance. I was at first as much puzzled as the men; but glancing at Orion, I soon saw that it was nothing else than our old dog-star friend, bright Sirius, come back to us. Refraction had raised him above the hills, so as to bring him to view a little sooner than we expected. His color was rather more lurid than when he left us, and the refraction, besides distorting his outline, seemed to have given him the same oblateness or horizontal expansion which we observe in the disks of the larger planets when nearing the horizon.

For some days the sun-clouds at the south had been changing their character. Their edges became better defined, their extremities dentated, their color deeper as well as warmer; and from the spaces between the lines of stratus burst out a blaze of glory, typical of the longed-for sun. He came at last: it was on the 29th. My journal must tell the story of his welcoming, at the hazard of its seeming extravagance: I am content that they shall criticise it who have drifted for more than twelve weeks under the night of a Polar sky.

"*January* 29. Going on deck after breakfast at eight this morning, I found the dawning far advanced. The whole vault was bedewed with the coming day; and, except Capella, the stars were gone. The southern horizon was clear. We were certain to see the sun, after an absence of eighty-six days. It had been arranged on board that all hands should give him three cheers for a greeting; but I was in no mood to join the sallow-visaged party. I took my gun, and walked over the ice about a mile away from the ship to a solitary spot, where a great big hummock almost hemmed me in, opening only to the south. There, Parsee fashion, I drank in the rosy light, and watched the horns of the crescent extending themselves round toward the north. There was hardly a breath of wind, with the thermometer at only -19°, and it was easy, therefore, to keep warm by walking gently up and down. I thought over and named aloud every one of our little circle, F. and M., T. and P., B. and J., and our dear, bright little W.; wondered a while whether there were not some more to be remembered, and called up one friend or relative after another, but always came back to the circle I began with. My thoughts were torpid, not worth the writing down; but I was not strong, and they affected me. It was not good 'Polar practice.'

"Very soon the deep crimson blush, lightening into a focus of incandescent white, showed me that the hour was close at hand. Mounting upon a crag, I saw the crews of our one ship formed in line upon the ice. My mind was still tracing the familiar chain of home affections, and the chances that this one or the other of its links might be broken already. I bethought me of the Sortes Virgilianæ of my school-boy days: I took a piece of candle paper pasteboard, cut it with my bowie-knife into a little carbine target, and on one side of this marked all our names in pencil, and on the other a little star. Presently the sun came: never, till the grave-sod or the ice covers me, may I forego this blessing of blessings again! I looked at him thankfully with a great globus in my throat. Then came the shout from the ship—three shouts—cheering the sun. I fixed my little star-target to the floe, walked backward till it became nearly invisible; and then, just as the completed orb fluttered upon the horizon, filled my '*salut*.' I cut M in half, and knocked the T out of Tom. They shall draw lots for it if ever I get home; for many, many years may come and go again before the shot of an American rifle signalizes in the winter of Baffin's Bay the conjunction of sunrise, noonday, and sunset.

"The first indications of dawn to-day were at forty-five minutes past five. By seven the twilight was nearly sufficient to guide a walking party over the floes. I have described the phenomena at eight. At nine the deck-lantern was doused. By 11h. 14m. or 15m. those on board had the first glimpses of the sun. At 5 P.M. we had the dim twilight of evening.

"Our thermometric records on board ship can not be relied on. I mention the fact for the benefit of those who may hereafter consult them. My wooden-cased Pike thermometer, hung to a stanchion on the northern beam of the brig, gave at noonday—19°; exposed to the sun's rays on the southern, -14°. The observation repeated at 12h. 30m., gave -20° for the northern, and -15° for the southern side; the difference in each case being five degrees. The same thermometer, carefully exposed about a hundred yards from the ship, gave at noon, on the north and windward side, -21°; on the south, exposed to the sun, -18°; and at thirty minutes afterward (nearly), on the north, -20° 5'; toward the sun, -16°. The difference in these last observations of 3° in the first and 4° 5′ in the second was owing unmistakably to the effect of the solar rays. The ship's record for the same hours was simply -19° and -18°. The fact is, that there is always a varying difference of two to five degrees of temperature between the lee and weather sides of the brig; the quarter of the wind and its intensity, the state of our fires, the open or shut hatches, and other minor circumstances, determining what the difference shall be at a particular time.

"*January* 30. The crew determined to celebrate 'El regresado del sol,' which, according to old Costa, our Mahonese seaman, was a more holy day than Christmas or All-Saints. Mr. Bruce, the diversely talented, favored us with a new line of theatrical exhibition, a *divertissement* of domestic composition, 'The Countryman's first Visit to Town;' followed by a pantomime. I copy the play-bill from the original as it was tacked against the main-mast:

ARCTIC THEATRE

To be performed, on the night of Thursday, the
30th day of January, the Comic Play of the
COUNTRYMAN. After which, a PANTOMIME.

To begin with
A Song By R. Bruce.

THE COUNTRYMAN.

Countryman R. Baggs.

Landlady	C. Berry.
Servant	T. Dunning.

PANTOMIME.

Harlequin	James Johnson.
Old Man	R. Bruce.
Rejected Lover	A. Canot.
Columbine	James Smith.

Doors to be opened at 8 o'clock. Curtain to rise a quarter past 8 punctually.

No admittance to Children; and no Ladies admitted without an escort.

Stage Manager,
S. BENJAMIN.

The strictest order will be observed both inside and outside.

We sat down as usual on the preserved-meat boxes, which were placed on deck, ready strapped and becketed (*nautice* for trunk-handled) for flinging out upon the ice. The affair was altogether creditable, however, and everybody enjoyed it. Here is an outline of the pantomime, after the manner of the newspapers. An old man (Mr. Bruce) possessed mysterious, semi-magical, and wholly comical influence over a rejected lover (M. Auguste Canot, ship's cook), and Columbine (Mr. Smith) exercised the same over the old man. Harlequin (Mr. Johnson), however, by the aid of a split-shingle wand and the charms of his "motley wear," secures the affections of Columbine, cajoles the old man, persecutes the forlorn lover, and carries off the prize of love; the fair Columbine, who had been industriously chewing tobacco, and twirling on the heel of her boot to keep herself warm, giving him a sentimental kiss as she left the stage. A still more sentimental song, sung in seal-skin breeks and a "*norwester*," and a potation all round of hot-spiced rum toddy, concluded the entertainments.

CHAPTER XIV

ON the 2d of February the sun rose up in full disk at a quarter before eleven. The atmosphere was clear, but filled with minute spiculæ. The cold was becoming more intense: our ship thermometers stood at -32°, my spirit standard at -34°, and my mercurial at -38°. The ice that had formed between the floes since our break-up of January 12th was already twenty-seven inches thick, and was increasing at the rate of five inches in the twenty-four hours. The floes crackled under the intense frost, and we heard loud explosions around us, which one of our seamen, who had seen land service in Mexico, compared very aptly to the sound of a musket fired in an empty town. The 6th was still colder. At seven in the evening my spirit standard was at -40°. The day, however, had been graced with some hours of sunshine, and we worked and played foot-ball out on the ice till we were many of us in a profuse perspiration. The next morning my mercurial thermometer had frozen, leaving its parting record at -42°; and at half past eight one of the spirit standards indicated the same point. Up to this period, it was our lowest temperature. The frozen mercury resembled in appearance lead, recently chilled after melting. You could cut the thinner edges easily enough with a penknife; but where it was heaped up, nearer the centre of the solid mass, it was tenacious and resisting. I wished to examine it under the microscope, but was unable to procure a fractured surface.

Between six and eight o'clock in the evening of the 2d, we had a magnificent though nearly colorless exhibition of the aurora; and on the 7th, at 10h. 20m. A.M., the southern sky presented the appearance of a day aurora attending on the sun. The observations which I made of these two phenomena may be the subject of a distinct chapter; I will only say here, that it was difficult to doubt their identity of character or cause. We had several displays of the paraselene, too, in the earlier days of the month, and an almost constant deposition of crystalline specks, which covered our decks with a sort of hoar-frost. The rate of this deposition on the vessel was about a quarter of an inch in six hours; but in an ice-basin on the floes, surrounded by hummocks, and thus protected from the wind, I found it nine inches deep.

When accumulated in this manner, it might, on a hurried inspection, be confounded with snow; but it differs as the dew does from rain. It is directly connected with radiation, and is most copious under a clear sky. Snow itself, the flaky snow of a clouded atmosphere, has not been noticed by us when the temperature was lower than -8° or at most -10°. Our last snow-fall was on the 1st of February and the day preceding. It began with the thermometer at -1°, and continued after it had sunk to -9°; but it had ceased some time before it reached -13°.

"*February* 9. To-day we had a sky of serene purity, and all hands went out for a sanitary game of romps in the cold light. Presently three suns came to greet us—strange Arctic parhelia—and a great golden cross of yellow brightness uniting them in one system. Under the glare of these we played foot-ball.

"At meridian we made a rough horizon of the ice, and found ourselves in latitude about 72° 16'. At this time another marvel rose before us—Land. The monster was to the W.S.W., in the shape of two round-topped hills, lifted up for the time into our field of view. An hour or two later, while the day was waning, these hills became mountains, and then a line of truncated cones, the spectre of some distant coast. Looking a few minutes later out of the little door in our felt house, the port gangway of the log-book, to where for this last fortnight a bleak sameness of snow has been stretching to the far north, we saw a couple of icebergs standing alone in the sky, and at their shadowy tops their phantom repetitions inverted. By this time the mountains also had become twain, and the long line of resurrected coast was duplicated in the clouds. A stratum of false horizon separated the two sets of images.

“We have been now for many months without seeing the icebergs. They were beautiful objects, monuments of power, when we met them on the coast of Greenland, floating along on a liquid sea. Now they admonish us only of our helplessness and of perils before us. We should be glad to keep them in the clouds.

“The sun begins to make himself felt, though as yet feebly enough. My large spirit thermometer, in the shade of a hummock some hundred yards from the brig, gave us at noon -21° 5', and on the sunny side of the same hummock -12°. The same thermometer, before a blackboard exposed to the sun, was at -7°. Twenty minutes later, the thermometer at the blackboard rose to +2°, and twenty minutes later still it was at -2°. The ice formed within the twenty-four hours in the fire-hole measured four and a quarter inches; three quarters of an inch less than our measurements of it a week ago. A thermometer plunged two feet deep in a bank of light snow-drift indicated -12°.

“*February* 10. A hazy day; with moon-light, and a drizzling fall of broken spiculæ following it. Mr. Murdaugh obtained observations for meridian altitude and time-sights of Aldebaran: our latitude is 72° 19', our longitude 68° 55'. The winds have been unfavorable to the rapidity of our drift, which has been reduced in its rate since our observation on the 29th of January from five and a quarter to four miles a day. It may be that our approach to the narrower parts of the bay and the increased cold together have been disturbing causes in the movement of the great pack; but the wind has been the most important in its influence.

“To look at the completely unbroken area which shows itself from our mast-head, motion would be the last idea suggested. In Lancaster Sound the changing phases of the coast gave us a feeling of progress, movement, drift—that sensation of change so pleasing to one’s incomprehensible moral machinery. But here, with this circle of impenetrable passive solidity everywhere around us, it is hard to realize that we move. But for the stars, my convictions of rest would be absolute. Yet we have thus traveled upward of three hundred miles. I shall not soon forget this inevitable march, with its alternations of gloomy silence and fierce disruptions.

“*February* 11, Wednesday. Day very hazy, and nothing to interrupt its monotony. It requires an effort to bear up against this solemn transit of unvarying time.

“I will show you how I spend one of these days—that is, all of them. It is the only palliation I can offer for my meagreness of incident. As for the study we used to talk about—even you, terrible worker as you are, could not study in the Arctic regions.

“Within a little area, whose cubic contents are less than father’s library, you have the entire abiding-place of thirty-three heavily-clad men. Of these I am one. Three stoves and a cooking galley, four Argand and three bear-fat lamps burn with the constancy of a vestal shrine. Damp furs, soiled woolens, cast off boots, sick men, cookery, tobacco-smoke, and digestion are compounding their effluvia around and within me. Hour by hour, and day after day, without even a bunk to retire to or a blanket-curtain to hide me, this and these make up the reality of my home.

“Outside, grim death, in the shape of -40°, is trying—most foolishly, I think—to chill the energy of these his allies. My bedding lies upon the bare deck, right under the hatch. A thermometer, placed at the head of my cot, gives a mean temperature of 64°; at my feet, under the hatchway, +16° to -4° —ice at my feet, vapor at my head. The sleeping-bunks aft range from 70° to 93°; those forward, regulated by the medical officer, from 60° to 65°.

“We rise, the crew at six bells, seven o’clock, and the officers at seven bells, half an hour later. Thus comports himself your brother. He sits up in the midst of his blankets, and drinks a glass of

cold water; eyes, nose, and mouth chippy with lamp-black and undue evaporation. Oh! how comforting this water is! That over, a tin-basin, in its turn, is brought round by Morton, mush-like with snow; and in this mixture, by the aid of a hard towel, with a daily regularity that knows no intermission, he goes over his entire skeleton, frictionizing.

"This done, comes the dressing—the two pairs of stockings, the three under-shirts, the fur outer robing, and the seal-skin boots; and then, with a hurried cough of disgust and semi-suffocation, he is on deck. There the air, pure and sharply cold, now about 26° or 30°, last week 40° below zero, braces you up like peach and honey in a Virginia fog, or a tass of mountain dew in the Highlands. Then to breakfast. Here are the mess, with the fresh smell of overnight undisturbed, and on our table griddle cakes of Indian meal, hominy, and mackerel: with hot coffee and good appetites, we fall to manfully.

"Breakfast over, on go the furs again; and we escape from the accumulating fumes of 'servants' hall,' walking the floes, or climbing to the tops, till we are frozen enough to go below again. One hour spent now in an attempt at study—vainly enough, poor devil! But he does try, and what little he does is done then. By half past ten our entire little band of officers are out upon the floes for a bout at anti-scorbutic exercise, a game of romps: first foot-ball, at which we kick till our legs ache; next sliding, at which we slide until we can slide no more: then off, with carbine on shoulder, and Henri as satellite, on an ice-tramp.

"Coming back, dinner lags at two. Then for the afternoon—God spare the man who can with unscathed nose stand the effluvium. But night follows soon, and with it the saddening question. What has the day achieved? And then we stretch ourselves out under the hatches, and sleep to the music of our thirty odd room-mates.

"*February* 14, Friday. A glorious day, with the sun from nine to half past two. Three bergs seen by refraction. The mercury rose to +2° over a black surface turned toward the sun. To-day the usual foot-ball.

"Our Arctic theatre gave us to-night 'The Mysteries and Miseries of New York,' followed by a pantomime. The sitting temperature was -20°; that outside, -36°; behind the scenes, -25°. A flat-iron used by the delicate Miss Jem Smith gave the novel theatrical effect of burning by cold. Poor Jem suffered so much in her bare sleeves and hands, that whenever the iron touched she winced. Cold merriment; but it concluded with hotchpot and songs.

"*February* 15, Saturday. Another glorious day; the sun visible from 9 A.M. to 3 P.M., and embanked during the remaining time. Much to our surprise, at the moment of setting, a startling ridge of mountain peaks rose into sight to the westward. Their distance, as estimated by the latest charts, was no less than 76 miles.

"*February* 22, Saturday. 'Some things can be done as well as others:' so at least Sam Patch said, when he scrambled up after his jump at Niagara. I walked myself into a comfortable perspiration this morning, with the thermometer at -42°, seventy-four degrees below the freezing point. My walk was a long one. When about three miles from the brig, a breeze sprang up: it was very gentle; but instantly the sensation came upon me of intense cold. My beard, coated before with massive icicles, seemed to bristle with increased stiffness. Henri, who walked ahead, began to suffer: his nose was tallow white. Before we had rubbed it into circulation, my own was in the same condition; and an unfortunate hole in the back of my mitten stung like a burning coal. We are so accustomed to cold that I did not suffer during our walk back, though it was more than an hour of hummock crossing.

“The sensation most unendurable of these extremely low temperatures is a pain between the eyes and over the forehead. This is quite severe. It reminded me of a feeling which I have had from over-large quantities of ice-cream or ice-water, held against the roof of the mouth. I reached the brig in a fine glow of warmth, having skated, slid, and made the most of my time in the open air.

“An increased disposition to scurvy shows itself. Last week twelve cases of scorbutic gums were noted at my daily inspections. In addition to these, I have two cases of swelled limbs and extravasated blotches, with others less severely marked, from the same obstinate disease. The officers too, the captain, Mr. Lovell, and Mr. Murdaugh, complain of stiff and painful joints and limbs, with diarrhœa and impaired appetite: the doctor like the rest. At my recommendation, the captain has ordered an increased allowance of fresh food, to the amount of two complete extra daily rations per man, with potatoes, saur-kraut, and stewed apples; and we have enjoined more active and continued daily exercise, more complete airing of bedding, &c. I have commenced the use of nitro-muriatic acid, as in syphilitic and mercurial cases, by external friction.

“The state of health among us gives me great anxiety, and not a little hard work. Quinine, the salts of iron, &c., &c., are in full requisition. For the first time I am without a hospital steward.

“It is Washington’s birth-day, when ‘hearts should be glad;’ but we have no wine for the dinner-table, and are too sick for artificial merriment without it. Our crew, however, good patriotic wretches, got up a theatrical performance, ‘The Irish Attorney;’ Pierce O’Hara taken by the admirable Bruce, our Crichton. The ship’s thermometer outside was at -46°. Inside, among audience and actors, by aid of lungs, lamps, and housings, we got as high as 30° below zero, only sixty-two below the freezing point! probably the lowest atmospheric record of a theatrical representation.

“It was a strange thing altogether. The condensation was so excessive that we could barely see the performers: they walked in a cloud of vapor. Any extra vehemence of delivery was accompanied by volumes of smoke. The hands steamed. When an excited Thespian took off his hat, it smoked like a dish of potatoes. When he stood expectant, musing a reply, the vapor wreathed in little curls from his neck. This was thirty degrees lower than the lowest of Parry’s North Georgian performances.

“*February* 23, Sunday. Mist comes back to us. After our past week of glorious sunshine, this return to murkiness is far from pleasing. But it might be worse: one month ago, and a day like this would have made our winter-stricken hearts bound with gladness.

