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THE SURVIVORS ON BOARD THE THETIS AT DISKO.

P R E F A C E .

THE history of the rescue of Greely and the other survivors of his party would hardly be complete without some account of the original expedition to Lady Franklin Bay, and of the two voyages undertaken for its relief before it left Discovery Harbor. In giving this account, it has been the aim of the writers to describe the events simply as they occurred, and studiously to avoid all criticism of those who took part in them. The facts are to be found for the most part in the voluminous testimony taken before the Court of Inquiry, and in the reports and official correspondence annexed to the proceedings of the Court.

The history of the Circumpolar Stations is chiefly derived from the *Mittheilungen* published from time to time by the International Polar Commission.

The illustrations in the book are from photographs taken during the voyage of the Relief Expedition of 1884, the negatives having been further treated by Mr. M. P. Rice, of Washington, before impressions were made.

The writers desire to express their obligations for the assistance given them by various officers of the Relief Squadron, in the preparation of the latter part of the work.

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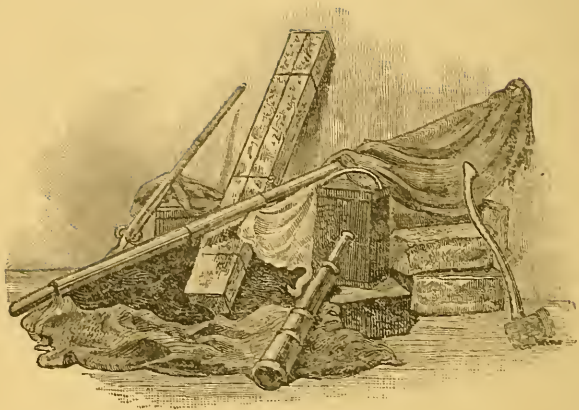
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THE RESCUE OF GREELY.

CHAPTER I.

THE GATEWAY OF THE POLAR SEA.

ALTHOUGH every student of Arctic exploration is familiar with the series of long, narrow channels that separate the coast of Greenland from the labyrinth of straits and islands north of the American Continent, it may be well to give once more a sketch of their characteristic features, upon which so much depended in the events of which this book recites the story.

Of the three entrances to the Polar Ocean, by Behring Strait, by the North Atlantic, and by Baffin Bay, the last has aroused by far the greatest interest, and has been the scene of the most numerous and successful expeditions, especially of American explorers. For a long time after the voyage of Baffin in 1616, little was known or thought of it. Even in this century, the absorbing problem of Arctic navigators was the discovery, not of the Pole, but of the Northwest Passage, and the voyage of Sir John Franklin in 1845 with this object, together with the innumerable expeditions to ascertain his fate, resulted in mapping out with fullness and comparative accuracy the islands of the North

American archipelago. In 1852, however, Captain Inglefield, of the Royal Navy, also engaged in the Franklin search, visited Smith Sound. After him came the second Grinnell Expedition under Dr. Kane in 1853, the expedition of Dr. Hayes in 1860, that of Hall in the *Polaris* in 1871, and that of Nares in the *Alert* and *Discovery* in 1875 and 1876, each going beyond its predecessor and each contributing its important additions to the geographical knowledge of the region. Last of all has set out and returned the Lady Franklin Bay Expedition, which has surpassed the furthest northern limit of the *Alert* and *Discovery*, placing its $83^{\circ} 24. 5'$, the northern latitude of Lockwood, beside the $83^{\circ} 20' 26''$ of Markham, and adding by actual discovery and survey a number of miles to the previously known geographical extent of the North Greenland shores.

Due north from St. John's, Newfoundland, at a distance of 1,300 miles, lies the little settlement of Lively, on the island of Disko. It is the principal one among the northern group of Danish trading posts on the west coast of Greenland, and its sheltered harbor, called Godhavn, makes it a convenient and usual point of departure for all expeditions making for Smith Sound and the waters beyond. Its importance is increased by the neighborhood of the coal mines at the Kudliscet cliffs, which lie on the shore of the Waigat, a long strait separating Disko Island from the mainland.

From Godhavn to Upernivik the way lies either through the Waigat, or around the western shore of the island, across the broad estuary known as the Omenak Fiord, and past the little village of Proven. Upernivik lies on an island forty miles beyond Proven. Its harbor is an open roadstead, exposed to gales from the south and west, with no good holding

ground, and subject to the inroads of drifting icebergs, which are kept in constant motion by the strong winds and currents, and make the anchorage a difficult and dangerous one for ships.

The coast beyond Upernivik as far as the Duck Islands is as ugly a bit of navigation as one would care to find. The shore is bold and cut up into ribbons by numbers of bays and estuaries, while the waters are filled with little islands whose position is imperfectly ascertained, and with countless submerged rocks and shoals and hidden dangers absolutely unknown and uncharted. The position of Tassuisak even, the northernmost of the Danish settlements—a little cluster of huts in a deep bay, midway between Upernivik and the Duck Islands—is given on the Admiralty charts as “approximate.” The points marked definitely on the charts are as likely to be wrong as right, so hurriedly and imperfectly has the coast been surveyed; most of the vessels that have visited the region having had all that they could do to get through or past the spot, in time to accomplish more important work at points beyond.

West of the Greenland coast lies the great expanse of Baffin Bay. As far as Disko, and in the midsummer season even as far as Upernivik, navigation is usually attended with little danger, but as soon as a vessel starts across, from whichever point she sets out, her difficulties begin. One hundred and fifty miles north of Upernivik the shore turns sharply to the westward, following this course another one hundred and fifty miles to Cape Dudley Digges, where it turns again to the north. The bight thus formed is Melville Bay. A few miles east of Cape Dudley Digges is Cape York, and it is to this point that all ships crossing Melville Bay are directed.

The run across is justly dreaded by Arctic navigators. Even the whalers who go there every summer are more anxious about Melville Bay than any other point. There are two ways of getting across—the Northern Passage following the curve of the coast, and the Middle Passage in a direct line across the Bay. Early in the season the first only is practicable. At that time the whole sheet of water is filled with the “middle pack”—a vast field of ice which represents the accumulations of years firmly held together by the additions of the winter before. The pack is generally out of the influence of the swiftest current passing south from Smith Sound to Davis Strait, but drifts with the winds and currents back and forth across Melville Bay. Sometimes it leaves a stretch of open water, sometimes again it closes up against the land ice, which forms a belt along the coast varying in width from one hundred yards to fifteen or twenty miles, as solid and impenetrable as terra firma. By the middle of July or the first of August the pack is generally either broken up into floes or has drifted to the southward and westward into Baffin Bay, so that a passage may then be made with care directly across to Cape York. Early in the season, however, a ship must take the Northern Passage, skirting the land ice and following the seam of water which lies between it and the pack, and defines the edge of both more or less distinctly,—generally, however, less rather than more, especially when a southerly wind drives the pack on the land ice, until the two become glued together in what seems for the time a homogeneous mass.

Whichever passage is taken there is always a possibility of encountering the pack, although, from the number of vessels that have crossed in recent years in August or late

in July, the run over at this season would seem to be comparatively easy for a cautious navigator. Occasionally, however, the middle pack is caught in the current and drifts away hundreds of miles to the southward. *The Fox*, the last of the Franklin search vessels, commanded by Captain McClintock, in August, 1857, could not find any middle passage, and though well to the northward, was beset in the middle pack, and was unable to extricate herself until the following April. During these eight months she drifted twelve hundred miles in the ice to a point nearly opposite Cape Farewell, the southern extremity of Greenland.

After rounding Cape York, the navigator enters a sheet of water, of large extent and triangular in outline, between the coasts of Greenland and Ellesmere Land. The shores gradually approach until at the northern apex of the triangle they are only twenty miles or so apart. At this point Cape Alexander on the Greenland coast, and Cape Isabella in Ellesmere Land,—the “Northern Pillars of Hercules,” as they were well called by Dr. Bessels,—mark the entrance to Smith Sound, which gives access to the difficult waters beyond. No name has been affixed to the triangular body of water above Cape York, but it will be called for convenience lower Smith Sound.

It is here that vessels penetrating or skirting the ice of Melville Bay find the “North Water;”—a name given by the whalers to the water-space left open by the progress southward of the winter pack. It is generally met not long after passing the promontory of which Cape York and Cape Dudley Digges are the principal points. But it may be found much lower down; and, on the other hand, there are seasons in which, until late at least, it hardly seems to exist

at all. The testimony of the explorers agrees only in the utter variety and uncertainty of the ice-movements, and the impossibility of fastening upon any general law to govern them, and of predicting their character and extent, even on the spot from day to day. McClintock says that nothing is more uncertain than ice-navigation, and that one can only calculate upon the chances; while Sir Allen Young, who commanded the *Pandora* in 1876, gives as his opinion: "All projects connected with Arctic navigation must necessarily be very speculative, and it is out of all human foresight to anticipate events in those regions." It appears to be a fact that navigation is easier in July and early in August than it is before and after that period; but beyond this no general conclusion can be stated, and no better evidence of this is to be found than in the various voyages which had their immediate or proximate origin in the expedition to Lady Franklin Bay.

The course of vessels after leaving Cape York depends somewhat on the state of the ice, but it generally deviates little from the line of the eastern shore. Passing by Conical Rock, an isolated peak which forms a conspicuous landmark, the coast trends to the northward to Cape Dudley Digges and on to Cape Athol. Beyond Cape Athol lies Saunders Island, at the entrance to Wolstenholme Sound, which, like most of these inlets, forms the embouchure of a glacier-river. The whole interior is covered by ice, and the glaciers pressing down the slopes between headlands on the coast, discharge great masses of ice, which break off and drift away as icebergs. Every nook and corner along the shore north of Cape York sends out its crop of bergs, many of which, passing southward with the current, are carried

out through Baffin Bay and Davis Strait to the ocean. Many of them ground about Cape York, and may remain there for months; but the larger number drift hither and thither, in and about the waters where they were launched, a constant source of anxiety and danger to navigators.

In a branch of Wolstenholme Sound, called North Star Bay, is an Eskimo village. There are several of these villages upon the Greenland shore, with a scanty population of Etah Eskimo, who remain through the winter, never crossing Melville Bay, but spreading along the coast to the northward in hunting and fishing parties during the summer, when the whole region abounds in game—seal, walrus, reindeer, and birds.

Forty miles to the westward of Saunders Island lies a little group known as the Cary Islands. Lying well off from the shore, and generally accessible to ships, they are a favorite station with expeditions to this region, which almost always leave a record here on the way north. Being also comparatively inaccessible to the natives, who are always ready to plunder anything they can find, the islands are a good place for a cache, or depot of provisions. It was on the Southeast Cary Island that Captain Nares, in the English expedition of 1875, composed of the *Alert* and *Discovery* landed his first depot of 1,800 rations, which were still in 1884 found, for the most part, in good condition.

Beyond Wolstenholme Sound and Saunders Island juts out the bold headland of Cape Parry. To the north the land again makes in, forming Inglefield Gulf, with three islands at its entrance—Herbert, Northumberland, and Hakluyt Island. The outermost, Hakluyt Island, which was the northern limit of Baffin's voyage, two centuries and a half ago, is

directly north of the Cary Islands, and is similarly used as a rendezvous, or as a place of communication. The three islands are separated by Whale Sound from Cape Parry on the south, and by Murchison Sound from Cape Robertson on the north. The promontory from which the latter projects extends far out to the westward, beyond the coast-line below, and forms the eastern shore of Smith Sound.

This sound—or strait, as it would properly be called—is the central point of interest in the Greenland waters. Its shores have been the scene of many perilous adventures and narrow escapes. From Cape Alexander to Cairn Point, on the eastern side, and from Cape Isabella to Cape Sabine, on the west, every headland and bay recalls some incident in the history of the expeditions of the last thirty years. It was at Hartstene Bay, just north of Cape Alexander, that the relief expedition sent out under Hartstene, in 1855, to rescue Dr. Kane, found a harbor. A branch of Hartstene Bay forms Pandora Harbor, named for Sir Allen Young's ship, which twice went up in quest of news from the *Alert* and *Discovery*. A little further to the north is Foulke Fiord, where Dr. Hayes wintered in 1860 and '61, in the schooner *United States*. Just beyond is Cape Ohlsen, marking the burial-place of one of Kane's men, for whom it was named. Making inwards from the Cape, the indentation of the shore forms Lifeboat Cove, the second winter quarters of the *Polaris*, and at its entrance, separated only by a strait half a mile wide, is Littleton Island. A few miles further north, at Cairn Point, the shore turns to the eastward, and Smith Sound opens into the wide expanse of Kane Sea.

The opposite side of the Sound on the coast of Ellesmere Land is a dreary wilderness, never visited by the Eskimo,

and only rarely by the bears and Arctic foxes. North of Cape Isabella, where Nares made a small cache, is a deep estuary called Baird Inlet. The northern point of the sound on this side is marked by Cape Sabine, on the extremity of what was supposed to be a peninsula, but which one of Greely's men discovered to be an island. Just south of the cape is Payer Harbor, lying between the shore and Brevoort Island. Stalknecht Island, a low and narrow strip of rock, lying to the west of Brevoort Island, was the place of Nares' third depot. Around the cape, on the northern shore, about four miles from the point, is a little cove. It is around this cove and the hill above it, that the interest of the present narrative centres; for it was here that the stores were landed from the wreck of the *Proteus*, and here that Greely made his final camp, October 21, 1853.

Beyond Smith Sound the Greenland shore trends away one hundred miles or more to the eastward, forming Kane Sea, whose shores were first outlined by Dr. Kane and his party of the second Grinnell expedition, during the two desolate years passed at Rensselaer Bay. The sea forms a large oval basin, covered most of the time by a nearly impenetrable polar pack. Only four vessels have succeeded in crossing it,—the *Polaris*, the *Alert* and *Discovery*, and the *Proteus* on her wonderful voyage with Greely in 1881. On the western side of the basin the most prominent point is Cape Hawks, so often referred to in the plans for the relief expeditions, where a small cache had been made by Nares. His fifth and last depot was at Cape Collinson, fifty miles to the north.

North of Kane Sea, the shores again converging, form Kennedy and Robeson Channels, the long, narrow strait lead-

ing directly to the Polar Ocean, and separating Greenland from Grinnell Land. A little more than half way up is Lady Franklin Bay, where Greely fixed his station, and where he passed two years with his command. The site of the station was Discovery Harbor, on the north side of the Bay, where the *Discovery* had wintered in 1875-76. Above this point, on the shores of the Sea itself, the *Alert* had passed the same winter, and a few miles away, at Thank God Harbor, the *Polaris*, under Hall, had made her station four years before. But these were all. Before these expeditions no one had entered the long, narrow passage, and since then, those who have attempted the journey have failed even to get beyond the ice-pack in Kane Sea.

CHAPTER II.

THE CIRCUMPOLAR STATIONS.

OF those whose names have been added during the last century to the roll of Arctic explorers and investigators, there are few to whom science must acknowledge a greater debt than to Karl Weyprecht. As the commander of the *Tegetthoff*, in the Austro-Hungarian expedition of 1872, he discovered and named Franz Josef Land. But his most important service consists in having first drawn up in a definite shape, and pushed to successful execution, the project of establishing a series of co-operating stations in the higher latitudes to make simultaneous observations for a considerable time.

It was on the 18th of September, 1875, at the meeting of the association of German naturalists and physicists at Gratz, that Lieutenant Weyprecht first unfolded his plan. He pointed out that while the polar regions offered one of the most important fields for the investigation of natural phenomena, especially in reference to the physical condition of the earth, the costly expeditions that had gone there had done little more for physical research than to show what a wealth of untouched materials lay within the grasp of the intelligent and systematic inquirer. He therefore proposed to leave the beaten track of Arctic exploration, and subordinate geographical discovery entirely to physical observation. As previous investigations had been largely ineffective from

their isolated character, his plan was to send a number of expeditions to remain for some time, and make contemporaneous observations, according to a prearranged programme.

Although these views may have been held more or less by scientific men in advance of Weyprecht, to him alone belongs the credit of having drawn up a definite plan of action, and of securing its adoption. No single state could be expected to furnish either the means or the personnel for so many expeditions, and it was decided from the start to put the scheme on an international footing. A beginning was to be made by Austria-Hungary, but it was as a private enterprise, the expenses being borne by Weyprecht's friend, Count Wilczek, who had taken a lively interest in his project. These two prepared a programme of operations, which was submitted to the meteorological congress held at Rome in 1879. The congress received it favorably and recommended its adoption, but as the delegates had no authority to act, the international meteorological committee was instructed to summon a special conference later to consider it.

The first International Polar Conference met at Hamburg, October 1, 1879, with delegates from Austria-Hungary, Denmark, France, Germany, the Netherlands, Norway, Russia, and Sweden. It organized as a permanent commission and decided that at least eight stations would be necessary to make the plan a success. The twelve months of observation were to be comprised between the autumn of 1881 and that of 1882. Dr. Neumayer, of Hamburg, was the first president of the committee, but was afterward succeeded by Professor Wild, of St. Petersburg.

Active efforts were now made by the commission and its members to secure the co-operation of a sufficient number of

Governments, and a second Conference met at Bern in the following summer. The reports were encouraging, but not enough so to carry out the undertaking at the proposed time. Four States had agreed to take part—Austria-Hungary, Denmark, Norway, and Russia. The Austrian station, still as a private undertaking, was to be fixed at Jan Mayen Island, off the east coast of Greenland, and was to be under the command of Lieutenant von Wohlgemuth, of the Austrian navy. Denmark was to select Upernivik or Godthaab; Norway named Bossekop, near Alten; and Russia the Lena Delta. This was all that had been done, and the beginning of the work was postponed for a year, or until the summer of 1882.

Early efforts had been made to secure the co-operation of the United States. Already in May, 1879, Weyprecht had written to General Myer, at that time the Chief Signal Officer of the army, urging that the Government should join in his new scheme of Arctic research, which was to be devoted to the investigation of magnetic and meteorological phenomena. He suggested that in completing the circle of circumpolar observing stations the United States should establish their post at Point Barrow, on the coast of Alaska, northeast of Behring Strait, where the English ship *Plover* had wintered in 1852 and 1853.

As the work was partly meteorological in character, it would naturally fall under the cognizance of the Weather Bureau, directed by the Chief Signal Officer of the army. The plan commended itself strongly to General Myer, and as it required no special legislation for the Office to establish a signal station anywhere within the limits of the United States, steps were taken in the course of the year to carry it out. Lieutenant Ray was ordered to command the expedition, which

left San Francisco July 18, 1881, in the schooner *Golden Fleece*, and arrived September 8th at the point where the station was finally established, a few miles from Point Barrow. After landing the party and stores the vessel returned to the United States. The dwelling-house and the observatories were at once put up, and by October the work was fairly in progress. It was steadily kept up until the end; the series of hourly magnetic and meteorological observations being continued without interruption until the final abandonment of the station. Other valuable observations were taken, and exploring expeditions were sent into the interior. On the arrival of the relief vessel the records and instruments with the scientific collections were put on board and the expedition embarked August 29, 1883, arriving safely at San Francisco in October. The work had been admirably done, and the results were accomplished without a mishap.

Meanwhile a plan of different scope, but with some features in common with the other, had been conceived by Lieutenant Howgate, an army officer attached to the Signal Service, and had been actively urged by him for several years. It was known as the scheme of Polar Colonization, and everybody was familiar with it under that name. The plan consisted in establishing a colony at some suitable point as far north as possible, where it should remain for three years; it being thought that during that time some occasion would arise presenting favorable conditions for reaching the North Pole. The failure of the Nares expedition to accomplish this object in 1875-76 was partly attributed to the cold season and exceptional winds prevailing during that year which formed ice ridges across the line of march and so rendered progress slow and difficult. The place selected as the

site of the proposed colony was Discovery Harbor, on the shore of Lady Franklin Bay, where the *Discovery* had wintered in 1875-76. It was chosen because of its advanced position in an important region and its vicinity to a coal-seam. During its three years' residence the colony would be able to choose a favorable time for effecting its primary object, the journey to the Pole. Besides this it would carry on a series of meteorological observations.

As a result of Howgate's efforts, Congress passed the Act of May 1, 1880, authorizing the President to establish a station at or near Lady Franklin Bay, and to accept the *Gulnare*, a vessel owned by Howgate, for the use of the expedition. First Lieutenant A. W. Greely, of the Fifth Cavalry, was assigned to the command, and Doctor Octave Pavy was engaged as surgeon. The *Gulnare* was not accepted by the Government, and Greely never went on the expedition. The vessel, however, started on her voyage and proceeded as far as Disko, but, proving entirely unfit to continue the journey, she returned in the autumn disabled, and the whole affair was in consequence a failure.

In September, 1880, Dr. Wild, the President of the International Polar Commission, in announcing to General Myer the progress of its work, stated that only two stations were needed to complete the circle, Point Barrow and some point in the North American archipelago. In view of this, although there was no necessary connection between the original "Howgate Plan" and Weyprecht's proposed circumpolar system, it was natural that the two should have been blended by the Signal Office, as they had been already connected in the Report of the House Committee recommending the passage of the bill in the previous May; and so it

happened that after the failure and disappearance of the first project in the fall of 1880, it reappeared in the winter clothed with the mantle of Weyprecht, and received an appropriation of \$25,000 in the Sundry Civil Act of March 3, 1881. This was stated to be "for continuing the work of scientific observation and exploration on or near the shores of Lady Franklin Bay," which, however, could as yet hardly be said to have begun. In this manner was assured the second observing-post of the United States in the circle which the International Polar Commission was seeking to establish. If it had not been for the adoption of the Howgate plan the year before, authority would probably never have been obtained for a second station; but the most unfortunate result of the combination of the two distinct projects was the necessity of taking Lady Franklin Bay, specified in the Act of 1880, as the site. It had been one of Weyprecht's ideas that each circumpolar station should be fixed at an accessible point, which Lady Franklin Bay, as the result showed, certainly was not; and while no place could have been better adapted to serve as a base for an expedition to the Pole, which Howgate contemplated, it did not offer any marked advantages for making scientific observations, which alone was the purpose of Weyprecht.

The third International Polar Conference met at St. Petersburg, August 1, 1881. Already in the May preceding, the required number of stations had been secured, and by August the preparations for most of them had been undertaken. Others were subsequently added, until they reached a total of fourteen, as follows:

- Austria-Hungary, at Jan Mayen Island.
- Denmark, at Godthaab, in Greenland.
- Finland, at Sodankyla.

France, at Cape Horn.

Germany, at Cumberland Sound and the South Georgian Islands.

Great Britain and Canada, at Fort Rae, on the Great Slave Lake.

Netherlands, at Dickson Haven, near the mouth of the Yenesei River.

Norway, at Bossekop.

Russia, at the Lena Delta and Nova Zembla.

Sweden, at Spitzbergen.

United States, at Point Barrow and Lady Franklin Bay.

An elaborate programme of scientific work had been carefully drawn up, which was to be followed at all the stations. The obligatory programme included meteorological, magnetic, and auroral observations to be made hourly during the whole period; and on certain fixed days, the 1st and 15th of the month, the magnetic observations were to be made every twenty seconds, during a stated hour, at Göttingen time, at all the stations. Besides the required work, suggestions were made as to optional observations, including the investigation of solar radiation, evaporation, earth currents, atmospheric electricity, ice, tides, and, in fact, nearly all the natural phenomena peculiar to the region. The principal observatories in the temperate zones were to co-operate with the work, and all the observations, with the necessary reductions and calculations, were ultimately to be published.

It will be seen from this on what a complete and far-reaching scale the enterprise was conceived and undertaken. For the most part it has been successfully carried out, and it is needless to say that its results will be of immense value in the solution of physical problems. A great deal of careful and thorough exploration over limited areas has also been accomplished. Weyprecht died before the stations were actually established, but he lived long enough to see the ultimate success of his project assured.

Although the United States had not been one of the first Governments to agree to the plan, our two expeditions were the earliest on the ground, being in fact a whole year in advance. The others got off at different times in the summer of 1882. Most of them were in time to begin work early in the fall, so that the proposed twelve months of observations of the Commission extended nearly from September 1, 1882, to September 1, 1883. The French expedition to Cape Horn and the Russian party at the Lena Delta were a little belated, though only by a few weeks. In consequence of this, the indefatigable committee issued a circular in February, 1883, asking for a continuation of the stations for a second year, but the proposal was not responded to with enthusiasm, the difficulties in the way of acceding to it being too great, and the efforts required to start the expeditions in the first place having pretty nearly exhausted the perseverance of the projectors. In fact, as far as the United States expeditions were concerned, the Act of Congress making appropriations for their support, passed in March of that year, expressly required that they should return. The stations at Sodankyla and at the Lena Delta were, however, kept up until 1884. The other expeditions left their posts in the summer or fall of 1883, and returned home safely, with the single exception of the unfortunate party at Lady Franklin Bay. The only one which had met with a mishap was that of Holland, which could not reach Dickson Haven, the intended place of wintering, the ship *Varna* which carried the party having been beset in September, 1882, in the ice-pack in Kara Sea. The observations were, therefore, imperfect. The ship, after being roughly handled by the ice, was finally disabled, and sank in July. The members of the expedition

were saved, and the scientific collections were brought back by the *Dijmphna*, which had wintered near by in the ice.

In the spring of 1884 the fourth and final International Polar Conference met at Vienna. It was a remarkable meeting. The great project had been carried out, the work had been performed and reported, and it only remained to make arrangements for the final reduction and publication of the immense mass of scientific data. The members had much upon which to congratulate themselves and each other. At the assembling of the Conference, there were present not only the members of the Polar Commission, through whose efforts the work had been set on foot, but many of those who had actually commanded the expeditions, and who had brought their parties safely home from the stations around the poles, with the results of a year of fruitful labor. Among these were Captain Dawson, from Fort Rae; Eckholm, from Spitzbergen; Giese, from Cumberland Sound; Payen, from Cape Horn; Paulsen, from Godthaab; Ray, from Point Barrow; Snellen, from Dickson Haven; Steen, from Bossekop; and Wilczek and Wohlgemuth, from Jan Mayen. After a week of friendly intercourse and discussion, the Conference adjourned on the 24th of April, its last act being the adoption of a resolution, proposed by Dr. Neumayer, of Hamburg, expressing "its warm and genuine sympathy for the misfortune of Captain Greely and his party, and the most earnest hope for the happy return home of the second American Expedition." At the moment when Greely's co-laborers were uttering their kindly words of sympathy at Vienna, he and his command were wasting away at Cape Sabine, on the edge of the Arctic wilderness, with little prospect of escape from starvation and death.

CHAPTER III.

THE LADY FRANKLIN BAY EXPEDITION.

UNDETERRED by the failure of the previous summer, the Signal Office, in the winter of 1880-81, entered boldly upon its preparations for a new expedition to Lady Franklin Bay. The Act of 1880 gave general authority for the enterprise, and in the following March the appropriation was made to carry it out. General Hazen, who had succeeded General Myer as Chief Signal Officer, had the general direction of the expedition, and Lieutenant Greely was again selected for the command, being formally assigned to the duty on March 11th. Complete preparations were made, stores for three years were procured and shipped, and the steam-sealer *Proteus*, of St. John's, was chartered to take the expedition to its destination. The *Proteus* was an excellent vessel, of 619 tons (gross), built at Dundee in 1874. She was built of oak, with a sheathing of ironwood from above the water-line to below the turn of the bilge, and her prow was armed with iron. Her speed was $8\frac{1}{2}$ knots. Captain Richard Pike, who commanded her, had had considerable experience in ice-navigation, having made several sealing trips to the coast of Labrador.

The following officers and enlisted men composed the force :

First Lieutenant A. W. Greely, 5th Cavalry, Acting Signal Officer.
Second Lieutenant Frederick F. Kisingbury, 11th Infantry.
Second Lieutenant James B. Lockwood, 23d Infantry.