“Caught a cold last night in attending the theatre. A cold here means a sudden *malaise*, with insufferable aches in back and joints, hot eyes, and fevered skin. We all have them, coming and going, short-lived and long-lived: they leave their mark too. This Arctic work brings extra years upon a man. A fresh wind makes the cold very unbearable. In walking to-day, my beard and mustache became one solid mass of ice. I inadvertently put out my tongue, and it instantly froze fast to my lip. This being nothing new, costing only a smart pull and a bleeding abrasion afterward, I put up my mittened hands to ‘blow hot’ and thaw the unruly member from its imprisonment. Instead of succeeding, my mitten was itself a mass of ice in a moment: it fastened on the upper side of my tongue, and flattened it out like a batter-cake between the two disks of a hot griddle. It required all my care, with the bare hands, to release it, and that not without laceration.

“*February* 25. A murky day. Two hundred and forty-four fathoms of line gave no bottom at the air-hole. Scurvy getting ahead. Began using the remnant of our fetid bear’s meat: nasty physic, but we will try it. It is colder to-day, with the wind and fog at -15°, than a few days ago at -46°. Wind south by east: sun not seen.

"*February* 26, Wednesday. The sun came back again with such vigor, that my spirit standard rose over black to +14°; my glass—cased, to +35°. The difference between shade and sunshine is 30°: a thermometer freely suspended in shade and in sun gave -32° and -2°. Black surfaces begin to scale off their snowy covering, not by thawing attended by moisture, but with a manifest diminution in the tenacity and adhesiveness of the snow. We observe these indications of returning heat closely.

"The scurvy has at last fairly extended to our own little body, the officers. Pains in the limbs, and deep-seated soreness of the bones, seem to be its most common demonstration. The complaint is of 'a sort of tired feeling,' or as if 'they had had a beating.' Our usual supper, the saur-kraut, has become excessively popular. Even the abused bear is not quite as bad as it was.

"The crew have been snow-rubbing their blankets. The snow is so fine and sand-like, that under these low Arctic temperatures it acts mechanically, and is an effectual cleanser. Withal, if you beat it well out of the tissue, it is not a damp application. The only trouble is that, on taking the bedding below, the condensation covers it with dew-drops. With drying-lines on the lower decks, the resort would be excellent.

"The setting sun, now fast approaching the home quarter of setting suns, the west, gave us again the spectral land about Cape Adair, eighty miles off.

"Sirius is beautifully resplendent on the meridian. What a fine exhibition it is! As it rises from the banked horizon, it gives us nightly freaks of terrestrial refraction. Its colors are blue, crimson, and white; its shapes oval, hour-glass, rhomboid, and square. Sometimes it is extinguished; sometimes flashing into sudden life: it looks very like a revolving light.

"To-day, in putting my hand inside my reindeer hood, I felt a something move. The something had a crepitating, insectine wriggle. Now, at home and everywhere else, without being a nervous man as to insects—for I have eaten locusts In Sennaar and bats in Dahomey—I rather dislike the crawl of centipede or slime of snail. Here, with an emotion hard to describe, surprise, pleasure, and a don't-know-why wonderment, I caught my bug gently between thumb and finger.

"An air insect would be, in this dreary waste of cold, an impossibility greater than the diamond in the snow-drift. Save a seal and a fox, nothing sharing our principle of vitality has greeted us for months. The teeming myriads of life which characterized the Arctic summer have gone. The anatidæ are clamoring in the great bays and water-courses of the middle south. The gulls have sought the regions of open water. The colymbi and auks are lining the northern coasts of my own dear home. The croaking raven, dark bird of winter, clings to the inshore deserts. The tern are far away, and so, thank Heaven, are the mosquitoes. There are no bugs in the blankets, no nits in the hair, no maggots in the cheese. No specks of life glitter in the sunshine, no sounds of it float upon the air. We are without a single sign, a single instinct of living thing.

"If now, with the thermometer eighty degrees below the freezing point, and the new sun casting a cold gray sheen upon the snow, you leave the thirty-one, to whom you are the thirty-second, and walk out upon the ice away off—so far that no click of hammer nor drone of voice places you in relation with that little outside world—then you will know how I felt when I caught that 'creeping wonder' on my reindeer hood. It was a frozen feather.

"*February* 27, Thursday. An aurora passing through the zenith, east and west, at 3h. 30m. this morning. What little wind we have is coming feebly from the west and southwest. The thermometer has traveled from -40° to -31°, and the sun is out again in benign lustre. A difference of 27°, due to his influence, was evident as early as 10h. 20m., viz.: Green's spirit standard gave, in shade,-33°;

over black surface, in sunshine, -7° and -6°. At noonday, the same thermometer gave +2°. My glass —cased, hot-house like,—gave the pleasant deception of +40°.

“Still the scurvy increases. I am down myself to-day with all the premonitories. It is strangely depressing: a concentrated ‘fresh cold’ pain extends searchingly from top to toe. I am so stiff that it is only by an effort that I can walk the deck, and that limpingly. Once out on the floes, my energies excited and my blood warmed by exercise, I can tramp away freely; back again, I stiffen.

“Walked with our other cook, Auguste Canot. Queer changes these Frenchmen see! Canot’s father, a captain in the French army, was shot while serving with Oudinot, beneath the infernal ‘barricades’ of Rome—Canot the younger looking on. A few months after, the son had figured upon the list of condemned for the affair at Lyons, and was a fugitive *emigré* to the United States. The same sergeant-major, Canot, is now cooking salt junk in Baffin’s Bay. His *confrère*, the modest but gifted Henri, although a worse soldier, is a better cook. He first saw ice among the glaciers of La Tour. He has scullionized at the '*Trois Frères*/ and played *chêf* to a London club-house. He passed through this latter ordeal, strange to say, unscathed; and, but for an amorous temperament, might be now at Delmonico’s, upon good wages and bad Bordeaux. Henri is a boy of talent, pensive by temperament, and withal ambitious. Were it not for the somewhat unequal distribution of two molars and an incisor, his entire stock of teeth, he would be an insufferable coxcomb. As it is, he treats his infirmity with amiable, if not philosophic contempt. He made me this morning an idea of white bear’s liver, *à la brochette*. The idea was good, the liver hippuric and detestable. Henri prides himself upon that most difficult simplicity, the *filet*. He prepares thus a sea-gull *à merveille*.

“*February* 28, Friday. The most wintery-looking day I have ever seen. The winds have been let loose, and the cheering novelty of a northwester breaks in on our calm. The drifting snow either rises like smoke from the levels, or whirls away in wreaths from the hummocks. The atmosphere has an opaline ashy look; in the midst of which, like a huge girasole, flashes the round sun. The clouds are of a sort seldom seen, except in the conceptions of adventurous artists, quite undefinable, and out of the line of nature, defying Howard’s nomenclature. They are blocked out in square, stormy masses, against a pearly, misty blue—harsh, abrupt, repulsive, quite out of keeping with the kindly lightness of things belonging to the sky."

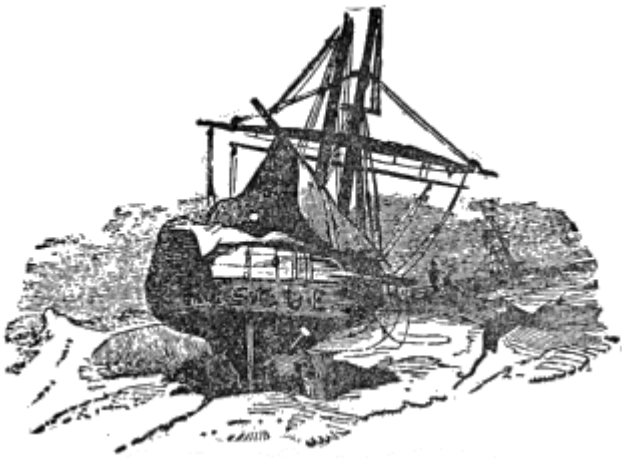
The lowest temperature we recorded during the cruise was on the 22d of this month, when the ship’s thermometer gave us -46°; my offship spirit, -52°; and my own self-registering instruments, purchased from Green, placed on a hummock removed from the vessels, -53°, as the mean of two instruments. This may be taken as the true record of our lowest absolute temperature.

Cold as it was, our mid-day exercise was never interrupted, unless by wind and drift storms. We felt the necessity of active exercise; and although the effort was accompanied with pains in the joints, sometimes hardly bearable, we managed, both officers and crew, to obtain at least three hours a day. The exercise consisted of foot-ball and sliding, followed by regular games of romps, leap-frog, and tumbling in the snow. By shoveling away near the vessel, we obtained a fine bare surface of fresh ice, extremely glib and durable. On this we constructed a skating-ground and admirable slides. I walked regularly over the floes, although the snows were nearly impassable.

With all this, aided by hosts of hygienic resources, feeble certainly, but still the best at my command, scurvy advanced steadily. This fearful disease, so often warded off when in a direct attack, now exhibited itself in a cachexy, a depraved condition of system sad to encounter. Pains, diffuse, and non-locatable, were combined with an apathy and lassitude which resisted all attempts at healthy excitement.

These, of course, were not confined to the crew alone: out of twenty-four men, but five were without ulcerated gums and blotched limbs; and of these five, strange to say, four were cooks and stewards. All the officers were assailed. Old pains were renewed, old wounds opened; even old bruises and sprains, received at barely-remembered periods back, came to us like dreams. Our commander, certainly the finest constitution among us, was assailed like the rest. In a few days purpuric extravasations appeared on his legs, and a dysentery enfeebled him to an extent far from safe. An old wound of my own became discolored, and, curious to say, painful only at such points of old suppuration, three in number, as had been relieved by the knife. The seats of a couple of abscess-like openings were entirely unaffected and free from pain.

The close of the month found this state of things on the increase, and the strength of the party still waning.



THE RESCUE IN HER ICE-DOCK.

CHAPTER XV

OUR brig was still resting on her cradle, and her consort on the floe a short distance off, when the first month of spring came to greet us. We had passed the latitude of 72°.

To prepare for our closing struggle with the ice-fields, or at least divide its hazards, it was determined to refit the *Rescue*. To get at her hull, a pit was sunk in the ice around her, large enough for four men to work in at a time, and eight feet deep, so as to expose her stern, and leave only eighteen inches of the keel imbedded. This novel dry-dock answered perfectly. The hull was inspected, and the work of repair was pressed so assiduously, that in three days the stern-post was in its place, and the new bowsprit ready for shipping. We had now the chances of two ships again in case of disaster.

Since the middle of February the felt housing of our vessel had shown a disposition to throw off its snowy crust. There was an apparent recession, or, rather, want of adhesion about it, that spoke of change. But it was not till the 7th of March that we witnessed an actual thaw. On the black planking

of the brig's quarter, in full sun glare, the snow began to move, and fell, leaving a moist stain. This was either evaporated or frozen instantly; but still it had been there, unequivocal moisture. A sledge, too, alongside the vessel, kept laden to meet emergencies, with a black felt cover, gave on its southern side a warm impression to the unmittened hand; and several drops of water rolled from its mounting of snow, and formed in minute icicles.

With these cheering signs of returning warmth came a sensible improvement in my cases of scurvy. I ascribed it in a great degree to the free use of saur-kraut and lime-juice, and to the constant exercise which was enforced as part of our sanitary discipline. But I attributed it also to the employment of hydrochloric acid, applied externally with friction, and taken internally as a tonic. The idea of this remedy, hitherto, so far as I know, unused in scurvy, occurred to me from its effects in cachectic cases of mercurial syphilis. I am, I fear, heterodox almost to infidelity as to the direct action of remedies, and rarely allow myself to claim a sequence as a result; but, according to the accepted dialectics of the profession, the *Acid. chlorohyd. dilut.* may be recommended as singularly adapted to certain stages of scorbutus.

The great difficulty that every one has encountered in treating this disease is in the reluctance of the patient to rouse himself so as to excite the system by cheerful, glowing exercise, and in the case of seamen, to control their diet. My ingenuity was often taxed for expedients to counteract these predispositions. Some that I resorted to were ludicrous enough.

James Stewart, with purpuric blotches and a stiff knee, had to wag his leg half an hour by the dial, opposite a formidable magnet, each wag accompanied by a shampooing knead. Stewart had faith; the muscular action, which I had enjoined so often ineffectually, was brought about by a bit of steel and a smearing of red sealing-wax. They cured him.

Another, remarkable for a dirty person, of well used-up capillary surface, a hard case—one of a class scarcely ever seen by any but navy doctors—sponged freely and regularly from head to foot in water colored brown by coffee, and made acid with vinegar. His gums improved at once. He would never have washed with *aqua fontana*.

Another set of fellows adhered pertinaciously to their salt junk and hard tack, ship bread and beef. These conservative gentlemen gave me much trouble by repelling vegetable food. The scurvy was playing the very deuce with them, when the bright idea occurred to me of converting the rejected delicacies into an abominable doctor-stuff. It was an appeal to their spirit of martyrdom: they became heroes. Three times a day did these high-spirited fellows drink a wine glass of olive-oil and lime-juice, followed by raw potato and saur-kraut, pounded with molasses into a damnable electuary. They ate nobly, and got well.

But the causes of scurvy were relaxing their energies only for the time. Before the month was out, the disease had come back with renewed and even exacerbated virulence. Some of its phases were curious. The joint of Captain De Haven's second finger became the seat of severe pain, accompanied by a distinct tubercle cartilaginous to the touch. It exactly recalled, he said, the appearance and feeling of the part for some months after it had been hurt by a schoolmaster's ruler twenty-five years before. One of the crew had his tongue completely excoriated. Another, who had lost a molar tooth seven years ago, spit from the cavity a conoidal wedge: I had no chance of examining it by the microscope; but an impression of the cavity in wax showed the sides perfectly smooth, and the vertex intersected by lines of ossification. I have spoken already of my lance mark in the groin: it had been healed some three years; but it now threatened suppuration again wherever it bore the marks of the surgeon's knife.

We had unfortunately almost exhausted our supply of anti-scorbutic drinks, and were driven to the manufacture of substitutes not always the most palatable. One of them, which served at least as a vehicle for lime-juice and muriate of iron, was, however, a recognized exception. It was a beer, of which a remnant of dried peaches and some raisins, with barley and brown sugar, formed the fermenting basis. The men drank it in most liberal quantities.

On the 10th we had an exhibition of the day aurora again, less brilliant than the one I have described a few pages back, but quite well marked. It was followed at night by the paraselene. Another atmospheric display, which occurred a few days afterward, attracted more notice.

"*March* 13. Again a day of bright sunshine, but to my feelings colder than our lowest temperatures. The thermometer stood at -24° in the shade at noon, and the wind was very light. Yet there was a cutting asperity about it that made your face tingle—a sensation as if evaporation was going on under the skin—quite a painful one. At four in the afternoon the atmosphere was studded with glistening particles. I have never seen them so manifest and so numerous. Our slide, a polished surface of clear ice, became clouded in a few minutes, and before five o'clock it was perfectly white. The microscope gave me the same broken hexagonal prisms, mixed with tables closely resembling the snow-crystal. A haze surrounded the horizon, rising for some six degrees in a bronzed purple bank; after which it gradually blended with the sky, a clear blue, undisturbed by cirri.

"Accompanying this redundancy of atmospheric spiculæ was a parhelion of remarkable intensity. There was no halo round the sun, and no vertical or horizontal column; but at the distance of 22° 04' from the sun's centre were three solar images, one on each side, and the other immediately above the sun. This latter image was intensely luminous, but not prismatic; the others had the rudiments of an arc, highly colored, the red upon the inner margin. The haze rose as high as these horizontal images; and the arc, which in so short a segment presented no visible curvature, expanded as it descended, so as to form an elongated pyramid or column, the prismatic tints increasing in intensity as they approached the horizon. The effect of this was that of two illuminated beacons or rainbow towers, the sun blazing between them. As we stood a little way off on the ice, it was very beautiful to see the brig, with its spars and rigging cutting like tracery against the central light, with these prismatic structures on each side, capped by a spectral sun."

Two evenings later, the parhelia gave us another spectacle of interest. Two mock suns, which had accompanied the sun below the horizon, sent up an illuminated and colored arc some eight or ten degrees in height. Midway rose a brush-like column of crimson (*baryta*) light. A series of flame-colored strata, alternating with an incomprehensible black cloud, was so completely eclipsed by the vertical column, that it seemed to cut its way without a diminution of its brightness. The whole atmosphere was as warmly tinted as in the evenings of Melville Bay.

Indeed, from the beginning of the month, the skies had undergone a sensible change of aspect. Instead of the heavy-banked or linear stratus about the horizon, and the light, cold cirri above, we were getting back to something like the fall skies of our own climate, the misty bands of morning becoming fleecy as the day wore on, and taking the marbled or mackerel character before they blended with the western skies.

I am tempted to apologize, once for all, for the imperfect character of these observations. Our stock of instruments on board was scanty at the best, and the routine observances of a ship of war do not favor the prosecution of merely scientific researches. We had no actinometer to mark the daily increments of solar radiation: om' thermometers were generally of rude construction, and were

not so placed as to give the highest value to their results; and an entry which I find in my journal explains why my barometrical records were so few.

"*March* 12. To-day, for the first time during the cruise, I had the pleasure of seeing our mountain barometer released from its stowage, and an attempt made to compare it with our aneroids. Before we began our drift to the north, when we had no fires below to give us a constantly vibrating temperature, and the aneroid of the *Rescue* had not come into the over-crowded cabin of our vessel to divide the formalities of registration with our own, it might have been well to make a careful comparison of the two with those of the British vessels, and with our mountain barometer also. The index error of this instrument on its zero point could have been adjusted then by reference to others that were just from Greenwich, and it would have been practicable, perhaps, to give something of increased value to our log-book records of the atmospheric pressure. Under all the circumstances, I have not thought it necessary to transfer them to my journal."

As the middle of March approached, our drift became gradually slower, until we almost reached a state of rest. For several days we advanced at an average rate of scarcely half a mile a day. We were at this time some seventy miles east of Cape Adair, our nearest Greenland shore being somewhere between Upper Navik and Disco; and the idea of encountering the final break-up among the closely-impacted masses that surrounded us, or of being carried back to the north by some inopportune counter-current, was far from pleasant. But our log-line, in an attempt at soundings, showed still a marked under-draught toward the south; and in a few days more we were moving southward again with increased velocity.

The 19th gave us a change of scene. I was aroused from my morning sleep by the familiar voice of Mr. Murdaugh, as he hurried along the half-deck: "Ice opening"—"Open leads off our starboard quarter"—"Frost-smoke all around us!" Five minutes afterward, Henri had been summoned from the galley; and, carbine in hand, I was tumbling over the hummocks.

After a heavy walk of half a mile, sure enough there it was—the open lead—stretching with its film of forming ice far in a narrowing perspective to the east and west. Balboa himself never looked out upon an ocean with more grateful feelings than I did upon this open chasm, the first inbreak upon complete solidity which we had known since the 15th of January. It was a breach in our prison-walls. The undulatory movement of the mercury and the varied appearance of the clouds were now explained. Although only discovered this morning, the rupture must have been going on for days, perhaps a week. Our winds had favored the separation of cracks into wide channels; but how such changes could have taken place puzzled me.

The ice, as shown by my measurements, was from four to eight feet; and even now, when I recall the fearful sounds which accompanied the Lancaster Sound commotions, I can hardly realize that such extensive chasms should have been formed almost in silence. We could only guess what had been the extent of our ice-field at this time. Baffin's Bay was nearly three hundred miles across, and the field may have been twice as long in the other direction. Perhaps the wave action of a heavy sea, great subglacial billows, unfelt at our fast-cemented little vessel, may have broken the tables without the crash and tumult of a collision. The lead where I first reached it, to the southeast of our brig, was nearly three hundred yards across; not, however, three hundred yards of open water, but a separation between the two sides of the original floe of about that distance. The sides still showed their clean-edged fracture, diversified by drift and hummock, and rising above the intervening level, like the banks of a tideless river, margined by new ice and crusted with efflorescing snow. But at its further or southern side, a long strip, narrow and very black, gave evidence of open water. In this, surrounded by exhaling mist and frost-smoke, were our old friends, the seal; grave, hirsute-looking

fellows, who rose out of the water breast-high, and gazed upon us with the curious faces of old times. Near them was a solitary dovekie, dressed in its gray winter plumage, the first bird I had seen for days; here, too, had crossed the tracks of a bear.

All this was very cheering. To see something, no matter what, checkering the waste of white snow, was like a shady grove to men sun-tired in a prairie; but to see life again—life, tenanting the desolate air and inhospitable sea—was a spring of water in the desert. My old hostility to gun-murder was forgotten. I wasted, of course, some small remnant of poetic sympathy with fellow-life thus springing up out of the wilderness; but then, in the midst of my sympathies, came the destructive instinct which longed to make it subservient to my wants. The scurvy, the scurvy patients, myself among the rest!—but the seal and the dovekies kept themselves out of shot.

At this lead we saw the recent frost-smoke within a few yards of us in pointed tongues of vapor: further off, the long, wreathy brown clouds were rising. I never before, not even in Wellington Channel, saw this phenomenon in greater perfection: in Wellington it was an interesting, sometimes a gloomy feature; here it was imposing. As far back as the twelfth, we had caught glimpses of brown vapor in this very direction: we now learned to look upon it in certain phases as an unerring indication of open water, and wondered that we did not so regard it earlier.

The chasms were not limited to the long lead before us. They extended to the east and west indefinitely; and were intersected by transverse fissures, which so met each other as completely to surround our vessels. From this circuit the frost-smoke was rising. The thermometer stood at -20°, fifty-two degrees below the freezing point in the shade; but the sun was shining brilliantly, raising the mercury to +10°. Under these circumstances, theoretically so favorable, this Arctic phenomenon became the most prominent feature in the scene.

As I stood upon a tall knob of hummock, the entire horizon seemed to be sending up, exhaling a bronzine smoke—not the lambent, smoky wreaths which I have compared to burning turpentine, but a peculiar russet brown smoke, tongued and wreathy when near, but at a distance rolling in cumulated masses. These seemed to cling at their bases to the surface from which they rose, like the discharges of artillery over water, or a locomotive steaming over a cold, wet meadow. They were wafted by the wind, so as to drive them out in lines two or three hundred yards long; but they clung tenaciously to the water and young ice, giving us a varying but always narrow horizon of smoke. The Rescue was enveloped with the heavy, sooty clouds of repeated broad-sides. If I had seen the flashing of guns or the glimmer of burning prairie-grass, I should have been less impressed; so strange, very strange, was this ordinary attendant on conflagration rolling in the midst of our winteriness.

EFFECT OF FROST-SMOKE.

CHAPTER XVI

"M*ARCH* 20. Thursday, the 20th of March, opens with a gale, a regular gale. On reaching deck after breakfast, I found the wind from the southeast, the thermometer at zero, and rising. These southeast storms are looked upon as having an important influence on the ice. They are always warm, and by the sea which they excite at the southern margin of the pack, have a great effect in breaking the floes. Dr. Olrik told me that they were anxiously looked for on the Greenland coast as precursors of open water. The date of the southeast gale last year, at Uppernavik, was April 25th. Our thermometer gave +5° at noonday, +7° at one, and +8° at three o'clock!

"This is the heaviest storm we have had since entering Lancaster Sound, exactly seven months and a day ago. The snow is whirled in such quantities, that our thick felt housing seems as if of gauze: it not only covers our decks, but drives into our clothes like fine dust or flour. A plated thermometer was invisible fourteen feet from the eye: from the distance of ten paces off on our quarter, a white opacity covers every thing, the compass-stand, fox-traps, and all beyond: the *Rescue*, of course, is completely hidden. This heavy snow-drift exceeds any thing that I had conceived, although many of my Arctic English friends had discoursed to me eloquently about their perils and discomforts. As to facing it in a stationary position, nothing human could; for a man would be buried in ten minutes. Even in reaching our little Tusculum, we tumble up to our middle, in places where a few minutes before the very ice was laid bare. The entire topography of our ice is changing constantly.

"7 P.M. 'The wind is howling.' Our mess begin to talk again of sleeping in boots, and the other luxuries of Lancaster Sound. For my own part, better, far better this, with the spicy tingling of a crisis, than the corroding, scurvy-engendering sameness of the past two months. Every moment now is full of expectation.

"*March* 21. The wind changed this morning to the westward, and by daylight was blowing freshly. After breakfast, Murdaugh and myself started on a tramp to the 'open water,' to see the effects of the gale. The drift was beyond conception; sufficient, in many places, to have covered up our whole ship's company. The wind made it as cold at -5° as I have seen it at -30°, and the fine snow pelted our faces; but the surface was frozen so hard that we walked over the crust, and in a little over half an hour we reached the lead.

"Planting a signal pole, with a red silk handkerchief as a mark, and taking compass-bearings to guide us back again, we began to look around us. Our expectations of hummock action were agreeably disappointed. We thought that the storm would have driven the ice from the southward, and that the change of wind would have marshaled opposing floes to meet it. But it was not so. Even the young, marginal ice, though warped, was unbroken. The pressure had evidently taken place, but with little effect. After the gigantic upheavings of Lancaster Sound, excited by winds much weaker, no wonder I was surprised. Upon thinking it over, I came to the conclusion that the absence of a *point d'appui*, either of land or land-ice, was the cause of these diminished actions. We were now in a great sea, surrounded by consolidated floes, and away from salient capes or shore-bound ice. The pressure was diffused throughout a greater mass, without points of special or even unequal resistance. If this reasoning holds, we will not experience the expected tumult until we drift into a region where forces are more in opposition; perhaps not until we reach the contraction of Davis' Straits.

"The young ice margin of this open lead had the appearance of a beautiful wave-flattened sand beach. The lead itself had opened so far that its opposite shores were barely visible. The wind checked the immediate formation of new ice; and, to our inexpressible joy, there, glittering in the cold sunlight, were little rippling waves. So long have we been pent up by this wretched circle of

unchanging snow, that I make myself ridiculous by talking of trifles, with which you, milk-drinking, sun-basking, melted-water-seeing people at home can have no sympathy. In spite of the winds and the snow-drift, I could hear the babbling of these waves as they laughed in their temporary freedom.

"*March* 22, Saturday. I started again for the ice-openings. There had evidently been a good deal of commotion in the night; but nothing so violent as to negative my yesterday's conclusions. Still there were hummocks of young tables, and some ugly twists of the beach line; and matters had not yet settled themselves into rest. As the great floe on which I stood traveled, under the influence of the west wind, obliquely eastward, I heard once more the familiar sounds of our *noctes Lancastrianæ*. The grating of nutmegs, the cork rubbing of old-fashioned tables, the young puppies, and the bee-hives; all these were back again; but we missed pleasantly the wailing, the howling, the clattering, the exploding din, which used to come to us through the darkness. The pulse-like interval was there too, like a breathing-time; but the daylight modified every thing, my feelings most of all. They became almost pleasant, as I listened, after a lullaby fashion, to the bees and puppies; and something very like gratitude came over me, as I thought of the uncertain gloom or palpable midnight which accompanied a few weeks ago the 'voices of the ice.' The thermometer was 21° below zero, and the wind blowing: naturally enough, my nose became a tallow nose in the midst of my reverie. So I rubbed the nose, blew the nose, buffeted my armpits until my fingers tingled, and then started off on a tramp.

"Seal were seen, curious as usual, but indulging in the weakness afar off. Presently two poor winter-mated little divers met my meat-seeking senses. One of these I killed with my rifle, covetously regretting that my one ball could not align his mate. This was the first game we had obtained since the fall: he was divided, poor fellow, between two of my scurvy patients. In getting this bird out, I came very near getting myself in; and that, when a ducking means a freezing, is no fun.

"10 P.M. To-night finds me knocked up. Be it known, that after crawling on my belly, not like the wisest of animals, for two hours, I came nearly within shot of a week's fresh meat. The fresh meat dived, first shaking his whisker tentacles at my disconsolate beard, leaving me half frozen and wholly discontented. Fool-like, after the long walk back, the warming, the drying, and the feeding, I returned by the other long walk to the ice-openings, tramped for two hours, saw nothing but frost-smoke, and came back again, dinnerless, with legs quaking, and spirits wholly out of tune.

"Our drift to-day, at meridian, was in the neighborhood of 9 miles; our latitude was 71° 9′ 18″.

"*March* 23, Sunday. After divine service, started for the ice-openings. We are now in the centre of an area, which we estimated roughly as four miles from north to south, and a little more east and west. On reaching what was yesterday's sea-beach, I was forced to recant in a measure my convictions as to the force of the opposing floes. Yesterday's beach existed no longer; it was swallowed up, crushed, crumbled, submerged, or uplifted in long ridges of broken ice.

"The actions were still in progress, and fast intruding upon the solid old ice which is our homestead. The ice-tables now crumbling into hummocks were from eight to fourteen inches thick, generally ten. Not even in Lancaster Sound did the destruction of surface go on more rapidly. The wind was a moderate breeze from the northwest, and the floes were advancing on each other at a rate of a knot and a half an hour, building up hummock tables along their Hue of collision. Several rose in a few minutes to a height of ten or twelve feet. I have become so accustomed to these glacial eruptions, that I mounted the upheaving ice, and rode upon the fragments—an amusement I could hardly have practiced safely before I had studied their changes.

“The snow-covered level upon which Brooks and myself were walking was about thirty paces wide, between the older ice on one side and the encroaching hummock-line on the other. Upon our return, after a walk of a short half mile, we found our footsteps obliterated, and the hummock-line within a few yards of this older ice. Things are changing rapidly.

“A new crack was reported at one o’clock, about the third of a mile from our ship; and the bearings of the sun showed that our brig had, for the first time since entering Baffin’s Bay, rotated considerably to the northward. Here were two subjects for examination. So, as soon as dinner was over, I started with Davis and Willie, two of my scurvy henchmen, on a walk to the openings. Reaching the recent crack, we found the ice five feet four inches thick, and the black water, in a clear streak a foot wide, running to the east and west.[G] I had often read of Esquimaux being carried off by the separation of these great floes; but, knowing that our guns could call assistance from the brig, we jumped over and hurried on. We were well paid.

[G] This direction, transverse to the long axis of Baffin’s Bay, seems to be that of most of our fissures.

“The hunamockings of this morning had ceased; the wind so gentle as hardly to be perceptible: the lead before me was an open river of water, and in it were narwhals (*M. monoceros*), in groups of five or six, rolling over and over, after the manner of the dolphin tribe. They were near me; so near that I could see their checkered backs, and enjoy the rich coloring that decorates them. The horn, that monodontal process which gives them their name of sea-unicorn, was perfectly examinable. Rising in a spirally indented cone, this beautiful appendage appeared sometimes eight and ten feet out of water; one especially, whose tall curvetings astonished my body-guard. I never saw a more graceful, striking, and beautiful exhibition than the unrestrained play of these narwhals.[H] In the same open water, almost in company with the narwhals, were white whales (*Delphinopterus albicans*, or *Beluga*: these cetacea have so many names, they puzzle me), and seal besides.

[H] I have seen many of these fish since, but never under such circumstances. I stood on a ledge of hummock within short gunshot. The animals were entirely unapprehensive. The non-symmetrical character of the “horn” (an unduly developed tooth, say the naturalists) was not seen; and as this long lance-like process played about at a constantly varying angle, it reminded me of the mast of some sunken boat swayed by the waves.

“I was tempted to stay too long. The wind sprang up suddenly. The floe began to move. I thought of the crack between me and the ship, and started off. The walking, however, was very heavy, and my scurvy patients stiff in the extensors. By the time I reached the crack, it had opened into a chasm, and a river as broad as the Wissahiccon ran between me and our ship. After some little anxiety—not much—I saw our captain ordering a party to our relief. The sledges soon appeared, dragged by a willing party; the India rubber boat was lowered into the lead, and the party ferried over. So ends this last trip to these ice-openings.

“It is evident that these gradual crack-formings and chasm-openings, with the hummocking and other attendant actions, are but preludes to a complete breaking up. Our previous observations show that the disruption of these large areas can not be effected suddenly. It is a gradual process; so gradual, even in Lancaster Sound, as to allow time for personal escape, although the vessel be a victim.

“From the 12th of January, the date of our last break-up, down to the present movement, is two months. The intense cold, with feeble winds and the absence of impact or collisions, have kept up the integrity of this great pack. I think it may reasonably be doubted whether it will now close again before our liberation or destruction. The excessive thickness of the tables, the wave and tidal actions, the mildening temperature, and the probable continuance of winds, all point to this. We have already a system of fissures within a third of a mile of us; and a continued augmentation of

their number must soon place us in a centre of commotion. It is pleasant by one's ice-experience to anticipate the state of things: and now that the battle is coming on again, I make a record of these reasoned expectations, to show you hereafter how well I am reasoning.

"One thing more: the days have stolen upon us—longer, and longer, and longer, until now the long twilight lets me read on deck as late as eight P.M. In fact, the sun's greatest depression below the horizon is now 18°, the limit of theoretical twilight.

"*March* 26, Wednesday. The same peculiar crisping or crackling sound, which I noted on the 2d of February, was heard this morning in every direction. This sound, as the 'noise accompanying the aurora,' has been attributed by Wrangell and others, ourselves among the rest, to changes of atmospheric temperature acting upon the crust of the snow. We heard it most distinctly between seven and eight A.M., when the solar ray should begin to affect the snow. The mercury stood at -27° at five, rising to -19° by nine A.M., and attaining a maximum of -2° by noonday. But this is not to be regarded as indicating the temperature of the snow surface. The snow, when horizontal, according to all my observations, differs but little in temperature from the atmosphere, owing probably to its oblique reception of the solar ray; while the snow-coverings of the hummocks and angular floe-tables, which receive the rays at right angles, show by repeated trials a marked augmentation. I venture, therefore, to refer this peculiar crisping sound to the unequal contraction and dilatation of these unequally presenting surfaces, not to a sudden change of atmospheric temperature acting upon the snow.

"To-day we saw a couple of icebergs looking up in the far south.

"*March* 27, Thursday. The sun shone out, but not as yesterday. The little cirrus clouds interfere with its brightness, and affect very perceptibly its warmth. To the eye, however, the day is undimmed.

"The wind, which we watch closely as the index of our ice-changes, our leading variety, came out at seven in the evening from the northward; and with it came a rise of black frost-smoke to the south, showing that the old ice-opening had gaped again. I had started before this at half past five, with old Blinn, my faithful satellite, for a bright plain, glittering in the low sunshine some three miles to the west, a new direction. We did not get back till eight.

"Let me make a picture for you without a jot of fancy about it, and you may get H. to put it into colors if he can. The sun was low, very low; and his long, slanting beams, of curious indescribable purple, fell upon old Blinn and myself as we sat on a crag of ice which overhung the sea. The chasm was perhaps a mile wide, and the opposite ice-shores were so painted by the glories of the sunshine, that they appeared like streaks of flame, licking continuous water. The place to which we had worked ourselves had been subjected to forces which no one could realize, so chaotic, and enormous, and incomprehensible were they. A line of old floe, eight feet thick and four miles long, had been powdered into a pedragal of crushed sugar, rising up in great efflorescing knobs fifteen and twenty feet high; and from amid these, like crystal rocks from the foam of a cataract, came transparent tables of blue ice, floating, as it were, on unsubstantial whiteness. Some of these blocks measured eight feet in thickness by twenty-two long, and of indeterminate depth, one side being obliquely buried in the mass. On one of these tables, that stretched out like a glass spear-point, directly over the water, were straddled your brother and his companion. Underneath us the narwhals were passing almost within pole-reach. As they rolled over, much after the fashion of our own porpoises, I could see the markings of their backs, and the great suction of their jaws throwing the water into eddies. Seal, breast-high, were treading water with their horizontal tails, and the white whale was blowing purple sprays into the palpable sunshine.

"*March* 23, Friday. I visited the western opening of yesterday. The sea has dwindled to a narrow lane, flanked by the heavy hummocks, whose rupture formed the sides. Although the aperture was so distant yesterday that I could barely see the further banks, here and there dotting the horizon, it has now closed with such nice adaptation of its line of fracture, that, but for a few yards of lateral deviation, this 'yesternight sea' would be nothing but a crack in the ice-field. The area of filmy ice that was between the edges of the lead had been thrust under the floe, thus aiding the process of re-cementation. These ice-actions are very complicated and various.

"Retracing my steps by a long circuit to the southward, I came to a spot where, without any apparent axis of fracture (chasm), the ice presented all the phenomena of table-hummocks. It was very old and thick, at least nine feet in solid depth. About a little circle of a hundred yards diameter, it had been thrown up into variously-presenting surfaces, with a marked bearing toward a focus of greatest energy and accumulation, presenting an appearance almost eruptive. The crushed fragments exuding and falling over, and rolling down toward the level ice, so as to cover it for feet in depth with powdery, granulated rubbish!"

CHAPTER XVII

MY journal for the closing days of March and the early one of April is full of varying drifts and alternating temperatures. Still, it seemed as if, by some gradual though scarcely explicable process, the work of our extrication was going on. Sometimes the wind would come to us from the southeast—the breaking-up wind as we called it, because as it subsided the reaction of the floes developed itself in fissures; but more frequently from the north, expediting our course to a more genial latitude. The floes themselves were, however, much more massive and gnarled than any we had seen before: every party that left the vessel for an ice-tramp came back with exaggerated impressions of the mighty energies that had hurled them together. We felt that it would have been impossible for any organized structure of wood and metal to resist such Maelstroms of solid ice as had left these memorials around us, and looked forward with scarcely pleasurable anticipations to the equivalent forces that might be required to obliterate them. Some extracts from my journal may show how far other causes were in the mean time operating our release.