- Acting-Assistant Surgeon Octave Pavy.
- Sergeant Edward Israel, Signal Corps.
- “ Winfield S. Jewell, Signal Corps.
- “ George W. Rice, Signal Corps.
- “ David C. Ralston, Signal Corps.
- “ Hampden S. Gardiner, Signal Corps.
- “ William H. Cross, General Service.
- “ David L. Brainard, 2d Cavalry.
- “ David Linn, 2d Cavalry.
- Corporal Nicholas Salor, 2d Cavalry.
- “ Joseph Elison, 10th Infantry.
- Private Charles B. Henry, 5th Cavalry.
- “ Maurice Connell, 3d Cavalry.
- “ Jacob Bender, 9th Infantry.
- “ Francis Long, 9th Infantry.
- “ William Whisler, 9th Infantry.
- “ Henry Bierderbick, 17th Infantry.
- “ Julius Fredericks, 2d Cavalry.
- “ William A. Ellis, 2d Cavalry.
- “ R. R. Schneider, 1st Artillery.

Two Eskimo were added at Upernivik,

Jens Edward, and
Frederick Thorley Christiansen,

making a total of twenty-five persons.

Two other enlisted men went to Lady Franklin Bay as members of the expedition, but returned with the vessel.

On June 17th, the following instructions were issued to Lieutenant Greely by the Chief Signal Officer :

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The *permanent* station will be established at the most suitable point north of the eighty-first parallel and contiguous to the coal-seam discovered near Lady Franklin Bay by the English expedition of 1875.

After leaving St. John's, Newfoundland, except to obtain Eskimo hunters, dogs, clothing, etc., at Disko or Upernivik, only such stops will be made as the condition of the ice necessitates, or as are essential in order to determine the exact location and condition of the stores cached on the east coast of Grinnell Land by the English expedition of 1875.

During any enforced delays along that coast it would be well to supplement the English depots by such small caches from the steamer's stores of provisions as would be valuable to a party retreating southward by boats from Robeson's Channel. At each point where an old depot is examined or a new one established, three brief notices will be left of the visit: one to be deposited in the cairn built or found standing, one to be placed on the north side of it, and one to be buried twenty feet north (magnetic) of the cairn. Notices discovered in cairns will be brought away, replacing them, however, by copies.

The steamer should, on arrival at *permanent* station, discharge her cargo with the utmost dispatch, and be ordered to return to St. John's, N. F., after a careful examination of the seam of coal at that point has been made by the party to determine whether an ample supply is easily procurable. A report in writing on this subject will be sent by the returning vessel. In case of doubt an ample supply must be retained from the steamer's stores.

By the returning steamer will be sent a brief report of proceedings and as full a transcript as possible of all meteorological and other observations made during the voyage.

After the departure of the vessel the energies of the party should first be devoted to the erection of the dwelling-house and observatories, after which a sledge party will be sent, according to the proposal made to the Navy Department, to the high land near Cape Joseph Henry.

The sledging parties will generally work in the interests of exploration and discovery. The work to be done by them should be marked by all possible care and fidelity. The outlines of coasts entered on charts will be such only as have actually been seen by the party. Every favorable opportunity will be improved by the sledging parties to determine accurately the geographical positions of all their camps, and to obtain the bearing therefrom of all distant cliffs, mountains, islands, etc.

Careful attention will be given to the collection of specimens of the animal, mineral, and vegetable kingdoms. Such collections will be made as complete as possible; will be considered the property of the Government of the United States, and are to be at its disposal.

Special instructions regarding the meteorological, magnetic, tidal, pendulum, and other observations, as recommended by the Hamburg International Polar Conference, are transmitted herewith.

It is contemplated that the permanent station shall be visited in 1882 and 1883 by a steam sealer or other vessel, by which supplies for and such additions to the present party as are deemed needful will be sent.

In case such vessel is unable to reach Lady Franklin Bay in 1883, she

will cache a portion of her supplies and all of her letters and dispatches at the most northerly point she attains on the *east coast of Grinnell Land*, and establish a small depot of supplies at Littleton Island. Notices of the locality of such depots will be left at one or all of the following places, viz. : Cape Hawks, Cape Sabine, and Cape Isabella.

In case no vessel reaches the *permanent* station in 1882, the vessel sent in 1883 will remain in Smith Sound until there is danger of its closing by ice, and, on leaving, will land all her supplies and a party at Littleton Island, which party will be prepared for a winter's stay, and will be instructed to send sledge parties up the *east side of Grinnell Land* to meet this party. If not visited in 1882, Lieutenant Greely will abandon his station not later than September 1, 1883, and will retreat southward by boat, following closely the *east coast of Grinnell Land*, until the relieving vessel is met or Littleton Island is reached.

A special copy of all reports will be made each day, which will be sent home each year by the returning vessel.

The full narrative of the several branches will be prepared with accuracy, leaving the least possible amount of work afterward to prepare them for publication.

The greatest caution will be taken at the station against fire, and daily inspections made of every spot where fire can communicate.

In case of any fatal accident or permanent disability happening to Lieutenant Greely, the command will devolve on the officer next in seniority, who will be governed by these instructions.

W. B. HAZEN,

Brig. and Bvt. Major-General, Chief Signal Officer, U. S. A.

A few important points are to be noted in these instructions. The work of the expedition was to be—first, exploration; secondly, the collection of specimens; and third and last, the observations called for by the International Polar Conference.

On the way up the only points to be visited after leaving the Danish settlements were the caches or depots of provisions made by the English expedition under Captain Nares in 1875. The importance of these caches lay in the fact that in case of the abandonment of the station from any cause they furnished a continuous series of supply depots at intervals

along the line of retreat between Lady Franklin Bay and Cape York. Precautions had been taken to secure from the Admiralty, through the State Department, an authoritative list of these depots. Their position and the amount cached at each became subsequently a matter of vital importance. Beginning with the most northerly, they were—

Cape Collinson, 240 rations.

Cape Hawks, a quantity of bread (amount not exactly known), potatoes, rum, and stearine.

Cape Sabine (Payer Harbor), 240 rations.

Cape Isabella, 150 pounds of meat.

Cary Islands, 1,800 rations.

The instructions contemplated a stay of two years at Lady Franklin Bay, and stated that a vessel would be dispatched to the station both in 1882 and 1883. These vessels were to bring "supplies for and such additions to the present party as are deemed needful." If the vessel of 1882 failed to reach the station, she was to cache a portion of her supplies at the most northerly point reached on the coast of Grinnell Land, and to make a *small* depot at Littleton Island. If the vessel of 1883 also failed to get up, she was to remain in Smith Sound as long as was safe, and, on leaving, to land all her supplies and a relief party at Littleton Island for the winter. Finally, if neither vessel reached the station, Lieutenant Greely was ordered to abandon it not later than September 1, 1883, and retreat southward by boat, until the relief vessel of 1883 was met or Littleton Island was reached, where he would find a fresh party with stores awaiting him.

The party after arriving at St. John's embarked on board the *Proteus*, and, on the 7th of July, Greely with his command left that port for Lady Franklin Bay. This was the

opening act of the drama—a drama marked by varied incident, by perilous undertakings, by successful achievements, and by unsurpassed sufferings; a drama which was to last three years, and to arouse the deepest interest and sympathy in Europe and America, until the rescue was accomplished and the few survivors were at last brought home.

The voyage to Godhavn, the first stopping place, was uneventful; there were continuous northerly winds, with thick weather. On the fifth day out pack ice was encountered, but it was not extensive or compact, and did not delay the vessel. Godhavn was reached on the 16th.

Here everything was favorable. The winter had been unusually mild, and was followed by an early spring, so that the ice to the northward had broken up some time before. For fourteen years, it was reported, Upernivik had never been so green. Doctor Pavy, the surgeon of the Howgate expedition, who had stayed behind the year before at Disko, joined the party, and the dogs and other supplies which he had secured were taken on board, together with the remains of the house and the stores which had been brought up in the *Gulnare*. Other supplies were obtained at Rittenbenk, whither the *Proteus* sailed on the 21st. On the 22d she left Rittenbenk, and passing through the Waigat, arrived on the 23d at Upernivik. Upernivik was the last point in regular communication with the world of Europe and America at which the expedition would touch before taking its final plunge for two years into the great unknown. Six days were spent here in making the closing preparations. Lieutenant Lockwood took the steam launch to Proven, forty miles away, and brought back the two Eskimo, who made the last accessions to the party, while Lieutenant Kislingbury

succeeded in getting four hundred guillemots at the loomery near Sanderson's Hope. More dogs were bought, and skin clothing, sledge fittings, dog harness, and other supplies were taken on board the vessel.

Leaving Upernivik on the afternoon of July 29th, the *Proteus* started on the uncertain passage across Melville Bay. Here everything depended on the treacherous ice-pack, which might delay the vessel for days. In 1875, it is true, the expedition under Nares had crossed to within forty-five miles of Cape York in sixty-five hours, but everybody considered this passage as most remarkable. The *Proteus* taking the Middle Passage, advanced steadily without check or obstacle until 7 A.M. of the 31st, when the engines were stopped in a thick fog. The dead reckoning placed the land about six miles off. An hour later the fog lifting, Cape York was seen five miles away, showing that the run had been made in thirty-six hours, which as Greely truly observed was "without parallel or precedent."

Pushing on into the North Water, the *Proteus* reached the Cary Islands on the afternoon of the same day. Two parties were landed on Southeast Cary Island: one under Doctor Pavy, to look at the cairn made by the *Pandora*; the other, under Greely himself, to examine the depot left by Sir George Nares. At the depot was found a whale-boat and a large supply of provisions, all in good condition.

Leaving the Cary group, the *Proteus* reached Littleton Island at about noon on the 2d of August. Here she remained ten hours. Some necessary repairs of the wheel were made, and the island was thoroughly searched. The English mail, which Sir Allen Young, in the *Pandora*, had placed here in 1876 for the *Alert* and *Discovery*, was

found and brought off to the ship, to be forwarded to England. What was supposed to be the Nares cairn was discovered open and empty, having probably been plundered by the Etah Eskimo. Lieutenant Kislingbury and Doctor Pavy visited the *Polaris*' winter-quarters at Lifeboat Cove, on the mainland, to communicate with the Eskimo, but they had apparently abandoned the place, as all traces of them were more than a year old. The transit instrument of the *Polaris* was recovered. It was decided to make a depot of fuel for possible future use, and $6\frac{1}{2}$ tons of coal were landed by Lieutenant Lockwood, placed in and around a large cask, on low ground, on the southwest side of the island.

Leaving Littleton Island at 10.45 P.M. August 2d, the *Proteus* went direct to Cape Hawks. It had been Greely's intention to stop and examine the Nares cache at Payer Harbor, near Cape Sabine, but the weather was fair, and no ice was in sight—an almost phenomenal condition—and he did not venture to delay. Three hours after starting he had passed Cape Sabine, and at ten minutes after nine in the morning he was lying to just north of Cape Hawks, between the mainland and Washington Irving Island. Lockwood and Doctor Pavy landed with parties on the island, while Greely, with Kislingbury and another party, went to examine the Nares cache on the Cape. The cache was found, containing a large quantity of bread, some of which was mouldy, two kegs of pickles, two partly full of rum, two barrels of stearine, and a barrel of preserved potatoes. The party took off with them a keg of piccalilli, one of the kegs of rum, and three cans of potatoes, to try them, and to experiment in cooking them. Greely also, as he was short of boats, brought off the jolly-boat of the *Valorous*, which had been left at the

Cape in 1875. The stores that were left behind were protected more securely to resist the weather.

Two hours after her arrival, the *Proteus* was again under way, and picking up the parties on the island, steamed cautiously in a northeasterly direction, along the western shore of Kane Sea. Cape Louis Napoleon was passed at 1.10 P. M. and Cape Frazer at 3. An hour later, through the rifts in the fog which was slowly settling, Greely sighted the Greenland shore at the northern edge of the Basin. At Cape Collinson, just before the entrance to Kennedy Channel, Nares had left another provision-depot of 240 rations. Greely passed this point at half-past five, but fearing a heavier fog, he again concluded not to land, but to push onward to his destination. After running for five hours or more, the fog became so dense that the ship came to a stop.

Shortly after eleven on the morning of the next day, August 4th, the fog lifted, and the *Proteus* advanced to Carl Ritter Bay, arriving at 2 o'clock in the afternoon. This was only 75 miles from the end of his journey, and Greely landed, and made a depot of 225 rations, as a provision for his possible retreat southward. Thence he hurried on to Cape Lieber.

Cape Lieber is the eastern point of the great promontory separating Archer Fiord and its embouchure, Lady Franklin Bay, from Kennedy Channel. Beyond the promontory, on the north side of the bay, lies Discovery Harbor, where the station was to be fixed. Up to this point the voyage had been absolutely free from danger or difficulty, and it looked as if the terrors of Arctic navigation existed only in the minds of explorers. The expedition was destined, however, to have a little experience before it reached the end of the journey.

Approaching the bay at 7.45 in the evening, the *Proteus* found a heavy pack against the land, and made a wide sweep to the eastward to pass it. All went well and good progress was made, until nine o'clock, when the vessel reached the southeast point of the bay. Here she was stopped, for the first time in her journey, by the solid ice-pack. She had come from Upernivik to Lady Franklin Bay, 700 miles, through all the perils of those perilous waters, in less than seven days, and had met no obstacle, seen no impending danger; and now, with the winter station in sight only eight miles away, she found herself face to face with an impenetrable barrier. The polar pack, twenty, thirty, in some places even fifty feet in thickness, cemented to a solid mass by harbor ice, lay close to Cape Baird on the west, and stretched away in a vast semicircle to the Greenland coast on the east, at the mouth of Petermann Fiord. In this massive wall not an opening was to be seen. The polar current driving southward had wedged it firmly between the opposite shores, where it lay for the moment immovable. There was nothing to do but to wait, and the ship was anchored to the edge of the pack. On the 6th the ice began to move, and the *Proteus* shifted her moorings. A northerly wind blowing steadily drove the pack down, forcing the vessel before it. Presently the ice began to break off in huge masses. The *Proteus* steamed around the floes to keep head against the current, and to lose as little ground as possible. During the 7th and 8th, ice fields reaching twenty-five miles in length passed to the southward. These were again wedged in below, between the shores of Kennedy Channel, opposite Carl Ritter Bay, and another wall was formed south of the vessel. She was thus hemmed in before and behind. On the even-

ing of the 8th the northern pack began to move down in a solid mass, until only a mile of open water remained. The position of the *Proteus* was now critical, and a nip seemed imminent. Fortunately the gap did not close, but the vessel was for the next two days driven slowly southward, losing about forty-five miles.

At noon of the 10th the wind came out from the southwest, and the situation changed at once. The pack began to move rapidly to the north, and on the morning of the 11th open water could be seen along the west coast as far as the eye could reach. The *Proteus* was again on her way, and at one o'clock in the afternoon had passed Cape Lieber, and in two hours more had crossed Lady Franklin Bay. Entering Discovery Harbor by a narrow lane, she rammed her way through light harbor ice for a quarter of a mile, and the journey was ended.

It was decided to fix the station at the winter quarters of the *Discovery* rather than near the coal-seam at Watercourse Bay, as the latter point was exposed to the pack ice, and the ship might be endangered by lying there. She was therefore on the 12th pushed through the harbor ice to within a hundred yards from the shore, and the work of unloading and establishing the station began at once. In sixty hours the cargo of stores and instruments was discharged. One hundred and forty tons of coal were landed, and the house was rapidly put up. The post was now established under the name of Fort Conger.

The *Proteus* remained at the station until the 18th, and was delayed by ice at the entrance of the harbor a week longer. Under date of the 15th Greely had made a report of the passage up and the installation of the party, and dur-

ing the delay occasional bulletins were sent off, noting the progress of preparations for the winter work. On the 17th Greely requested that certain necessary stores should be procured through the Danish Government, to be brought up with the expedition of 1882. On the 18th he reported that the house was entirely framed and partly boarded, and by the 20th it had been covered. Two of the party who proved to be unfitted for the service were sent back in the *Proteus*.

By far the most important, however, of the communications made by Greely from his station at Fort Conger, in view of what afterward happened, was the letter of August 17th, in which he gave directions to govern the relief parties which had been promised, and on which he depended. The letter was as follows :

FORT CONGER, GRINNELL LAND,
August 17, 1881.

CHIEF SIGNAL OFFICER OF THE ARMY :

SIR :—I have the honor to recommend that in connection with the vessel to visit this station in 1882 there be sent some captain of the merchant service who has had experience as a whaler and ice-master. Five enlisted men of the Army are requested to replace men invalided or who are found to be unfit otherwise for the work. One of the number should be a Signal Service sergeant. Sergeant Emory Braine, 2d Cavalry, and Sergeant Martin Hamburg, Company E, 10th Infantry, are recommended most highly, and without they are physically or morally unfitted within the year their detail is requested. The two remaining men should be such as have had some sea experience. All the men should be rigidly examined as to their physical condition. The ice-master should be expected to see that every effort is made to reach this point by the vessel sent. In case the vessel can not reach this point, a very possible contingency, a depot (No. A) should be made at a permanent point on the east coast of Grinnell Land (west side of Smith Sound or Kennedy Channel), consisting of ninety-six cans chocolate and milk, ninety-six cans coffee and milk, one-half barrel of alcohol, forty-eight mutton, forty-eight beef, one keg rum, forty-eight cans sausage, forty-eight cans mulberry preserves, two barrels bread, one box butter, forty-eight cans condensed milk, one-half barrel onion pickles, forty-eight cans cranberry

sauce, forty-eight cans soup, twenty-four cans tomatoes, one gross wax matches (to be in water-tight case), one-eighth cord of wood, one wall-tent (complete), one axe and helve, one whale-boat. At Littleton Island, carefully cached on the western point, out of ordinary sight, with no cairn, should be placed an equal amount (depot B), but no boat. A notice as to the exact locality should be left in the top of the coal (preferably in a corked and sealed bottle) buried a foot deep, which was left on that island. A second notice should be in the edge of the coal furthest inland, and a third in the Nares cairn, now open, which is on summit southwest part of island.

The second boat should be left at Cape Prescott, or very near, in order that if boats are necessarily abandoned above that point one will be available to cross to Bache Island and go to the southward. These boats should be not exceeding forty feet and not less than twenty above high-water mark, and their positions should be marked by substantial scantling, well secured and braced, to the top of which a number of pieces of canvas should be well nailed, so that it may be plainly and easily seen. A second staff, with pieces of canvas, should be raised on a point which shows prominently to the northward, so a party can see it a long distance. Depots A and B should be made ready in Saint John's, and be plainly marked and carefully secured.

The packages during the voyage should be easily accessible. Depot A should be landed at the farthest possible northern point. A few miles is important, and no southing should be permitted to obtain a prominent location. The letters and dispatches should all be carefully soldered up in a tin case, and then boxed (at Saint John's) and marked, or put in a well-strapped, water-tight keg, and should be left with depot A if such depot shall be at or north or in plain sight of Cape Hawks, and the newspapers and periodicals left at Littleton Island. If depot A is not so far north, the letters and all mail should be returned to the United States. After making depot B, at Littleton Island, the vessel should, if possible, leave a record of its proceedings at Cape Sabine. If the party does not reach here in 1882, there should be sent in 1883 a capable, energetic officer, with ten (10) men, eight of whom should have had practical sea experience, provided with three whale-boats and ample provisions for forty (40) persons for fifteen months. The list of all provisions taken by me this year would answer exceedingly well. In case the vessel was obliged to turn southward (she should not leave Smith Sound near Cape Sabine before September 15th) it should leave duplicates of depots A and B of 1882 at two different points, one of which should be between Cape Sabine and Bache Island, the other to be an intermediate depot between

two depots already established. Similar rules as to indicating locality should be insisted on. Thus the Grinnell Land coast would be covered with seven depots of ten days' provisions in less than three hundred miles, not including the two months' supplies at Cape Hawks.

The party should then proceed to establish a winter station at Polaris winter quarters, Lifeboat Cove, where their main duty would be to keep their telescopes on Cape Sabine and the land to the northward. They should have lumber enough for house and observatory, fifty tons of coal, and complete meteorological and magnetic outfit. Being furnished with dogs, sledges, and a native driver, a party of at least six (6) men should proceed, when practicable, to Cape Sabine, whence a sledge party northward of two best-fitted men should reach Cape Hawks, if not Cape Collinson. Such action, from advice, experience, and observation, seems to me all that can be done to insure our safety. No deviation from these instructions should be permitted. Latitude of action should not be given to a relief party who on a known coast are searching for men who know their plans and orders. I am respectfully yours,

A. W. GREELY,

1st Lieut. 5th Cav., A. S. O. and Ass't, Commanding Expedition.

On the 25th Greely sent this last dispatch :

L. F. BAY, *August 25, 1881.*

All stores under cover. Freezing weather commenced. Observatory under way. House entirely done except inside work, which can be done at leisure. Start a small party north and one into interior in few days. Ice in L. F. Bay has unfortunately not gone out at all this year, and so steam launch is kept here. No snow on ground. Party all well. *Proteus* delayed by ice at entrance to harbor for days, although channel open outside. Since Starr and Ryan are gone, seven men should come next year. Lowest temp., 22°.0 on 20th.

A. W. GREELY.

Gen. W. B. HAZEN,

Chief Signal Officer, Washington, D. C., United States.

Soon after this dispatch was written the *Proteus* started on the voyage home. This was accomplished as rapidly and with as little difficulty as the journey up, and the ship arrived at St. John's about the 12th of September.

Greely and his companions, numbering twenty-five in all, were now left to their own resources. They were to begin at once the magnetic and meteorological observations, and the more brilliant, though perhaps not more important, work of exploration—all of which was to occupy them during two years of Arctic solitude and isolation. They were well provided with all that could be had to make life bearable in that dreary and desolate region. Their provisions were ample for three years, and before the ship left they had killed at the station three full months' rations of musk-oxen. The supply of beef on the spot would be enough to keep them from want long after the period when the stores they had taken with them were exhausted. Moreover, they rested in the confident belief that a vessel would be sent to them in the next summer, and again in 1883, as had been promised, or, if these failed, that a station of refuge would be established at Lifeboat Cove, 260 miles to the southward; and they settled down to their work in good health and courage, with no apprehensions of the future. How terribly their expectations were to be disappointed, and how it happened that the disaster overtook them which such precautions had been taken to avert, is to be told in the chapters that follow.

CHAPTER IV.

THE RELIEF EXPEDITION OF 1882.—THE *NEPTUNE*.

THE fortunate voyage of the *Proteus* in making her way in six days from Upernivik to the edge of Lady Franklin Bay without a check had one most unfortunate result. It created a false impression in everybody's mind, not only that the station could be reached easily, but that it could be reached without danger. The fact was forgotten that of all the vessels that had ever attempted to pass Kane Sea only three had accomplished the voyage before the *Proteus*, and that these had accomplished it at great risk. The influence of this impression that the difficulties had been exaggerated was seen again and again in the events of the next two years.

In preparing for the expedition of 1882 the suggestions of Lieutenant Greely's letter of August 17th were carefully followed. The letter did not draw up a complete plan for the expeditions, although some of its directions were extremely minute and specific; but was rather a memorandum, containing such suggestions as occurred to him after the experience of the voyage. Thus it is not quite clear from the letter what kind of vessel was to be sent on the first relief expedition. The object of this expedition was to carry a detachment of five enlisted men to the station (or seven, as the last bulletin suggested), one of them to be a Signal Service sergeant, together with a mail and certain stores and instruments, and to make two depots at points below. No men-

tion was made of a commissioned officer, although the duty was an important and arduous one. This fact and the suggestion that a "captain of the merchant service, who has had experience as a whaler and ice-master," should accompany the vessel, would seem to imply a possible intention that a naval vessel should be employed. Possibly no such idea existed; but at any rate it was not distinctly stated what the vessel was to be, or who was to be responsible except the experienced "captain of the merchant service" for the success or failure of the enterprise. Of course, there was no necessity of making specific recommendations upon these points, as they could be determined by the authorities at home.

The two depots, A and B, were to be made, "in case the vessel can not reach" Lady Franklin Bay. This was in accordance with the original instructions to Greely, in the preparation of which he was doubtless consulted. Depot A was to be landed at the furthest possible northern point, and depot B on Littleton Island. The exact quantity of stores composing the depots was prescribed, and was the same for both, each depot being estimated at 250 rations. Two boats were to be taken—one to be left at depot A, the other at Cape Prescott.

The purpose of depot A and of the two boats is clear. They were to be at points on the coast of Grinnell Land, and therefore to serve as aids in a retreat southward in addition to those already provided. The object of placing depot B on Littleton Island is not obvious. It was intended in case of a retreat the next year to have a relief party there with a very large depot, enough for both detachments for fifteen months—certainly not less than 18,000 rations. If this large depot was established in 1883,—and its establishment was

clearly the most vital element in the whole plan of relief,—the 250 rations of 1882 would be superfluous. If through any mishap this supremely important depot of 18,000 rations should not be made, the 250 rations of 1882 would be utterly inadequate to supply its place. The only other possible explanation of depot B is, that if the large depot was not established, Greely meant to use Littleton Island as a way station to the Cary Islands, one hundred miles below, where 1,800 rations were deposited; but this would seem to be negatived by his express direction not to leave a boat with the depot, where, if such a plan was contemplated, it might be of great use.

Measures were taken early to set on foot preparations for the relief party. On November 30, 1881, the Chief Signal Officer called the attention of the Adjutant-General to Lieutenant Greely's requests, and asked that the General of the Army would call for volunteer offers to complete the detail required for service at Lady Franklin Bay. On the 2d of December, a letter was written to the Secretary of War, presenting revised estimates for the required appropriation to the amount recommended by Greely, namely, \$33,000, and stating that the expedition should sail July 1st. On the 5th, the two whale-boats were ordered at New Bedford, and proposals for the supplies were invited from firms at St. John's. On the same day, the Danish minister was asked to take the necessary steps in order that his Government might direct that the stores mentioned by Greely should be ready for delivery in Greenland.

On the 6th of May, 1882, a board of officers attached to the Signal Service was ordered to meet in Washington and consider plans for the supply expeditions at Point Barrow

and Lady Franklin Bay. Two days later the Chief Signal Officer asked that an agent be sent to charter a steamer at St. John's, and that a naval officer should be detailed to accompany him. Mr. William M. Beebe, Jr., a private in General Service, was designated as the agent, and ordered to St. John's, and Commander S. Dana Greene, of the Navy, was ordered to inspect the steamers offered. As no appropriation had yet been made, Beebe was directed to enter into a provisional contract, conditional upon the passage of the appropriation. Reports from St. John's indicated that the season was bad and that the time was late for securing a suitable vessel.

Commander Greene and Mr. Beebe sailed from Baltimore on the 17th of May, and arrived at St. John's on the 24th. They found that there were three sealing vessels suitable for the work, the *Proteus*, *Neptune*, and *Bear*, but the last required repairs, and would not be available. Two smaller vessels, the *Hector* and *Ranger*, were also adapted to the service, but they were of less steam power and speed. Of the three larger vessels, tenders were received for the *Proteus* and *Neptune*, and the bid for the latter being the lower, it was accepted. A provisional contract was made with the owners June 3d, which became final when the appropriation was passed June 27th.

The *Neptune* had her own officers and crew. Her master was William Sopp, a very capable seaman. Her chief mate was Norman, who had been mate of the *Proteus* on her voyage of the previous year, and who first and last was a conspicuous figure in the relief expeditions. Apparently it had not originally been intended to send Beebe farther than the Greenland ports, where he was to secure certain additional

stores; but on the 4th of June he was designated to accompany the expedition to Grinnell Land. With him were a surgeon, and a sergeant and four privates. Delays or desertions prevented the departure of the others who had been selected.