"*April* 7, Monday. For the last fortnight the ice has been perceptibly moist at the surface. The open crack near our brig to the south has now been closed for nearly a fortnight; yet the snow which covers it is quite slushy. The trodden paths around our ship are in muddy pulp, adhering to the boots. All this can hardly be the direct influence of the sun upon the surface; for the thermometer seldom exceeds +16°, and is more generally below +10° at noonday. Yet this temperature has an evident influence upon the status of the ice, increasing its permeability, and permitting some changes analogous to thawing, but which I can not explain. May it be that the crystalline structure of the ice is undergoing some modification, that increases its capillarity, or develops an action like the endosmose and exosmose!

"It is a mere puzzle, of course, for we have not data enough to make it a question. Yet there is another like it that I can not help setting down. Can it be that our thermometers, so notorious in this Polar region for their imperfect coincidence with 'sensations of cold,' are equally fallacious as measures of absolute increments or decrements of sensible caloric? It will not do, I suppose, to admit such a supposition; yet the marvels which come constantly before me may almost justify it.

You know that I am no heat-maker. Well, my winter trials, as you may imagine, have not increased my vital energies. Suppose me, then, as you knew me when I left New York. For the past week I have almost lived in the open air—genial, soft, bland, and to sensation just cool enough to be pleasantly tonic. I walk moderately, and am in comfortable, glowing warmth. I walk over the hummocks or ice floes, and am oppressed with perspiration and lassitude. This at a temperature of zero in the shade, and +11° in the sun! I can not realize it. To-day the thermometer gave +10° in the shade of the ship, obviously affected not a little by radiation, +34° in the sun over the ship's painted side, +13° by my own observation of an instrument suspended at a distance from the ship, and under the same circumstances in the shade, *zero*! Yet the day seemed spring-like and delicious. The early breezes (8 A.M.) from the southeast came with a sensation of reviving coolness, although to their warmth we perhaps owed our sensations of pleasant heat. While I am writing, the skaters come in to say that 'it is too warm to skate:' yet the sun is low, and my shade thermometer gives some ten degrees below the point of freezing.

"I have often alluded to this discrepancy between our feelings and the recorded temperature. I have read of the same thing in the Arctic voyages, with a reference to contrast for the explanation. But I never until to-day realized so fully that we were warmed from within by a mysterious, and, I must believe, unknown system of functional compensation. I wish Liebig could make a Polar voyage! As you feel open-windowed at the first breaking-in day of spring, with your thermometers at vernal 60°, so feel I with the thermometer at zero!

"*April* 10, Thursday, 2 P.M. The south-easter blows on with steady endurance. It is now east by south; a snow-storm reminding me of home, so soft and flaky, drifting every where; and the thermometer rising steadily to +32° at noonday. Once more at the freezing point! it seems hard to realize. The decks are wet, the housing dripping, the snow adhesive and slushy.

"9 P.M. The gale continues. Our thermometer outside at a maximum of +33°. Every thing wet, warm, and summer-like.

"I have a story to tell—a foolish adventure; but I was ennuied past all bearing. Walking the deck, beast-like, in our damp cage, it occurred to me that I would climb the rigging. Climb the rigging I did; and, by a glimpse between the long wreaths of drift, saw Water! The temptation was a sore one: I yielded to it, came down from my perch, donned my seal-skin, shouldered my carbine, and walked off with my face toward the wonder. None of the crew would accompany me: my mess-mates did not volunteer: so I was alone.

"It was a walk to be remembered. Snow up to the neck; drift moist and blinding; and a gale, luckily not a cold one, in my face. But after a mile of such promenading as no other region can boast of, I reached the water at last. Water it was; dark, surging water; no pellicles of glazing ice; no sludgy streams of pancake; but the liquid element itself, such as we saw last summer, and you see every day, stretching out as broad as the Delaware, and in contrast with the snow at its margin as black as Styx.

"I took a good look at it, and turned to come back. The wind had wiped out my footsteps: all within the horizon was a waste of sleet. I had neither compass nor signal pole to show me the way; but I kept the gale behind me, and waded onward. I do not know how far I might have traveled before reaching the vessel; but I had buffeted the elements quite long enough to content me, when I heard Captain Griffin hailing me through the drift. He had been uneasy at my stay, and was out in search of me. We took a new departure together, were blown over a few times, and tumbled over, no matter how often; but we hit the ships to a notch.

“This crack is the old transverse one from northeast to southwest, off the *Rescue’s* port beam. The gale, with such a temperature, must be achieving much upon the ice to the southward. It can hardly reach men so imbedded as we are; but it may so break up the southern edge of the pack as to give us a ready drift, should we have a favoring wind. As it is, we are undoubtedly flicking it to the north again.

“*April* 15. The sun perceptibly warmer, and the indications of thaw unequivocal. To guard as far as we can against the chance of the two vessels being separated among the floes when the general break-up comes, we began a trench to-day from one to the other. It goes down through the snow to the solid ice; and we are going to strew rock-salt in it, remembering that even a slight scratch on the surface will determine the line of fracture. We will try it at any rate, even across the entire floe to the present seat of hummocking at the open water, though it is a distance of nearly or quite two miles. We are looking to our approaching disruption with absorbing interest; and whether our theories are good or bad, they give us something to think and talk about. Our ice-cutting machine belongs to the same family. We finished it to-day, and it will be tested to-morrow.

“The ice in the neighborhood of the fire-hole is wet and overflowed. It seems to be depressed below the water-level. The snow has piled up some seven or eight feet high on the vessel’s side, and this, with the radiating heat, may possibly explain this depression. But I am strongly inclined to believe in endosmotic actions in the ice.

“*April* 16. To-day the salting continues. The men call it our spring-seed sowing. On board the *Rescue*, a party are at work preparing for the return to her. The ice-cutting machine proves a failure.

“This afternoon a solitary snow-bunting was seen flitting around our vessel. The last time we saw this little animal was at Griffith’s Island, in the midst of the terrible storm which we were sharing with our English brethren. Goodsir saw the same bird on the 13th, in latitude 54°; but he was not at Winter Island till the 27th. Since then, the little family have made their migratory journey, and are now on their way again to these Polar seas. They breed seldom or never south of 62°, and linger late among the Northern snows. This poor little wanderer was an estray from his fellows. He paused at the treasures which surrounded our ship, refreshed himself from our dirt pile, and then flew away again on his weary journey.

“*April* 17. A memorable day. We put out our cabin lamps, and are henceforward content with daylight, like the rest of the world. Our latitude is 69° 52'; our longitude, 63° 03'.

“This afternoon, while walking deck, this endless deck, with Murdaugh, we discovered a bear walking tranquilly alongside, nearly within gunshot. We have lost so many opportunities by the bustle and ignorance of a universal chase, that I crawled out to attack him alone. To my sorrow, the brute, who had been gazing at the ship dog-fashion and curious, turned tail. He was out of range for my carbine, but I gave him the ball as he ran in his right hind-quarter. He fell at once, and I thought him secure; but rising instantly, he turned upon his wounded haunch, and, very much as a dog does at a bee-sting, bit spasmodically at the wound. For a little while he spun round, biting the bloody spot with a short, probing nip; and then, before I could reload my piece, started off at a limping but rapid gait. I mention this movement on account of the very curious fact which follows. The animal had found the ball, seized it between the incisors, and *extracted it*. The bullet is now in my possession, distinctly marked by his teeth.

“After a very tedious and harassing pursuit, I came up to him at the young ice. He stood upon the brink of the lead. I was within long shot, and about to make preparations for a more deliberate

and certain aim, when he took to the water, and then to the opposite young ice, bleeding and dropping every few yards.

“Joined by Daly, a bold, bull-headed Irishman, I crossed by a circuitous channel, and then took to the young ice myself, and tried to run him down. It was very exciting; and I fear I was not as prudent as I ought to have been; for a dense fog had gathered around us, and the young floe, level as the sea which it covered, was but two nights old. The bear fell several times; and at last, poor fellow, dragged himself by his fore feet, trailing his hind quarters over the incrusted snow, so as to leave a long black imprint stained by blood.

“The fog was getting more and more dense, and the frail ice—we were now walking, as it were, over the sea itself—bent under us so much, that I, like a prudent man, ordered a return. This chase cost us at least ten miles of journey, part of it at an Indian trot. We dripped like men in a steam bath.

“*April* 20, Sunday. Daly started with a company of sailors after the wounded bear. They walked, by their own account, six miles before they found him. He was unable to retreat—stood at bay; and the fools were so scared at his ‘growlings’ and his 'bloody tongue,' that they returned without daring to attack him.

“*April* 21, Monday. I have more than common cause for thankfulness. A mere accident kept me from starting last night to secure our bear. Had I done so, I would probably have spared you reading more of my journal. The ice over which we traveled so carelessly on Saturday has become, by a sudden movement, a mass of floating rubbish. An open river, broader than the Delaware, is now between the old ice and the nearest part of the new, over which I walked on the 19th more than three miles.

“In the walk of this morning, which startled me with the change, I saw for the first time a seal upon the ice. This looks very summer-like. He was not accessible to our guns. To-day, for the first time too, the gulls were flying over the renovated water. Coming back we saw fresh bear tracks. How wonderful is the adaptation which enables a quadruped, to us associated inseparably with a land existence, thus to inhabit an ice-covered ocean. We are at least eighty miles from the nearest land, Cape Kater; and channels innumerable must intervene between us and terra firma. Yet this majestic animal, dependent upon his own predatory resources alone, and, defying cold as well as hunger, guided by a superb instinct, confides himself to these solitary, unstable ice-fields.

“Parry, in his adventurous Polar effort, found these animals at the most northern limit of recorded observation. Wrangell had them as companions on his first Asiatic journey over the Polar ocean. Navigators have found them also floating upon berg and floe far out in open sea; and here we have them in a region some seventy miles from the nearest stable ice. They have seldom, or, as far as my readings go, never—if we except Parry’s Spitzbergen experience—been seen so far from land. In the great majority of cases, they seem to have been accidentally caught and carried adrift on disengaged ice-floes. In this way they travel to Iceland; and it may have been so perhaps with the Spitzbergen instances. Others have been reported thirty miles from shore in this bay. I myself noticed them fifty miles from the Greenland coast last July.

“There is something very grand about this tawny savage; never leaving this utter destitution, this frigid inhospitableness—coupling in May, and bringing forth in Christmas time—a gestation carried on all of it below zero, more than half of it in Arctic darkness—living in perpetual snow, and dependent for life upon a never-ending activity—using the frozen water as a raft to traverse the open seas, that the water *unfrozen* may yield him the means of life. No time for hibernation has this Polar tiger: his life is one great winter.”

CHAPTER XVIII

"A *PRIL* 22. The past week has been one of dismantling, rubbish-creating, ship-cleaning torment. First, bull's-eyes were inserted in the deck; and the black felt housing, so comfortable in the winter darkness, but that now shut out the sunlight like a great pall, was triced up fore and aft, remaining only amidships. Next, the *Rescue*, with her new bowsprit in, received her crew and officers. They slept on board last night for the first time, but still walk over the ice to their meals.

"When I saw the little brig through the darkness, on the afternoon of the 13th of January, moving slowly past us and losing herself in the gloom, while sounds like artillery mingled with the shrieking, howling, and crashing of the ice, as the great ridges rose and fell—and when the India-rubber boat was launched, and the men took their knapsacks, and old Brooks called out to us to get out of the way of the rigging, believing the brig about to topple over—I did not think there would be a spring-time for the *Rescue*.

"We are now in the midst of those intestine changes which characterize the house-cleanings at home. The disgusting lamps have done smoking, the hatches are allowed to look out at the sun, and the galley, with its perpetual odors, is banished to the hurricane-house on deck. That peculiar interspace between the coal and the 'purser's slops,' so dark and full of head-bumping beams, exults in the full glare of day. What a wonderful hole we have been existing in! It, the half-deck, as it is called on board ship, is three feet six inches high, by fourteen feet long and seventeen broad. On it, forgetful of precedence and rank, our bedding separated from the loose planking by a canvas cot frame, slept Murdaugh, Vreeland, Brooks, De Haven, two cooks, and Dr. Kane. The last-named came on board last, and found, though he is not a very large man, a sufficiently narrow kennel between the companion-ladder and the dinner-table. Our clothing, as it now welcomed the sun, was black with lamp-soot; the beams above fringed, and festooned, and wreathed with the same. My bed-coverings, frozen over the feet in the winter, are bathed with inky water. But all this is to be removed to-day; and we go back to the luxuries of bunks, and daylight, and a long breath.

"The day was bright and sunny. I walked out to the open water. Marks of commotion, hummock ridges, and chasms. A new feature was the thaw. Heretofore I could stand upon the brink of the cleanly-separated fissures, and look down upon the bleak water as securely as from a quartz rock. To-day every thing around (pshaw! the snow and ice, I mean; we have no *things* here) was wet and crumbling. The snow covered deceitfully some very dangerous cracks: in one of these I sunk neck deep. My carbine caught across it, and Holmes pulled me out.

"We are very anxious to obtain fresh meat for the invalids. Indeed, our longing for something fresh is itself a disease. To-day a tantalizing seal kept me prostrate upon the slushy ice for an hour and a half. In spite of all my seal craft, the prime secret of which is patience, I could not draw him into gunshot. With the characteristic curiosity of his tribe, the poor animal would rise breast high to inspect my fur cap. Presently a whale spouted, and off he went.

"The decks are clear! the barrels stowed away below, the fore-peak restored, the old bunks reoccupied, and my mess-mates snoozing away as in old times, a fire burning in the stove, and lard lamps flaming away vigorously upon my paper. Daylight still finds its way down the hatch, although it is eleven o'clock.

"*April* 24, Thursday. The snow falls in loose, flaky, home feathers. The decks are wet, and the misty air has the peculiar ground-glass translucency which I noticed last summer. When I came up before breakfast to look around, the thermometer gave +32°, the familiar temperature of old times: to me it was warm and sultry.

"The season of summer, if not now upon us, is close at hand. It seems but yesterday that we hailed the dawning day and burned our fingers in the frozen mercury; now we have a summer snow-storm at 32°.

"This little table will show you how stealthily and how rapidly summer has trampled down winter:

> Mean temperature for week ending March 14th, -23° 94'.
>
> Mean temperature for week ending March 21st, -9° 07'; gain, 14° 87'.
>
> Mean temperature for week ending March 28th, -16° 90'; loss, 7° 83'.
>
> Mean temperature for week ending April 4th, -4° 31'; gain, 12° 39'.
>
> Mean temperature for week ending April 11th, +8° 59'; gain, 12° 90'.
>
> Mean temperature for week ending April 18th, +9° 55'; gain, 0° 55'.
>
> Mean temperature for five days ending April 23d, +14° 56'; gain, 5° 01'.

"Changes show themselves in the configuration of the snow surfaces. The hummocks seem already to have diminished by evaporation. They are less angular, and blend in rounder hues with the snow drifts. Night has gone. I see still at midnight the circumpolar stars, and Jupiter, in his splendor, on the eastern sky; but I can read at midnight.

"*April* 25, Friday. Walked to open water to the northeast. The snow is melted through the crust. I sink up to my knees. Saw the tracks of a fox, very recent. The little fellow had come from the direction of the poor wounded bear, now cut off from us by the broken ice, swimming the lead at its narrowest crossing, some fifteen paces. So long as his patron could have supplied him with food, the little parasite would not have left him. It may be that the bear has perished from inability to hunt for both.

"Saw a right whale! Saw also a large flock of geese at 9 A.M., winging their way to the northward, and flying very low. They were so irregular in their order of flight, that I would have taken them for ducks—the *Somateria*; but my mess-mates say geese.

"*April* 26, Saturday. One of the changes which we must expect has brought back to us comparative winter. Yesterday gave us a noonday and morning temperature of +28°. It is now (10 P.M.) -9°. It was -7° at noonday, with a bright, clear sunshine. The change is due to a northerly

wind. It has blown steadily throughout the day from northwest by north. We hope much from it in the way of drift. Our latitude was 69° 40′ 42″ N.; our longitude, 63° 08′ 46″ W.

"The wind change has given us no new ruptures. Indeed, it seems to have shut up the environing 'leads' around us. This may be a good preface to a squeeze; for I can see no water from the mast-head.

"The stars at midnight remind me of our Lancaster Sound noondays. The peculiar zone of fairly blended light, stretching over an amplitude of some seventy degrees—the colors red, Indian red, Italian pink, with the yellows; and then a light cobalt, gradually deepening into intense indigo as it reaches the northern horizon.

"*April* 27, Sunday. The cold increases, and our northwest wind continues. The day's observation gives us 69° 35′ 50", so that we still go south encouragingly, though slowly. This big floe is so solid, that some of us are beginning to fear it may resist the pressure, and not break up in the bay; leaving us to the thaws of summer and the stormy winds of September before our imprisonment ceases. The apprehension has no mirth in it.

"Walked to the open water to the northward, nearly ahead of us. The leads were so frozen over as to bear me. Looking across the level, letting my eyes wander from tussock to tussock of entangled floe-ice, as they had grouped themselves in freezing, I heard the blowing of a narwhal, followed by the peculiar swash of squeezing ice. A short walk showed me some six or eight conical elevations, forced upward upon the recently-formed ice, evidently by a force protruding from beneath. While looking at these, the sounds, though seemingly further off, increased to such a degree that I was convinced the ice was in action, and started off to double a cape of hummocks and see the commotion. Our steward, Morton, a shrewd, observant fellow, who was with me, suddenly called out, 'Look here, sir—here!'

"Each of these little cones was steaming like the salices or mud-volcanoes of Mexico, the broken ice on top vibrating, and every now and then tumbling, as if by some pulsatory movement below. Presently, in one concerted diapason, a group of narwhals, imprisoned by the congelation of the opening,[I] spouted their release, scattering spray and snow in every direction. I was not more than three yards from the nearest cone; yet I could see nothing of the animal except this jet.

[I] I found afterward from the Danes that they assemble in this way when extensive areas are frozen. Mr. Moldrup, of Godhaven, mentions fifty being killed at one of these congregations.

"The noise was so great that I could hardly make the steward hear me. It had, moreover, more of voice mingled with its sibilant 'blow' than I had ever heard—a distinct and somewhat metallic tone, thrown out impulsively, and yet with the crescendo and diminuendo of an expiration. According to the views of some systematic naturalists, the cetacea have, strictly speaking, no voice. This opinion admits of much modification. The white whale in Wellington Sound whistled while submerged and swimming under our brig; and, in the present singular case, the ejaculatory character of the tone sounded like a gigantic bark.[J]

[J] On this occasion, I heard the white whale singing under water—a peculiar note between the whistle and the Tyrolean yodel. Our men compared it to the Jew's-harp. Once, off Cape James, it was so loud that we heard it in the cabin, as if proceeding from the cable-tier. I have often, in my walks over the ice-openings, been startled by the resemblance between the sudden spout of a near narwhal and the bark of an animal.

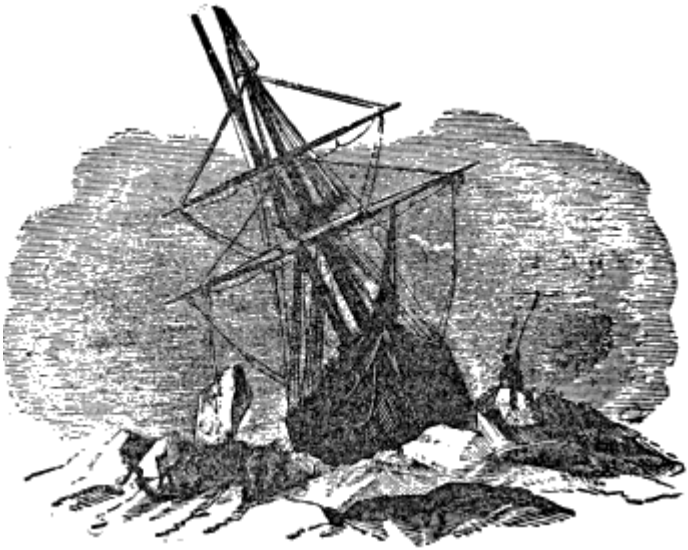
"*May* 1, Thursday. A little before ten this morning, the sun showed almost half its disk above the snow horizon, with his usual appanage of pearly opals and mellowed fire displayed about the southern heavens. At noon I walked out in the full glare, twenty-five degrees above the freezing-

point on my face, and about as many below it on my back—a May-day frolic in the snow! The crisp covering, over which I used to skim along a few weeks ago, broke through with me at every step. It was just strong enough to tantalize and deceive. Never, in the warmest days of summer harvest-time, have I felt the heat so much as on this Arctic May-day; and yet no life, no organization carried me back to the spring-time of reviving nature. Even the tinnitus of the idle ear, that inner droning that sings to you in the silent sunshine at home, was wanting. In fact, the silentness was so complete, and the reflection from the snow so excessive, though I had a green rag over my face, that when I got far away, and out of sight of every thing but the interminable ice, it made me feel as if the world I left you in and the world about me were not exactly parts of the same planet.

“And so I traveled back to my sick men. God bless us! here are old Blinn, and Carter, and Wilson, all on my list for fainting spells: the same scurvy syncope our officers complain of. Captain Griffin fainted dead away, and Lovell complains of strange feelings. We need fresh food sorely. I hardly think any organized expedition to these regions was ever so completely deprived of anti-scorbutic diet as we are at this time.

“Midnight. My old scurvy symptoms, it may be, that keep me from sleeping. But I write by the light of the sun; and it really seems to me that there is a something about this persistent day antagonistic to sleep. The idea thrust itself upon me last summer. Thinking the fact over afterward, I referred it to habit, acting unphilosophically, as it is apt to do; and concluded that my sleeplessness was not connected directly with the augmented or continued light. But this is not so. I neither get to sleep so easily nor sleep as long, nor, indeed, do I seem to need the same quantity of sleep as when we had the alternation of light and darkness. On the other hand, I think our long Arctic night solicited a more than common ration of the same restorative blessing, though my journal has shown you that our waking energies during that period were not so heavily taxed as to require more than their usual intermission."

The day after this entry superadded the visitation of snow blindness to our trials. Four of the party were attacked severely, myself among the rest; so severely, indeed, as to make it impossible for me to write, and, what was much more important in the estimation of our scurvy patients, impossible for me to hunt. The brief notes which were made in my journal by the kindness of a brother officer speak of our sensible approach toward a final disengagement from the ice-field. Though the winds were generally from the southwest, our drift tended very plainly to the south: in one day, we reduced our latitude eighteen miles, passing at the same time nearly a degree of longitude, twenty-two miles to the east. The ice, too, was becoming more infiltrated, and the heavy snow-banks that surrounded our vessel were saturated with water. Spring was doing its office.



CUTTING OUT, MAY, 1851.

CHAPTER XIX

"ON the 11th, I was well enough, or imprudent enough, to attempt a seal hunt. Our mean temperature had sunk to 19° 5\ and the snow-crust was strong enough to bear. A gale had swept away the loose, fleecy drifts of the fortnight before, exposing the familiar surface of the older snow. I walked over it as I did in April.

“Reaching the seat of the open water to the northward, I found it closed by young ice, an extensive surface frail and unsafe. About a quarter of a mile from the edge of the old floe, almost in the centre of this recent lead, was a seal. The temptations of the flesh were too much for me: I ventured the ice, crawled on my belly, and reached long-shot distance.

“The animal thus laboriously stalked was large; a hirsute, bearded fellow, with the true plantigrade countenance. All his senses were devoted to enjoyment: he wallowed in the sludge, stretched out in the sunshine, played with his flippers, lying on his back, much as a heavy horse does in a skin-loosening roll. I rose to fire—and down he went. An unseen hole had received him: a lesson for future occasions. This hole was critically circular, beveled from the under surface, and symmetrically embanked round with the pulpacious material which he had excavated from the ice.

“Crawling back less actively than I had approached, my carbine arm broke through, carrying my gun and it up to the shoulder. It was very well, all things considered, that my body did not follow; for I was on a very rotten shell, and nearly two miles from the brigs, alone.

“Wednesday, 12. For the last fortnight, our ice-saw, under Murdaugh’s supervision, has been hard at work. To-day we have a trench opened to our gangway.

“The ice shows the advancing season. It is no longer splintery and quartz-like, spawling off under the axe in dangerous little chips; but sodden, infiltrated ice, such as we see in our ice-houses. The water has got into its centre, and the crowbars, after the sawing out, break it readily up for

hauling upon the field. The process is this: First, we cut two parallel tracks, four feet asunder, through six and five feet ice, with a ten-foot saw; then lozenged diagonals; then straps (ropes) are passed around the fragments, and a block and line, *nautice* jigger, or watch tackle, made fast to the bowsprit, hauls the lumps upon the floe, where they are broken up by the ice bars. A formidable barricade of dirty ice, about the size and shape of gneiss building stones, is already inclosing our vessel. Many a poor fellow has had an involuntary slide-bath into the freezing mixture alongside; but in most cases without unpleasant consequences."

I remember only one serious exception. It was that of our heroine of the Thespian corps, Jim Smith. The immediate result for him was an attack of scurvy, so marked, yet so blended with the active symptoms belonging to arthritic disease, as to incline me to an opinion for the time that there may be such a thing as acute scurvy, or a sudden inflammatory sthenic action, whose characteristics are scorbutic. He had immediately stitch, dyspnœa, pains in the back and joints, and in the alveolar and extensor muscles, just as in his previous attacks of scurvy, but without fever. The day after, he was so distressed by his stitch, that I feared pleuritis. On looking at his shins, I found large purpuric blotches, which were not there a week before. I commenced the anti-scorbutic tyranny at once; and the next morning his gums bled freely, his pains left him, and he took his place again at the ice-saw.

"Several laridæ flew about us: I heard them to-day for the second time—pleasant tones, with all their discord. Do you remember the skylark's song, 'a dropping from the sky,' in the 'Ancient Mariner'? I thought of it this morning when the gulls screeched over our motionless brig.

"*May* 18, Sunday. First, of late, in my daily records is this glorious wind, still from the northwest, fresh and steady. It is, as is every thing else for that matter, a Godsend. To-day's observation places us but thirty-two miles from Cape Searle, and seventy from Cape Walsingham, the abutting gates of Davis' Straits, where the channel is at its narrowest, and where our imprisonment ought to end.

"This welcome wind-visitor is still freshening: it is not perpetrating, I hope, an extra brilliancy before its *congé*.

"I found to-day a rough caricature drawing by one of the men: some of the mess call it a portrait of myself. By-the-way, suppose I tell you of my latest rig? Here it is. A long musket on shoulder; a bear-knife in the leg of the left boot; a rim of wolf-skin around my head, leaving the bare scalp with its '*hairs*' open to the breeze; rough Guernsey frock, overlined by a red flannel shirt, in honor of the day on which thou shalt do no labor; legs in sailor pants of pilot cloth, slop-shop cut; feet in seal-hide socks or buskins, of Esquimaux fabric and Esquimaux smell; a pair of crimson woolen mittens, which commenced their career as a neck comforter; and a little green rag, the snow veil, fluttering over a weather-beaten face: place all this, for want of a better lay figure, on your brother of the Arctic squadron.

"With a delicacy which may possibly do me discredit, I have never before alluded to the garniture of my outer man. I may as well tell the truth at once. We are an uncouth, snobby, and withal, shabby-looking set of varlets. *L'illustre* Bertrand would be a Beau Brummel alongside of us. We are shabby, because we have worn out all our flimsy wardrobes, and have of late resorted to domestic tailorization. We are snobby, because our advance in the new art does not yet extend to the picturesque or well-fitting. I wish some of my soda-water-in-the-morning club friends could see me perspiring over a pair of pants, dorcassing a defunct sock. We do our own sewing, clothing ourselves cap-à-pie; and it astonishes me, looking back upon my dark period of previous ignorance, to feel how much I have learned. I wonder whether your friend the Philadelphia D'Orsay knows how to adjust with a ruler and a lump of soap the seat of a pair of breeches?

DR. KANE IN ARCTIC RIG.

"Why, I have even made discoveries in—I forget the Greek word for it—the art which made George the Fourth so famous. Thus a method, adopted by our mess, of cutting five pairs of stockings out of one hammock blanket—a thing hitherto deemed impossible—is altogether my own. In the abstract or speculative part of the profession, I claim to be the first who has reduced all vestiture to a primitive form—an integral particle, as it were. I can't dwell on this matter here: it might, perhaps, be out of place; perhaps, too, attributed in some degree to that personal vanity almost inseparable from invention. I will tell you, however, that this discovered type, this radical nucleus, is the 'bag.' Thus a bag, or a couple of parallelogramic planes sewed together, makes the covering of the trunk. Similar bags of scarcely varied proportion cover the arms; ditto the legs; ditto the hands; ditto the head: thus going on, bags, bags, bags, even to the fingers; a cytoblastic operation, having interesting analogies with the mycelium of the fungus or the saccine vegetation of the confervas.

"All this is a digression, perhaps; yet I am not the first traveler whose breeches have figured in his diary of wonders: you remember the geometrical artist of Laputa who re-enforced the wardrobe of Mr. Gulliver. But to return to less ambitious topics. The birds, in spite of the increasing wind, fly over in numbers, all seeking the mysterious north. What is there at this unreached pole to attract and sustain such hordes of migratory life? Since the day before yesterday, the 16th, we can not be on deck at any hour, night or day—they are one now—without seeing small bodies, rather groups than flocks, on their way to the unknown feeding or breeding grounds. Toward the west the field of a telescope is constantly crossed by these detachments. The ducks are now scarce: in fact, they have been few from the beginning. Geese are seen only in the forenoon and early morning. The guillemots, also, are not so numerous as they were two days ago; but from to-day we date the reappearance of the little auk. This delicious little pilgrim is now on his way to his far north breeding grounds. Toward the open lead the groups fly low, sometimes doubtless pausing to refresh. At the water's edge I shot five, the first game of the season; and most valuable they were to our scurvy men. If this snow blindness permits me, I hope to-morrow to prove myself a more lucky sportsman.

"*May* 19, Monday. Jim Smith, little Jim Smith, reported 'Land.' We have become so accustomed to this great sameness of snow, that it was hard to realize at first the magnitude of our drift. Our last land was the spectral elevation upreared in the sunset sky of the 9th of February. The land itself must have been eighty miles off. Our drift, although now not absolutely fixed by observation, has probably carried us to within forty miles, perhaps thirty, of Cape Searle. Land it certainly is, shadowy, high, snow-covered, and strange. It is ninety-nine days since we looked at the refracted tops of the Lancaster Bay headlands, our last land.

"*May* 20, Tuesday. So snow-blind that I can barely see to write. A gauzy film floats between me and every thing else. I have been walking twelve miles upon the ice. No sun, but a peculiar misty, opalescent glare. I bagged thirty-three auks; but my snow-blindness avenges them."

For some days after this entry my snow-blindness unfitted me for active duty. Several of the officers and men shared the visitation, Captain De Haven more severely than any of us. My next quotation from my journal dates of the 24th.

"*May* 24, Saturday. The ship shows signs of change, grating a little in her icy cradle, and rising at least nine inches forward. The work of removing the ice goes on painfully, but constantly. The blocks are now hoisted with winch and capstan by a purchase from the fore-yard; the saw, of course, pioneering. The blocks when taken out resemble great break-water stones, measuring sometimes eight by six feet.

"Thus far, by persevering labor, we have cut a four-feet wide trench to our starboard gangway, a little vacant pool of six yards by three in our bows, and a second trench now reaching amidships of our fore-chains.

"The difference of level between the deck at our bows and stern is still five feet three inches. It is proposed to launch the brig, as it were, from her ice-ways. To this purpose a screw jack is to be applied aft, and strong purchases on the ice ahead. The experiment will take place this afternoon. We have now been five months and a half, since the seventh of December, living on an inclined plane of about one foot in sixteen.

"10 P.M. The effort failed, as no doubt it ought to have done: we must wait for the great break-up to give us an even keel. From the mast-head we can see encroachments all around. The plains, over which I chased the bear and shot at auks, are now water. The floe is reduced to its old winter dimensions, three miles in one diameter, five in the other. We have not yet reached the narrow passage; and the wind, now from the southward, seems to be holding us back. Strange as it sounds, we are in hopes of a break-up at Cape Walsingham.

"*May* 25, Sunday Howling a perfect gale; drift impenetrable. By some providential interference the wind returned last night to its old quarter, the northwest, a direction corresponding with the trend of the shore. It is undoubtedly driving us fast to the southward, and is, of all quarters, that most favorable to a passage without disruption. Once past Cape Walsingham, the expansion of the bay is sudden and extensive. If, then, our floe maintains its integrity through the strait, the relief from pressure may allow us to continue our drifting journey. So at least we argue.

"And just so, it may be, others have argued before us about chances of escape that never came: there is a cycle even in the history of adventure. It makes me sad sometimes when I think of the fruitless labors of the men who in the very olden times harassed themselves with these perplexing seas. There have been Sir John Franklins before, and searchers too, who in searching shared the fate of those they sought after. It is good food for thought here, while I am of and among them, to recall the heart-burnings and the failures, the famishings and the freezings, the silent, unrecorded transits of 'ye Arctic voyageres.'

"Mount Raleigh, named by sturdy old John Davis 'a brave mount, the cliffes whereof were as orient as golde,' shows itself still, not so glittering as he saw it two hundred and sixty-five years ago, but a 'brave mount' notwithstanding. No Christian eyes have ever gazed in May time on its ice-defended slope, except our own. Yet there it stands, as imperishable as the name it bears.

"I could fill my journal with the little histories of this very shore. The Cape of God's Mercy is ahead of us to the west, as it was ahead of the man who named it. The Meta Incognita, further on, is still as unknown as in the days of Frobisher. We have passed, by the inevitable coercion of ice, from the highest regions of Arctic exploration, the lands of Parry, and Ross, and Franklin, to the lowest,

the seats of the early search for Cathay, the lands of Cabot, and Davis, and Baffin, the graves of Cortereal, and Gilbert, and Hudson—all seekers after shadows. Men still seek Cathay."

CHAPTER XX

"THE storm broke in the early morning hours. We have drifted more than sixteen miles since Saturday. The true bearing of the prominent cape we supposed to be Cape Walsingham was found by solar distance to be S. 63° W.; while our observed position, by meridian altitude and chronometers, placed us but four miles north of Exeter Bay. Either, then, the protruding cape is not Walsingham, or our chronometers are at fault. This latter is probably the case; for if the coast line be correctly laid down on the charts, the true bearing cited above, projected from our present parallel of latitude, would place us thirty-six miles from the cape. More likely this than so near Exeter.

"Our latitude is about 66° 51', a very few miles north of the projecting headland, the western Gades of our strait. The character of the land is rugged and inhospitable. Ridges, offsetting from the higher range, project in spurs laterally, creviced and water-worn, but to seaward escarped and bluff. Some of these are mural and precipitous, of commanding height. The main range does not retire very far from the sea; it seems to follow the trend of the peninsula, and most probably on the Greenland shore is but the abutment of a plateau. Its culminating points are not numerous: the highest. Mount Raleigh, is, by my vague estimate, about fifteen hundred feet high.

"*May* 27. The land is very near to the eye; but in these regions we have learned to distrust ocular measurements of distance. Though we see every wrinkle, even to the crows' feet, on the cheeks of Mount Raleigh, I remember last year, on the west coast of Greenland, we saw almost under our nose land that was thirty-five miles off. A party from the *Rescue* measured a base upon the ice to-day, and attempted trigonometrical measurements with sextant angles. They make Cape Walsingham seven miles distant, and the height of the peak at the cape fifteen hundred feet. Our observation places us in latitude 66° 42′ W; our longitude by time sights, at 5h. 43m. P.M., was 60° 54'. According to the Admiralty chart, this plants us high and dry among the mountains of Cape Walsingham.

"It is evident that our rate of drift has increased. The northwest winds carried us forward eight miles a day while near the strait—a speed only equaled in a few of the early days of our escape from Lancaster Sound. What has become of all the ice that used to be intervening between us and the shore? At one time we had a distance of ninety miles: we are now close upon the coast. What has become of it? If it moves at the same rate as we do, why have we no squeezing and commotion at this narrow strait? Can it be that the ice to the westward of us has been more or less fixed to the land floe, and that we have been drifting down in a race-course, as it were, an ice-river whose banks were this same shore ice? Or is it, as Murdaugh suggests, that the inshore currents, more rapid, have carried down the inshore ice before us, thus widening the pathway for us? It is certainly very puzzling to find ourselves, at the narrowest passage, close into the land; and no commotion, no disturbance. On the contrary, from the mast-head abundant open water meets the eye; and could we escape from our imprisoning, but—thankfully I say it—protecting floe, we might soon be moving in open seas.