Most of the stores for the expedition had been sent to St. John's in the steamer *Alhambra*, one of the regular line of steamers plying between that port and New York. The orders to Beebe were based on Greely's letter of August 17th, and gave directions for the establishment of the two caches, in case the *Neptune* failed to reach Lady Franklin Bay. These, as already stated, amounted to 250 rations each. In addition to these the ship carried a quantity of stores for the expedition, including over 2,000 pounds of canned meats, 2,500 pounds of canned fruits and vegetables, 6 tons of seal meat, 60 gallons of rum, 300 pounds extract of coffee, and other miscellaneous provisions, which, for some unaccountable reason, Beebe was ordered to bring back in the event of failing to reach Lady Franklin Bay, and which he actually did bring back, to be stored at St. John's, from which place they were carried up next summer, to be sunk in the *Proteus*. They would have kept better in the ice upon the rocks at Cape Sabine.

The selection of Beebe as the person in charge of the expedition was made by the Chief Signal Officer, who described him in a letter of May 8th, to the Secretary of War, in the following terms: "I desire to send," as agent to St. John's, "Mr. William M. Beebe, now a private in general service, my private secretary. He was an officer of merit on my staff in the war." Beebe seems to have had some apprehension of the embarrassments that would arise from

his situation as a private, in charge of an expedition that included a sergeant, and on the 4th of June he wrote to General Hazen: "I should either be made a sergeant, dating back to rank whoever may come, or better still (and the President upon your request would, under the circumstances, do it) be made a lieutenant." This solution of the problem appears to have been impracticable, and the Signal Office, in a letter of June 18th, giving Beebe his instructions, defined his position as follows:

In reply to your letter of June 4th, the Chief Signal Officer instructs me to say the men named, "enclosure A," or such of them as have reported, will be directed to report to you to be guided by the following instructions, wherein, though you can not lawfully be vested with powers of command, it is hoped you will have no difficulty of securing compliance by the use of your personal influence, supported by your official connection as disclosed by this letter.

Dr. Hoadley will go up as medical officer, and you will find his association agreeable.

You will not delay sailing beyond the time necessary to take in the stores and that required to put the ship in serviceable condition. Your point of destination will be Lady Franklin Bay, Grinnell Land, where you will report to Lieut. Greely for his orders, and when the ship is ready to return you will bring back such dispatches, etc., as Lieut. Greely may entrust to you.

If unable to reach Lady Franklin Bay you will establish the depots "A" and "B," as requested by Lieut. Greely in the memorandum which you have already been furnished. You will observe that these depots are to be established only in the event that it is impossible to reach Lieut. Greely. The supplies, therefore, under favorable circumstances, all go to Lady Franklin Bay, and those stores which are needed to establish depots "A" and "B" are included. Capt. Clapp, who goes to New York with the stores, will arrange, as far as possible, for marking the packages so that they may be separated and stowed at Saint John's, convenient for the depots, if it should become necessary to establish them. If he should be unable to complete this it should be done by your men at Saint John's.

If you should be unable to reach Lady Franklin Bay, after establish-

ing the depots you will return with the vessel and the remainder of her stores to Saint John's and report your arrival by telegraph.

Yours very respectfully,

LOUIS V. CAZIARC,
1st Lieut. 2d Artillery, Acting Signal Officer.

The *Neptune* sailed from St. John's on the 8th of July, and arrived at Godhavn on the 17th, where such supplies as the Danish authorities could furnish were taken on board. Leaving Godhavn on the 20th, the ship shaped her course directly across Melville Bay, without going to Upernivik. Making her way slowly and with difficulty, frequently stopped by the ice-pack, but always gaining, she came in sight of Cape York on the 25th. Here she was beset for a time and drifted with the tides. On the 28th she was again advancing, and at 7 o'clock in the evening had passed the Cary Islands. Littleton Island was reached early the next morning.

So far all had gone well. But half an hour after passing Littleton Island the ship's progress was suddenly stopped. Going on deck, Beebe found a wall of solid pack-ice extending across the head of Smith Sound, from Rosse Bay on the west to Cape Inglefield on the east. According to his report, the ice was from twelve to twenty feet thick, and stretched out to the northern horizon. After following its edge for some distance, without finding a lead or a crack, the ship was turned southward, and passing Littleton Island and Port Foulke, came to anchor in Pandora Harbor.

The next forty days were spent in a fruitless effort to penetrate the ice in Kane Sea. During the first week the ship remained in the harbor, riding out a succession of south-

westerly gales. On this side, the harbor is exposed to the wind, and the ship parted her hawser twice, and once lost an anchor. On the 7th of August a second attempt was made to pass the barrier. The gale had loosened the ice somewhat, and the *Neptune*, steaming directly north, toward Cape Hawks, at first made satisfactory progress. Gradually the ice became denser, until by evening it was impassable, and the ship was made fast to the floe off Victoria Head, the northeast end of Bache Island. The pack closed in gradually, and the position would have been critical had it not been that the ice around the ship was broken up and soft, and the pressure of the heavy floes, grinding it to powder, made a cushion underneath and about the hull, which, while it raised the ship several feet, protected her from the severe pressure.

Here the *Neptune* was fairly beset. For a week her movements were confined within an area of twelve miles square. One day, the 10th, she got within twelve miles of Cape Hawks. This was her furthest northern point. Beebe formed the opinion that the intervening ice could not be traversed, and he was therefore unable to reach the place where he had decided to make his depot. On the 11th the pack closed in, piling the ice as high as the steamer's rail. On the 12th it began to relax, and by the 15th the ship was out of its clutches, having rammed her way into open water to the southward. Following the edge of the pack to the eastern shore of Smith Sound, at Cape Inglefield, she turned back to Payer Harbor, where she arrived on the 18th.

Here the ship found an anchorage, between Cape Sabine and Brevoort Island. Beebe took this occasion to examine the English cache, made by the *Discovery* in 1875, on the

long tidal island or peninsula in the harbor. This cache, which became later so important, was found to contain one barrel of canned beef, two tins (40 pounds each) of bacon, one barrel (110 pounds) dog-biscuit, two barrels (120 rations each) biscuit, all in good condition; 240 rations, consisting of chocolate and sugar, tea and sugar, potatoes, wicks, tobacco, salt, stearine, onion powder, and matches, in fairly good condition. Three casks that had contained rum and alcohol had been separated from the other packages and broken, and their contents had evaporated or leaked out. The cache was rebuilt and made secure, and marked by two oars placed upright in the rock. No provisions or stores were landed.

On the 23d of August, as the southwest wind had been blowing with considerable force for two days, and ice floes were seen passing southward, the *Neptune* started out on her third attempt to reach Cape Hawks. Again the ice-wall was encountered, this time a short distance above Cape Sabine. Skirting the wall to the eastward, open water was found in mid-channel. This lead was followed to a point nearly due east from Cape Prescott, where it stopped. Again the pack was eagerly scanned, and again it appeared to extend miles away to the northward, while its impenetrable border reached the Greenland shore. The wind from the southwest increasing, the ship was turned southward, and as the captain declined to remain at Lifeboat Cove or at Foulke Fiord, and Payer Harbor was now closed by ice, she returned to her first anchorage at Pandora Harbor, arriving August 24th. Two weeks had made rapid changes in its appearance, warning the expedition that winter was approaching. The scanty vegetation had become faded and brown, the birds had disappeared, and the summits of the cliffs were covered with snow.

On the 25th the *Neptune* left Pandora Harbor to make her fourth trial. For four days she moved backwards and forwards in an irregular course along the pack, sometimes making a little progress northward, but not succeeding in approaching as near to Cape Hawks as on the second attempt. A sledge had by this time been made to carry the stores over the ice-pack, but the continual grinding and crushing to which the pack was exposed had thrown the ice up in hummocks, making it impassable. Moreover, the whole pack seemed to be moving bodily southward, and Beebe, fearful that he might be cut off from the positions in Smith Sound at which as a last resort he was to make depots, returned to Littleton Island.

On the morning of August 29th he landed at the island to find a place for a cache. Natives were seen on the mainland opposite, at Cape Ohlsen, who had apparently discovered his presence. Crossing over, he found that they were a hunting party of Etah Eskimo, six men and three women, who wished to visit the ship. As the Etahs would probably rifle any cache they could find, Beebe concluded to postpone making the depot here, and to go over to Cape Sabine. Standing across the sound, he landed and established his cache at this point, the northernmost land he had reached. The stores, amounting to 250 rations, one-eighth of a cord of birch wood, and a whale-boat, were placed in a sheltered spot to the west of the Cape, well secured and covered by a tarpaulin; while at a prominent point a cairn was made, in which was a record giving the bearings of the cache, and over it was placed a tripod made of scantling, securely anchored with rocks, and showing well to the northward. A description was also left

of the English depot in Payer Harbor. Leaving Cape Sabine, the *Neptune*, as shown by her track chart, made her fifth attempt to pass the pack, again without success, and after reaching a point opposite Cape Albert on Bache Island, returned in a northeast gale and found a temporary refuge under the lee of Cape Ohlsen, to the southward of Littleton Island, where the party of Eskimo still remained.

On the 2d of September, the gale having abated, the *Neptune* made her sixth and final effort. Heavy field-ice was found off Cape Sabine, increasing in size and thickness as the ship advanced, until the captain refused to go further, and at 8 o'clock in the evening she was tied up to a floe. An hour later, new ice had formed to the thickness of three inches, cementing the broken floes. The next day, September 3d, the ship was anchored to the ice all day, only shifting her berth to avoid the broken masses.

On the 4th, finding it impossible to advance, the new ice having increased in thickness, and a leak having started in the boiler, Beebe decided to go back to Littleton Island and make his second depot. Although the Etahs were still about, there was no time to be lost, and the stores, amounting to 250 rations, were landed in a cove at the north end of the island, covered with a tarpaulin, anchored with rocks, and so concealed as to be visible only at a few yards' distance. Minute directions for finding the stores were placed at the points indicated in Greely's letter, two copies in the coal at the southern end of the island, and one in the Nares cairn on the southwestern summit. After completing this work, the vessel crossed over to Cape Isabella, and left the remaining whale-boat, marking its position by a tripod. This done,

nothing could be gained by a longer stay, and a little before midnight on September 5th, the *Neptune* started on her homeward voyage. Godhavn was reached on the 8th, and after a week's delay to make repairs to the boiler, the ship left Godhavn for St. John's. Here she arrived September 24th, and the expedition of 1882 was ended.

CHAPTER V.

THE RELIEF EXPEDITION OF 1883.—THE *PROTEUS*.

THE first relief expedition could hardly be said to be a failure, as far as the final result was concerned, as it performed every duty bearing materially on that result with which it had been charged. True, it had not reached Lady Franklin Bay, but that was in no way essential, as Greely was to stay only one year longer, and still had two years' supplies. The arrival of the *Neptune* at Camp Conger would not have altered one whit the final catastrophe, except by making a few changes in the list of its victims. In regard to the placing of stores, Beebe had carried out his instructions to the letter, except that one of the depots had been made at Cape Sabine instead of at a point to the northward, in Grinnell Land,—which was a most happy mischance. In the amount of provisions deposited, the directions of the Signal Office were exactly followed: 250 rations, or ten days' supply, had been left at each depot; and the remainder of the stores carried by the *Neptune*, amounting to at least 2,000 rations, or a full supply for three months, had been safely brought back to St. John's from the perils of the Arctic.

After the return of the relief party, it became a matter of very grave importance to make such arrangements for the expedition of the next summer as would ensure success. The general guide to be followed in preparing the plan, as before, would naturally be Greely's letter of August 17, 1881, giving

an outline of the steps which he desired to have taken. This plan was briefly to send a capable officer and ten men, eight of whom should have had practical sea-experience, with three whale-boats and provisions for forty men for fifteen months. If the vessel was obliged to turn southward, she should leave small depots similar to those of the year before, at points intermediate between depots already established on the coast of Grinnell Land, thus completing the series of way-stations in case of a retreat by boat. The relief party were then to establish their winter station at Lifeboat Cove, close by Littleton Island, "where their main duty would be to keep their telescopes on Cape Sabine and the land to the northward," and when established there, with provisions, house, coal, boats, sledges, and dogs, they should send a detachment to Cape Sabine, and thence to Cape Hawks, or even to Cape Collinson.

On the 1st of November the Chief Signal Officer submitted to the Secretary of War a plan for the relief expedition, the details of which accorded with Greely's general sketch, which was enclosed as a part of the plan. General Hazen stated that the expedition should leave St. John's by June 15th, and if possible reach Discovery Harbor. Failing this it should land at the designated point, establish itself for the winter, and open communication with Greely. If the vessels reached Lady Franklin Bay it was desirable that the station there should be kept up for another year. It was further stated that "it is most desirable that the officer and the enlisted men who are to go next year be detailed as early as practicable, in order that they may be trained and have experience in rowing and managing boats, and in the use of boat compasses. . . . It is desirable that men be selected whose

service has been in the northwest, and it is also important that the entire party, before going, should be familiar with boats and their management under all conditions."

The plan was returned the same day by the Secretary with an endorsement stating that "it seems that it would be much more desirable to endeavor to procure from the Navy the persons who are needed for this relief party." To this General Hazen replied :

"To change the full control of this duty now would be swapping horses while crossing the stream, and when in the middle of the stream. To manage it with a mixed control, or even with mixed arms of the service under a single control, would be hazardous, and such action is strongly advised against by the many persons of both Army and Navy I have discussed the subject with. The ready knowledge of boats and instruments is but a very small part of the indispensable requisites in this case. This whole work has required a great deal of attention and study from the first, and I have not a doubt but any transfer of control now would result in failure to convey all the threads of this half finished work, and that it would work disastrously in many ways.

"In view of these facts, I would consider the transfer now of any part of this work to any other control as very hazardous and without any apparent promise of advantage."

In accordance with General Hazen's plan, orders were issued on February 6th to 1st Lieutenant Ernest A. Garlington of the 7th Cavalry, then at his post at Fort Buford, Dakota Territory, who had volunteered for the service in December, to proceed to Washington, and take command of the expedition. Four enlisted men who had volunteered were also ordered from Dakota. Lieutenant Garlington, who had served with his regiment continuously since his graduation from the Military Academy in 1876, arrived in Washington on February 20th. Soon afterward he was placed in charge of the preparations for the expedition, re-

lieving Captain Clapp, of the Signal Office, who had made a special study of Arctic matters, and who until then had superintended the arrangements. From this time until his departure, on June 13th, in the *Yantic* from New York, Garlington was engaged in preparing for the expedition.

The passage of the appropriation Act on March 3d, completed all that was necessary to enable the Signal Office to go on with the preparations. The Act required that the work at the stations should be closed, and the force brought back to the United States. Up to this time it had been hoped to keep up the station until the summer of 1884, as stated by the Chief Signal Officer in his letter of November 1st, to the Secretary of War; and one object in sending out the relief expedition had been to inform Lieutenant Greely of this decision. Otherwise he would move south in the coming summer, in accordance with his instructions. Under the law of March 3d, however, the work was to be discontinued, and therefore one object of sending the relief vessel through to Lady Franklin Bay had ceased to exist. There remained the other object, which was to bring back the party with their records and instruments; or, if Camp Conger should not be reached, to establish the supply station at Lifeboat Cove. The second was really the essential thing. As to reaching Camp Conger, Greely himself did not seem to consider it of great importance, as he made no direct reference to it in his letter of August 17th, and in his full report, dated two days earlier, he had said that, in his opinion, a retreat southward from the station to Cape Sabine would be "safe and practicable." Every arrangement had been made for Greely to go to this point, or somewhere near it, and go he would to a certainty, unless an accident prevented him;

and he was not likely to bring with him any considerable means of subsistence, as it had been arranged that he should find a depot on his arrival.

Work upon the outfit of the relief expedition had already been begun. A dwelling and storehouse for the party that was to winter at Littleton Island were contracted for at St. John's, and the Navy Department was called on for two whale-boats, a dingy, and such other supplies as came within its province. Arrangements were made to charter the *Proteus*, the same vessel which had made the extraordinary trip in 1881, subject to inspection, and in the latter part of May General Hazen, accompanied by Lieutenant-Commander B. H. McCalla, of the Navy, proceeded to St. John's, and examined the vessel. McCalla reported her as fit for the purpose, and she was accordingly engaged. Captain Pike, who had taken her up in 1881, was again to command her.

Up to, or nearly up to this time, it appears to have been the intention to employ only one vessel on the relief expedition. On the 14th of May, however, request was made by the Chief Signal Officer that a vessel of the Navy should be detailed for service in connection with the expedition, "as escort, to bring back information, render assistance, and take such other steps as might be necessary in case of unforeseen emergencies." It was added that the vessel need not enter the ice-pack, or encounter any unusual danger. As only about four weeks were given for preparation for this very exceptional service, it was impossible to fit out a vessel specially for the purpose, and the only thing that could be done was to take the most available of the vessels in commission on the North Atlantic Station. The *Yantic*, commanded by Commander Frank Wildes, which was then at

Hampton Roads, was selected, and after her arrival at New York underwent such preparation as the time permitted. Her battery and ammunition were removed, to allow the stowage of additional coal, and a sheathing of oak plank was put on, 2½ inches thick, increasing somewhat at the bow, and extending down from the water-line a distance of seven feet. This sheathing was not calculated to resist pressure in the ice-pack, but was merely to prevent the sharp ice from cutting the ship's sides. She was in no sense a vessel fitted for ice navigation, nor, as was stated in the Chief Signal Officer's application, was such navigation contemplated. In order to serve any useful purpose as a reserve ship or tender, it was necessary that she should cross Melville Bay and put in at some harbor in Smith Sound; but in most seasons this can be done in July or August without entering the pack. Upon these facts the sailing orders of the *Yantic* were based. The orders were as follows:

NAVY DEPARTMENT,

Washington, June 9, 1883.

SIR: The steam sealer *Proteus*, Captain Pike, has been chartered by the Chief Signal Officer of the Army to proceed to Smith Sound and Kennedy Channel for the purpose of bringing to St. John's, N. F., Lieutenant Greely, U. S. A., and the party under his command (about twenty in all, who have been stationed at Fort Conger, Lady Franklin Sound), for the past two years, engaged in obtaining meteorological data for the use of the U. S. Signal Service. Lieutenant Greely's party was conveyed to Fort Conger by Captain Pike, in the *Proteus*, during the summer of 1881; and last summer an unsuccessful effort was made in the steam sealer *Neptune* to communicate with the above-mentioned officer.

Inclosed herewith for your information are copies of a letter from Lieutenant Greely, to the Chief Signal Officer, written after the arrival of the former at Fort Conger: "Work of the Signal Service in the Arctic regions"; track chart of the steamer *Neptune* from July to September, 1882; instructions to Lieutenant Greely; and instructions to Lieutenant Garlington, U. S. A., "commanding relief vessel to Lady Franklin Bay."

An examination of these papers will acquaint you with the object of the relief expedition and the importance of its success. You will, therefore, when in all respects in readiness for sea, proceed with the vessel under your command to St. John's, Newfoundland.

After having filled up with coal at St. John's, proceed to the northward, through Davis Straits, in company with the steamer *Proteus*, if practicable; but before leaving that port you will confer with Lieutenant Garlington, and make arrangements which will enable you to act advantageously in the event of an early separation from the *Proteus*, which ship, being fitted for cruising in the ice, will probably take advantage of opportunities to reach her destination which you would not feel authorized in taking in the *Yantic*.

In view of the possibility of the destruction of the *Proteus*, it is desirable that you should proceed as far north as practicable in order to afford succor to her officers and men in the event of such an accident, and it is desired that you should await there the return of that ship, or the arrival of authentic information as to her fate.

Under no circumstances, however, will you proceed beyond Littleton Island, Smith Sound, and you are not to enter the ice-pack, nor to place your ship in a position to prevent your return this season. You will take on board at St. John's all the coal that you can safely carry below and on deck, as it is very desirable that you reach your destination with an ample supply still remaining for use. It may be possible to obtain a small supply of coal on the coast of Greenland, but this can not be relied upon.

In cruising to the northward, you will rely to a certain extent upon the ice pilot, and upon the information which is given you by the Danish authorities at Disko and Upernivik, as to the probable movements of the ice in Smith Sound, based upon their knowledge of the prevailing winds and their effects upon the moving ice.

The length of your stay to the northward of Upernivik must depend upon your discretion, and should you find it imperative to leave the vicinity of Littleton Island or Cape York before the return of the *Proteus*, you will establish a station on shore (having previously, in consultation with Lieutenant Garlington, settled upon prominent points on the coasts of Smith Sound or Baffin Bay for this purpose), in which you will leave information as to your movements.

In issuing the instructions for your cruise the details must be left to your judgment, and the Department considers it only necessary to call your attention to the desirability of cordially co-operating with Lieutenant Garlington, affording him all the assistance in your power.

The Rescue of Greely.

When you have completed this duty you will return with the *Yantic* to New York.

Very respectfully,

ED. T. NICHOLS,
Acting Secretary of the Navy.

Commander FRANK WILDES, U. S. N.,
Comm'd'g U. S. S. Yantic, New York.

Lieutenant Garlington had been ordered to New York on the 21st of May. During the next two weeks he was superintending the collection and shipment of the stores for the expedition. These consisted of supplies for forty men for a period of fifteen months. They were to go by the *Alhambra*, the same vessel which had taken Beebe's stores the year before. Sergeant Wall, of the 3d Infantry, a member of the expedition, was detailed to go with them, and attend to their reshipment and stowage in the *Proteus*. The nine other members of the party, comprising Lieutenant Garlington, Dr. John S. Harrison, who had been engaged as Acting Assistant Surgeon, one sergeant, one corporal, one artificer, and four privates, were to be taken to St. John's in the *Yantic*. The latter vessel, however, was not to sail until the 11th of June, and as the *Alhambra* left on the 7th a considerable time would elapse between the arrival of the stores and that of the commander of the expedition, to whom it was all-important to know personally the disposition of every article on board the relief vessel. Impressed by these facts, Garlington sent a dispatch to Washington, recommending that the whole party, including himself, should sail in the *Alhambra*.

The suggestion was not approved, and the original programme was adhered to, as the facilities for discipline and care of the men would be superior on board the *Yantic*, and

as a sergeant had been detailed to go with the stores. The sergeant, however, left the *Alhambra* at Halifax, owing, as was stated, to having been "injured by an accident." There was, therefore, no one at St. John's connected with the expedition to superintend the discharge and reshipment of the stores. When Lieutenant Garlington arrived, everything that had come from New York had been stowed on board the *Proteus*, and no one knew where the different articles were. To get at the meteorological instruments, a large part of the stores had to be broken out. The guns that had been shipped could never be found, so that except for three rifles, a shotgun, and two pistols which different members of the party carried with them, the expedition was without firearms.

The instructions given to Garlington by the Chief Signal Officer make a long document, but in the sequel so much turned upon their language, that it is necessary to quote them in full. The paper was as follows :

WAR DEPARTMENT,
OFFICE OF THE CHIEF SIGNAL OFFICER,
Washington City, June 4, 1883.

Lieut. E. A. GARLINGTON,
Commanding relief vessel to Lady Franklin Bay :

SIR : You are aware of the necessity of reaching Lieutenant A. W. Greely and his party with the expedition of this year. This necessity can not be overestimated, as Lieutenant Greely's supplies will be exhausted during the coming fall, and unless the relief ship can reach him he will be forced, with his party, to retreat southward by land before the winter sets in.

Such a retreat will involve hardship and the probable abandonment of much valuable public property, with possible loss of important records and life.

For these and other reasons which will occur to you no effort must be spared to push the vessel through to Lady Franklin Bay.

In the event of being obstructed by ice in Smith Sound or Kennedy Channel, you are advised to try to find a passage through along

the west coast, which, beside being usually the most practicable, will afford better advantages for sighting and communicating with any party sent out by Lieutenant Greely. To make communication surer, your party must be able to readily send and receive messages by flag or heliograph, and other means, and the necessary articles should be kept in readiness for instant use when communication is possible.

Should the vessel be unable to get through the ice to Lady Franklin Bay or to reach the west coast at points above Cape Sabine, it will be of great importance that Lieutenant Greely should know of the efforts being made to relieve him and of the plans for doing so. You will endeavor, therefore, to convey such intelligence and omit no means of informing him or any of his party of the situation. Should any landings be made at prominent points on either coast during the efforts to get through the ice, you will leave a short record of the facts, with such information as it is desirable to convey, so deposited and marked as to render it discoverable by parties travelling southward. If such landings be made at points where caches of provisions are located, you will, if possible, examine them and replace any damaged articles of food, leaving, of course, a record of your action.

If it should become clearly apparent that the vessel can not be pushed through, you will retreat from your advanced position and land your party and stores at or near Lifeboat Cove, discharge the relief vessel, with orders to return to St. John's, N. F., and prepare for remaining with your party until relieved next year. As soon as possible after landing, or in case your vessel becomes unavoidably frozen up in the ice-pack, you will endeavor to communicate with Lieutenant Greely by taking personal charge of a party of the most experienced and hardy men, equipped for sledging, carrying such stores as is practicable to Cape Sabine, whence a smaller party, more lightly equipped, still headed by yourself, will push as far north as possible, or until Lieutenant Greely's party is met. In this and other matters you will follow closely the instructions of Lieutenant Greely, dated August 17, 1881, a printed copy of which is furnished you herewith. (Enclosure "1.")

The men not employed in these expeditions will lose no time in preparing the house for the whole party, and in securing the stores preparatory to the arrival of Lieutenant Greely.

You will be furnished two observers and an outfit of scientific apparatus, and will be guided in their use by instructions herewith. The character and amount of the meteorological and other scientific work to be accomplished by your party is enumerated in enclosed memoranda marked B, C, D, E.

In addition to the medical officer, enlisted men taken from this city, you will employ three hardy ice-men at St. John's who have been already selected by the U. S. consul there under my direction, and in Greenland such Esquimaux as you may require.

It is important that a careful and complete record of events should be made, and in case your party does not return this year that a full report be sent by the vessel on her return to St. John's. Each member of your party will be required to keep a private diary, which will be open to the inspection of the Chief Signal Officer only in case it should be necessary. Whenever a junction is effected with Lieutenant Greely you will report to him with your party for duty.

Should any important records or instruments have been left behind by Lieutenant Greely in his retreat, they may be recovered by the steamer to be sent in 1884.

It is believed that with the stores and supplies sent last year, which are at St. John's, N. F., and at the Greenland ports, a list of which is herewith furnished (enclosure "3"), and which you will gather on your way northward, together with the provisions and articles supplied this year, everything needful will have been furnished for safety and success. I believe and expect that you will zealously endeavor to effect the object of the expedition, which is to succeed in relieving your comrades, since upon your efforts their lives may depend, and you can not overestimate the gravity of the work entrusted to your charge.

A ship of the United States Navy, the *Yantic*, will accompany you as far as Littleton Island, rendering you such aid as may become necessary and as may be determined by the captain of that ship and yourself, when on the spot.

With my best wishes for your success and the safe return of the united party, I am, very respectfully, your obedient servant,

W. B. HAZEN,
Brig. and Bvt. Maj. Gen'l, Chief Signal Officer, U. S. A.

In the envelope with these instructions were several enclosures. Enclosure 1 was Greely's famous letter of August 17th from Fort Conger, which was of paramount importance as a guide to the relief party, taken in connection with such other instructions as prudence might dictate after the light of the second year's experience. Enclosure 2 was composed of the memoranda containing directions for scientific observa-

tions. Enclosure 3 was a list of stores designated as being "at St. John's or cached." Enclosure 4, not, however, referred to in any way in the body of the instructions, was a copy of the agreement for the use of the steamer *Proteus*.

There was also in the envelope another paper or memorandum, not signed or dated, containing apparently a proposed scheme of operations for the *Proteus* and *Yantic*, which was in some essential points in conflict with the instructions. This paper read as follows :

"The naval tender to join the *Proteus* at St. John's, N. F., and to proceed with her to the neighborhood of Littleton Island.