"*May* 28, Wednesday. The fact of the day is the rotation of our floe. In spite of its irregular shape, it has rotated a complete circle within the past twenty-four hours. It is still turning at the

same rate, wheeling us down along the inshore fields. The *Rescue*, early this morning, was between us and the land: the evening before, the same land was astern of us. Strange that no rupture takes place!

"*May* 29, Thursday. I have just been witnessing one of the oddest of Arctic freaks. We were all of us engaged in tracing out the rugged indentations on Mount Raleigh, as the floe was rolling our vessels slowly along past Cape Walsingham, when, at five o'clock in the afternoon—the thermometer at 27°, the barometer at 30.31, and the atmosphere of the usual pearly opalescence—the captain, sweeping shoreward with his glass, saw a large pyramidal hummock, with a well-defined figure projecting in front of it, evidently animated and moving. Murdaugh, looking afterward, declared it 'a man.' I saw it next, a large human figure, covered with a cloak, and motionless. Murdaugh took the glass again, and holding it to his eye, suddenly exclaimed, 'It moves:' 'it spreads out its arms;' 'it is a gigantic bird!'

"The hummock was within a mile of us. The words were hardly uttered before the object had disappeared, and the white snow was without a speck. A discussion followed. The size made us at once reject the bird idea: the shape, too, was that of a cloak-covered man; the motion, as if he had opened his mantle-covered arms. Convinced that it was a human being, an Esquimaux astray upon the ice, Murdaugh and myself started off, nearing the hummock with hearts full of expectation. The traces on the soft snow would soon solve the mystery, and remove our only doubt, whether the 'Rescues' might not be playing us a trick.

"Whatever it was, it either did not perceive us approaching, or was willing to avoid us; for it kept itself hidden behind a crag. Reaching, however, the spot where it had stood, we found traces, coprolitic and recent, of a bird; footprints, as a learned professor would have said, of certain familiar animal processes, exaggerated and dignified by those of refraction.

"On returning to the brig, the watchers told us that we had been ourselves curiously distorted; and that, when perched on the little icy crag we had gone to scrutinize, we lengthened vertically into gigantic forms. The position of the bird, probably a glaucous gull, had been breast toward the brig: a vertical enlargement, with the white body and moving wings, explained the phenomenon.

"The 'Rescues' had a very large bear hovering around them all this morning. At one P.M. he came within reach of a carefully-prepared ambush, receiving four out of a half dozen balls, a number soon increased to nine. You may have some idea of the superb tenacity of life of this beast, when I tell you that he ran, thus perforated, with his skull broken and his shoulder shivered. He even attempted a charge, uttering a hissing sound, ejaculated by sudden impulse, like the 'blowing of a whale,' to use Captain Griffin's comparison. He measured eight feet five inches, only three inches less than my own big trophy, which, with one exception, is the largest recorded in the stories of the Polar American hunt. What a glorious feed for the scurvy-stricken ships!

"To-day, for the first time, we had a tide, made evident by the changing phases of the shore. We made southing in the forenoon: now, at half past eight P.M., the alignment of the hills shows a northward drift. The ice is unchanged: our floe is rotating from west to south, against the sun, but not equably. We crossed the Arctic circle at some unknown hour this forenoon. To the eye every thing is as before; yet it cheats one into pleasant thoughts. I do not wish to see a midnight sun again.

"*May* 30. The seal are out upon the ice, one of the most certain signs of summer. They are few In number, and very cautious. We notice that they invariably select an open floe for their hole, and that they never leave it more than a few lengths. Their alertness is probably due to their vigilant enemy, the bear. Sometimes you will see them frolicking together like a parcel of swimming school-

boys; sometimes they are solitary, but keenly alive always to the enjoyment of the sunshine. I have often crawled within fair eye-shot, and, seated behind a concealing lump of ice, watched their movements.

"The first act of a seal, after emerging, is a careful survey of his limited horizon. For this purpose he rises on his fore flippers, and stretches his neck in a manner almost dog-like. This maneuver, even during apparently complete silence, is repeated every few minutes. He next commences with his hind or horizontal flippers and tail a most singular movement, allied to sweeping; brushing nervously, as if either to rub something from himself or from beneath him. Then comes a complete series of attitudes, stretching, collapsing, curling, wagging; then a luxurious, basking rest, with his face toward the sun and his tail to his hole. Presently he waddles off about two of his own awkward lengths from his retreat, and begins to roll over and over, pawing on the most ludicrous manner into the empty air, stretching and rubbing his glossy hide like a horse. He then recommences his vigil, basking in the sun with uneasy alertness for hours. At the slightest advance, up goes the prying head. One searching glance; and, wheeling on his tail as on a pivot, he is at his hole, and descends head foremost.

"I have watched so many without success, that to-night I determined to try the Esquimaux plan —patience and a snow-screen. This latter, the easier portion of the formula, I have just returned from completing; it was a mile's walk and an hour's snow-shoveling. The other, the patience, I attempt to-morrow, 'squat like a toad' on the ice for an unknown series of hours, with the sun blistering my nose, and blinking my eyes the while; a sort of sport so much like fishing, that it ought to be reserved for the Piscators of our Schuylkill Club.

"The walk over the snow to-night was very delightful. The opalescence, so painful to the eyes, had given place to a clear atmosphere; and the low sun was full of rich coloring. Land, too, that pleasing representative of the world we are cut off from, was refracted into grotesque knolls and long spires.

"The surface of the floes shows more and more the thawing influence of our sun, now half as high at meridian as in the torrid zone! The immediate surface to-day was often entire, though we plunged almost knee-deep in water below it. This you will easily understand when I tell you that the thermometer in the sun gave, for four successive hours to-day, a mean of nearly 80°. The surface thaw percolates through the loosely-compacted snow, and, forming a pasty substratum, is protected from re-freezing by the very snow through which it has descended. Our mean temperature of late has varied but little between 25° and 27° for any twenty-four hours.

"The infiltration of saline water through the ice assists the process of disintegration. The water formed by surface or sun thaw is, by the peculiar endosmitic action which I believe I have mentioned elsewhere, at once rendered salt, as was evident from Baumé's hydrometers and the test of the nitrate of silver. The surface crust bore me readily this evening at a temperature of 21° and 19°, giving no evidences of thaw. Beneath, for two inches, it was crisp and fresh. As I tried it lower, cutting carefully with my bear-knife, it became spongy and brackish; at eight inches markedly so; and at and below twelve, salt-water paste. On the other hand, all my observations, and I have made a great many, prove to me that cold, if intense enough, will, by its unaided action, independent of percolation, solar heat, depending position, or even depth of ice, produce from salt water a fresh, pure, and drinkable element.

"*May* 31, Saturday. Walked to-night to the southward in search of seal: found the ice in motion, and had some difficulty in getting back. Wind from southward, and freshening, after a day of nearly perfect calm. The drift is somewhat to the eastward. The tables were heaping up actively, and the

chewing process of demolition was in full energy among them. I have some hope that the action may extend itself to the core of our veteran floe-circle; but for the present it is confined to those peripheral adjuncts that have grown up around it in more recent freezings. A bird's-eye view from the mast-head, corrected by my walks, enables me to map out its present shape with considerable accuracy."

The "month of roses" closed on us without adventure; but its last ten days were full of monitory changes. The increased temperature had been visibly acting upon the ice, softening down its rough angles, and reducing bowlders to mere knobs on the surface; its weary monotony becoming every day only more disgusting. From the 1st to the 19th we had drifted almost a hundred miles, and had been expecting daily to make the eastern shore, when land was reported ahead. It proved to be the Highlands around Cape Searle, about thirty-five miles off.

It was the first inbreak upon our desolate circle of ice and water that we had experienced in ninety-nine days. The hundredth gave us a complete range of dreary, snow-covered hills; but to men whose last recollections of terra firma were connected with the refracted spectres that followed us eighty miles from shore, just one hundred days since, the solid certainty of mountain ridges was inexpressibly grateful. We studied their phases, as we drew nearer to them, with an intentness which would have been ludicrous under different circumstances: every cranny, every wrinkle spoke to us of movement, of a relation with the shut-out world. Our drift which brought us this blessed variety was favored by an unusual prevalence of northwesterly winds. We made in the thirty-one days of May one hundred and ninety odd miles to the southward and eastward.

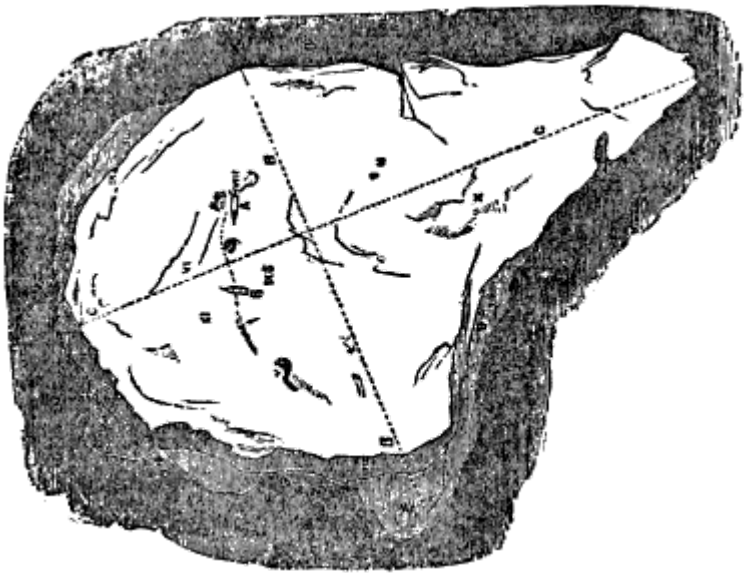
For the last four days of the month we were at the margin of the Arctic circle, alternating within and without it. We passed to the south of it on the 30th, to recross it on the 31st with an accidental drift to the northward. We were experiencing at this time the rapid transition of seasons which characterizes this climate. The mean of the preceding month, April, had been +7° 96'; that of May was 20° 22'—a difference of nearly twelve degrees. At the same time, there was a chilliness about the weather, an uncomfortable rawness, both in April and May, which we had not known under the deep, perpetual frosts of winter. Cold there seemed a tangible, palpable something, which we could guard against or control by clothing and exercise; while warmth, as an opposite condition, was realizable and apparent. But here, in temperatures which at some hours were really oppressing, 60° to 80° in the sun, and with a Polar altitude of 45°, one half the equatorial maximum, we had the anomaly of absolute discomfort from cold. I know that hygrometric conditions and extreme daily fluctuations of the thermometer explain much of this; but it was impossible for me to avoid thinking at the time that there must also be a physiological cause more powerful than either.

I have alluded in my journal to the return of the birds. They were most welcome visitors. Crowds of little snow-birds (*Emberiza* and *Plectrophanes*), with white breasts and jetty coverts, were attracted by the garbage which the thaw had reproduced around us, and twittered from pile to pile, chirping sweet music over their unexpected store-house. Some of the larger birds, too, were with us, returning to the mysterious North; the anatinæ, represented by the eiders (*Somateria*), followed by two of the uria genus, the grylle and the alke. We recognized the latter as our little fat friend of last summer, and gave him treatment accordingly. I shot thirty-three in one day, which my mess-mates made up to sixty.

The characteristic disease of May was the snow-blindness, severe and acute, leaving with some of us a disturbed, uncertain state of vision far from pleasing. The remedy most effective was darkness. A disk of hard wood, with a simple slit, admitting a narrow pencil of light, we found a better protection than the goggle or colored lens; the increased sensibility of the retina seeming to

require a diminution of the quantity rather than a modification of the character of the ray. The slightest automatic movement varied, of course, the sentient surface affected by the impression.

CHAPTER XXI



TOPOGRAPHY OF THE FLOE, MAY 31.

A. Advance. B B. Shorter diameter, 314 miles. R. Rescue. CC. Longer diameter, 51/2 miles. Distance between the vessels, 500 yards.

"J*UNE* 1. June opens on us warm. Our mean temperature to-day has been above the freezing point, 34°; our lowest only 29°; and at 11 this morning it rose to 40°. The snow-birds increase in numbers and in confidence. It is delightful to hear their sweet jargon. They alight on the decks, and come unhesitatingly to our very feet. These dear little Fringillides have evidently never visited Christian lands.

"*June* 3. The day misty and obscure: no land in sight from aloft; and no change apparent in the floe. But we notice a distinct undulation in the ice trenches alongside, caused probably by some propagated swell.

"I walked out at night between 9 and 11 o'clock in search of open water. We had the full light of day, but without its oppressive glare. The thawed condition of the marginal ice made the walk difficult, and forced us at last to give it up. But, climbing to the top of a hummock, we could see the bay rolling its almost summer waves close under our view. It was a grand sight, but more saddening than grand. It seems like our cup of Tantalus; we are never to reach it. And while we are floating close upon it, the season is advancing; and if we are ever to aid our brothers in the search, we should even now be hurrying back.

"*June* 4. Yesterday over again. But the water is coming nearer us. As we stand on deck, we can see the black and open channel-way on every side of us, except off our port quarter: it is useless to talk of points of the compass; our floe rotates so constantly from right to left, as to make them useless in description. To port, the extent of ice baffles the eye, even from aloft; it must, however, be a mere isthmus.

"*June* 5, Thursday. We notice again this morning the movement in the trench alongside. The floating scum of rubbish advances and recedes with a regularity that can only be due to some equable undulation from without to the north. We continue perched up, just as we were after our great lift of last December. A more careful measurement than we had made before, gave us yesterday, between our height aft and depression forward, a difference of level of 6 feet 4 inches. This inclination tells in a length of 83 feet—about one in thirteen.

"P.M. The BREAK-UP AT LAST! a little after five this afternoon, Mr. Griffin left us for the *Rescue*, after making a short visit. He had hardly gone before I heard a hail and its answer, both of them in a tone of more excitement than we had been used to for some time past; and the next moment, the cry, 'Ice cracking ahead!'

"Murdaugh and myself reached the deck just in time to see De Haven crossing our gangway. We followed. Imagine our feelings when, midway between the two vessels, we saw Griffin with the ice separating before him, and at the same instant found a crack tracing its way between us, and the water spinning up to the surface. 'Stick by the floe. Good-by! What news for home?' said he. One jump across the chasm, a hearty God-bless-you shake of the hand, a long jump back, and a little river divided our party.

"Griffin made his way along one fissure and over another. We followed a lead that was open to our starboard beam, each man for himself. In half a minute or less came the outcry, 'She's breaking out: all hands aboard!' and within ten minutes from Griffin's first hail, while we were yet scrambling into our little Ark of Refuge, the whole area about us was divided by irregular chasms in every direction.

"All this was at half past five. At six I took a bird's-eye sketch from aloft. Many of the fissures were already some twenty paces across. Conflicting forces were at work every where; one round-

house moving here, another in an opposite direction, the two vessels parting company. Since the night of our Lancaster Sound commotion, months ago, the *Rescue* had not changed her bearing: she was already on our port-beam. Every thing was changed.

BIRD'S-EYE view of floe, JUNE 5.

A. Advance. D. Floe adhering to the Advance. R. Rescue. C. Path between brigs before break-up. H H. Hummocks.

"Our brig, however, had not yet found an even keel. The enormous masses of ice, thrust under her stern by the action of repeated pressures, had glued themselves together so completely, that we remained cradled in a mass of ice exceeding twenty-five feet in solid depth. Many of these tables were liberated by the swell, and rose majestically from their recesses, striking the ship, and then escaping above the surface for a moment, with a sudden vault.

"To add to the novelty of our situation, two cracks coming together obliquely, met a few yards astern of us, cleaving through the heavy ice, and leaving us attached to a triangular fragment of 14 by 22 paces. This berg-like fragment, reduced as it was, continued its close adhesion. Its buoyancy was so great, that it acted like a camel, retaining the brig's stern high in the air, her bows thrown down toward the water. We are so at this moment, 10 P.M."

All hands were in the mean time actively at work. The floe had been to us terra firma so long that we had applied it to all the purposes of land. Clothes and clothes' lines, sledges, preserved meats, kindling wood and planking, were now all bundled on board. The artificial horizon, which had stood for eight months upon a little ice-pedestal, was barely saved; and I had to work hard to get one of my few remaining thermometers from a neighboring hummock.

The cause of this sudden disruption—I mean the immediate cause, for the summer influences had prepared the floe for disintegration—was evidently the sea-swell setting from the southeast. This swell had given us minor manifestations of its existence as far back as the 1st of June. Whether

it was increased without, or our floe made more accessible to it by the drifting away of other and protecting floes, I can not say. This, however, was clear, that the great undulations propagated by wave action caused our disruption. The proof of this I shall not forget.

Standing on our little deck, and looking out on the floe, we had the strange spectacle of an undulating solidity, a propagated wave borne in swell-like ridges, as if our ice was a carpet shaken by Titans. I can not convey the effect of this sublime spectacle. The ice, broken into polyhedric masses, gave at a few hundred yards no indications to the eye of the lines of separation; besides which, the infiltration of salt water had no doubt increased the plasticity of the material. Imagine, then, this apparently solid surface, by long association as unyielding to us as the shore, taking suddenly upon itself the functions of fluidity, another condition of matter. It absolutely produced something like the nausea of sea-sickness to see the swell of the ice, rising, and falling, and bending, transmitting with pliant facility the advancing wave.

A hummock hill, about midway between us and the *Rescue*, gave me an opportunity of measuring rudely the height of the swell. It rose till it covered her quarter boat; sinking again till I could see the side of the brig down to her water-line, an interval of five feet at least.

"As we walk along the edge of the open fissures, we see a wonderful variety in the thickness of the ice. Our apparently level surface is, in fact, a mosaic work of ices, frozen at separate periods, and tesselated by the several changes or disruptions which we have undergone. Thus I can see the tables under our stern extending down at least twenty-five feet: adjoining this is ice of four feet; next comes a field of six feet; and then hummock ridges, with tables choked below, so as to give an apparent depth of twenty.

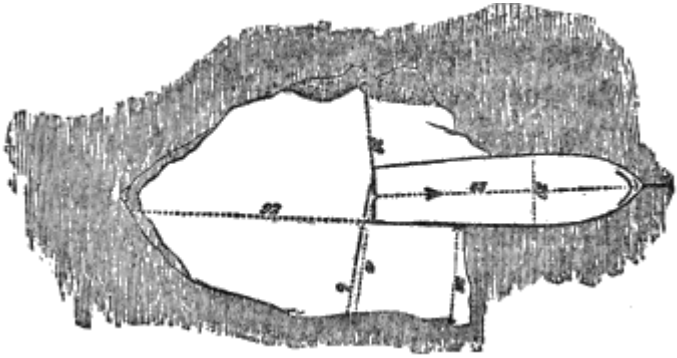
"The 'calves' also, of which a great many have now risen to the surface, are worthy of note. These singular masses are evidently fragments of tables, of every degree of thickness, which have been forced down by pressure, and afterward, by some change in the temperature of the water, or by wave and tidal actions, have been liberated again from the floe, and find their way upward wherever an opening permits. We saw them honeycombed and cellular, water-sodden and in rounded bowlders, rising from the depths of the sea. Their density, so near that of the liquid in which they were submerged, made this rise slow and impressive. We could see them many fathoms below, voyaging again to the upper world. Once between the gaping edges of the lead, they effectually prevent the closing. They are about us in every direction, interposed between the fields.