"The *Proteus* to land her stores, except supplies for more northerly depots, at Littleton Island, on her way north. If she succeeds in reaching Lady Franklin Bay, to pick up the stores, excepting the house and depots, if possible, on her return. The naval tender will await the return of the *Proteus* at the neighborhood of Littleton Island, and, on her return, steam to the south in her company, until she reaches the southern limits of the ice-pack, when the vessels may separate. Should the *Proteus* be crushed in the ice, her crew will retire on Littleton Island, and the tender will bring to St. John's, N. F., the officers and crew of the *Proteus*. The rest of the party to remain at Littleton Island. But should the ice render it dangerous for the tender to remain in the neighborhood of Littleton Island, until the *Proteus* returns or her crew and the expeditionary force succeed in reaching there, the tender may go to the south, leaving full particulars at Littleton Island.

"Signals by flags, heliograph, and guns should be preconcerted, and communication by this means should be maintained between the two vessels as long as possible after they are separated by the passage north of the *Proteus*.

"Nothing in the northward movement must be allowed to retard the progress of the *Proteus*. It is of the utmost importance that she take advantage of every lead to get up to Lady Franklin Bay."

The first point to be noted in the main instructions is that Greeley's supplies would be exhausted in the fall, and that no effort must be spared to reach Lady Franklin Bay. In this

statement it must have been assumed that from some unexplained cause a very large part of the stores had been spoilt or destroyed during the two years, for it was afterward stated by the Greely Relief Board that the force was furnished with subsistence stores—the components of the army ration or their equivalents—for three years. Of beans, coffee, sugar, and salt, it had a supply for four years and a half, and there was in addition a very extensive assortment of canned fruits, vegetables, butter, and other articles which would probably be equal to another year's supply of food for the party. It was known that all these stores had been safely landed, except the 225 rations at Carl Ritter Bay, and also that before the *Proteus* left, Greely had succeeded in collecting three months' full rations of musk cattle. For fuel there had been landed 140 tons of coal, and the coal-seam near by furnished an unlimited supply. In fact, if no relief expedition had started, and if no orders to abandon the station had been given, the party could readily have remained at Fort Conger another year—housed, clothed, warmed, and fed without serious inconvenience.

The second point of importance in the instructions was, that if any landings were made at prominent points on the way up where there were depots of provisions, Garlington should if possible examine them and replace any damaged articles of food. These points were now seven in number—Cary Islands, Cape Isabella, Littleton Island, Cape Sabine (two depots), Cape Hawks, Cape Collinson, and Carl Ritter Bay. Thirdly, if the vessel could not get through, the party and stores should be landed at Lifeboat Cove, the vessel should be sent back, and the party should remain; fourth, the instructions of Lieutenant Greely were to be closely followed;

and finally, the *Yantic* would accompany the *Proteus* as far as Littleton Island, rendering such aid as might become necessary, and as should be determined by her captain and Garlington on the spot. No provision was made for the contingency of the loss of the *Proteus*.

The unsigned memorandum, on the other hand, laid out a quite different plan for the expedition. First and foremost, it directed that the *Proteus* should land her stores, except supplies for the more northerly depots, at Littleton Island, *on the way north*. This was clearly not in harmony with the orders, which said nothing about landing stores on the way up, except in replacing damaged supplies at depots already established, "should any landings be made at prominent points," and which, by dwelling at the same time upon the necessity of pushing through to Lady Franklin Bay, virtually prohibited any action that might obstruct this result, unless it was elsewhere expressly directed. The memorandum, having provided for the landing of the stores, also prescribed a plan of action in case of the loss of the vessel. In that event the crew was to retire on Littleton Island, and the relief party was to remain there with the stores which it had previously landed. The movements of the naval tender were also carefully laid out in the memorandum. She was to join the *Proteus* at St. John's and *proceed with her* to Littleton Island. Here she was to await the return of the *Proteus*, after which she was to steam to the south in her company to the southern limits of the ice-pack, at which point the vessels might separate—and, inferentially, they were not to separate until this point was reached, except while the *Proteus* was north of Littleton Island. If the *Proteus* was crushed the tender was to bring back her crew. The memorandum

ended with the somewhat vague statement that nothing in the northward movement must be allowed to retard the progress of the *Proteus*, which can only be interpreted to mean nothing except such causes of delay as were specified in the memorandum. These specified causes of delay were two—first, the injunction to land stores at Littleton Island, which was only a slight delay; and secondly, the injunction to remain in the company of the *Yantic*, which would be a serious cause of obstruction, as the *Yantic* was a considerably slower vessel.

It subsequently appeared that the memorandum was drawn up by Lieutenant Caziarc, of the Signal Office, upon his own views of the necessities of the case, at the order of the Acting Chief Signal Officer, during the absence of General Hazen at St. John's, and in consequence of a request from the Secretary of the Navy that the Signal Office should indicate what it wanted the tender to do. A copy of the memorandum was sent to the Navy Department, by whom or through whom could never be ascertained, but not through the regular official channels. Here it was seen at one time by an officer in the Department, the copy being headed "Memoranda," or "instructions for naval tender," but it subsequently disappeared, and could not be traced.

An unsigned copy of the memorandum was also, through misunderstanding or inadvertence, put in the envelope containing Garlington's instructions. Upon reading it Garlington immediately went to the Chief Signal Officer, and pointed out the contradictions between the main instructions and the unsigned memorandum. In the conversation that ensued, he was verbally informed by the Chief Signal Officer that he was to follow the main instructions and Greely's letter,

and that the memorandum "was no part of his orders"; and this direction appears to have had reference to the landing of stores on the way up. This was, in its consequences, by far the most momentous decision made in connection with the expedition, up to the time of its arrival in Smith Sound.

The *Yantic* sailed from New York June 13th, carrying Garlington, the Surgeon, and the enlisted men, and arrived at St. John's June 21st. Upon learning that Wall, the Sergeant who had been sent in the *Alhambra*, had left the vessel at Halifax, Lieutenant Garlington telegraphed a request that Lieutenant J. C. Colwell, of the Navy, an officer of the *Yantic*, who had volunteered, should be detailed to accompany the expedition. The request was complied with immediately, and, as subsequent events showed, it was a most fortunate circumstance that this addition was made to the party. A further addition of three men from St. John's brought up the total number of the force to thirteen persons. Two Eskimo were subsequently added.

Lieut. Colwell's telegraphic orders were to report to Lieut. Garlington for duty, as a member of his party. Garlington, on the voyage up, assigned to him the duty of taking charge of the magnetic and meteorological work required by the Signal Office at the proposed station at Littleton Island, and also that of accompanying the sledging party that was to proceed north during the winter. No duties were given him in connection with the navigation of the vessel, or the disposition of the stores, nor had he any authority in reference to these matters. During the voyage of the *Proteus*, until a short time before the wreck, Colwell was simply a passenger.

At St. John's Commander Wildes and Lieutenant Gar-

lington entered into an agreement as to the movements of the two vessels. This agreement was as follows :

MEMORANDUM OF AN AGREEMENT BETWEEN LIEUT. GARLINGTON AND
COMMANDER WILDES.

Yantic to proceed to sea with the *Proteus*, and remain in company as long as possible. *Yantic* will proceed to Disko under sail, will leave letters for Lieut. Garlington at Disko and Upernivik.

Cairns enclosing bottles or tins will be left at Cape York, S. E. Cary Island or Hakluyt Island, Pandora Harbor, and Littleton Island. *Yantic* will remain in Pandora Harbor not later than August 25th, Disko not later than September 20th.

Lieutenant Garlington to leave letters in Disko and Upernivik, and records on Southeast Cary Island, or Hakluyt Island, Littleton Island, and Pandora Harbor if entered.

Proteus to endeavor to communicate with *Yantic* at Pandora Harbor before August 25th.

Should *Proteus* be lost, push a boat or party south to *Yantic*.

Pandora Harbor will be headquarters, but before departure *Yantic* will run up to Littleton Island.

In reference to this agreement, and to the circumstances that followed, it must be remembered that the *Yantic* was not, in a military sense, a part of the relief expedition. That expedition consisted of fifteen persons, of whom Lieutenant Colwell was one, under the command of Lieutenant Garlington, who were to be transported to their destination in a chartered vessel. Had the relief party and the *Yantic* formed a single expedition, they would have been under a single command—in this case, necessarily, that of Commander Wildes. The Signal Office had not, however, expressed a desire to constitute the expedition on such a basis, and the Navy Department acted in accordance with its wishes. There were, therefore, two independent commands. Commander Wildes was to co-operate cordially with Lieutenant Garlington, affording the latter all the assistance in his

power. He was not, however, to assume any direction of the expedition. His ship was to be employed as a tender, or rather as a transport upon which to fall back in case of disaster, and in which the crew of the *Proteus* might be taken home. Even in reference to a supply of provisions, when inquiry had been made of the Signal Office whether the *Yantic* should take any beside those for her crew, a negative answer was given. It follows, therefore, that her connection with the relief of Greely, the object of the expedition, was entirely a secondary and subsidiary connection, to be effected through the medium of Garlington, in whom the primary authority and the primary responsibility were vested.

It may be objected that this would be a narrow view for Commander Wildes to take of his duties. But it must be remembered that the present statement is not made by Commander Wildes, but by the authors of this book. It is undoubtedly a purely technical view; but in determining a question between primary and secondary responsibility, a difference as essential as that between principals and accessories, it is necessary to start with a technical view. Had the relief party been lost, it would clearly have been Wildes' duty, in a technical sense as well as in every other sense, to take the same steps to rescue Greely that he would have taken had he been originally sent on that mission alone; but as long as the members of the relief expedition remained alive and well in the Greenland waters, and in a condition to effect their object, although it was Wildes' duty to afford them every succor and assistance, the primary responsibility of measures for Greely's rescue rested not upon him, but upon them. If the relief party had become palpably demoralized, and had lost their

heads, the commander even of a tender would doubtless have been right in taking the enterprise in his own hands; but Wildes was bound to assume until he had evidence to the contrary, that they had the capacity to discover and the intention to adopt the right methods to accomplish the end in view. A failure to execute orders is one thing, but a failure to exercise an independent discretion outside of and beyond orders,—in some ways, perhaps, contrary to orders,—to retrieve the failures of others, is a very different thing.

Another fact to be remembered in reference to the separation of the *Proteus* and *Yantic* is that in two essential points—capacity for ice navigation and motive power—they were very different vessels. The *Proteus* was built to cope with the ice, while the *Yantic* was no more fitted for such work than any other ship taken at haphazard. As to their coal capacity the *Proteus* carried between 500 and 600 tons, and the *Yantic* barely 200 below and on deck, while at full speed she consumed much more than the sealer. The *Proteus* made $8\frac{1}{2}$ to 9 knots, while the *Yantic* made only 7.

Garlington could therefore remain in company with the *Yantic*, but the *Yantic* could not by any possibility remain in his company unless he chose to have her. Commander Wildes had no control or supervision over Garlington's movements, and if he saw fit to separate himself from Wildes, the latter had no right to detain him or even to make an objection. The agreement said the two vessels should proceed to sea and remain in company as long as possible. They proceeded to sea, and the *Proteus* steamed right away from the *Yantic*. It is only fair to Lieutenant Garlington to add that she could not very well have done otherwise, if she was to reach Lady Franklin Bay and return that summer.

The day of departure from St. John's was the 29th of June. Soon after the separation the *Yantic*, running a little to the eastward to avoid the Labrador ice, hauled her fires and proceeded under sail, while the *Proteus*, taking a direct northerly course and steaming all the way, arrived at Godhavn July 6th. Here she remained for several days awaiting the arrival of the Inspector, from whom she was to obtain skin clothing and Eskimo dog drivers. The interval was occupied in an attempt to discover missing articles of cargo, filling the coal bunkers, and arranging the stores for the proposed depots. The *Yantic* came in on the 12th. On the same day the Inspector arrived, and arrangements were made as far as possible for what was required. As the *Yantic* required a week in port to repair her boilers and take coal on board, the *Proteus*, after a further delay from bad weather, left Godhavn on the 16th, and, after stopping at Disko Fiord for a second Eskimo, proceeded alone to Smith Sound.

The *Proteus* found plenty of ice in Melville Bay, but it was mostly rotten and thin, and, on the whole, she had a fair passage. When two days out from Disko Fiord, on the 19th, she was stopped for the first time by the pack, and worked back to the eastward, occasionally approaching the land in the bight of the bay. According to Garlington's report, the captain of the *Proteus* had made a considerable error in his position, and it appears from her track on the chart that she must at one time at least have been heading directly into the land ice. It is therefore not to be wondered at that she found the pack impenetrable in that direction. Turning again to the southward and afterward to the westward, on the morning of the 20th she was in the neighborhood of Cape York, and again heading for the land when the ice stopped her.

Retracing her course once more, she made twenty miles to the south, and, continuing on to the westward through loose and rotten ice, she succeeded in rounding Cape York. Conical Rock and Saunders Island were passed on the 21st, and on the afternoon of the same day a landing was made at Cary Island.

Garlington made an examination of the Nares cache of 1,800 rations on Southeast Cary Island and found the boat sound and sixty per cent of the rations in good condition. A record for Commander Wildes was placed in the cache—Leaving the island after a stay of four hours, he steamed to Pandora Harbor, where he left a record early on the morning of the 22d. The weather was fine and no ice was to be seen, and it was determined to push on at once without stopping, with a view to making the first cache at Cape Prescott. Littleton Island was passed a little before ten o'clock, and three-quarters of an hour later the ice-pack was sighted. At half-past eleven the ship had come up with it, and it presented an unbroken front. Garlington thereupon decided to go to Cape Sabine "to examine cache there, leave records, and await further developments." At half-past three the *Proteus* came to anchor at Payer Harbor.

She remained at her anchorage from 3.30 to 8 P.M. This stay of four hours and a half at Cape Sabine was a turning-point in the history of the relief expedition. It was made up of golden moments. It is true that no one could predict that by that time next day the *Proteus* would be at the bottom of Kane Sea. It is also true that Garlington's instructions had been officially construed as not including the formation of depots on the way north, and that the importance of reaching Lady Franklin Bay had been impressed upon

his mind as the main purpose of his enterprise. At the same time, it was known with tolerable certainty that two months later Greely would be at that point, if he carried out his intentions; and the commander of the relief expedition, although not expressly directed to land anywhere, had been instructed that if landings should be made at points where caches of provisions were located, he was, if possible, to examine them, and replace any damaged articles of food.

Now there were two caches at or near Cape Sabine. One of them, left by Beebe the year before, was around the point of the cape. The other, left by Nares in 1875, was on Stalknecht Island, a long, low rock in the harbor itself, due west from Brevoort Island, and close to it. The position of this cache was well known. Beebe had visited it in 1882, and had made a report of its condition, as stated in the last chapter. The *Proteus* was now at Payer Harbor, probably within half a mile of Stalknecht Island; and on board the vessel were the four depots of provisions, of 250 rations each, that had been arranged at Disko to be in readiness for landing, at some time and at some place.

The first thing done at Payer Harbor was to land two privates of the expedition with magnetic and other instruments to get a set of observations. Garlington, with a party of his men in one of the ship's boats, then went to search for the cache left at the Cape by Beebe. It was found after some difficulty. The tripod with its flag which marked the cairn had fallen down, and the tarpaulin which covered a part of the stores had been pulled up. Everything else was in good condition except the boat, which bore marks of the claws of bears, and from which a patch of lead had been pulled off; but the damage was slight. The tripod was set

up and secured. The repair of the cache and the set of observations are all the work that was reported as having been done at Cape Sabine on the way north. The Nares cache, according to Garlington's second letter to the Chief Signal Officer of October 20th, "was not disturbed."

While the men were at work Garlington took a look at the ice to the northward in Kane Sea. Seeing open lanes of water in the direction of what appeared to be Cape Hawks, and prompted by the conviction that he ought to take advantage of every opportunity to reach Lady Franklin Bay, he hurried back to the ship, recalled his men, and directed Captain Pike to get under way and examine the leads with a view to going north. The *Proteus* started at eight in the evening. Lieutenant Colwell took his post in the crow's-nest with the mate. After making about twenty miles through the loose pack, the ship was stopped near Cape Albert, within six hundred yards of the open water, beyond which a lane extended as far as the eye could reach, along the coast. Entering a crack in the ice, she got through half the distance by ramming. Beyond this point she could make no impression, the ground-up ice forming a cushion under her bows and so deadening her way that there was no momentum in her blows. At midnight the attempt was abandoned, and other leads were tried, until, at 5 A.M. of the 23d, the ship was in the open water. But the long lane of the evening before had now disappeared, and in its place was the solid pack.

The ship now turned to the southward to escape from what might become at any moment a critical position. The tide was bringing back the floes that had been started down Smith Sound, and Buchanan Strait and the lower part of

Kane Sea were fast filling up. Toward three o'clock the ship was stopped within four hundred yards of open water. Suddenly the ice in the crack began to show signs of enormous pressure. Unfortunately the ship, in the endeavor to extricate herself, was lying at the moment east and west, which subjected her sides to the full strain of the pack working north. Had she been headed south, the pressure, though it would have thrown up her bow, would probably have left her without serious injury. As it was, her situation was the worst that could have been contrived, and with a continuance of the nip, the result was inevitable.

The *Proteus* was a staunch vessel, and nothing showed it more than the way in which she stood the terrible trial of that July afternoon in Kane Sea. Had she not been of extraordinary strength and endurance, the ice, which was from five to seven feet thick, would have made short work of her. As it was, there was ample time for preparation, supposing that the ordinary precautions of ice-navigation had been taken. The nip began about three o'clock. At half-past four the starboard rail was crushed in. At this time, Garlington and a part of his men were in the hold getting out stores, and another party under the Sergeant was at the same work in the fore-peak, where the prepared depots had been stowed. Presently the ship's side opened with a crash, the ice forced its way into the coal bunkers, the water rushed into the hold, and the deck planks began to rise. The pressure of the floes kept the ship up, and the stores which had been got on deck were thrown upon the ice. In the hurry, a third of what was thrown overboard was lost by falling too near the ship. The whale-boats, one of which had become jammed and was saved with difficulty, and the dingy, were got out by

Lieutenant Colwell, who was the last man to leave the ship. At a quarter past seven, as the tide turned and the pressure slackened, she began to sink, and soon passed out of sight.

The crew of the *Proteus*, freed from the restraints of discipline, with one or two exceptions, lent no assistance in saving the stores, and after securing their bags, spent their time in plundering the property of the expedition. The captain could not prevent it, and when it came to a question of force between the relief party and the sailors, the latter had in many ways the advantage. After the ship went down, it was agreed that the crew, numbering twenty-two men, should take the three ship's boats, and the relief detachment, numbering fifteen, the two whale-boats belonging to it, and that they should all sail in company and work for the common good. One of the whale-boats was then loaded with provisions, estimated at five hundred rations, and Lieutenant Colwell, making up a crew in part from the steamer's men, took them ashore at a point four miles west of Cape Sabine, and made a depot, afterward known as the "wreck-camp cache."

After Colwell's return to the floe, Garlington took a boat and attempted to reach the land, but "after going half a mile found all approaches closed, so returned, and pulled the boats on the floe." Later, Colwell made another trip to Cape Sabine, followed shortly by Garlington in the whale-boat, and by all of Captain Pike's boats. All these arrived safely although with difficulty, only two men in Garlington's boat knowing how to row. The boat came near swamping on the way over, the plug in the bottom of the boat having been worked out by boxes rubbing against it. Garlington then attempted to return to the floe, but found the approaches cut

off, and pulled back to the Cape. Reaching the floe a second time, Colwell was obliged to fill his boat with the men who had been left behind, and was thus prevented from taking any considerable quantity of the provisions that remained. A final attempt was made by Sergeant Kenney, which resulted in saving the dingy and another boat-load of stores. The rest, consisting of two barrels, and some scattered cans and clothing, were abandoned on the ice.

CHAPTER VI.

THE RETREAT FROM THE WRECK OF THE *PROTEUS*.

IN reference to the events at the time of the wreck and following it, it must be confessed that it was a cruel situation in which this young officer of cavalry was placed, taken from his station in Dakota, after six years of service with his regiment, and suddenly finding himself in a sinking ship, in the middle of Kane Sea, with the whole responsibility of a most important expedition on his shoulders. That he had voluntarily assumed this responsibility did not make his position any the less distressing. As long as no mishap occurred, the charge of conducting the expedition was a light one, by whomsoever it might be borne. But the moment an accident happened,—and the history of navigation in those waters is little more than a chapter of accidents,—the nautical experience and nautical judgment of the head of the expedition became the prime element in the situation. From that moment there was not a decision to be taken, not an act to be performed, that did not call for this experience and judgment, and call for them in a high degree. Under such circumstances, the presence of a professional subordinate, though it may lessen, does not obviate the difficulties of a commander whose occupations have been foreign to the business in hand.

Garlington now had his party of fifteen safely on shore at Cape Sabine, with two whale-boats, and provisions for forty

days. The crew of the *Proteus* were not materially either a help or a hindrance, except that they rendered possible a separation of the two boats of the relief party. A plan of this kind was suggested by Colwell, his idea being to take a boat, lightly equipped, with picked men, and hasten south to get the news to the *Yantic*. Garlington, with the other boat, could then have remained at Littleton Island, or have followed with the crew of the *Proteus*, along the east shore, making as good time as he could. The suggestion accorded nearly with the Wildes-Garlington agreement, which said: "Should *Proteus* be lost, push a boat or party south to *Yantic*." It was not adopted, however, and the whole party remained in company until it reached Cape York.

It was recognized that the *Yantic* was now the essential element in the problem. Nothing had been done to relieve Greely, except the landing of five hundred rations (estimated) at the wreck-camp cache, and some few stores and clothing at Cape Sabine. The relief party had come with the intention of wintering at Littleton Island, if it failed to reach Lady Franklin Bay, but it had lost its stores. The *Yantic* had on board provisions sufficient to have supplied the relief party, or a portion of it, for the winter. If she arrived at Littleton Island, "the question," says Garlington in his report, "would become one of easy solution. I could get from her all the stores she could spare, including clothing, coal, and canvas, establish a station at Lifeboat Cove, remain there with two or three men, and send the rest of the party with the crew of the *Proteus* to St. John's."

The *Yantic* had not at this time arrived at Littleton Island, or Pandora Harbor just below, and Garlington came to the conclusion that she would not arrive. "It was my honest

opinion," he says, "that the *Yantic* would not cross Melville Bay." In this he was guided by what he had seen of the ice on the way up, taken in connection with the instructions to Commander Wildes, as far as he knew them, and his opinion seems to have been generally shared by those with him. On the other hand lay the fact that the only object of the *Yantic's* cruise was to go to Littleton Island, or some neighboring point; that the agreement between himself and Commander Wildes expressly provided that the *Yantic* should remain until August 25th in Pandora Harbor, six miles below Littleton Island, which would be the head-quarters, where the *Proteus* should endeavor to communicate with her, the *Yantic* agreeing before her departure to run up to Littleton Island; and finally, that a reasonable doubt existed, of which a few days' delay would furnish a probable solution, and the question was one upon which the success or failure of the relief expedition, the performance of the Government's pledge to Greely, and the lives of his party might perhaps depend. In forming a judgment upon this all-important question, the former considerations appear to have prevailed, and it was decided to move southward at once.

After a day's rest at Cape Sabine, on the 25th of July the two parties started independently in their boats, the crew of the *Proteus* taking their own provisions (amount unknown), and the relief party carrying about 600 rations, estimating the amount at the figures reported, which were forty days' provisions for fifteen men. If this supply should prove insufficient, Garlington had also the possible contingency of finding game on the eastern shore, (although for small game he had but one shotgun and thirty-six cartridges), and as the last resort of replenishing his stores from the depot on

Cary Island. The resources which would be at Greely's disposal, should he arrive at Cape Sabine for the winter, were correctly described by Garlington in the record left by him on Brevoort Island, on the second day after the wreck, the essential part of which is as follows :

“ A depot was landed from the floe at a point about three miles from the point of Cape Sabine as you turn into Buchanan Strait. There were five hundred rations of bread, sleeping bags, tea, and a lot of canned goods ; no time to classify. This cache is about thirty feet from the water-line, and twelve feet above it on the west side of a little cove under a steep cliff. Rapidly closing ice prevented its being marked by a flag-staff or otherwise ; have not been able to land there since. A cache of two hundred and fifty rations in same vicinity left by the expedition of 1881 ; visited by me and found in good condition, except boat broken by bears. There is a cache of clothing on point of Cape Sabine, opposite Brevoort Island, in the ‘ jamb ’ of the rock, and covered with rubber blankets. The English depot on the small island near Brevoort Island in damaged condition ; not visited by me. There is a cache of two hundred and fifty rations on the northern point of Littleton Island, and a boat at Cape Isabella.”

Soon after starting from Cape Sabine, the relief detachment was separated from the others, and crossing the sound, landed near Lifeboat Cove. Next morning it stopped at Littleton Island, leaving a record, which announced the disaster to the *Proteus*, and stated that all hands had been saved, and that the relief party had arrived at Littleton Island. Consistently with Garlington's theory that the *Yantic* could not or would not come up, notwithstanding the agreement, the record was not expressed as if Wildes would ever see it, but was apparently intended to enlighten and reassure Lieutenant Greely, in case that officer should come to the island before going to Cape Sabine. It went on to say : “ Much provisions gotten over side of ship, but a great quantity went under before it



LIFEBOAT COVE AND LITTLETON ISLAND.

could be removed a sufficient distance from the ship for safety. 500 pounds of hard bread, sleeping bags, and assorted subsistence stores were landed from the floe, about three miles from Cape Sabine around point toward Bache Island. There is also a cache, made last year, along same shore. The depot was secured as well as possible. Ice was rapidly closing, heavy, etc. A quantity of clothing was left on extreme point of Cape Sabine, and one barrel of beef, all poorly secured for same reason as above. I am making for the south to communicate with U. S. Steamer *Yantic*, which is endeavoring to get up. Every effort will be made to come north at once for the Greely party. The *Yantic* can not come into the ice, and she has a crew of 146 men. So will have to get another ship. Everything will be done to get as far north as possible before the season closes. Ice thick and heavy. Calm to-day, and I am in a great hurry to take advantage of it and tide."

As it turned out, Greely passed the winter at Cape Sabine, and did not cross to Littleton Island, so that he was never in a position to obtain whatever encouragement might have been derived from the perusal of this record. If he had been, it would have puzzled him not a little. It reasoned substantially that although the *Yantic* (presumably somewhere between Upernivik and Littleton Island) was endeavoring to get up, Garlington would not wait for her, but would make for the south to communicate with her, cause her to desist from her perilous undertaking, as she could not enter the ice, and then go back in her to St. John's to get another vessel,—for certainly no other vessel could be obtained short of that place,—after which, all would be done to get as far north as possible.

In the endeavor to communicate with the *Yantic*, which, according to the record, Garlington now purposed making, the natural course to pursue was to visit those points of communication which had been agreed upon by the two commanders before leaving St. John's, leaving records which should indicate as closely as possible the next stages in the retreat southward. However impossible the *Yantic* might find the passage, she was endeavoring to get up, and Garlington was endeavoring to meet her, so that in pursuing this plan he was only following the most obvious and necessary line of conduct. The stations agreed upon as places of communication were in the inverse order, Littleton Island, Pandora Harbor, Hakluyt or Southeast Cary Island, and Cape York. If any meeting was to take place, therefore, it would probably be at or near one of these points; and if the *Yantic* passed the boats without meeting, it was by a record at these points that the mishap could most quickly be remedied. The next point sought was therefore Pandora Harbor, where Captain Pike's party, composing the crew of the *Proteus*, were rejoined, and where another record was left. Some detention occurred here from fog, but on the afternoon of the 28th the boats were again moving southward.

The party passed the night at Cape Saumarez. At Garlington's request, the boatswain of the *Proteus* was transferred to his boat, only two of his men being, as he states, "at all versed in the management of a small boat." Northumberland Island was reached in the evening of the 29th, and the boats were delayed here by a strong easterly wind until the following afternoon when they started for Cary Island; but after proceeding twenty miles, they were obliged by bad weather to run in to the mainland. On the 31st the

boats reached a point seven miles north of Cape Parry, where they remained two days, during a heavy easterly storm. This was now the natural point of departure for the Cary Islands, the next of the prearranged post-offices. After a consultation with Colwell, Garlington decided not to go there, as Colwell "thought it would be extremely hazardous with our heavily laden boats." Accordingly, on the morning of August 2d, the expedition proceeded southward towards Cape York, the last point of communication, passing the Cary Islands, at a distance of from twenty to thirty miles, and reached Saunders Island at 9.20 in the evening, where they landed and made a camp. As the sequel showed, it was most unfortunate that the circumstances should have seemed to require such a decision, for if the boats had gone to Cary Island, or if, in accordance with the suggestion previously made by Colwell, and renewed by him at this time, one of them lightly equipped and provided with a picked crew had gone there, the whole year's work might have borne a different aspect. To understand this fact, it will be necessary to return to the movements of the *Yantic*.

After the departure of the *Proteus* from Disko, on July 15th, the *Yantic*, which had arrived on the 12th, was detained six days by repairs of the boiler. After a further delay of two days on account of bad weather, she left Godhavn for Rittenbenk and Kudlisøet, where she stopped for coal. Proceeding on without incident, she arrived at Upernivik on July 27th, late in the evening.

The orders of the Department to Commander Wildes directed him, in cruising to the northward, to rely to a certain extent upon the ice-pilot, and upon the information given by the Danish authorities at Disko and Upernivik, as to the

probable movements of the ice. Governor Elborg, of Upernivik, informed him that the previous winter had been mild, the prevailing winds having been southwest, and that he thought it likely there was little ice in Melville Bay, and that what there was would be close to the land.

The *Yantic* remained at Upernivik from 10 P.M. July 27th, until noon July 31st, waiting for thick foggy weather to clear. Upon leaving his anchorage, Wildes found that the predictions of the governor were correct. The Duck Islands were reached early on the morning of August 1st, and the ship headed across the bay. From noon until 8 in the evening she was in a thick fog, but she held steadily on her course, and by one o'clock the next morning she was in sight of Cape York. During the passage she had met streams of loose ice, and had seen the pack to the northward, but had not found it on her course. At Cape York the land-ice extended fifteen miles off shore, and the pack fifteen miles beyond, stretching along the coast as far as could be seen from the crow's-nest. It was therefore decided not to stop at the Cape, although it had been designated in the agreement with Garlington as one of the communicating stations; nor indeed had the *Proteus* done so on her way up. It may be suggested here that Cape York, though a good place for a cairn on account of its prominence, is very apt to be surrounded by ice, and that Conical Rock is much more accessible. Skirting closely the edge of the pack, and occasionally cutting off a corner, or driving through a lead, the *Yantic* continued on during the morning of the 2d, only impeded by a fog. By noon it had cleared, Cape York had been rounded, and the ship was headed directly for the second of the post-offices named in the agreement, the Southeast Cary Island.

Wildes reached the island at 9.30 P.M., August 2d, landed, and examined the cairn. Here he found the record left by the *Proteus* on the 21st of July. He also examined the English depot, which he found in good condition. Having made his examination and left a record, he got under way at 10.30 P.M., the weather being very fine, and steamed to the northward.

It was on the morning of this very day, the 2d of August, that Garlington and his party, with the crew of the *Proteus*, had left the camp seven miles north of Cape Parry, where they had passed two days, and where the question of going to the post-office at Cary Island had been decided adversely. The three points—Cape Parry, Cary Island, and Saunders Island, form the vertices of a nearly equilateral triangle, with its northern apex at Cape Parry, Saunders Island lying to the southeast, well in with the coast, and Cary Island to the southwest. Had Garlington, instead of going southeast to Saunders Island, where there was no reason to suppose the *Yantic* would touch, and where he arrived at 9.20 P.M. on this memorable day, gone to the southwest to Cary Island, where there was every reason to suppose the *Yantic* would touch, if she came up, and where he would have arrived in nearly the same length of time, the boats and the reserve vessel would have met beyond a doubt, the party would have been landed on Littleton Island for the winter, as Garlington desired, and the disaster of the next spring would in all human probability have been averted. The *Yantic* arrived at Cary Island at 9.30, ten minutes after the boats arrived at Saunders Island. Even without this extraordinary coincidence, by which it seemed as if the fates had placed the issue in such certain lines that nothing short of a miracle could have prevented a meeting, if the boats had reached and left the

post-office before the *Yantic* arrived, the latter would have been enabled from the indications in the record to have followed and found them by the next day.

In reference to this, one of the most important decisions taken on the return voyage, Garlington, in his report, gives no reason existing in his own mind for his action. As far as the report shows, he depended entirely on the judgment of Lieutenant Colwell. He says: "After consulting with Lieutenant Colwell, I decided not to go to Cary Island as originally intended. He thought it would be extremely hazardous with our heavily laden boats. We left this camp at 8.30 A.M. August 2d." This apparently settled the matter.

The decision was a result of the arrangement by which a landsman found himself in command of a nautical expedition, with a nautical subordinate. When a nautical question arises,—and all the questions upon which success or failure depended would probably be nautical,—the non-professional commander abdicates his responsibility and throws it on his professional assistant. Whether the latter, had he been in the position of responsible command, would have been unable to reach the place of meeting, is another question. Had Colwell been permitted to carry out the suggestion made by him at Cape Sabine, and renewed before leaving Cape Parry, of proceeding alone to the place of communication, he would certainly have effected his object, for it is clear that the man who successfully accomplished two weeks later the passage across Melville Bay in a single boat, would have found no serious difficulty in making his way from Cape Parry to Cary Island.

The ship and the boats were now moving in opposite direc-

tions. The retreating party in the boats, leaving a record on Saunders Island, pursued their way southward with great difficulty and with frequent delays from the ice. When in the neighborhood of Cape York on the 9th of August Colwell with a party of five men took the light punt belonging to the *Proteus* and set out over the ice to the Eskimo settlements to find out whether anything had been seen of passing vessels. He rejoined the main party next day after having seen the natives, but no ship had been seen at Cape York. No more definite information could be obtained. Other Eskimo were afterward met and questioned, with a like result.

Garlington remained about Cape York until the 16th. It was decided that Lieutenant Colwell, taking one of the whale-boats, should leave the main party and make directly across the bay to Disko, to reach the *Yantic* before she proceeded south; while Garlington in the other boat, accompanied by the boatswain and the rest of the relief party, should remain with the people of the *Proteus* and proceed to Upernivik, keeping as close in to the land as possible on the outside of the ice. This plan was carried out.

Meanwhile the *Yantic*, having left Cary Island at half-past ten on the 2d of August, steamed up the eastern side of Smith Sound and arrived the next afternoon at Littleton Island. Here Garlington's record of July 26th was found, and the first news was obtained of the disaster to the *Proteus*. All hands had been saved and the relief party had arrived at Littleton Island; but no statement was made as to the situation of the steamer's crew, which, it will be remembered, had not touched at Littleton Island on the way south, and of whose movements Garlington was at that time in ignorance.

The question what course of action should be pursued by

Commander Wildes in the light of the record was not a doubtful one. In the first place, the *Yantic* had positive orders not to go north of Littleton Island, and therefore she could not supply the place of the wrecked *Proteus* and proceed on the latter's unfulfilled mission to Lady Franklin Bay; nor had it ever been intended or thought possible that she should. Secondly, to carry out the agreement with Garlington and remain at Littleton Island till August 25th would now be wholly futile, as Garlington was on his way south. There was therefore only one course to pursue, namely, to follow the traces of the relief party, and overtake and bring them back as soon as possible. The plan outlined by Garlington was not very clear, as he merely said that he was "making for the south to communicate with the *Yantic*." The agreement made at St. John's, even if it had not suggested a course of action with a view to the actual state of events, would naturally, however, be reverted to by both parties in the absence of other information. It was fair to presume that if Garlington was endeavoring to communicate, he would make the endeavor at one of the previously established points of communication. In view of these facts, the *Yantic* followed what was clearly a correct course, and went in search of the retreating boats, to ascertain something of the missing crew of the *Proteus*, and to pick up the relief party, which might then be landed with provisions upon Littleton Island.

The *Yantic*, therefore, put in first into Pandora Harbor. There she found the two records left by Garlington and by Captain Pike. The former stated that the party had forty days' full rations, and that he would "go south, keeping close into shore as possible, and calling at Cary Islands, to Cape

York, or until I meet some vessel. Hope to meet U. S. S. *Yantic* or the Swedish steamer *Sofa*, which should be about Cape York."

In accordance with these instructions, Commander Wildes set out with his vessel in pursuit of the boats. Following the directions in the record, and at the same time keeping the general agreement, the *Yantic*, after running down the coast to Cape Robertson, stood across Murchison Sound to Hakluyt Island. The island was closely examined, but nothing was found, as Garlington had not visited it. From Hakluyt Island the *Yantic* struck across to the mainland, nearing the coast at a point seven miles east of Cape Parry, which must have been about the spot where Garlington camped on the 31st of July, and from which he set out on the 2d of August for Saunders Island. Running over in four hours from this point, Wildes reached Cary Island at midnight of August 4th, but he found that it had not been visited, and his record of two days before had not been disturbed.

The situation was now a perplexing one. It was not likely that the five boats could be lost, nor did it seem possible that they could have gone south without touching at Cary Island, after the explicit statement made in the record at Pandora Harbor. The only other supposition was that they had been missed on the way down, and all that could be done by the *Yantic* was to go once more over the ground, and make a more careful search. She therefore ran back to Hakluyt Island, and then across to Cape Parry, following the shore closely southwards. In these movements, her progress was checked from time to time by the ice, or by threatening weather. Thus it happened that in this last southerly course, along the shore, she arrived on the 5th of August at a point

five miles northwest of Saunders Island, to which place Garlington had proceeded three days before, and which he had only left on the afternoon of the 4th, after depositing a record. If the *Yantic* had continued on her course she would have been but a day behind the boats, and would have reached them in a few hours to a certainty. In fact, at this very moment, Garlington and his party were near Cape Athol, at a point seventeen miles from Saunders Island, and therefore twenty-two miles from the *Yantic*, or less than four hours' steaming; and here they remained until the 7th. But the ice was thickening ahead, and the pack to the westward extending in, the wind was "fresh from the north, and fog hanging low down," so the *Yantic* ran off shore to the southwest, and then stood back to Whale Sound.

The game of cross-purposes which the two parties had been playing for several days in lower Smith Sound now came to an end, and the only chance of their meeting was at the final rendezvous at Cape York. On the 6th of August, at 5.30 A.M., the *Yantic* came to anchor off Northumberland Island. Commander Wildes states in his report: "I determined to remain here a few days to await the moving off shore of the ice or a loosening up of the pack so [that] I could get through." On the evening of the same day, a party of officers from the *Yantic*, in searching Northumberland Island, came upon the remains of a camp apparently a week old, with tin cans and matches strewn about, showing that it had been a station of the relief party. Next day another camp was found on the same island, which was surmised to be that of the crew of the *Proteus*. This was the first trace that had been found, but there was no record. It was clear that the boats had gone south, and that in all

probability they were now in the neighborhood of Cape York.

The *Yantic* remained at her anchorage for three days, her search having now apparently terminated. Late on the 9th she made her way again to Cary Island. Here she ran in close to the cove, and fired guns, but received no response, and Wildes headed for Cape York.

It was unfortunate that the *Yantic* on her first arrival at Littleton Island, or at some time during the next seven days, when she was knocking about lower Smith Sound, although her orders contained no directions on this point, did not land on the island some part of her abundant store of provisions, when it was learned that nothing had been done for Greely's relief beyond the establishment of the wreck cache at Cape Sabine. It is true, that as it turned out, Greely never crossed to Littleton Island, but remained eight months at Cape Sabine, and he would therefore have derived no benefit from a whole ship-load of stores on the east coast. But nobody could foresee this, and there was every reason to suppose he would go there. It is also true that it had never been expected that the *Yantic* should carry stores for the expedition, or that she would be of any service except as a tender to the *Proteus*. But if, notwithstanding the absence of any directions to that end, the *Yantic* had gone beyond her orders, beyond the sphere for which the Signal Office had intended her, and to which the Navy Department had assigned her, and had seized the extraordinary opportunity which had fallen to her, of retrieving in some sense the disaster which had already occurred, through no fault of her own, it would have been a most happy occurrence; and if, in addition to leaving the stores, a party of volunteers had been found from her own

people—and it has been officially stated that they were forthcoming—and had been landed on the island, it is more than probable that the tarrying of the explorers at Cape Sabine, during the next year, would have been without its fatal consequences. Had a fresh party of seamen with boats under a competent officer been there through the fall and winter, “keeping their telescopes fixed on Cape Sabine and the land to the northward,” there is small doubt that they would at some time during those weary months have discovered the party which they had stayed to rescue, and have found a time and a way to cross the twenty-three miles between the cape and the island, whatever might have been the condition of the ice or the currents.

After leaving Cary Island for the last time to make her way to Cape York, the *Yantic* ran close in to the ice near Cape Dudley Digges, but could find no opening; the ice was packed close, and reached to the land some distance off. Cape York lay around the bend of the shore, forty miles further on. It was the last place of communication mentioned in the agreement, and it was the final objective point designated by Garlington in the record at Pandora Harbor. There was every reason to believe that at this time he was in that neighborhood. He actually arrived at Cape York with the boats on the 10th of August, and here, or near here, he remained till the 16th. At noon of the 10th—the day that Garlington arrived—“having ice,” says Commander Wildes in his report, “in all directions except S.E., and unable to see but a short distance in that direction, the land being unapproachable, our supply of coal greatly diminished, the imprudence of remaining in this vicinity became sufficiently obvious, and I bore up for Upernivik, which was reached August 12th.”

The failure to meet at Cary Island finds its parallel in the failure to meet at Cape York. It is not a little singular that by a coincidence in dates as remarkable as that which had occurred eight days before, the *Yantic* passed the final rendezvous at the very time when the party which she had been seeking arrived there; and it was correspondingly unfortunate that as the attendant circumstances in the first case prevented the boats from falling in with the *Yantic*, in the second case they prevented the *Yantic* or her people from meeting the shipwrecked party in the boats.

While at Upernivik a launch was chartered, and sent to Tassuisak with provisions. A boat with a crew of Eskimo was sent on to Cape Shackleton, to keep a lookout for the lost expedition. After lying ten days at Upernivik, Commander Wildes decided on the 22d to leave the place, as stated in his report:

“*Aug. 22d.* The short summer of this high latitude being at an end, the weather having changed, vegetation having become brown and withered, the birds having departed with their young, ice and frost forming each night, the intervals of good weather becoming rarer, the autumn gales being liable to set in at any time, and knowing that the first one of any severity would put the ship on the rocks, as the only holding ground was bare rock, feeling that I was incurring great risk, increasing daily by remaining longer, I got under way and proceeded to the Kudliset coal cliffs in Waigat Straits.”

Taking on board fifty tons of coal at the coal cliffs, the *Yantic* proceeded on to Godhavn, where she arrived on the 28th.

It only remains to follow the fortunes of the two boat parties. They had separated near Cape York, Garlington's boat remaining with the crew of the *Proteus*, and Colwell's hastening alone directly across the Bay. Garlington's party

took a more northerly course, following the trend of the shore, and, stopping at the islands on their way, arrived off Cape Shackleton a week after the separation. Here they saw smoke-signals, and heading for the land, they were met by the Eskimo whom Gov. Elborg had sent north to establish an advanced relief-post. Next day they arrived at Upernivik, whence the *Yantic* had departed two days before.

The other boat under Colwell, taking a more southerly course, set out alone on its journey across Melville Bay—a journey which takes a place among the best work done by Arctic explorers. For perseverance, good judgment, and courage in the officer who accomplished it almost single-handed, it could not well be outdone. After separating from the rest of the party on the afternoon of August 16th, Colwell steered south-southeast for Upernivik. Meeting a pack which extended to the northward and eastward, he moved off to the southward, so that he might just keep within its broken edge. The wind gradually increased to a gale, with frequent snow-squalls. Inside the edge of the pack there was a heavy swell, but the seas did not break. In the afternoon the southern edge of the pack seemed to trend off to the northeast, and the boat left the ice, resuming her course for Upernivik. Soon after clearing the pack, the wind increased, and Colwell, unable longer to steer his course, was obliged to run before the gale and the short, heavy, breaking sea. Three of his men were hopelessly sea-sick, and the Eskimo too frightened to understand English, so that his crew was reduced to two men, who, fortunately, stood well to their work.

The gale kept up through the afternoon and evening until near midnight, when the weather cleared a little; but an

hour later it was again overcast, with every now and then a thick flurry of snow. Toward morning the wind moderated, and Colwell, giving the tiller to one of his men, lay down for two hours during a heavy snow-storm. Breakfast was made off a pot of tea and some canned meat, warmed by burning alcohol in a tin can, and it was the first thing the crew had eaten since starting, except bits of wet hard-tack.

After breakfast, the wind hauling to the southward and eastward, Colwell shook out his reef and set the mainsail, making an easterly course on a wind. The sea was rough, but did not break. Toward noon the wind increased, and the outlook was threatening. Both sails were close-reefed, but soon it became necessary to take in the mainsail. The sea was now rising, and Colwell headed for a small island in sight to the northeast, but missed it in a blinding snow-squall. When this passed he found himself a mile to leeward of the island, with the sea too heavy to pull against, and he ran for a line of ice further on, and made fast to a small berg. This was at three in the afternoon.

The second gale kept up for nine hours, with constantly increasing wind and sea. Four times the boat was cast off to find a safer place, as the icebergs broke or drifted down. Finally she was made fast to a flat berg, which lasted until the gale was over, although the breaking off of great lumps had reduced it by that time to one-third of its former size. It was a fearful night; the boat was filled with snow, and the icebergs drove past her before the gale, crash after crash resounding on all sides as they ground together or foundered. While the boat was fast, the bow oarsman had to stand with his axe ready to cut the painter. The crew, exhausted from loss of sleep and sea-sickness, wet to the skin, and covered

with snow, had sat for fourteen hours on the thwarts with the oars out, ready to pull at a moment's notice, and dozed over their oars as they might. Soon after midnight Colwell lighted his alcohol fire again, and warmed some bacon and tea, which, with a little whisky, kept up his men's strength during the night.

Toward five o'clock on the morning of the 18th, the clouds broke and the wind moderated. The boat was now near Thom Island. To the north the bergs, driven together by the gale, were packed in a wall as solid as a glacier's face. During the forenoon the boat pulled among icebergs against a moderate head wind, and Colwell got a couple of hours' rest. In the afternoon, a light northeast breeze coming up, he made sail to it, during the rest of the day, and allowed his wearied men to sleep.

In the night the wind increased, and hauled to the south. Nothing could be made by working to windward, and Colwell gave it up and took in sail, trying to pull to the eastward. But by morning the wind and sea were too much for the exhausted men, and Colwell ran back to a small rocky islet which he had passed some hours before, and lighting an alcohol fire, got a meal, after which the men stretched themselves on the rocks for a nap.

The wind fell light a little before noon, and the boat started again. It was now the 19th of August. For the next three days and nights the party continued on their way to the southward, through bergs and lump ice, with the Greenland coast generally in sight; sailing when the wind was fair, which was about half the time, and during the rest making slow progress with the oars. Toward the close of the 22d Colwell's reckonings placed him not far from Upernivik, but

a dense fog that had hung over him all day prevented him from finding out exactly his position. At six o'clock on this evening while skirting the coast, a barrel was discovered on shore, and the sight had an exhilarating effect upon the party. After they had gone a little way without finding a settlement, they returned to the spot, landed, kindled a fire with the barrel, and cooked a meal from the best they had. After two or three hours of rest they were again under way, and at two o'clock on the morning of the 23d they sighted a storehouse, which proved to be on the north side of Upernivik.

Pulling round the island, the party landed at five o'clock in the morning. Here everything was done for their comfort. Colwell found that the other boats from the *Proteus* had not been heard from, and that the *Yantic* had sailed for Disko the day before. Wishing to lose no time in communicating with Commander Wildes, he would hear of no delay, and, taking a heavy open launch which the Governor of Upernivik urged him to use in place of the whale-boat, at three o'clock on the afternoon of the same day he started south with his boat's crew for Disko, distant 230 miles.

The journey to Disko took seven days and a half, the men rowing most of the way, although it was hard work in the launch after the light whale-boat. A stop of a few hours was made at the settlement of Proven to get provisions and water. At Noursoak natives were employed to go ahead in their kayaks with a letter to Wildes. Finally, on the 31st, after a passage through Waigat Strait, the launch arrived at Disko, and Colwell and his exhausted party, after their journey of 800 miles, were taken on board the *Yantic*.

On the evening of the same day the *Yantic* got under way and returned to Upernivik, where she arrived on the 2d

of September, and found the remainder of the expedition, which had come in on the day after Colwell had gone. The junction which had been barely missed so many times on the coast of lower Smith Sound was now effected; but the season was advanced, and the question of returning across Melville Bay to carry out the purpose of the expedition, if considered, was decided adversely; and the *Yantic* returned to St. John's.

CHAPTER VII.

WHAT WAS TO BE DONE FOR GREELY ?

ST. JOHN'S, N. F., *Sept.* 13, 1883.

To Chief Signal Officer, U. S. A., Washington :

It is my painful duty to report total failure of the expedition. The *Proteus* was crushed in pack in latitude 78.52, longitude 74.25, and sunk on the afternoon of the 23d July. My party and crew of ship all saved. Made my way across Smith Sound and along eastern shore to Cape York ; thence across Melville Bay to Upernivik, arriving there on 24th Aug. The *Yantic* reached Upernivik 2d Sept. and left same day, bringing entire party here to-day. All well.

E. A. GARLINGTON.

This was the message that brought the first account of the disastrous result of the expedition. It said nothing of Greely, and for the moment the country was left in suspense, awaiting further light on the particulars of the voyage. Eager telegrams were at once sent to Garlington from the Signal Office asking what stores had been placed for Greely. The reply was sent the next day :

“ No stores landed before sinking of ship. About five hundred rations from those saved, cached at Cape Sabine ; also large cache of clothing. By the time suitable vessels could be procured, filled, provisioned, etc., it would be too late in season to accomplish anything this year.”

When the fatal news was received, and it was learned not only that the relief ship had been lost, which was a small matter, but that the whole expedition was abortive, that only 500 rations, or twenty days' provisions, had been landed from

the *Proteus*, there was a general outburst of indignation. As the situation began to be looked into and pondered over, it gradually dawned upon the public that the Lady Franklin Bay Expedition had been ordered to leave their well-supplied station by Sept. 1st; that the commander had signified his intention of leaving it; that it was almost a certainty that at that date, Sept. 14th, he was on his way south, confidently counting on a supply depot and a relief party which had been promised at Littleton Island; and, finally, that he was destined shortly to arrive there, with little food, and with no possibility of retracing his steps, only to find that the Government had not carried out its pledge, and that he and his command were doomed to starvation and death.

Unfortunately, through a clerical error, the so-called supplementary memorandum which, as related in the last chapter, had found its way into the envelope containing Garlington's original orders, appeared from the records of the Signal Office to be a specified enclosure, and therefore part of the order itself. The memorandum directed that the *P. teus* should land her stores *on the way north*, and Garlington having, it will be remembered, called the attention of the Chief Signal Officer, before sailing, to the conflict between the body of the instructions and the memorandum, had been expressly told that the latter "was no part of his orders." This fact had never transpired, and in the absence of the Chief Signal Officer, there being no mention of it in the records, but, on the contrary, a record describing the memorandum as "Enclosure 4" of the orders to Garlington, the announcement was made that the commander of the expedition had been ordered to land stores or make a depot before going north. The inference was naturally drawn that Garlington had

disobeyed his orders in this particular, and that to this disobedience the failure of the expedition was due ; whereas, in point of fact, the question of the memorandum had been distinctly raised, and it had been distinctly excluded from his orders.

This impression was subsequently corrected, but a long and comprehensive inquiry was necessary to thread the intricacies in which the subject was involved, and clear up the confusion wrought in the public mind by the great number and variety of statements made in reference to the expedition. The findings of the subsequent Court of Inquiry form no part of the present narrative, and no reference is made to them by way of either dissent or concurrence, further than to quote from them an apt statement of the net results of the efforts to relieve Greely,—that “from July, 1882, to August, 1883, not less than 50,000 rations were taken in the steamers *Neptune*, *Yantic*, and *Proteus* up to or beyond Littleton Island, and of that number only about 1,000 were left in that vicinity, the remainder being returned to the United States or sunk with the *Proteus*.”

Long before the question of responsibility was examined, indeed on the very day upon which Garlington's first dispatch was received, the more pressing question was considered of taking immediate measures to repair the disaster. It was with this view that the officers at the Signal Office on that day telegraphed Garlington an inquiry whether anything more could be done this year, to which he replied, in his second telegram quoted above, that by the time suitable vessels could be procured, filled, and provisioned, it would be too late in the season to accomplish anything. Not satisfied with this, the Secretaries of War and of the Navy, both of whom

now had an interest in the matter, directed that further inquiry should be made as to the feasibility of starting an expedition immediately. Lieutenant Garlington replied: "The ultimate result of any undertaking to go north at this time extremely problematical; chances against its success, owing to dark nights now begun in those regions, making ice navigation extremely critical work. There is no safe winter anchorage on west shore of Greenland between Disko and Pandora Harbor, except perhaps North Star Bay, winter-quarters of Saunders. However, there is a bare chance of success, and if my recommendations are approved, I am ready and anxious to make the effort. My plan is to buy a suitable sealer, take the crew from volunteers from crews of *Yantic* and *Powhatan*, now in this harbor, paying them extra compensation. Lieutenant J. C. Colwell to command the ship; two Ensigns and one Engineer to be taken from those who may volunteer from same ship; also employ competent ice-pilot here."

On the 15th Commander Wildes telegraphed in answer to the same inquiry, as follows: "To charter another foreign ship with foreign crew for this duty to go north at this late season would simply invite fresh disaster. *Proteus* handled very unskillfully, and crew behaved shamefully at wreck. Ship must be American-manned, and officered by Navy, and thoroughly equipped. Unless winter-quarters can be reached north of Cape Athol, the attempt would be useless. This can not be done. Melville Bay will be impassable by October 1, at latest. Ship can not winter at Upernivik, and can not sledge north from there."

The Chief Signal Officer sent six telegrams from Washington Territory, where he happened to be at the time, suggest-

ing a new expedition, and earnestly advocating immediate action, being of the opinion that there was still time to repair the failure. Chief Engineer Melville, of the Navy, about the same time, submitted a plan for a relief expedition, proposing to accomplish part of the journey in the *Yantic*, and the rest by sledge. Others, however, whose experience entitled their opinion to weight, among them Dr. Laws, the surgeon of the Relief Expedition of 1855, and Tyson, who was with Hall in the *Polaris*, were decided in the conviction that an expedition at that time would only lead to fresh disaster. After repeated consultations with the most competent and experienced advisers, the Secretaries decided that it would not only be useless to make any attempt that year, but that the probabilities were that those who were sent on such a mission would find themselves in a situation as bad as Greely's. The idea was therefore abandoned.

The information gained at the Greenland ports by the Relief Expedition of 1884, proves beyond a doubt that this conclusion was right. Had a ship gone up in the latter part of September, 1883, she would either have been stopped at Disko, or have been frozen up for eight months in the ice of Melville Bay. The cold weather set in about the 21st of September, and the temperature steadily fell at Disko, Upernivik, and Tassuisak, until 60° below zero was reached. This continued for a period of sixty consecutive days. Melville Bay, as far as could be seen from these three points, was frozen over early in October. As the season of continual darkness had come on by this time, navigation would have been well-nigh impossible, even if the bay had been fairly open; and the project of reaching the party by sledges must be regarded as utterly chimerical. Under the circum-

stances, any vessel attempting the voyage would have come to grief, if she had not been totally lost.