"The appendage which sustains our brig has a good deal of this character. I will try to make an exact drawing of it as a curiosity, if it hangs on to us much longer. Its buoyancy indicates great submerged mass. A strong cable and ice anchor have been carried to a floe on our starboard bow, and the swell drives it upon us like a great battering-ram. This ingenious method of pounding us out of our tenacious cradle subjects us to a regular succession of heavy shocks, which would startle a man not used to ice navigation. At the time I write, 11 P.M., we have been nearly three hours subjected to this banging without any apparent impression. To-morrow we will, if not liberated, apply the saw; and then again to the warps!

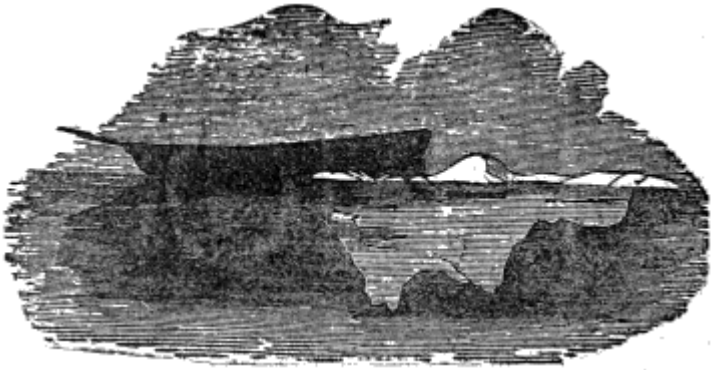
"11:20 P.M. In the midst of fragments, few more than a hundred yards in length, nearly all much smaller. Between them are zigzag leads of open water. Astern of us is an expansion of some fifty yards across; ahead, a winding creek, wider than our brig. Thus closes the day.

"One thing more: a thought of gratitude before I turn in. This journal shows that I have been in the daily habit of taking long, solitary walks upon the ice, miles from the ship. Suppose this rupture

to have come entirely without forewarning! I had greased my boots for a walk a few hours before the change, and only postponed it because I happened to get absorbed in a book."



TOPOGRAPHY OF FLOE, JUNE 5.



PROFILE OF FLOE; PORT SIDE.

CHAPTER XXII

"J*UNE* 6. Our bumping continued all I night, without any apparent effect I upon our sticking-plaster. Acting, as this impact does, at the long end of a lever, our stern being immovably fixed, it must be hard upon the rudder post, a beam that is now protruding from the least strengthened part of our brig into a transparent glue of tenacious ice. The twelve-feet saw, suspended from a tripod of spars, is at work, trying to cut a line across the mass to our keel. But for this appendage, we would be now warping through the fissures.

"7 P.M. The position of things continues unchanged. Our ice-saw with great labor buried its length in the floe, reaching nearly to our stern; but the submerged material is so thick that it has little or no effect. Wedging, by billets of wood between her sides and the mounding ice, was equally ineffectual. Gunpowder would perhaps release us; but that we can not spare.

“I tried to measure the depth of this inveterate companion of ours. Standing at our port gangway, I lowered the pump-rod twenty-four feet to a shelf projecting from the mass: beneath this, a prolongation or tongue stretched to a depth which I could not determine. On the other side, to starboard, the ice descends in solid mass some twenty feet. Adopting twenty-four feet as a mean depth, and ninety by fifty feet as the mean of dimensions at the surface, the solid contents of this troublesome winter relic would be 108,000 cubic feet. No wonder it lifts up our little craft bodily. I have made my drawings of it with all topographical accuracy.

“The wind has been hauling round from the south to the west, and by afternoon blew quite freshly. We made all sail, even to studding-sails, in hopes of forcing the cracks ahead, and tearing ourselves, as it were, from our impediment. Thus far all has failed.

“10 P.M. The ship is covered with canvas: she stands motionless amid the ice, although her wings are spread and tense. The wind is fresh and steady from the northwest. Our swell ceases with this wind, and the floes seem disposed to come together again; but the days of winter have passed by, and the interposing calves prevent the apposition of the edges.

“The effects of a constant force, slight as it seems, have been beautifully shown by our brig. Pressing as we do, under full canvas, against heavy yet quiescent masses, we gradually force ahead, breasting aside the floes, and leaving behind us a pool of open water. Our rate is ten feet per hour! Remember that the old man of Sinbad still clings to us, and that we carry the burden in this slow progress. I hope that the Sinbad comparison will end here; for I can readily, without much imagination, carry it further.

“12 Midnight. Still advancing, dragging behind us this pertinacious mass. We have butted several times against projecting floes, but it is as unmoved as solid rock. Very foggy: *Rescue* not visible. Thermometer at 29 degrees.

“We recognize, among the floe fragments around us, old play-fellows. Here we played foot-ball; there we skated; by this hummock crag stood my thermometers; and here I shot a bear. We are passing slowly from them, or they from us. Now and then a rubbish pile will show itself, cresting the pure ice. Even an old champagne basket, full of nothing but sadly-pleasant associations, is recognized upon a distant floe. This breaking up of a curtilage is not without its regrets. I wish that our ‘old man’ would loosen his gripping knees: three hours would put us into comparatively open water.

“*June* 7, Saturday. The captain says that the shocks of the night of the fifth were the hardest our brig has experienced yet.

“This morning we made our incubus fast to one end of a passing floe, and ourselves fast to the other: double hawsers were used, blocks and tackle rigged, and all hands placed at our patent winch, the slack being controlled by a windlass. We parted our stern hawser, and that was all. Our resort now is to the fourteen-feet saw. With this, before the day closes, we shall cut a skerf as far as our fore-foot, and then try the efficacy of wedges.

“Toward evening the *Rescue* made sail, and forced her way slowly through the fragments. By eight P.M. she was snugly secured to the other side of our own floe. A beautiful sight it was to see once more, even in this labyrinth of rubbish, a moving sail-spread vessel. Once a momentary opening showed us the dark water, and beneath it the shadow of the brig.

“10:40. A crash! a low, grinding sound, followed by loud exclamations of ‘Back,’ ‘back!’ ‘Hold on,’ ‘hold on!’ I ran upon deck in time to add one cheer more to three which came from the ice. A

large fragment, extending from her saw-crack along the bottom on the port side, had broken off, cutting the triangle in half, and leaving the crew behind floating and separated from the ship. All that now confined us was the mass (*a*) which remained on her starboard quarter. This descended some twenty or more feet, embracing our keel, and by its size sustaining us in our perched condition. We had settled but nine inches in consequence of our partial disengagement.

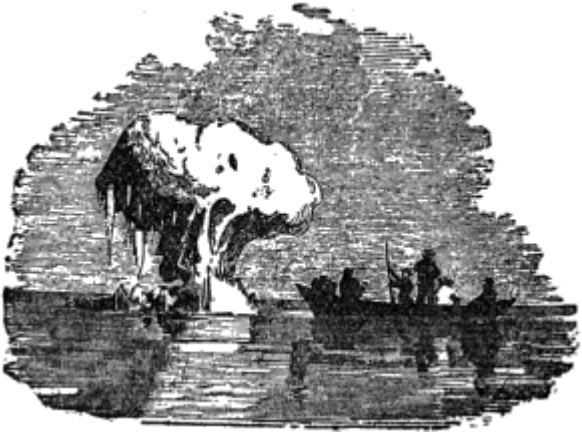
"Looking from the taffrail down the stern-post, we can now see the position of this portion of our brig distinctly. A strip of her false keel has been forced from its attachments, drawing the heavy bolts, and tearing away some of our sheathing. How far the injury extends, whether the entire length of the brig, or through some few yards, we can not tell. It must have occurred during the great ice commotion of December 7th and 8th. The disruption of January no doubt added to the thickness of the underlying tables; but our keel probably received its shock at the same time that we received our elevation. We have escaped wonderfully.

"*June* 8, Sunday. Even keel again! Once more floating ship-fashion, in a ship's element. It was between twelve and one o'clock this morning. Murdaugh went down upon the fragment, which was still adhering to our starboard side. He had hardly rested his weight upon it, when, with certain hurried, scarcely premonitory grindings, it cleared itself. He had barely time to scramble up the brig's side, tearing his nails in the effort, before, with crash and turmoil, it tumbled up to the surface, letting us down once more into clear water. When I reached the deck, I could hardly realize the level, horizontal condition of things, we have been accustomed to this up and down hill work so long.

"9 P.M. At 1 o'clock P.M. the wind freshened from the northward, enough to make sail. We cast off, and renewed the old time process of boring, standing irregularly among the fragments to the southward and eastward. We received some heavy bumps, but kept under weigh until 6 P.M., when an impenetrable ice-fog caused us to haul up to a heavy floe, to which we are now fast by three anchors. We estimate our progress at six miles. The *Rescue* is not visible.

"From the heavy floe to which we are secured we obtained fresh *thawed* water. This is the first time since the 15th of September that I have drunk water liquefied without fire. Eight months and twenty-four days: think of that, dear strawberry and cream eating family!

"We saw an ice-floe to-day, which had evidently come from the upper northern regions of Wellington, or the North Baffin's Straits. This ice, though pure and beautiful, could never have been created in any single winter. It has made me understand for the first time the startling stories of Wrangell. This floe is now more than two hundred and fifty yards long by four hundred wide; a size too large for infraposition of tables, while its purity precludes the idea of ground ice. Its depth, ascertained from its mean line of flotation, exceeds forty feet. Its surface is level, and the appearance, looking down into its pure depths, beautiful beyond description. It forms part of a great field, miles in circumference, as similar coaptating fragments are seen in every direction; the great swell of the 5th having no doubt destroyed its integrity. From what great winter basin comes this colossal ice?"



CHAPTER XXIII

WE continued our progress through a labyrinth of ice, sometimes running into a berg, or grazing against its edge so close as to carry away a spar or stave a quarter-boat, but still making our way across to the Greenland shore. The sea was studded with low bergs and water-washed floes, wearing the fantastic forms which had surprised us the year before. Some were both complicated and graceful, supported generally by peduncular bases, which gave them a curious aspect of fragility. This was evidently due to the action of the waves at the water-line, aided by the warmth of the atmosphere.

If we suppose a nearly symmetrical lump of ice, floating with that stable equilibrium which belongs to its excessive submergence, the atmosphere, which has now a temperature as high as 64° in the sunshine, will gradually round off and crease the edges, and at the same time will melt the portions of the mass which are above water. Its buoyancy increasing as its weight is reduced, the berg will now rise slowly, presenting a succession of new surfaces to the abrasion of the waves; and thus we shall have the familiar mushroom or fungoid appearance which is shown in many of the plates illustrating peculiar berg forms.

The process continuing under all the modifications of wave action, while the opposing face of the berg varies with every change of its gravitating centre, we may have eccentric resemblances to animated things sculptured in the ice, and at other times forms of classic symmetry, or the frets and garniture of mediæval art.

Our sail through this fanciful archipelago was a most uncomfortable one. Our stoves had been taken down; and the scurvy, exaggerated by the increased exposure to damp, began again to bear hard upon us. We devoured eagerly the seal, of which, by good fortune, we had several re-enforcements; but as the excitements of peril declined, the energies of the men seemed to relax

more and more; and I had reason to fear that we should not be able to resume our search effectively, until the health of our party had undergone a tedious renovation.

It had been determined by our commander that we should refresh at Whale Fish Islands, and then hasten back to Melville Bay, the North Water, Lancaster Sound, and Wellington Channel; and certainly there was no one on board who did not enter heart and soul into the scheme. It was in pursuance of it that we were now bending our course to the east.

The circumstances that surrounded us, the daily incidents, our destination and purpose, were the same as when approaching the Sukkertoppen a year before. There were the same majestic fleets of bergs, the same legions of birds of the same varieties, the same anxious look-out, and rapid conning, and fearless encounter of ice-fields. Every thing was unchanged, except the glowing confidence of young health at the outset of adventure. We had taken our seasoning: the experience of a winter's drift had quieted some of our enthusiasm. But we felt, as veterans at the close of a campaign, that with recruited strength we should be better fitted for the service than ever. All, therefore, looked at the well-remembered cliffs, that hung over Kronprinsen, with the sentiment of men approaching home for the time, and its needed welcomes.

We reached them on the 16th. Mr. Murdaugh, and myself, and four men, and three bottles of rum, were dispatched to communicate with the shore. As we rowed in to the landing-place, the great dikes of injected syenite stood out red and warm against the cold gray gneiss, and the moss gullies met us like familiar grass-plots. Esquimaux crowded the rocks, and dogs barked, and children yelled. A few lusty pulls, and after nine months of drift, and toil, and scurvy, we were once more on terra firma.

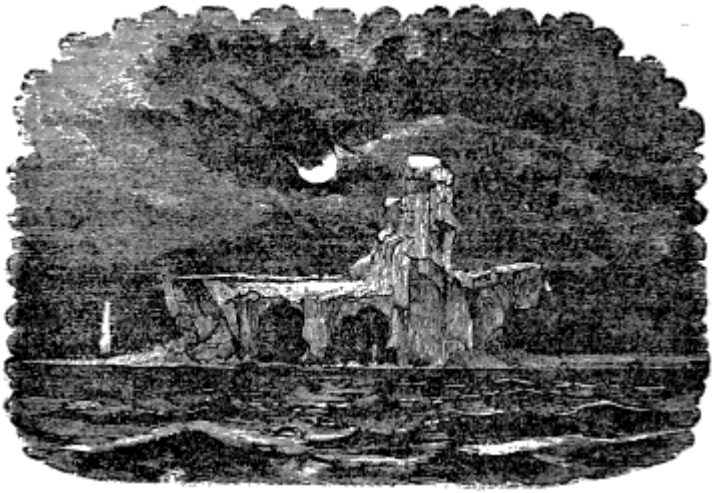
God forgive me the revulsion of unthankfulness! I ought to have dilated with gratitude for my lot.

Winter had been severe. The season lagged. The birds had not yet begun to breed. Faces were worn, and forms bent. Every body was coughing. In one hut, a summer lodge of reindeer and seal skins, was a dead child. It was many months since I had looked at a corpse. The poor little thing had been for once washed clean, and looked cheerful. The father leaned over it weeping, for it was a boy; and two little sisters were making lamentation in a most natural and savage way.

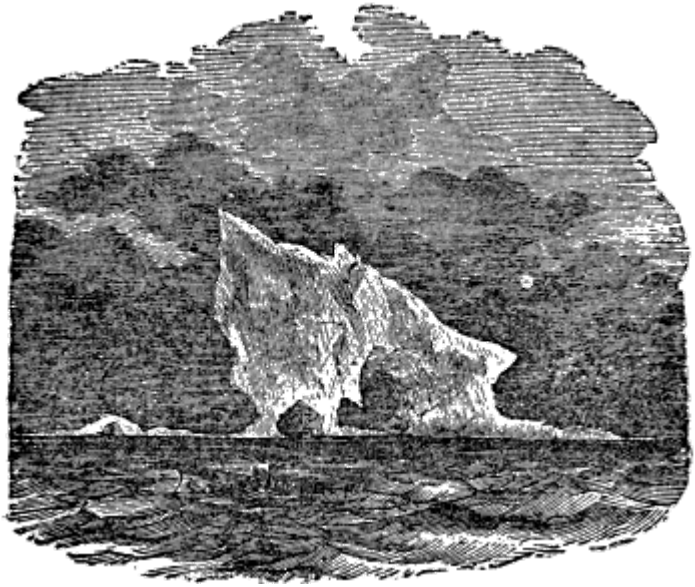
I gave the corpse a string of blue beads, and bought a pair of seal-skin boots for twenty-five cents; and we rowed back to the brig. In a very little while we were under sail for Godhaven.

We were but five days recruiting at Godhaven. It was a shorter stay than we had expected; but we were all of us too anxious to regain the searching ground to complain. We made the most of it, of course. We ate inordinately of eider, and codfish, and seal, to say nothing of a hideous-looking toad fish, a *Lepodogaster*, that insisted on patronizing our pork-baited lines; chewed bitter herbs, too, of every sort we could get; drank largely of the smallest of small-beer; and danced with the natives, teaching them the polka, and learning the pee-oo-too-ka in return. But on the 22d, by six o'clock in the morning, we were working our way again to the north.

We passed the hills of Disco in review, with their terraced summits, simulating the Ghauts of Hindostan; the green-stone cliffs round Omenak's Fiord, the great dockyard of bergs; and Cape Cranstoun, around which they were clustered like a fleet waiting for convoy. They were of majestic proportions; and as we wound our way tortuously among them, one after another would come into the field of view, like a temple set to be the terminus of a vista. At one time we had the whole Acropolis looking down upon us in silver; at another, our Philadelphia copy of the Parthenon, the monumental Bank of the United States, stood out alone. Then, again, some venerable cathedral, with its deep vaults and hoary belfries, would spread itself across the sky; or perhaps some wild combination of architectural impossibilities.



AN ICE CATHEDRAL.



THE GROTTO IN THE BERG.

We moved so slowly that I had time to sketch several of these dreamy fabrics. The one which is engraved on the opposite page was an irregular quadrangle, projected at the extremity of a series of ice-structures, like the promontory that ends an isthmus: it was crowned with ramparts turreted by fractures; and at the water-line a great barreled arch went back into a cavern, that might have fabled as the haunt of sea-kings or smugglers. Another, much smaller, but still of magnificent size, had been excavated by the waves into a deep grotto; and the light reflected from the bay against its transparent sides and roofs colored them with a blue too superb for imitation by the brush or pencil.

In the morning of the 24th we made the pack; more to the south, therefore, than last year. It appeared at first like a firm neck, extending out among heavy bergs well into Haroë Island; and remembering our last year's experience, we moved cautiously. But after a while, our captain, now perhaps the best ice-master afloat, determined on boring. The dolphin-striker was triced up, the boats were taken on board, and the old sounds of conning the helm began again. This time we were lucky. In four hours we were through the tongue of the pack, and out in nearly an open sea.