The idea of an immediate expedition having been reluctantly given up as impracticable, the next question was to consider carefully the probable situation of Lieutenant Greely and his command, and to prepare a well-digested plan of operations for the coming summer.

In regard to Greely's situation in October, 1883, it was known that a little more than two years before, in August, 1881, he had been landed at Discovery Harbor with a full supply of provisions for three years, with a considerable margin over. He was therefore amply provided with the means of subsistence, if he remained at the station. He had, however, been directed in the original instructions of the Signal Office, if not visited in 1882, to abandon his station not later than September 1, 1883, and to retreat southward by boat, following closely the east coast of Grinnell Land, "until the relieving vessel is met or Littleton Island is reached." He had been assured in the same letter that, if no vessel reached him in 1882, the vessel sent in 1883 would remain in Smith Sound until there was danger of its being closed by ice, and on leaving would land her supplies on Littleton Island, together with a party which would be prepared for a winter's stay, and would be instructed to send sledge parties up the east coast of Grinnell Land to meet him. Finally he had not only concurred in all the arrangements, but had written a letter from Fort Conger giving his last suggestions for the party which was to be left at Littleton Island, saying that they should "establish a winter station at *Polaris* winter quarters, Lifeboat Cove, where their main duty would be to keep their telescopes on Cape Sabine and the land to the

northward"; and further, that a detachment "should proceed, when practicable, to Cape Sabine, whence a sledge party northward of two best fitted men should reach Cape Hawks, if not Cape Collinson." Depots were to be made, by the first expedition, at the furthest possible northern point on the coast of Grinnell Land, and at Littleton Island; by the second expedition, between Cape Sabine and Bache Island, and at some point intermediate between depots already established.

It was perfectly clear from this what Greely intended to do, and what in the absence of preventing causes, in all probability he had done. He intended to leave Fort Conger in 1883, and go southward to his main base of supplies at Littleton Island. He also proposed to line the shore with smaller depots, placed at intervals, so that he could find, at each successive point, enough to sustain his party until the next was reached. How far he would progress on this downward trip was a matter of uncertainty, and he counted upon the relief party to come up and meet him in case he was for any reason detained between Cape Collinson and Cape Sabine. There was little doubt, therefore, in the fall of 1883, that Greely had carried out his programme, left Fort Conger, and proceeded south. The only uncertain element in the question was how far he had been able to go.

In order to reach Littleton Island he would have to travel 263 miles. His party consisted of twenty-five, and he had taken up with him a Navy steam-launch, and three other boats, suitable for navigation in Arctic waters. There were also two boats of which, in case of necessity, he could avail himself; one an ice-boat left by the Nares expedition at Polaris Bay, twenty-eight miles from his camp, and the other a whale-boat, left by the *Polaris* near Cape Sumner, thirty-

eight miles off. The most favorable season for boat navigation, or, as far as that is concerned, for any navigation, in Kennedy Channel and Kane Sea, is during the month of August, and it was therefore probable that the expedition would move at this time.

The distribution of depots on the way down, as far as was known, was not all that Greely had planned or asked for, but it was still fairly complete, unless he met with some extraordinary misadventure. The longest interval was the first, of 75 miles, between Camp Conger and Carl Ritter Bay. It turned out afterwards that Greely himself, with the careful forethought that distinguished his arrangements, had reduced this gap by making a depot at Cape Cracroft, an intermediate point which he could reach from his station. At Carl Ritter Bay, the next point, Greely had established a depot of 225 rations, or nine days' supply, on his way up in the *Proteus*. Sixty-two miles beyond, at Cape Collinson, was the Nares depot, of 250 rations. Following the western shore of Kane Sea, the fourth depot was to be found at Cape Hawks. This had been made by Nares, and had originally consisted of 1,500 rations, but the *Alert* and *Discovery* had taken off most of the stores on their return trip, and the quantity left was not great, perhaps eight or ten days' rations. Greely had visited it on the way up, and had taken from it an inconsiderable quantity of stores. At Cape Sabine, fifty-three miles further, were several depots, roughly estimated as amounting to 1,000 rations in all, or forty days' supply, if they were all well preserved. They were in three caches. That of the English expedition on Stalknecht Island in Payer Harbor consisted of 250 rations, which Beebe had reported as being for the most part good, but which were subsequently found

to be damaged. The Beebe cache contained about 250 rations, with a whale-boat, and one-eighth of a cord of wood. This Garlington had found in good condition, except a slight injury to the boat. The third cache was composed of the provisions rescued by Colwell from the wreck of the *Proteus*, estimated at 500 rations.

South of Cape Sabine there were three depots. At Littleton Island, twenty-three miles distant, on the opposite shore of Smith Sound, was the second Beebe cache of 250 rations, and six tons of coal, placed there by Greely. At Cape Isabella, twenty-five miles from Cape Sabine, was Beebe's second whale-boat, together with 150 pounds of meat left by the English expedition. Finally, at Southeast Cary Island, one hundred miles to the southward, was the largest depot of all, also made by Nares, with 1,800 rations and a boat, which had been examined both by Greely and Garlington, and which were still good when visited by the *Bear* in 1884.

As the Lady Franklin Bay Expedition was an Army organization, it belonged to the War Department to take the initial steps looking to its relief, whoever might ultimately be charged with the execution of the project. Accordingly, on the 13th of December, Secretary Lincoln addressed a letter to Secretary Chandler, asking the co-operation of the Navy Department in considering and carrying out a plan. The Secretary of the Navy responded promptly, and within a week the President issued an order, constituting the Greely Relief Board. This was the first step in the history of the final expedition. The order was as follows :

EXECUTIVE MANSION, *December 17, 1883.*

The following-named officers of the Army and Navy will constitute a board to consider an expedition to be sent for the relief of Lieutenant

Greely and his party, comprising what is known as the Lady Franklin Bay Expedition, and to recommend to the Secretaries of War and the Navy, jointly, the steps the board may consider necessary to be taken for the equipment and transportation of the relief expedition, and to suggest such plan for its control and conduct, and for the organization of its *personnel*, as may seem to them best adapted to accomplish its purpose: Brigadier-General WILLIAM B. HAZEN, Chief Signal Officer, U. S. Army; Captain JAMES A. GREER, U. S. Navy; Lieutenant-Commander B. H. MCCALLA, U. S. Navy; Captain GEORGE W. DAVIS, 14th Infantry, U. S. Army.

The board will meet in Washington, D. C., on the 20th instant.

CHESTER A. ARTHUR.

The Board met on the 20th of December, and remained in session until January 22, 1884, when its final report was presented, although it did not formally adjourn until February 21st. On the second day of its meetings, it presented a preliminary recommendation, that immediate steps should be taken to secure, by purchase, two full-powered steam whalers or sealers, and to prepare them for service in the Arctic. It was also recommended that a naval vessel should be prepared to act as a tender to the expedition.

Three general plans were laid before the Board at the beginning. The first, presented by Lieutenant Garlington, proposed the purchase of a steam-whaler as a relief ship, and the selection of a convoying vessel from the list of third-rate cruisers in the Navy. The plan submitted included the suggestion that the expedition should be commanded by Lieutenant Garlington, and the relief ship by Lieutenant Colwell. The commander of the convoying vessel was not designated. The relief ship was to be pushed forward at the opening of the season, and to land a party at Cape York, which would proceed north by sledge, if it was learned that the explorers had arrived on the Greenland coast, meeting the relief ship

at Pandora Harbor. If no tidings were obtained at Cape York, the ship should proceed to Littleton Island, and thence to Cape Sabine, where a large depot should be established, and a sledge party be sent north, to be followed by the ship as soon as the ice permitted. The convoying ship was to have positive orders to proceed as far north as Cape Sabine, and her movements were to be regulated by "the discretion of the commanding officers." In addition to the general plan, many details of importance were provided for.

The second plan, presented by Lieutenant-Commander McCalla, proposed a purely naval expedition, the ships composing it to consist of two purchased sealers or whalers, with a naval vessel as a tender. The first vessel should make a complete depot at Littleton Island before proceeding north, with house, coal, provisions, and clothing for the whole party for a year. If the explorers were not found after a search of the shores of Smith Sound, the ship should advance to Lady Franklin Bay, or as far as possible in that direction, while the second vessel should be used as a reserve, going north of Kane Sea only in case the first should be lost or her absence be prolonged. The tender was to proceed to Littleton Island, to bring back news of the expedition, and in case of a general disaster to serve as a second reserve.

The third plan, presented by Captain Davis, was to some extent a middle course between the other two, and provided for a whaler as the relief ship, with a naval tender, the whole expedition to be in command of a naval officer, and the officers and crew proper of each ship to be from the personnel of the Navy. Each vessel was also to carry a detachment from the Army, composed of two officers, a doctor, and ten enlisted men. This plan, like the others, presented several excellent features of detail.

In considering these and other plans, several of which were subsequently offered, the Board consulted a number of persons having Arctic experience, who appeared at its invitation, and gave it the benefit of their observation and experience. Among these were Lieutenants Garlington and Colwell; Dr. Bessels and Captain Tyson, of the *Polaris* expedition; Mr. George Kennan, who had passed several years in north-eastern Siberia; Chief Engineer Melville and Lieutenant Danenhower, of the *Jeannette*; Lieutenant Ray, who commanded the station at Point Barrow; Lieutenants Berry and Hunt, of the *Rodgers*; and Captain Pike, of the *Proteus*. Advice and suggestions were also asked from Sir George Nares, Captain Markham, and Major Feilden, who had served in the *Alert* in 1875, and an elaborate and extremely valuable memorandum was drawn up by these officers for the use of the Board.

After making a most complete and thorough examination, the Board, on the 22d of January, 1884, presented its report, containing a plan for the expedition. Although there was every reason to suppose that Greely and his party had left their station, and had probably succeeded in reaching Smith Sound, either at Cape Sabine or Littleton Island, it was necessary to assume that they might have remained in their quarters, and to provide for a cruise extending to Lady Franklin Bay. As this might involve detention in the ice until another season, the expedition must be prepared for a winter in the Arctic. By way of making assurance doubly sure, it was recommended that the expedition should consist of two vessels, each supplied for a cruise of two years, not only for its own crew, but also for that of the other ship, and for the Greely party besides. The best ships for the work

were the Dundee whalers, or the Newfoundland sealers, of from 500 to 600 tons, two of which should be purchased immediately, and brought to a navy-yard to be fitted out. In view of the possibility of delay in securing or getting ready these vessels, it might be advisable to use a third ship for an early advance, in order that by taking greater risks than the two others, it might be enabled, if the party had reached Smith Sound or the Danish settlements, to effect an early rescue. A naval vessel was also to be provided to go to Littleton Island, and return the same year. The advance vessel was not deemed an essential part of the plan, and in fact no such vessel was employed; nor, as the result showed, would it have been of any use, for the first of the relief vessels, although starting a week in advance, was overtaken by the second at Upernivik, having been unable to get beyond that point in the heavy ice still covering Melville Bay.

As the work of the relief expedition was to be of a nautical character, the Board recommended that its control should be entrusted to the Navy Department. The crews were reduced to a minimum, in order to give abundant air-space in case of wintering at the north. The total complement of each ship was fixed at thirty-four persons, the preference being given to Americans, and all being subjected to a rigorous medical examination.

A general programme was marked out for the relief ships, but chiefly by way of suggestion. The problem of reaching Lady Franklin Bay from Cape Sabine was one that could only be solved by sound judgment and good seamanship; unless indeed it should happen that Kane Sea was nearly free from ice, in which case it was a comparatively simple matter. It was, therefore, recognized that a wide discretion must be given to the commanding officer on the spot.

The Board considered carefully the details of Arctic equipment, clothing, and stores, and made full and valuable recommendations. The information which it collected, and the suggestions which it made in reference to these matters were afterwards of incalculable service in fitting out the expedition.

The report of the Board was unanimous upon all the points mentioned, but it was unable to come to an agreement in regard to the question whether or not a detachment from the Army should accompany the expedition. As opinion was equally divided, separate memoranda containing the views of both sides were submitted with the report, one advocating the employment of a detachment of enlisted men from the Army, the other that the expedition should be exclusively naval.

The latter view was that approved by the two Secretaries, and finally carried out. There can be no doubt of the correctness of the theory upon which this decision was based. The work of the relief expedition of 1884—and for that matter, of all the relief expeditions—was as purely nautical as any work that was ever entrusted to a seaman. More than this, the whole issue of the work, the ultimate question of success or failure, depended primarily upon seamanship. Nor was there any possible contingency which would require in the personnel of the expedition qualities or experience other than those which seamen will be found to possess at least equally with soldiers. It was not an expedition like Greely's, which was to remain at a permanent station making observations and explorations from its base, either on the land or close by it; nor was it in any way similar to the wonderful enterprise which Lieutenant Schwatka undertook and carried to a successful completion.

Even in the case of Greely's expedition, however, it was stated by the survivors on board the *Thetis* on their way home, that in their retreat from Lady Franklin Bay they had felt the lack of men accustomed to the management of boats, and that if they had had one or two seamen, their chances would have been better, and the result might have been different. In the relief expedition of 1884, as it turned out, a detachment from the Army on board the ships, where there was little room to spare, and where every man was incessantly employed, would have found nothing to occupy them from the time they left New York until they landed on their return.

Before the adoption of its final report, the Board made a preliminary statement of the requirements of the new expedition, and on January 17th a letter was addressed to the President by the Secretary of War and the Secretary of the Navy, embodying its recommendations, which were in a brief form those afterward elaborated in the report. The Navy Department was to have charge of the expedition, and it was to be on the ground at the earliest possible time. As no vessel was known to have passed Cape York earlier than June 1st, the expedition should leave New York by May 1st, and Upernivik by May 20th. To accomplish this the necessary vessels should be obtained immediately.

The letter of January 17th, from the two Secretaries, was transmitted to Congress by the President on the same day, with a special message urging prompt action to enable the Departments to carry out the plan of relief. The message was referred in the House to the Committee on Appropriations, and on the 21st, the Chairman of the Committee, Mr. Randall, submitted a joint resolution, accompanied by a favorable report. The resolution was as follows :

Resolved, That the President be, and is hereby, authorized to prepare and dispatch an expedition to the coast of Greenland, Smith Sound, or Lady Franklin Bay, for the purpose of relieving and bringing home Lieutenant A. W. Greely and party, and that for this purpose the purchase of not exceeding three vessels is authorized, and all expenditures necessary for manning, equipping, and supplying them, and for any land journeys which may be required, and such sums as may be necessary to effect the object of this resolution are hereby appropriated out of any moneys in the Treasury not otherwise appropriated; the vessels purchased to be sold after their return and the money arising from such sale covered into the Treasury.

And the President shall submit to Congress on the first Monday of December, 1884, a full and detailed account of all expenditures and outlays made on account of this appropriation.

The resolution was exceptional in its character, in making an appropriation without any specific limit, but upon Mr. Randall's statement that it was thought unwise to restrict the appropriation to a fixed sum, the resolution was passed by the House almost without debate, on January 22d.

Two days later it was discussed in the Senate. Much was said in condemnation of Arctic expeditions in general, and of the relief expedition of 1883 in particular. The necessity for a relief party was admitted on all sides, and the opposition narrowed itself down to the question of making an unlimited appropriation. It was pointed out by Mr. Hale, who had charge of the resolution, that it was impossible to fix an estimate of cost; that if it were fixed too low it might result in failure, and that a very high estimate would only have the effect of raising prices for the vessels, of which there were only a small number available in existence; and finally, that an amendment would delay the resolution, and perhaps put back the whole expedition, when every day was important. Several amendments were proposed and lost, fixing limits between half a million and a million of dollars. Finally the

resolution was passed, with an amendment restricting the personnel of the expedition to such as volunteered for the service.

In view of the fact that the duty was not one of scientific exploration, but for the relief and rescue of Government officers, whose lives were in peril, it would seem to have come within the limits of legitimate service in the Army or Navy, for which any one might reasonably be called on, without confining the executive to volunteers. Besides, all history shows that for any work of peril or hardship, however appalling, both the Army and the Navy have always been ready to furnish far more volunteers than were needed, men who were willing and eager to go on any forlorn hope, and the small number required for the service would undoubtedly be selected from among these, so that the question was not one of great practical importance. In short, its decision one way or the other would not have made any change in what was actually done. Each House, however, insisted on its view of the matter, and at the end of a fortnight, during which there were repeated discussions, and two ineffectual conferences, the resolution was in the same situation as when it had first passed the Senate.

It was now called up anew by Senator Hale, who, with Mr. Randall, had all along been indefatigable in pushing it forward, with every probability that the Senate would at length recede from its amendment, when a parliamentary difficulty presented itself in the fact that the resolution, although bodily in the possession of the Senate, the engrossed copy being on the presiding officer's desk, was not technically before it, the House not having reported any action upon the last conference. This led to a prolonged debate as to whether

any action at all could be taken on the resolution in its present situation, and if not, how the difficulty should be obviated, so that the resolution might either be returned bodily to the House or brought technically before the Senate. Another delay seemed imminent, and led the Senator in charge of the bill to express ironically, in the course of the discussion, the hope that if Greely and his followers were to be left to perish they might die in a parliamentary manner. The knot was untied by sending back the resolution informally to the House, which returned it three days later, with a message insisting on its disagreement. The Senate thereupon receded from its amendment, and on the 13th of February the resolution was approved.

CHAPTER VIII.

THE PREPARATIONS.

SOME time before the Joint Resolution was passed, the Secretary of War and the Secretary of the Navy, acting conjointly, had taken steps looking to the acquisition of suitable vessels. No dependence could be placed upon the Naval fleet, which was totally unfitted for ice-navigation. To assign a vessel of the Navy to the work would only be to repeat the experience of the *Yantic*, with a greater probability of failure, as the ice would be entered much earlier in the season. It was indispensable that vessels should be taken which had been built directly for the purpose.

The only vessels in the world answering this description are the sealers and whalers of Dundee and St. John's. They are given steam-power to enable them to go into the ice, while the American whalers, which cruise to Behring Strait, use their steam-power to keep out of it. The first are distinctively ice-ships, the second open-water ships. The structure of the Dundee whalers is entirely directed to efficiency in navigation under the exceptional conditions prevailing in Baffin Bay. The hull is built of wood, on account of its greater elasticity when squeezed by the ice pressure. It is covered with a sheathing of ironwood to prevent abrasion from the jagged edges of the pack when forcing through broken floes, or breaking a way through bars into leads. The screw-propeller must be two-bladed, and so fitted that

it may be hoisted up in case of a nip, or when the ship is stationary, and the ice streaming by with the current. The stem must be protected by a broad guard of iron bolted through, and the bow must be covered with iron plates extending well aft, to withstand the heavy shocks in ramming, or in smashing through floe-ice. Without this precaution the grinding pack would soon tear off the bow planking. Finally, both ends of the ship must have interior water-tight bulkheads.

The question of building new vessels for the relief expedition was presented in the interest of American ship-builders, and carefully considered, but although there was a possibility that suitable vessels might be built within the required time, it was thought best, in view of the exigencies of the case, not to run the risk of delay by placing dependence upon the uncertainties that are almost inseparable from contract work.

The Dundee fleet makes two cruises annually, the first after seals and the second after whales, the interval between the two cruises being spent at St. John's. Leaving Dundee toward the end of January, the ships go to St. John's, take on board additional men, and set out for the coast of Labrador. Here they spend about a month in sealing. Some time in May they make for the "Southwest fishing grounds" off Cape Farewell, and in June they move up the Greenland coast, cross Melville Bay to the North Water, and thence work over to Lancaster Sound, for the west-side fishing.

In order, therefore, to secure any choice of whalers for the Relief Expedition, it was clear that prompt action was necessary. The resolution had been introduced in the House on the 21st of January. In a few days all the ships would be

off on their sealing cruise. To postpone the selection until the voyage had begun would probably defeat the purpose of the expedition. The vessel chosen might be detained, possibly lost; and even if she returned early in the season, she would need repairs, docking perhaps, and the work of refitting at St. John's would involve delays that would render futile all efforts for an early start.

Already in December inquiries had been addressed to the Consuls at St. John's and Dundee, calling for information as to the possibility of purchasing a vessel at either place. It appeared by the answers received from Mr. Molloy, the Consul at St. John's, that most of the vessels were already prepared to start for the sealing voyage, having their crews and captains engaged. Several offers were made by owners of vessels for delivery in May, but this was out of the question. It was learned, however, that the steamer *Bear*, owned by Grieve & Co., of Greenock, was then on her way from Greenock to St. John's, after a thorough overhauling. She was a sister ship of the *Proteus*, but had been fitted the year before with a new steel boiler, and was probably the best vessel in the St. John's fishing trade. Negotiations were immediately opened for her purchase, through Mr. Molloy, and on the 23d of January the owners consented to sell her at once for \$100,000, delivered at New York.

The question of an appropriation was now dragging through its slow parliamentary course. By the 24th the resolution had passed in both branches, and the only difference between the Senate and the House was in reference to the employment of volunteers. It was reasonably certain that the appropriation would be made, but a final agreement might be delayed (as actually turned out to be the case), until the fishing fleet

had started on their sealing voyage. In view of the urgency of the case, and of the fact that there was reasonable ground for believing that even without a specific appropriation, authority existed to make the purchase, the two Secretaries, in whose charge the matter lay, directed on their own responsibility that the offer should be accepted and the vessel purchased. To a newspaper reporter, who asked one of them what he would do if the resolution failed to pass, the latter replied that he supposed he "would become part owner of a ship."

The offer was closed on the 28th, and the *Bear* arrived at New York on the 15th of February, two days after the passage of the appropriation. Captain Ash, who brought her from St. John's, was engaged as her ice-pilot for the expedition. She was surveyed soon after her arrival, and on the 8th of March, orders were issued to proceed with the repairs recommended.

While the negotiations were in progress at St. John's, similar inquiries were being made at Dundee, with a view to obtaining a second vessel. The same difficulties were encountered here owing to the advanced state of preparations for the sealing voyage. Owners were unwilling to lose their prospective profits, to secure which they had already made an outlay; and there is no doubt that the prices subsequently paid, both at St. John's and Dundee, were increased at least £6,000 from this cause. The negotiations at Dundee were conducted with excellent judgment by Lieutenant-Commander Chadwick, the Naval Attaché at our Legation in London, acting under Mr. Lowell. Chadwick had the advice and co-operation of the English officers who had served in Arctic expeditions, as well as of the little coterie of English-

men who take up Arctic exploration as an amusement, of whom the foremost are Leigh Smith and Sir Allen Young. The former will be remembered as the enterprising owner of the yacht *Eira*, which made two voyages to Franz Josef Land, and was finally nipped in the ice and lost; while Sir Allen Young, in the whaler *Hope*, gallantly went to the rescue of his brother explorer, and brought him home from Nova Zembla, a year after the wreck of the *Eira*. Young had also commanded his own vessel, the *Pandora* (afterward the *Jeannette*), in her adventurous voyages in 1875 and 1876 to Smith Sound and Franklin Strait. Among the naval men, Sir Leopold McClintock and Sir George Nares, and other officers of the expedition of 1875, especially Captains Markham, Beaumont, and Aldrich, were indefatigable in giving counsel and assistance.

As it was desirable that the Government should not appear in the matter, inquiries were at first conducted through Mr. Leigh Smith and others, but this precaution was presently laid aside, as it very soon became a matter of general notoriety that the United States were seeking vessels for the expedition. By the 9th of January the Legation was able to telegraph that out of the fifteen or more whalers in the Dundee trade, the four best that were available were the *Thetis*, *Hope*, *Resolute*, and *Arctic*, at prices ranging from £18,500 for the *Hope*, to £27,000 for the *Thetis*; but only the *Hope* was offered for immediate use, the others being deliverable at St. John's in May. Unfortunately a commercial demand for whalers had just arisen, due to an advance in the price of whalebone, and the Government was thus placed in competition with private buyers. Of the vessels offered, the *Thetis* was the newest and universally considered the best, and after

some delay her owners, Stephen & Son, of Dundee, agreed to an immediate delivery for £32,000. A little further negotiation brought this down to £28,000, and on February 4th a despatch was sent to London accepting the ship, subject to the inspection of the Board of Trade. The inspection was satisfactory, and on the 13th, it was directed that the purchase should be completed. After some delay, required for the removal of the oil-tanks and other whaling equipment, the vessel was delivered at noon on Monday, the 25th, to Lieutenant-Commander Chadwick; and Lieutenant Reamey, who had been detailed to bring her to New York, was placed in command.

No time was lost in preparing for the voyage to New York. The ship was coaled, provisions were taken on board, and a crew engaged. Three of Whitworth's gun-forgings, weighing twenty-five tons, and intended for the armament of the cruisers building for the Navy, together with a lot of pig-iron, were shipped for ballast, and at 3 P.M. of Wednesday, the 27th, the *Thetis* steamed out from the docks and anchored in the river. While here the entire crew left the ship, having selected this opportune moment to go ashore for a last spree. After some delay they were brought off in a tug, and at 3 A.M. of the 29th the vessel sailed. She arrived in New York March 23d, after a stormy passage, in the course of which she met a large field of heavy ice, and had an opportunity of showing what she could do in that sort of navigation.

Some time before the purchase of the *Thetis* was completed, Lieutenant-Commander Chadwick had turned his attention to the question of securing a third vessel among those which at one time or another had been used or fitted for

Arctic exploration. There were three of these in England, the *Pandora*, the *Discovery*, and the *Alert*. The *Pandora* was first examined. This steamer had been built at Pembroke Dockyard as a surveying vessel under the Admiralty. She was then called the *Newport*. After Sir Allen Young had sold the first *Pandora* (later the *Jeannette*) to Mr. Bennett for DeLong's expedition, he bought the *Newport*, a vessel in all respects similar, and had her doubled for Arctic navigation. She was re-named the *Pandora*, and having been thoroughly repaired, with new decks, engines, and boilers, in 1881, she was now a beautiful steam-yacht of about 570 tons. In the meantime she had again changed hands, but her new owner, Mr. Assheton Smith, was willing to part with her. Sir George Nares strongly recommended her consideration as an advance vessel, and she was accordingly examined by Chadwick, who went down to Port Dinowic for the purpose. Captain Pelham Aldrich, R. N., the explorer of the northern coast of Grinnell Land, kindly volunteered to accompany Chadwick in his inspection. They found the vessel in every way fitted for the service, except that her engines were of small power (35 nominal), and there was therefore a grave doubt as to her capacity to cope with the ice.

While the question of the *Pandora* was still under consideration, inquiries were made unofficially in reference to the *Alert* and the *Discovery*, the ships commanded by Captain Nares in 1875, which were still in the Naval service. The *Discovery*, however, which was herself an old Dundee whaler, was in active employment by the Admiralty as a transport and freight boat between the dockyards, and could not well be spared. The *Alert* was lying dismantled at

Chatham, and although it seemed possible that she might ultimately be sold, no decision had yet been arrived at. The Arctic men all seemed to prefer her strongly to the *Pandora*, at likely to prove more efficient for the service intended. Matters being in this state, Lieutenant-Commander Chadwick, in an interview with Sir Cooper Key, one of the Lords of the Admiralty, on the morning of February 2d, intimated the possibility that the United States Government might desire to use the *Alert* in the proposed expedition. The interview was entirely of an informal character, and, as Lieutenant-Commander Chadwick said at the time, he was without specific instructions, and no definite proposition could as yet be made. In the evening the following unofficial letter was received at the Legation from the First Lord of the Admiralty :

February 2, 1884.

DEAR MR. LOWELL :

Commander Chadwick has mentioned, in conversation with Sir Cooper Key, that Her Majesty's ship *Alert* might be of use to the United States Government in an expedition to be dispatched in search of the expedition which is missing in the Arctic region. I write a line to say that we have not forgotten the very considerate conduct of the Government of the United States on the occasion of the recovery of the *Resolute*, and that if you should be instructed to make any suggestions through the usual official channel, that the *Alert* would be of any use to the United States Government, we shall be happy to ask you to accept her as a present.

Yours very sincerely,

NORTHBROOK.

Mr. Lowell lost no time in sending the answer :

LEGATION OF THE UNITED STATES, *February 2, 1884.*

MY DEAR LORD NORTHBROOK :

It is with an emotion for which the diplomatic phrase "peculiar satisfaction" is altogether too colorless, that I hasten to acknowledge the reception of your private note of yesterday, informing me of the offer by

Her Majesty's Government of H. M. S. *Alert* as a gift to that of the United States for the use of the Greely Relief Expedition. As I think the terms of your note more expressive than any that I could substitute for them, I shall this morning send a copy of it, in cipher, to Washington.

In the meanwhile I beg thus in advance to convey to you, and through you to Her Majesty's Government, the thanks of the President for this particularly timely and graceful recognition of that international courtesies which I trust will always characterize the intercourse of our respective countries.

Faithfully yours,

J. R. LOWELL.

In consequence of Lord Northbrook's letter, a dispatch was sent to Mr. Lowell, stating the conclusion arrived at by the Navy Department that the *Alert* would be best fitted for a third vessel for the Relief Expedition, and asking if she could be spared for the service. The suggestion was accordingly made by the Legation, it being understood that the *Alert* was in condition to enable the United States to fit her for the proposed service. As parts of her equipment were wanting, Chadwick proposed, if the presentation was made, to take her to Green's, the best ship-yard for that sort of work on the Thames, and fit her out. On the 20th, the Admiralty made a formal offer of the ship as a gift, and while waiting for an answer, consented to tow her to the ship-yard, and take her back if she was not accepted. The acceptance was cabled in the afternoon, and work began the next morning. The dispatch to Mr. Lowell, informing him that the *Alert* had been accepted, was as follows :

LOWELL, Minister, London.

Her Majesty's Government having presented to the Government of the United States the ship *Alert* to aid in the relief of Lieutenant Greely and his party, you will inform the Secretary of State for Foreign Affairs, that the spirit which prompts this act of generosity, and this evidence of sympathy with the object in view, receives the highest appreciation of the President, as it will that of the people of the United States. The Presi-

dent sends his cordial thanks for the opportune gift of this vessel, which he accepts in the name of the United States, and which will be used in the humane enterprise for which it is so peculiarly adapted.

FRELINGHUYSEN.

The work of fitting out the *Alert* was carried on with hot haste, the shipwrights covering her with workmen. Lieutenant Commander Chadwick was constantly present during the work, as well as Lieutenant-Commander Goodrich, who was to take the ship to New York. Sir George Nares, Commander Parr, and other officers who had served in the *Alert*, came down frequently and gave suggestions, so that the shipyard became for the time a sort of rendezvous of Arctic men. Mr. Leigh Smith had generously furnished to the Government his Arctic outfit of sledges, tents, and clothing, and it was decided to accept them and bring them over in the ship, at the same time offering Mr. Smith a passage, if he desired.

The *Alert* left the works at Poplar on the 26th of March, and on the 29th sailed from Gravesend for New York, under the command of Lieutenant-Commander Goodrich. She arrived safely in New York on the 22d of April, two days before the departure of the first ship of the Relief Expedition.

Long before this time, arrangements had been made by the Navy Department for the organization of the expedition, and the detail of its officers. The first step was the appointment of a Commander-in-chief, which was made on the 18th of February.

In making a selection at this early date, it was the purpose of the Department to identify one man with the enterprise from the beginning, and thus not only to give him time and opportunity to make all the needful arrangements, but to

centralize from the start the executive responsibility, and to include under it both preparation and action. From the 18th of February until the return of the vessels, the expedition, in the eyes of the Navy Department, was the commanding officer, and the commanding officer was the expedition. There was to be no possibility of saying, "We were unable to do so and so, because the Bureaus forgot this or that detail of equipment"; it was one man's business to call for everything that was needed, and to make sure that he got it. The orders ran :

NAVY DEPARTMENT, WASHINGTON, *February 18, 1884.*

Commander WINFIELD S. SCHLEY, Washington.

SIR : Having been selected for the command of the Greely Relief Expedition of 1884, you will make immediate and full preparation for the performance of your duties. You will investigate the circumstances of Lieutenant Greely's voyage to Lady Franklin Sound in 1881, and of the attempts to relieve him in 1882 and 1883, incidentally familiarizing yourself with the whole subject of Arctic exploring and relief expeditions. You will examine the *Thetis* and *Bear*, and all other ships which may be designed for the expedition, and co-operate with the Chiefs of Bureaus in strengthening and equipping them, giving particular attention to all the special articles of outfit necessary in Arctic voyaging, including boats, sledges, dogs, houses, provisions, clothing, navigation instruments, and the whole material of the expedition.

You will also consider and assist in the selection of the subordinate officers and the enlistment of the crew ; and on all points above indicated, and concerning any steps which ought to be taken to give success to the expedition, you will from time to time make to the Department all suggestions and recommendations which may occur to you as useful or important.

Very respectfully,

WILLIAM E. CHANDLER,
Secretary of the Navy.

Commander George W. Coffin was assigned to the command of the *Alert*, and Lieutenant William H. Emory, Jr., to that of the *Bear*. All the officers for the three ships, as

well as the seamen, were carefully selected. Every man was examined by a medical board, under instructions from the Surgeon-General, prescribing a standard of physique necessary to endure the hardships and exposures of the Arctic, and many of those who came before the board were rejected. Care was taken that on board each vessel there should be at least one officer who had had more or less Arctic experience.

The list of officers, as finally made up, was as follows :

THETIS.

Commander Winfield S. Schley, Commanding Expedition.

Lieutenant Uriel Sebree, Executive and Navigating officer.

“ Emory H. Taunt.

“ Samuel C. Lemly.

Ensign Washington I. Chambers, (afterwards transferred to the *Loch Garry*).

“ Charles H. Harlow.

Chief-Engineer George W. Melville.

Passed Assistant-Surgeon Edward H. Green.

BEAR.

Lieutenant William H. Emory, Jr., Commanding.

“ Freeman H. Crosby, Executive and Navigating officer.

“ John C. Colwell.

“ Nathaniel R. Usher.

Ensign Lovell K. Reynolds.

Chief-Engineer John Lowe.

Passed Assistant-Surgeon Howard E. Ames.

ALERT.

Commander George W. Coffin, commanding.

Lieutenant Charles J. Badger, Executive and Navigating officer.

“ Henry J. Hunt.

Ensign Charles S. McClain.

“ Albert A. Ackerman.

Passed Assistant-Engineer William H. Nauman.

“ “ Surgeon Francis S. Nash.

The officers of the *Thetis* who had had Arctic experience were Lieutenant Sebree, who had been in the *Tigress* when she made her voyage to Littleton Island in search of the *Polaris*, and Chief-Engineer Melville, whose part in the *Jeannette* expedition is too well known to require even a passing allusion; in the *Bear*, Lieutenant Colwell, whose services in the return from the wreck of the *Proteus*, form the brightest episode in an otherwise gloomy chapter of Arctic history; and in the *Alert*, Lieutenant Hunt, who had served in the *Rodgers*, on the disastrous expedition in search of the *Jeannette*, and Ensign Ackerman, who had made the cruise the summer before in the *Yantic*. There were also three ice-masters, Norman, the former mate of the *Proteus* and the *Neptune*, in the *Thetis*; Ash, in the *Bear*; and Gifford, a New Bedford whaler, in the *Alert*.

The ships carried no paymasters. The care of the provisions and clothing was made a part of the Surgeon's duty. He regulated the variety and quantity of the dietary allowance of the crews, as well as their changes of clothing, and all issues of food or clothing were made under his supervision. Whenever the payment of money was necessary it was done by the commanding officers upon the usual vouchers. The medical officers of course performed their ordinary professional duties, in reference both to the sanitary condition of the ships and the health of those on board, which, on the return trip, were no slight responsibility and care. Their suggestions always had the force of law, and were observed under all circumstances during the cruise.

The crews were cut down to the lowest possible limit. The number of officers and men allowed to the *Thetis* was thirty-seven, to the *Bear* thirty-four, and to the *Alert* thirty-

nine. In order to secure crews as homogeneous as possible, all the men were taken from the Navy. Volunteers were invited from all the ships of the North Atlantic fleet, but the absence of most of the vessels made it necessary to fall back on the *Powhatan*, from which three-fourths of the men were drawn. After Americans, the preference was given to "north-countrymen," that is, Scandinavians and Russian Finns. All were enlisted on board the *Vermont* at New York, in order that the same rule of examination might be generally applied. The examination was rigid, and many were excluded, but those whose only defect was in the teeth, were taken after being put in the hands of a dentist. The pay of all the crews was increased ten dollars per month for the cruise, and a bounty amounting to two months' regular pay was promised if the ships returned successful in the fall.

The *Thetis* and the *Bear* were vessels built to encounter the ice of Melville Bay, but after they had been inspected by the commander of the expedition and by the chiefs of Bureaus of the Navy Department, it was thought best to take every possible precaution and strengthen them further. Additional beams were therefore laid between those already supporting the lower decks, and truss-frames were put in, extending from the bilge to the middle of the lower deck beams. A deck was also laid on these beams, as the whalers had no berth-deck, the space where it is usually found being left open to give access to the immense blubber-tanks in the hold. Water-tight bulkheads were put up at the forward and after ends. Iron straps were put over the stem and secured with through-bolts to the forward deadwood, and sponsons or filling-pieces were used to close up the space in the angle between the keel and the ship's bottom, so that the

thrust of ice forced laterally against the lower part of the hull, would be borne on without resistance, and all danger of forcing open the bottom planking avoided.

Besides the strengthening of the vessels, they were calked and painted, the machinery was thoroughly examined and repaired, and two donkey-boilers were placed in the fire-rooms for general use during winter. The standing rigging was overhauled and repaired, and the running rigging and sails were renewed. Steam-jets were placed in the holds and coal-bunkers, to assist in putting out fire in case of spontaneous combustion, of which there was some danger from the bituminous coal used by the vessels.

To provide for an increase of air-space for the officers and men during what might be a long period of confinement, the quarters on board both ships were remodeled. Only the Captain had a room by himself. The saloon of the vessels, which was to be used as a wardroom, was fitted with bunks, and curtains with rods which could be "rigged out" at night. On the berth-deck was a general storeroom, and the ammunition-locker, the men's quarters being on the upper-deck forward. To give more room, the top-gallant forecastle was extended aft, and the quarters were fitted with twenty-eight bunks built in pairs, one above the other. The quarters were separated from the ship's side by an alley-way which gave access to the forward part of the ship, and the walls and ceilings were lined with felt to exclude the cold and to prevent condensation of moisture. The same device, which was a suggestion of Chief Constructor Wilson, was employed in the officers' quarters, and served its purpose admirably. Both apartments were heated by stoves instead of steam from the boiler, for reasons of economy, the consumption of coal when

the ship was not under way being thus reduced to 150 pounds a day, instead of two tons. The difficulty described by Nares in the use of stoves in the Arctic, which arises from the inability of the column of hot air from a small fire to resist the heavy downward pressure of cold air in the flue, was obviated by the introduction of fresh air through a pipe to the space below the grate bars.

The *Alert* was in such good condition upon her arrival at New York as to require no changes except in the construction of berths for the crew, the removal of some unnecessary bulkheads in her hold, and slight repairs to the rigging and sails.

On the 10th of March the Navy Department called upon the Commander of the expedition to submit a plan proposing dates for the departure of the relief ships, and on the 17th the following answer was given :

WASHINGTON, D. C., *March 17, 1884.*

HON. W. E. CHANDLER, Secretary of the Navy.

SIR :—In reply to your letter of March 10th, informing me that it had been definitely settled that the *Thetis*, *Bear*, and *Alert* were to be the vessels of the expedition to relieve Lieutenant Greely and party at Lady Franklin Bay, I would respectfully suggest that the *Bear*, being the vessel most advanced in the strengthening needed for this service, should be dispatched from New York on the 25th of April to St. John's, Newfoundland, to fill up with coal, to take dogs on board, and to inquire into the condition of the ice in Davis Strait, and at the earliest practicable moment to proceed to the Danish settlements of Disko and Upernivik, reaching there about the third week in May, if practicable.

The *Thetis* should follow the *Bear*, leaving New York not later than May 1st, stopping at St. John's for coal, to take dogs on board, and to convoy the coal steamer to Upernivik, where she ought to arrive about May 25th.

From Upernivik the *Thetis* and *Bear* should proceed onward with the convoy to Cape York and Littleton Island. Should the ice appear too formidable for the collier to encounter so early as June, she should re-

main at Upernivik until the arrival of the *Alert*, which vessel would then be charged with the convoy.

The importance of convoy beyond Upernivik can hardly be over-estimated, in view of the circumstance that the Government may be obliged to assume all responsibility for the coal vessel, and cargo.

The *Alert* should be dispatched not later than May 10th from New York to St. John's, to fill up with coal, and then to proceed onward to Disko and Upernivik, where she should arrive not later than June 1st.

Her movements should be so timed that she might reach Littleton Island, or Foulke Fiord, about the 1st of July, in order to have sufficient time to land and build the house, land provisions, coal, and other supplies, to establish the station upon which the advance ships' companies could retreat in the event of disaster, and afterwards to send a sled party onward to examine the coast on the eastern side of Smith Sound as far as Humboldt Glacier.

This duty completed by September 1st, and the *Thetis* and *Bear* not having returned to Littleton Island, or Foulke Fiord, the *Alert* should return to St. John's with news of the expedition.

I have the honor to be, very respectfully,

W. S. SCHLEY,

Commander, Commanding Greeley Relief Expedition.

This programme was rigorously carried out. The *Bear* was put in commission March 17th, the *Thetis* April 2d, and the *Alert* was continued in commission after her arrival from England. All the vessels sailed on or before the dates named.

As soon as the officers reported for duty, a detail was made, and instructions were given them to inspect all articles of outfit under preparation, and to report daily to the Commander of the expedition the progress made in the different departments, and any deficiencies in the lists of stores. The provisions and the medical outfit were carefully inspected by the medical officers. In this way, not only was the commanding officer cognizant of the state of forwardness of the expedition day by day, but the officers themselves became familiar with every article of outfit; and many points not

yet thought of came up for consideration, which resulted in new ideas and suggestions, and the addition of much that was needful to the resources of the expedition. By the first week in April the supplies were well advanced, those of the *Bear* being pushed most rapidly, as she was to be the first vessel off.

As it had been ascertained that the use of anthracite coal,—the kind generally employed in the service,—would result in a loss of speed of at least twenty per cent., it was decided to send for the best Welsh or semi-bituminous coal. The coal-transport *Ybarra* was accordingly chartered, and she brought over 2,000 tons from Cardiff. A contract was also made with Sutton & Co., the agents of the English steamer *Loch Garry*, to transport 500 tons of Welsh coal from Cardiff to Littleton Island. This would secure a supply for the expedition on the spot, and the Government assumed the responsibility for the vessel from the time of her departure from St. John's until her return to New York. It is a noteworthy fact that no suitable vessel could be found in the United States for this service.

Each ship was furnished with a Herreshoff steam cutter, and the *Alert* with White's steam cutter, which had been purchased in England. The other boats were constructed to serve three purposes. They were to be used as boats in crossing water-spaces, as sleds in crossing floes, and as quarters when hauled out in stormy weather, or for rest. For this reason they were fitted with bilge-runners, after the method adopted by Sir Edward Parry, and with covers and tent-stanchions. The thole-pins were of wood, and, in general, the use of metal was avoided as much as possible. Besides the oars, two paddles were supplied to each boat, with ice-chisels fitted

on their upper end, to be used in cutting through small ice-tongues or blocks in the way of the ships. Their sails and tent-coverings, as well as the A tents supplied to the expedition, were made of tan-colored canvas, to avoid the glare, and to make them more easily distinguishable at a distance in a region where nearly all objects are white.

The steam cutters were of the Herreshoff type, built as whale-boats, and were of excellent service, especially as sea-boats, for which their form and lightness peculiarly fitted them; but the type of engine with the exterior condenser was hardly simple enough for the exceptionally hard service and unavoidable neglect to which the boats are subjected in the Arctic. The safety-valve was a weak spot in the machinery, and unless closely watched, was apt to lose its tempering with the sudden increase of steam pressure in the coil-boiler. The *Bear's* steam cutter, christened by somebody the "Cub," which was so prominently connected with the rescue, was partly disabled at the time, and it is doubtful if she would have been of any service but for the indefatigable industry and resource of Chief-Engineer Lowe, who kept her running in spite of all the difficulties that arose at this critical moment.

The sleds of the expedition were made in accordance with the designs of Chief-Engineer Melville, with reversible runners shod with iron, and were well constructed, though somewhat heavier than they should have been. In the outfit supplied by Mr. Leigh Smith, there were also two McClintock sleds.

The ships were provisioned for 115 men for two years. The enormous progress of recent years in the art of canning foods made it possible to fit out the expedition with an

almost unlimited variety of provisions. As the nutritive value of food depends largely upon frequent changes of diet, it was deemed of the first importance to include in the list everything that was in the market, and next that all the articles should be securely packed in hermetically-sealed cans, covered with light wooden boxes. The bread was packed in the same way, the wooden cases weighing about forty pounds each, making stowage and handling an easy matter. Every package was plainly stencilled with its weight and contents. The pemmican, which is always the most nutritious food in the most compact form for Arctic work, was packed in one and two-pound cans and boxes. Pemmican is made from the round of beef cut in strips and dried, then shredded or minced, and mixed with beef tallow and currants. It is palatable and wholesome, and may be eaten from the can, or cut into cakes and fried. Anti-scorbutics of several kinds were included in the list, and tea and chocolate were the principal stimulants taken. It was found by the expedition that in the Arctic climate the use of coffee has injurious effects on many constitutions, and tea seemed to be the best stimulant for ordinary use; though there are times when, after severe exposure, nothing short of hot spirits will give the internal warmth needed.

The clothing outfit was made at the New York Navy Yard, the officers and men being fitted as soon as they joined. It was intended to be sufficient for two years, and comprised three suits of under and outer clothing for each year. The underclothing was of heavy red flannel made double about the chest, and with stockings of red wool extending to the knees. The outer clothing was made of heavy pliable cloth, and consisted of a blue flannel overshirt, made full with

double chest and back and a rolling collar, a vest and blouse of blue cloth lined with flannel, an overcoat made like a monkey jacket, and an Elsinore leather cap with a woolen strip to roll down over the ears and the neck. Horn buttons only were used, because they do not collect the frost. The hand coverings were woolen one-fingered mittens and sealskin gloves, and the boots were of tanned horse-hide and sealskin. This was the "summer rig."

The winter rig comprised two suits of reindeer clothing for each year, consisting of a jacket and hood made in one, with the sleeves covering the hands, and loose trousers falling to the knee. Under the reindeer hood a woolen hood was worn, with a knitted cape covering the ears and neck, leaving the face uncovered. Great difficulty was found in obtaining reindeer skins for the winter clothing. They could not be found in the United States, and the Department was obliged to order them from Stockholm, and even there delays occurred in bringing the skins in from the country villages, where alone they were to be bought. They only arrived at the last moment, and the suits were made up in New York in an extraordinarily short time.

The winter foot-gear consisted of sealskin moccasins lined with Iceland wool, inside of which was worn, over the ordinary stocking, a long cloth stocking lined with fleece, and laced from the instep to the knee. The moccasins are generally soled with oogook skins, which are taken from the larger seals, and are stouter and tougher than the ordinary skins, as well as more lasting and impervious to water. They are not generally found for sale outside of Arctic settlements. The *Thetis* purchased all she wanted at Tassuisak. To protect the eyes from the snow glare, goggles of colored glass

were used, and to avoid condensation on the inner side, thin gauze surrounded the glass and fitted over the eye, maintaining the same temperature on both sides of the glass. During the summer in the Arctic, the sun being always above the horizon, it is necessary to wear goggles most of the time to avoid snow-blindness. Mittens are obviously better than gloves, and the Eskimo pattern of mittens, with a thumb or finger on each side, is probably the best suited for Arctic use.

Sleeping-bags for work in sledging were made of reindeer skin with the fur inside. They were about eight feet long and thirty inches wide, cut somewhat to the shape of the figure. They were fitted with a slit to facilitate getting in and out, with a round hole or opening for the face, covered by a flap closing toward the foot. When a party is on the march, the bags are rolled up to exclude moisture, and they give a moderate amount of comfort even at extreme temperatures, if one is inside of a tent. They are an indispensable part of an Arctic outfit.

For firearms, each ship was supplied with six double-barrelled sporting guns and twelve Springfield rifles. All ammunition was put up in metallic cases, to avoid the effect of moisture in the higher latitudes. In former expeditions, when paper cases have been used, they have swollen so much from the moisture absorbed, that it has been necessary to pare them off before they would fit the breech of the gun. This serious objection is entirely obviated in the metallic cartridges, which have also the advantage of being capable of closer stowage. The charge for the shot-guns was too light to bring down game at long distances, though the gun was heavy enough to stand a much larger charge.

The outfit of meteorological instruments was furnished by

the Signal Office, and arrangements were made to take the observations requested by the office at the proposed station in Smith Sound.

There have been occasions in the history of the Navy Department, especially where ships were to be fitted for sea, when the execution of an important project has been postponed by obstacles and delays of one kind or another, until the opportunity for action has gone by, and among the multitude of officials engaged in the work, no one is to be found who has not an excuse for his share of the delay. It was just here that the active and untiring efforts of Secretary Chandler were to be seen and felt. Everybody was given to understand from the start that the ships must be ready at the designated time, and that no excuses for failure would be accepted. As early as the 4th of February, before any of the ships had reached New York, a letter was sent to all the Chiefs of Bureaus, which said :

“ The vessels of the Greely Relief Expedition will be fitted out by the Navy Department. You will immediately familiarize yourself with the subject and be prepared to perform any work necessary from your Bureau thoroughly and without delay. Difficulty has been experienced in starting to sea vessels of the Navy at the dates fixed for sailing. There must be no such failure in the case of this expedition. You will promptly call the attention of the Department to any questions upon which you wish decisions or explicit directions. You will give all practicable personal attention to the business, in all its details, trusting as little as possible to other persons. You will communicate freely with the Chiefs of other Bureaus, and with the Commanding officer of the expedition.

“ The subject is thus specially called to your attention not on account of any doubt, but with the fullest conviction, that you, and every officer and seaman of the Navy who may have duties to perform in connection with the Relief Expedition, will gladly do the utmost to make it successful, and to find and relieve our imperiled countrymen, for whose safety our whole people are full of anxiety.”

The survey of the *Bear*, the first steamer to arrive, was completed on the 4th of March, and on the 8th the report of the Board of Survey was approved and an order was given to begin the alteration of the vessel at once. The order was addressed to all the officials connected with the work—the Commandant of the New York Yard, and the Chiefs of the Bureaus of Construction, Steam Engineering, and Equipment; and it contained a proviso that “it must, however, be distinctly understood that no work is to be undertaken on the *Bear*, or any other ship of the Greely Relief Expedition, which can not be fully completed without delaying the expedition beyond the time which may be fixed for its departure from New York.”

These dates, as already noticed, were decided upon by the 17th of March, and all the officials concerned were immediately informed of the decision. The work was pushed forward with energy, and no detail was too minute to receive the attention of the Secretary. He insisted upon satisfying himself personally that the work was done, well done, and done in time. As the time approached for the sailing of the *Bear*, the following brief but pointed letter was addressed to all the Chiefs of Bureaus :

NAVY DEPARTMENT, WASHINGTON,
April 18, 1884.

SIR : You are requested to inform the Department whether the *Bear*, of the Greely Relief Expedition, is in all respects, so far as your Bureau is concerned, ready for sea. If she is not, what work yet remains to be done ?

Very respectfully,

WILLIAM E. CHANDLER,
Secretary of the Navy.

On the 28th of April, a letter identical in its language was written, referring to the *Thetis*, and another on the 7th of

May, referring to the *Alert*. As the Commander of the Expedition had sailed before the last date, additional copies of the third letter were sent to the Commandant of the New York Yard and to Commander Coffin.

No further explanation is needed of the unusual fact that an expedition, of so elaborate and exceptional a character, sailed on the days fixed, and that in the outfit and preparations not a single omission or defect of importance was ever discovered.

Throughout all the work of preparation, the Navy Department had the cordial and earnest co-operation of the Secretary of War, and the two Secretaries were in constant consultation upon questions relating to the expedition.

In addition to fitting out the Government expedition, it was thought wise to take such subsidiary measures as might offer any promise of a beneficial result. To this end requests were made in February by the State Department, through the Consuls at Dundee and St. John's, that the owners of sealing or whaling vessels would direct their captains to be on the lookout for signs of Greely's party, as it was just possible that they might have drifted south on an ice-floe; and assurances were given that any services performed by the whalers would be substantially recognized by the Government. Later, Congress went beyond this, and, on the 17th of April, directed the Secretary of the Navy to offer a reward of \$25,000 for the rescue of Greely or for the discovery of his fate.

The proclamation announcing the offer was issued by the Navy Department on the same day, and distributed through the Legations and Consulates abroad. It was as follows :

The Rescue of Greely.

PROCLAMATION—\$25,000 REWARD.

UNITED STATES OF AMERICA,
NAVY DEPARTMENT,
WASHINGTON, DISTRICT OF COLUMBIA,*April 17, 1884.*

Notice is hereby given that the Government of the United States of America will pay a reward of twenty-five thousand dollars, to be equitably paid or distributed to such ship or ships, person or persons, not in the military or naval service of the United States, as shall discover and rescue, or satisfactorily ascertain the fate of the expedition of Lieutenant A. W. Greely, an officer of the United States Army, and his command, consisting of about twenty-four persons, which, in the month of August, in the year eighteen hundred and eighty-one, landed from the steamer *Proteus* at Discovery Harbor, in Lady Franklin Sound, in latitude 81° 44' N. and longitude 64° 45' W.

Unprepared vessels are warned not to incur extraordinary peril or risk in the effort to secure the reward hereby offered; the United States will, in no event, be involved in any future liability or responsibility beyond said reward; and the determination of the Secretary of the Navy as to the right of any man to said reward, or a share thereof, shall be conclusive upon all persons.

Witness my hand, at the Navy Department, in Washington, on said seventeenth day of April, A.D. 1884.

WILLIAM E. CHANDLER,
Secretary of the Navy.

The proclamation was received at St. John's before the whalers set out for Melville Bay, and aroused the greatest interest among them. Most of them resolved to make an effort to obtain the reward, and the result was that the whaling cruise of 1884 to the North Water was marked by a competition and a zest far beyond those which ordinarily characterize the passage.

CHAPTER IX.

THE DEPARTURE OF THE RELIEF SQUADRON.