We did not move long, however, before the navigation became embarrassed. The ice between Cape Lawson and Storoë was too compact to be wedged aside; and after some rude encounters with the floes, and a narrow escape from a reef of rocks which Captain Graah's charts do not mention, we found ourselves, on the 25th, nearly embayed by the noble headlands off Ovinde Oerme. The ice, in a horseshoe curve, completely shut us in to the north, and the tongue of the pack we had come through lay between us and the sea. The wind had left us. We were drifting listlessly in a glassy sea that reflected the green-stone terraces and strange pyramidal masses of its romantic shores.

We amused ourselves killing seals. There must have been hundreds of them of all varieties playing about us. Generally they were to be seen paddling about alone, but sometimes in groups, like a party of school-boys frolicking in the Schuylkill. One of their favorite sports was "treading water," rising breast-high, keeping up a boisterous, indefatigable splashing, and stretching out their necks, as if to pry into the condition of things aboard ship. We compared their behavior to that of the timorous but curious natives, when the Europeans first met them in the waters of America; and in our intercourse with them, conformed accurately to the Spanish precedent.

Occasionally only we obeyed our "manifest destiny" with reluctance. Some of the younger of these poor sea-dogs had overmuch of the honest expression of their land brethren: the truncation of the muzzle in others, with no external ear showing behind it, set their faces in almost perfect and human-like oval. When one of these would come up out of the water near us, and, raising his head and shoulders, that stooped like those of a hooded Esquimaux, gaze steadily at us with his liquid eye, then diving, come up a little nearer and stare again; so drawing nearer and nearer, diving and rising alternately, till he came within musket range; it sometimes went hard to salute him with a bullet.

We shot, among others, a very large beast (*P. barbata*), lying upon a floating piece of ice. The captain's ball went through his heart; and my own, equally deadly, within a few inches of it; but the unwieldy creature continued struggling to reach the water, until a shot from Mr. Lovell, close upon him, drove a musket-ball through his head. He measured eight feet from tip to tip, five feet eleven inches in his greatest circumference, and five feet six inches in girth behind the fore-flippers. His carcass was a shapeless cylinder, terminating in an awkward knob to represent the head.

We lost two seals by sinking. Hitherto, when killed on the instant by perforation of the brain or spinal marrow, they had invariably floated. But the rule does not hold always. I wounded one so as to carry away the crown of his skull, and Captain De Haven gave him a second shot from within a

few yards directly through his head, and yet we lost him. As the balls struck, he discharged, almost explosively, a quantity of air, and went down like a loon. The whalers say, wound your seals; but my own experience is, that, if they are fat, it is best to kill them at once. A Danish boy, who had joined us by stealth at Disco, told us that the animal's sinking was a proof that he had no blubber. He was probably right: we certainly did not secure any that were in good condition.

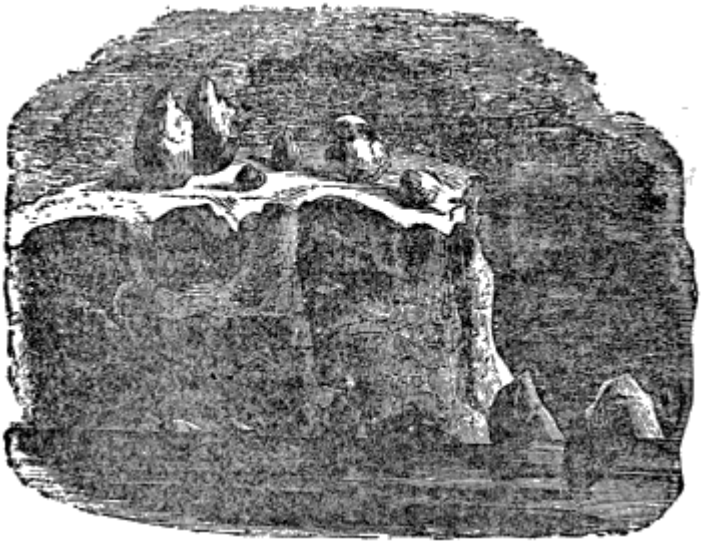
The next day gave us excitement of a different sort. We had been lying in the young ice-field, close under the southeast shore of Storoë, with the current setting strong toward it, and a grim array of bergs to the west of us. It was an ugly position; but we were fairly entangled, and there was no escape. Early in the morning, the wind freshened, and blew in toward the island; the ice piling against the rocky precipice under our lee, and opening in broken masses to windward. The *Rescue* managed to make fast to a crag between us and the shore, but our ice-anchors missed. At four in the afternoon we were within rifle-shot of the land, and still drifting; the wind a gale, and the sea-swell coming in heavily.

We stopped, of course, or there would have been an end of my journal. But for some hours things looked squally enough. Our soundings had become small by degrees and beautifully less, till they were down to thirteen feet; and the black wall looked so near that you could have hit it with a filbert. It could not have been fifty yards off, when we brought up on some grounded floe-pieces. By eleven, our warps had headed us to windward, and our bow was off shore. For once, at least, we owed our safety to the ice.

The *Rescue* followed a few hours after; and we took the direction of the pack together to the N.N.W. By the next day at noon we were within twenty-three miles of Uppernavik, but a belt of ice lay between. We anchored to a berg, and for two days waited patiently for an opening.

My mess-mates in the mean time went off on a hunt to a flat, rocky ledge, that showed itself inshore, and I amused myself with a tramp on the ice-island to which we were fast. I had for company a noble Esquimaux slut, that Governor Moldrup had enabled me to get at Disco, and a dog of the same breed belonging to Mr. Lovell. I do not know what has become of Hosky, as Mr. Lovell named his favorite; but my poor Disco fell a martyr to our Philadelphia climate and his Arctic costume together, some three days after we got home.

I had a quiet day's walk. My companions rambled with evident glee over the peaks and ravines of their familiar element. It was a magnificent pile of frost-work. But these crystal palaces of the ice, like every thing else under this northern sky, deceive one strangely in their apparent size. We thought, when we anchored, that the berg was a small one; yet we coursed more than the third of a mile in almost a direct line before we reached its further edge.



ICE BOULDERS.

The pure surfaces which we traveled over were studded with irregular blocks of ice, evidently once detached and cemented on again. They varied in size and shape from a boy's playing-marble to a haystack; and by their interesting distribution suggested most obtrusively the question of almost every Arctic traveler, how such fragments find their place on the plateau surfaces of the icebergs. I had answered the question for myself before; but I was glad to be consumed by the observations I made in the course of this excursion. When first the mass separates from the land-berg or glacier, it is accompanied by a large quantity of disengaged fragments, with all varieties of detritus; and during the alternate risings and sinkings that follow the fall into the sea, a great deal of this is caught by the emerging surface of the berg, and adheres to it. I noticed valleys, where the subsequent roll had rounded the masses, and grouped them into something resembling bowlder-drift. I had seen similar valleys in some of the large bergs of Duneira Bay, supplying a bed for temporary water-streams, in which the bowlders were beautifully rounded, and arranged in true moraine fashion.

Off Storoë, a white fox (*C. lagopus*) came to us on the loose ice: his legs and the tip of his tail were black. He was the first we had seen on the Greenland coast.

He was followed the next day by a party of Esquimaux, who visited us from Pröven, dragging their kayacks and themselves over seven miles of the pack, and then paddling merrily on board. For two glasses of rum and a sorry ration of salt-pork, they kept turning somersets by the dozen, making their egg-shell skiffs revolve sideways by a touch of the paddle, and hardly disappearing under the water before they were heads up again, and at the gangway to swallow their reward.

The inshore ice opened on the thirtieth, and toward evening we left the hospitable moorage of our iceberg, and made for the low, rounded rocks, which the Hosky pointed out to us as the seat of the settlement. The boats were out to tow us clear of the floating rubbish, as the light and variable winds made their help necessary, and we were slowly approaching our anchorage, when a rough yawl boarded us. She brought a pleasant company, Unas the schoolmaster and parish priest, Louisa his sister, the gentle Amalia, Louisa's cousin, and some others of humbler note.

The baptismal waters had but superficially regenerated these savages: their deportment, at least, did not conform to our nicest canons. For the first five minutes, to be sure, the ladies kept their faces close covered with their hands, only withdrawing them to blow their noses, which they did in the most primitive and picturesque manner. But their modesty thus assured, they felt that it needed no further illustration. They volunteered a dance, avowed to us confidentially that they had educated tastes—Amalia that she smoked, Louisa that she tolerated the more enlivening liquids, and both that their exercise in the open air had made a slight refection altogether acceptable. Hospitality is the virtue of these wild regions: our hard tack, and cranberries, and rum were in requisition at once.

It is not for the host to tell tales of his after-dinner company. But the truth of history may be satisfied without an intimation that our guests paid niggard honors to the jolly god of a milder clime. The veriest prince, of bottle memories, would not have quarreled with their heel-taps. * * *

We were inside the rocky islands of Pröven harbor as our watches told us that another day had begun. The time was come for parting. The ladies shed a few kindly tears as we handed them to the stern-seats: their learned kinsman took a recumbent position below the thwarts, which favored a continuance of his nap; and the rest of the party were bestowed with seaman-like address—all but one unfortunate gentleman, who, having protracted his festive devotions longer than usual, had resolved not to "go home till morning."

The case was a difficult one; but there was no help for it. As the sailors passed him to the bottom of the boat, and again out upon the beach, he made the air vocal with his indignant outcries. The dogs—I have told you of the dogs of these settlements, how they welcomed our first arrival—joined their music with his. The Prövenese came chattering out into the cold, like chickens startled from their roost. The governor was roused by the uproar. And in the midst of it all, our little weather-beaten flotilla ran up the first American flag that had been seen in the port of Pröven.

CHAPTER XXIV

THE port of Pröven is securely sheltered by its monster hills. But they can not be said to smile a welcome upon the navigator. A smiling country, like a smiling face, needs some provision of fleshly integuments; and no earthly covering masks the grinning rocks of Pröven. They look as if the process of crumbling, and wrinkling, and splitting, and splintering had been at work on them since the first Arctic frost succeeded the last metamorphic fire; and even now great ledges are wedged off from the hillsides by the ice, and roll clattering down the slopes into the very midst of the settlement.

Summer comes slowly upon Pröven. When we arrived, the slopes of the hills were heavily patched with snow, and the surface, where it showed itself, was frozen dry. The water-line was toothed with fangs of broken ice, which scraped against the beach as the tides rose and fell; and an iceberg somehow or other had found its way into the little port. It was a harmless lump, too deep sunk to float into dangerous nearness; and its spire rose pleasantly, like a village church.

"*July* 3. I am writing in the 'Hosky' House of Cristiansen. Cristiansen is the Danish governor of Pröven, and this house of Cristiansen is *the House* of Pröven. Its owner is a simple and shrewd old Dane, hale and vigorous, thirty-one of whose sixty-four winters have been spent within the Arctic circle, north of 70° N. Lord in his lonely region—his four sons and five subordinates, oilmen, the

only white faces about him, except when he visits Uppernavik—the good old man has the satisfaction of knowing no superior. His habits are three fourths Esquimaux, one-eighth Danish, and the remainder Prövenish, or peculiarly his own. His wife is a half-breed, and his family, in language and aspect, completely Esquimaux.

"When the long, dark winter comes, he exchanges books with his friend the priest of Uppernavik. 'The Dantz Penning Magazin,' and 'The History of the Unitas Fratrum,' take the place of certain well-thumbed, ancient, sentimental novels; and sometimes the priest comes in person to tenant the 'spare room,' which makes it very pleasant, 'for we talk Danish.'

"Except this spare room, which elsewhere would be called the loft of the house, its only apartment is the one in which I am. And here eat, and drink, and cook, and sleep, and live, not only Cristiansen and all his descendants, but his wife's mother, and her children, grandchildren, and great-grandchildren who are growing up about her. It is fifteen feet broad by sixteen long, with just height enough for a grenadier, without his cap, to stand erect, and not touch the beams. The frame of the house is of Norway pine coated with tar, with its interspaces caulked with moss and small window-panes inserted in a deep casing of wood.

"The most striking decorative feature is a ledge or shelf of pine plank, of varying width, which runs round three of its sides. Its capacity is wonderful. It is the sofa and bed, on which the entire united family find room to loll and sleep; and upon it now are huddled, besides a navy doctor and his writing board, one ink bottle, sundry articles of food and refreshment, one sleeping child, one lot of babies not in the least asleep, one canary-bird cage with its exotic and most sorrowful little prisoner, and an infinite variety of other articles too tedious to mention, comprising seal-skins, boots, bottles, jumpers, glasses, crockery both of kitchen and nursery, coffee-pots, dog-skin socks, canvas pillows, an eider-down comforter, and a sick bitch with a youthful family of whining puppies.

"Una, the second daughter, has been sick and under treatment; and she is now hard at work with her sisters, Anna, Sara, and Cristina, on a tribute of gratitude to her doctor. They have been busy all the morning whipping and stitching the seal-skins with reindeer tendon thread. My present is to be a complete suit of ladies' apparel, made of the richest seal-skin, according to the standard mode of Pröven, which may always be presumed to be the 'latest winter fashion.' It is a really elegant dress. To some the unmentionables might savor of mascularity; but having seen something of a more polite society, my feminine associations are not restricted to petticoats. Extremes meet in the Esquimaux of Greenland and Amazons of Paris.

"The large family is a happy one: so small a home could not tolerate a quarrelsome mess. The sons, the men Cristiansens, brave and stalwart fellows, practiced in the kayack, and the sledge, and the whale-net, adroit with the harpoon and expert with the rifle, are constant at the chase, and bring home their spoil, with the honest pride becoming good providers of their household. And the women, in their nursing, cooking, tailoring, and housekeeping, are, I suppose, faithful enough. But what favorable impression that the mind gets through other channels can contend against the information of the nose! Organ of the aristocracy, critic and *magister morum* of all civilization, censor that heeds neither argument nor remonstrance—the nose, alas! it bids me record, that to all their possible godliness cleanliness is not superadded.

"During the short summer of daylight—it is one of the many apparent vestiges, among this people, of ancient nomadic habits—the whole family gather joyously in the summer's lodge, a tent

of seal or reindeer skin, pitched out of doors. Then the room has its annual ventilation, and its cooking and chamber furniture are less liable to be confounded. For the winter the arrangement is this: on three sides of the room, close by the ledge I have spoken of, stand as many large pans of porous steatite or serpentine, elevated on slight wooden tripods. These, filled with seal-blubber, and garnished with moss round the edge to serve as a wick, unite the functions of chandelier and stove. They who quarrel with an ill-trimmed lamp at home should be disciplined by one of them. Each boils its half-gallon kettle of coffee in twenty minutes, and smokes—like a small chimney on fire; and the three burn together. There is no flue, or fire-place, or opening of escape.

"On the remaining side of the room stand a valued table and three chairs; and with these, like a buhl cabinet or fancy étagère, conspicuous in its modest corner, a tub. It is the steeping-tub for curing skins. Its contents require active fermentation to fit them for their office; and, to judge from the odor, the process had been going on successfully."

We warped out to sea again on the afternoon of the third, with our friend the cooper for pilot; the entire settlement turning out upon the rocks to wish us good-by, and remaining there till they looked in the distance like a herd of seal. But we found no opening in the pack, and came back again to Pröven on the fourth, not sorry, as the weather was thickening, to pass our festival inside the little port.

Our celebration was of the primitive order. We saluted the town with one of the largest balanced stones, which we rolled down from the cliff above; and made an egg-nogg of eider eggs; and the men had a Hosky ball; and, in a word, we all did our best to make the day differ from other days—which attempt failed. Still, God ever bless the fourth!

The sixth was Sunday, and we attended church in the morning at the schoolmaster's. The service consisted of a long-winded hymn, and a longer winded sermon, in the Esquimaux—surely the longest of long-winded languages. The congregation were some two dozen men and women, not counting our party.

We put to sea in the afternoon. The weather was soft and warm on shore; but outside it was perfectly delightful: no wind—the streams of ice beyond enforcing a most perfect calm upon the water; the thermometer in the sunshine frequently as high as 76°, and never sinking below 30° in the shade. I basked on deck all night, sleeping in the sun.

And such a night! I saw the moon at midnight, while the sun was slanting along the tinted horizon, and duplicated by reflection from the water below it: the dark bergs to seaward had outlines of silver; and two wild cataracts on the shore-side were falling from ice-backed cliffs twelve hundred feet into the sea.

July 7. I was awakened from my dreamy sleep to receive the visits of a couple of boats that were working slowly to us through the floes. An English face—two English faces—twelve English faces: what a happy sight! We had had no one but ourselves to speak our own tongue to for three hundred days, and were as glad to listen to it as if we had been serving out the time in the penitentiary of silence at Auburn or Sing-Sing. Their broad North Briton was music. It was not the offensive dialect of the provincial Englishman, with the affectation of speaking his language correctly; but a strong and manly home-brew of the best language in the world for words of sincere and hearty good-will. They had to turn up their noses at our seal's-liver breakfast; but, when they heard of our winter trials, they stuffed down the seal without tasting it. I felt sorry after they were off, that I had not taken their names down every one.

The whaling vessels to which they returned were in the freer water outside the shore stream, the *Jane O'Boness*, Captain John Walker; and the *Pacific*, Captain Patterson. These gentlemen boarded us as soon as we got through the ice to them. They thought our escape miraculous; and it was some time before they found words to congratulate us. "Augh!" and "Wonderful!" with a peculiar interchange of looks, was all they said.

These burned children dread the fire; and their conversation opened our eyes to dangers we had gone through half unconsciously. Few masters in the whaling trade but have at some time suffered wreck. Two seasons ago, this veteran Patterson saw his ship thrust bodily through another, and then the transfixed and transfixing vessels were both eaten up together by the greedy floes. He stepped from the last remnant of his buried sail on to the hummocks: "And that's a' that e'e ha' seen o' her!"

They left us newspapers, potatoes, turnips, eggs, and fresh beef enough to eat out every taint of scurvy! They took letters from us for home, and cheered ship when we parted. I must not soon forget the Pacific and *Jane O'Boness*.

(*Editor's note.*) The next day they made Uppernavik. July and a good part of August were spent in a vain endeavor to return to Lancaster Sound and complete their explorations in Wellington Channel; but the ships were so beset with floes and icebergs that this project had to be abandoned. On August 21st the expedition headed homeward, and it arrived in New York on September 30, 1851.

ARCTIC
REGIONS
MELVILLE ISLAND
BATHURST
BEAUFORT LAND
NORTH DEVON
BARROW STRAITS
NORTH SOMERSET
PRINCE REGENT INLET
COCKBURN LAND
LANCASTER SOUND
JONES SOUND
BAFFIN BAY
SCALE OF HAUTICAL MILES
SCALE OF STATUTE MILES

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