THE plan upon which the Navy Department had acted in the preparation of the expedition, as described in the last chapter, and which it proposed to follow to the end, was clear and consistent. As soon as the decision was reached that it was to take a part in the enterprise, it obtained the fullest advice as to the needs of the service. Before the resolution was passed it took measures to secure suitable ships. Having provided these, it selected a commander, and it placed at his disposal the whole machinery of the Department and Bureaus. He was to ask for everything he wanted; the Secretary took care that it should be supplied. Ships, officers, men, provisions, stores, equipment, clothing,—he had but to say that he needed them and he had them if any country in the world could supply them. That all was accomplished according to the commander's fullest wish, and accomplished at the time he fixed, showed an extraordinary energy on the part of the Department. Of course it was not done without an unwearied effort, a close attention of the Secretary himself to the minutest details, a personal certainty on his own part that every order was executed to the letter, with promptness and fullness. So much for the preparations. The same plan was followed in laying out the work of the expedition. Recognizing that it was impossible to give instructions for every contingency in a voyage in the Arctic seas, and that if

an officer is fit to command at all, he is fit also to judge of the best method to accomplish on the spot a known end, when he is supplied with all the means he has asked for, the Secretary hampered the commander of the expedition with no minute directions as to what should be done in this or that hypothesis, but left him free as air to act according to his discretion. From his first connection with the expedition to the time he sailed, the Department only laid upon him three simple injunctions: first, to acquaint himself with the circumstances of Greely's voyage in 1881, and of the attempts of 1882 and 1883, and with Arctic expeditions in general; secondly, to ask for everything the expedition needed; and finally, to take his ships and proceed to the coast of Greenland, or further north, and "find and rescue or ascertain the fate" of the lost explorers.

The final orders were as follows:

NAVY DEPARTMENT,

WASHINGTON, *April 21, 1884.*

SIR: The *Thetis*, *Bear*, and *Alert*, the ships of the Greely Relief Expedition of 1884, being ready, you are ordered to take command of them and to proceed to the coast of Greenland, or further north if necessary, and, if possible, to find and rescue, or ascertain the fate of Lieutenant A. W. Greely and his comrades.

All the officers and men under your command are hereby enjoined to perform any duty on sea or land to which you may order them. No detailed instructions will be given you. Full confidence is felt that you have both the capacity and the courage, guided by discretion, necessary to do all that can be required of you by the Department or the nation for the rescue of our imperiled countrymen.

With earnest wishes and high hopes for your success and safe return,
I am,

Very respectfully,

WILLIAM E. CHANDLER,

Secretary of the Navy.

Commander WINFIELD S. SCHLEY, U. S. N.,

Commanding the Greely Relief Expedition.

The plan adopted was one calculated to call forth all a man's efforts in their highest and fullest activity. Power and responsibility were placed from the first, and placed in a single individual, and the fullest confidence was shown that the desired result would be attained.

The Secretary, while untiring in his attention to details, never seemed to feel any apprehension as to the fate of his expedition. At Portsmouth, after the return of the Relief Squadron, some one asked him whether he had not been anxious as to the result. "Never for a moment," said Mr. Chandler, promptly; "I thought it possible that one of the ships might be lost, or even two of them; but there is this advantage about being nipped in the ice, that you have always the ice as a refuge. The preparations were so complete, and the precautions taken in the event of any disaster so perfect, that I was sure that, no matter what happened, the result would be accomplished, and that without further calamity."

It should not be forgotten that during the preparation of the expedition of 1884 there was little encouragement to be drawn from popular or newspaper utterances; the recollection of all the disasters in the Arctic regions, and especially of those which had recently overtaken the brave DeLong and his fellows in the *Lena delta*, was too fresh in the public mind to permit any great hope of success for this new enterprise. It was generally felt that it was a pity that there should be a necessity of offering new material to almost certain sacrifice; and though all the people who visited the ships before their departure felt that the Government was in duty bound to attempt Greely's relief, there were many who freely expressed their regret that the expedition should set forth on what seemed to them not only a fruitless but a fatal errand.

It is hardly necessary to say that this prevalent feeling did not have a very depressing influence upon the officers of the expedition. With regard to Greely's situation there was of course much thought and discussion, but it was recognized as being largely a matter of conjecture. The three commanders, in their frequent conversations, were never willing to admit the possibility that a general catastrophe had taken place. As for the work of the relief expedition itself, while there was no apprehension of disaster, there was no expectation that success would come with a hurrah; and it was recognized as a serious undertaking, to which everybody must give his best efforts. The officers and men of the expedition sailed, if not with a certain, at least with a possible prospect of wintering beyond Kane Sea; and although few of them knew much about ice navigation except what they had read of its dangers, and the events of the last two years did not offer much encouragement to the hopes of the public at large, such considerations did not lead those connected with the squadron to have any doubts about a successful result.

Although it is fair to assume that an officer who has the right spirit will always set about any serious duty with the intention of doing his best, it is due to the officers and men of the relief squadron to say that all of them knew that the object of the voyage was something above and beyond the ordinary calls of service, and that they felt an earnestness of purpose which a mere exploring expedition would hardly have called forth. At any rate, whatever may have been their feelings, they certainly evinced a determination to spare no pains, to incur any exposure, to assume any required risk, and to be unflinching in watching for opportunities to gain a mile, a yard, or a foot on the journey toward Greely and his party.

The *Bear*, being most advanced in her preparations, had been designated as the first vessel to depart. Her sailing orders were signed on the 16th of April, and directed her to proceed to Disko and Upernivik, stopping on the way at St. John's only long enough to fill up with coal and take on board the few supplies awaiting her. After engaging Eskimo dog-drivers for the three ships, the *Bear* was to wait for the *Thetis* at Upernivik, unless news had been received there of Greely's arrival at Littleton Island, or unless special circumstances justified an advance. Neither contingency was very probable, as there is no communication between Cape York and the Danish settlements, and Melville Bay was not likely to be open at that date. If the *Bear* crossed the Bay, she was to wait for the other ships before advancing into Kane Sea, unless the delay was so long as to lead to the belief that no other ships would arrive. In passing north from Cape York, the coast was to be searched, and cairns were to be placed with records for the other ships at prominent points, of which exact indications were to be given beforehand. If Greely and his party were discovered, they were to be brought to Upernivik, and a record of the fact left at Littleton Island, Cape Parry, and Conical Rock.

General directions were given as to the conduct of the voyage. Sixty days' provisions were to be kept on deck from the moment of arriving in the ice regions, and the men were to have exact and frequent exercises at "fire-quarters," and in "abandoning ship."

The date fixed for the departure of the *Bear* from New York was the 25th of April. It was discovered that this date fell on Friday, and in deference to the well-known sailor superstition, it was thought best to take another day. It had

been determined, however, that none of the ships should be an hour behind the appointed date, and the only alternative was to anticipate it. So the preparations were hurried with redoubled energy, and the *Bear* set out on Thursday, April 24th.

It was half-past three in the afternoon when the advance ship, leaving her moorings at the Navy Yard, steamed slowly down the East River and out of the harbor of New York. The wharves on the Brooklyn and New York sides were thronged with cheering crowds of people, while the steamers and other shipping of the port were dressed with flags and pennants. The good wishes and the godspeed were universal.

The last message from the Navy Department was a dispatch telegraphed that morning from Washington to Lieut. Emory :

I wish you and all your comrades good health, good courage, and good luck. Good-bye.

WM. E. CHANDLER,
Secretary of the Navy.

A week later, at half-past two on the afternoon of May 1st, the *Thetis* sailed from New York, followed by the same demonstrations of interest and sympathy. Salutes were fired from the Navy Yard, from Governor's Island, and from Fort Hamilton, the relief ship dipping her colors in return. The *Tallapoosa* followed her to the lower bay, and the Secretary of the Navy gave her in person his last good-bye. At Sandy Hook lightship, the *Thetis* was swung to determine the deviation of her compasses, and immediately after she proceeded to sea.

The passage to St. John's lasted eight days, with fine weather. On the third day out the connecting rod of the air-

pump broke. It was rather a discouraging circumstance to meet with such an accident so early in the voyage, but thanks to the efforts of Chief-Engineer Melville, it resulted in only a slight delay. He went to work at the forge himself and spent the night in forging a new rod. The ship continued on her voyage, and early on the morning of May 9th, she steamed into the harbor of St. John's.

The *Bear* had arrived on May 2d, after a severe passage of seven days, part of the time in a thick fog. On the third day out she encountered a heavy gale, which carried away the bridge. She remained at St. John's only two days, just long enough to renew her store of coal, and to receive the supplies which Consul Molloy had ready for her,—sealskin boots and Elsinore caps for her crew, dogs from Labrador for sled-work, and fresh provisions. The injuries received on the way up were not allowed to cause any additional delay, only the iron-work being refitted in port, and enough lumber was taken on board to complete the repairs at sea.

On the 3d, Lieutenant Emory wrote to the Navy Department, giving an account of what he had learned at St. John's, and of his proposed movements. He said :

“ I had the honor to advise you by cable to-day that this season is considered as propitious for favorable ice conditions. Northeasterly gales have prevailed in this vicinity for some weeks ; if they have in the Arctic seas, as there is reason to believe, the ice will have been set in motion to the southward sooner than usual.

“ The sealing season closed this year the 25th of April, so that all the sealing vessels and whalers in that pursuit have returned to port. These steamers do not go to the northward of the coast of Labrador for seals, so that the information regarding the ice conditions in the Arctic can not be otherwise than the opinions of their respective masters.

“ All these steamers report an unusual quantity of ice packed off the Straits of Belle Isle and the southern coast of Labrador. In fact the

Neptune, the most successful vessel this season, was jammed in the ice, and her master, while regretting the fact that he was unable to proceed with the other steamers to what he considered the best sealing ground, suddenly found himself surrounded by seals, and in a few days returned to port with forty-one thousand harps [young seals], his ship loaded to her gunwales. The steamers off shore all returned empty.

“The above observations have determined me to pursue the following course after leaving this port: Take the middle passage of Davis Straits, and when my progress is obstructed by ice, skirt its edge until I reach the Greenland coast, thence along the edge of the foot-ice to Disko and Upernivik. Should my early arrival at the latter port be prevented by ice, I will then be able to find a lee on the coast, or make one in the foot-ice, to await a favorable opportunity of proceeding.

“Should I be able to steam with dispatch to Upernivik, it is not my intention to tarry at Disko; I will communicate only by boat, leaving dispatches for Commander Schley. Should the ice delay us on the coast of Greenland to the southward of Disko, I will communicate with Holsteinborg. At the latter place I would be able to obtain news from Upernivik of 15th February, and send a mail home via Copenhagen. My instructions say: ‘You may proceed beyond Upernivik if any special circumstances justify such movement.’ If upon my arrival at Upernivik I find that the ice conditions are favorable for the passage of Melville Bay, I will attempt it without delay. I have advised the Department by cable that two steam whalers, the *Narwhal* and the *Esquimaux*, have sailed, and that the *Arctic* and the *Polynia* would leave next week for Cape York and the north water, and that their departure two weeks earlier than usual was due to the Greely reward. In addition to these vessels which I have named, several whalers have left Dundee for the same destination. All these vessels have instructions for the rescue of the Greely party. In making this attempt the whalers are only put to the additional expense of two weeks earlier in commission. Their intentions are to communicate with Cape York, and should they rescue Lieutenant Greely and his party, to land them at Upernivik; so the only departure from their regular cruise will be a departure of two weeks earlier than usual, and a second passage of Melville Bay. It is not the intention of these whalers, nor have they the authority, to go beyond Littleton Island. These steam whalers are ably commanded, and are efficiently fitted out. Their masters are ambitious to secure the Greely party; and, although the reward will not be a secondary consideration, they are one and all desirous of obtaining the prestige of the rescue. From information that I can gather, it would seem that the *Arctic* will be our only dangerous

competitor. She is not stronger than the *Bear* or *Thetis*, but has more powerful engines. I have arranged everything at this place to avoid any delay to the *Thetis*, and have left full information of every event for Commander Schley, also of my future intentions.

“ I am led to believe that even should the season prove most favorable, Commander Schley will be able to reach Upernivik before any vessel can undertake or attempt the passage of Melville Bay. Should he not arrive before I leave I feel sure my decision to sail for Cape York at the first moment practicable will meet with your approval and that of the Commander-in-chief of the expedition.”

On the 4th further intelligence had been obtained of the movements of the whalers, and Emory wrote :

“ The following-named vessels (steam whalers) have sailed for the whale fishery of Lancaster Sound and Pond’s Inlet, *via* Melville Bay, and their masters are intending to go, at least to Littleton Island, in the endeavor to get the \$25,000 reward.

<i>Triune,</i>	}	Barque rigged ; sailed two or three weeks ago from Dundee ; are now in Davis Straits.
<i>Cornwallis,</i>		
<i>Nova Zembla,</i>		
<i>Jan Maen,</i>		

Narwhal, sailed April 26, from St. John’s for North Water.

Esquimaux, “ May 3, “ “ “

Polynia, will sail May 4 to 5, “ “ “

Arctic, “ “ May 6, “ “ “

Aurora, “ “ May 7 to 8, “ “ “

Resolute, will sail for the east coast of Greenland. If the fishing is bad, may go up the west coast for the reward.”

Of the whalers mentioned, the *Resolute* was the only one which the expedition never met. The *Jan Maen* and the *Esquimaux* were only fallen in with on the return trip. The other seven, together with the *Wolf*, of St. John’s, attempted the passage of Melville Bay in company with the relief ships.

On the 4th the *Bear* put to sea again, bound for Disko. The passage was rough and stormy. On the way up the

days began sensibly to lengthen, until the Arctic circle was reached. From this time the sun never went below the horizon, until the same point was passed on the return, and the officers and men experienced the novel sensation of being obliged to manufacture darkness for purposes of sleep. The first field ice was met off Holsteinborg, and on the 13th the *Bear* arrived at Godhavn. Hardly stopping, Emory hurried on, steaming up the western shore of Disko Island, but when abreast of Haroen, or Hare Island, he found the ice impenetrable. A gale was blowing from the southward with no signs of abating. With the wind from this direction nothing could be done. The danger of remaining to windward of the pack, and near its edge, was a risk that no prudent commander could run. So the *Bear* returned to Godhavn to wait for a change of wind.

On the way back along the west shore of the island, the *Bear* sighted two steamers coming in to Godhavn. These were the whalers *Polynia* and *Nova Zembla*. The *Polynia* had left St. John's the day after the *Bear*. She was commanded by Captain Walker, the oldest and most experienced of the whaling captains in the fleet. The *Nova Zembla* had been cruising off the coast of Newfoundland for seals, and later in Davis Strait for bottle-nosed whales. These two were the first of the Dundee whaling fleet which were met by either of the relief ships in the Greenland waters. As Emory had been told at St. John's, they were on their annual cruise after fish, but they intended before going to Lancaster Sound to make an effort to secure the £5,000 reward. The *Cornwallis* and *Narwhal* had been seen off Disko some days before, but had gone off to the southwest and disappeared.

The *Bear* ran in and anchored near the entrance of the

harbor, where she remained three days. During this delay precautions were taken to put everything in readiness, for the event of a possible disaster. Provisions were got up and stowed on deck. The boats were filled with men and provisions, and a trial of them was made to see if they would carry their loads. The spare propeller was got up out of the hold, and lashed in the port gangway. The crew was exercised in "abandoning ship" on the ice-foot, and torpedoes were exploded in the ice to test their effect.

At Godhavn the *Bear* purchased from Peterson, the governor, a team of seven trained Eskimo dogs, in addition to the eighteen Labrador dogs she had taken on board at St. John's. As a rule, the Labrador dog is a more satisfactory animal than his cousin from Greenland. He is a little more tractable and takes naturally to his work, when the Eskimo dog must be driven. Moreover he is a water-dog, and will swim from floe to floe across leads, where the other must be ferried over—a matter of great importance in working over the ice. Both breeds eat enormously, but with the difference that the Eskimo will not work for some time after eating, while Labrador dogs are ready at all times. All of them are savage and wolfish to a degree, and if a man falls on the ice they will attack him at once.

With an Eskimo team a king must be chosen, and the dogs fight day and night until the strongest comes to the front. During this process they are virtually useless, if they have not been previously trained to the sleds. Even when it is over, the mastery must be established anew whenever dogs from different teams are brought together. When the kingship is once admitted the entire team are ready to yield him the most crouching subserviency. The king dog always lies on

the sled and the others about him on the ice. In travelling, a growl from the king is enough to start up all the dogs, and it fares ill with any one that heeds it not. A skulker is always punished when the team returns from a journey, not only by the king, but by the whole pack, who pitch upon him and finally kill him, if he is not rescued from them in time.

The Greenland dog undergoes the worst possible treatment from his Eskimo master, and is made to endure all sorts of exposure and hardship on a minimum allowance of food—perhaps a pound and a half of seal meat, which he gets once a day. If he licks the hand he is generally rewarded with a kick, and if he seeks shelter he is driven off to the ice. He is expected to be ready at all times for work, and always to keep up his endurance with nothing in his stomach. If he dies under this treatment, his master wonders what killed him; but in fact the only cause for wonder is that he manages to live at all.

On Wednesday, the 21st, the wind came out from the north, and in the afternoon the *Bear* left Godhavn and once more steamed up to Hare Island. The two whalers had started betimes in the morning, but about ten o'clock in the evening the *Bear* passed them, both under sail, beating up to the northward. The pack was still dense, and the movement of the heavy floes in the tidal currents about the north end of Disko Island was full of danger. The *Bear* advanced slowly and tediously through tortuous leads, until on the 23d she had crossed the mouth of the Waigat and worked in to the land near Noursoak. Here half a dozen natives came out in their kayaks, among them those whom Lieutenant Colwell had sent on the year before to Godhavn, to bring the

Yantic the news of his approach. Colwell was on board the *Bear*, and they recognized him at once, and were made happy with a present of bread and tobacco.

Steaming along the land through ice heavily rafted, the *Bear* made slow progress during the next two days. The mouth of Omenak Fiord was passed, and on the 25th, the ship was tied up to a large sheet of ice off Svarten Huk. On the opposite side of the sheet a third whaler, the *Triune*, was found at anchor. She had been here a week repairing her boilers. A few miles to the northward were two more, the *Aurora* and *Cornwallis*. It was learned from some of the *Triune's* people who walked over the ice to the *Bear*, that another, the *Narwhal*, had succeeded in getting still further up. Of the fleet of eight vessels that was destined to accompany the relief ships into Melville Bay, these four, with the *Polynia* and *Nova Zembla*, some distance in the rear, were all that had as yet made their appearance.

No further progress was made that day, and very little on the next. On the 27th, however, the pack moved off, leaving open water with occasional streams of ice to the northward, and the *Bear* cast off early in the morning, and putting on full speed steamed all day along the coast. At seven in the evening she passed the *Cornwallis*, and at ten the *Narwhal*. The *Aurora* was still ahead, and the *Aurora*, as the relief ships afterwards learned, was not easily to be beaten. Under the circumstances, Emory, finding he had clear water which, for all he knew, might extend across the bay, continued on his course without stopping at Upernivik, and did not bring up until he reached Brown Island, eighteen miles beyond, where he was headed off by a solid barrier. The *Aurora*, which he had passed just before, anchored about two miles off

from him on the edge of the ice, where she was joined soon after by the *Cornwallis* and *Narwhal*. The *Bear* waited eight hours at Brown Island, but there was not the slightest encouragement for expecting a break-up, and Emory reluctantly steamed back. Late in the evening he picked up a native in his kayak, and induced him to pilot the ship into Upernivik, where she arrived at 10.40 P.M., the *Polynia*, *Triune*, and *Nova Zembla* getting in from the southward just ahead of her.

Meanwhile, the *Thetis*, after her arrival at St. John's on the 9th, had remained there two days and a half, long enough to take on board supplies similar to those received by the *Bear*, including eighteen Labrador dogs. During this time the weather was foggy and rainy. Sleet storms occurred once or twice, and the temperature fell to about 40°. The necessary boating was wet and disagreeable work, though the weather did not interfere with the preparation of the ship for sea. During her stay the *Thetis* was visited by several of the English officers from the *Tenedos*, and other ships of war lying in port. One of the officers had been in the *Hope* with Sir Allen Young, when she rescued Leigh Smith, and examining the *Thetis* with the critical eye of an expert in Arctic matters, he seemed to be strongly impressed with the thoroughness with which she had been fitted out.

On Saturday night, while the parts of the engine were being connected for sea, a small brass bearing was lost in some unaccountable way. The next day Melville went on shore to replace it, but as it was Sunday, he could not induce any one to give him assistance, although he was free to take the keys of the shops to work if he chose. Nothing could be done

beyond getting brass enough to enable him to fit a proper fixture himself, the inhabitants concluding that Americans were "a race of Sabbath-breakers," and that no good would come to them if they worked on a Sunday.

At St. John's, one of the firemen was found to be disqualified for work and exposure at the north, and he was sent ashore to be returned to the United States. As one of the machinists had been injured on the way up, and there was some doubt as to the probable time of his recovery, another man was enlisted for the service.

Among the articles taken on board at St. John's were two thousand pounds of beef and vegetables which were intended to afford all hands a fresh meat and vegetable ration once or twice a week until the region of deer or other game was reached. The beef was covered with gunny sacking and hung up in the rigging out of reach of the dogs. A day's sail from St. John's carried the ships into cold weather and a freezing temperature, so that the beef was frozen hard and all danger of spoiling removed. It was intended to keep at least two quarters exclusively for Lieutenant Greely and his party, for it was recognized from the beginning that when found they would probably be in a destitute condition.

The coaling steamer *Loch Garry*, which had been chartered to carry 500 tons of Cardiff coal in bags to Littleton Island for the use of the expedition, was found waiting at this point. She was an ordinary iron steamer of 1,000 tons, entirely unprepared for the ice, although her crew had seen some service at the North, and her master, Captain Robert Jones, was an experienced ice navigator, whose knowledge was of great use in the management of his ship. Notwith-

standing her defects, the importance of having coal at hand was so great that it was necessary to take some risk in getting it to the point where it was wanted.

Ensign Chambers, of the *Thetis*, was detailed for duty on board the *Loch Garry* to represent the Government, and to protect its interests in its responsibility for the ship and cargo from the time of her sailing until her return to St. John's. Two seamen were detailed from the *Thetis* for duty with him, and were required to keep a regular watch. The master's position was to be verified each day, and he was required by written instructions to follow the directions given by Ensign Chambers as to his movements. While the two ships remained in company, the *Loch Garry* was directed to take a position at three cables' distance on the starboard quarter of the *Thetis*.

The two vessels left St. John's at 6 A.M., May 12th, and soon after clearing the harbor were enveloped in a dense fog. During the afternoon the wind hauled to the northeast, and blew up into a gale with heavy sea, which increased very much the difficulty of keeping the prescribed distance. Towards 5 P.M., broken lumps of ice were reported ahead, but they were discovered to be the washings from an iceberg soon after seen through the fog close aboard. At this time, an iceberg was looked upon with considerable concern, as a formidable and dangerous object, and to come within a quarter of a mile of it was regarded as getting uncomfortably close. A week's experience in Melville Bay produced a wonderful change in the feeling of awe with which a berg was regarded. On this occasion, the *Thetis* prudently got out of the way as soon as possible.

The ships continued their journey, with alternations of fair

and bad weather, meeting occasionally with field ice, until the morning of May 22d, when they arrived at the edge of the harbor ice of Godhavn. Considerable time was required to moor the vessels properly, as all hands lacked practical experience with ice-implements, and several attempts were made before the process was successful. Afterwards during the cruise, when practice had made everybody familiar with the tools, ice-anchoring was seldom an operation of more than three minutes.

The ordinary ice-anchor was a large iron hook bent nearly at a right angle, with a point to be inserted in a hole in the ice. At first, the hole for the fluke of the anchor was made with picks and chisels, but later ice-augers were tried and found to be a decided improvement. These augers, which had been furnished by the Ordnance Bureau for boring holes for torpedoes, were designed by Lieutenant Bradley A. Fiske, of the Bureau, and were contrived with considerable ingenuity, after experimenting with cakes of ice in the ice-house at the Navy Yard at Washington. The borer was a half cylinder of steel, four inches in diameter and four feet long, with a twisted point, and the instrument was provided with additional sections, so that its length could be adjusted at four, eight, twelve, or sixteen feet, according to the thickness of the ice to be bored through. Generally two sections were sufficient. Although only intended to be used for torpedoes, the augers were found to serve equally well for ice-anchors.

On the day after the ships arrived, a southerly gale packed the harbor so full of ice that they were delayed for thirty-six hours. During this enforced delay many little kindnesses and courtesies were shown to the officers and men by the authori-

ties of North Greenland, Mr. Anderson, the Royal Inspector, and Mr. Petersen, the Governor and Chief Trader.

As the dogs had been without a proper keeper since leaving St. John's, an Eskimo named David Danielsen was engaged for the cruise of the *Thetis*, and a contract was signed for his services as dog-driver. David had served in the *Proteus* on her voyage of the year before, and on the retreat had been assigned to Colwell's boat, which made the memorable passage alone across Melville Bay, and along the coast from Upernivik to Disko. In spite of the hardships and fright he had experienced on the trip, the recollection of his good fare on-board the steamer overcame any lingering impressions of the retreat from the wreck, and he was glad to go with the *Thetis*. Here he made the most of his opportunities after his scanty allowance of food at Disko, and in a few weeks he grew to aldermanic proportions.

On the 24th, at nine in the morning, the *Thetis* and *Loch Garry* sailed for Upernivik. At the North Fiord they came up to a solid ice barrier, which from its pressed-up and hummocky appearance was recognized as the polar pack of the last season. The *Thetis* rammed her way in for fifty yards, and lay there during the night, while the collier remained on the edge. Next morning a gale sprang up from the southwest, and the *Loch Garry* was sent back to Godhavn to await a change of wind.

The *Thetis* now got everything in readiness to enter the ice-pack. In the sudden and treacherous movements of the ice, there is little opportunity to save much, if preparation has been delayed until a disaster occurs, and there is never time enough to make a selection from the variety of stores in a ship's hold, so as to take those which contain the most

nourishment in the least space. Careful instructions were therefore given, assigning to each officer and man his individual duty, in case a nip made it necessary to abandon the ship, and everything was made ready for landing on the ice. Rubber knapsacks were packed and served out to each officer and man, containing a complete shift of under-clothing and foot-gear, a tablet and pencil for records or notes, and a box of rifle or sporting ammunition. The daily change of foot-gear, which comprises the whole of an Arctic toilet on the ice, is of the utmost importance to avoid frost-bite, the wet gear being dried under the clothing of the wearer on the march.

Sixty days' supplies of provisions, consisting of pemmican, beef, pork, tea, sugar, hard biscuit, salt, and pepper, together with stoves, alcohol, pots, pans, and two boxes of ammunition for the fowling-pieces and rifles, were stowed on deck alongside the boats for which they were intended, and marked accordingly. Thereafter the provisions were regularly inspected from day to day to see that none should be spoilt when they were needed for use. Packed as they were in tin cases, no injury was feared from moisture or from exposure to the elements, and deterioration within could easily be discovered by the swelling of the heads of the cases. In making these preparations the Arctic experience of Sebree and Melville was found invaluable.

As soon as everything was in readiness, the *Thetis* pushed on into the pack. It was here that the crow's-nest first came into frequent and important use. From its position near the masthead, at an elevation of 120 or 130 feet, it gives a broad lookout, with a range of twelve or fifteen miles in clear weather. The ice-fields are stretched out in a wide pano-

rama, and every lead and crack is marked out like the lines on a map, when nothing can be seen from the deck. It is the only place from which the movements of a ship can be intelligently directed in the pack, and from the time of entering, during all the ice-work, with little intermission the Captain has his station here except while he is asleep. Except for the confinement, and the increased jar from the shock of ramming—which last, however, soon wears off—it is a comfortable place enough, and no captain who has any concern for his ship would occupy any other while she is in the pack.

In all the Dundee whalers, to which class the *Thetis* and *Bear* of course belonged, the crow's-nest is a heavy barrel with the upper head knocked out, attached to the foremast or mainmast, and large enough to hold a man standing upright. It is held in place by two stout iron bands fitted tightly around it, and secured to two others around the mast. The bottom is arranged as a round trap-door on heavy hinges, opening upward and closing down on a heavy supporting ledge. A seat is placed on the after side of the barrel, but there is not much chance to sit down while the vessel is working through the pack. An iron rod encircling the top gives a rest for the telescope. The whole structure is abaft the mast, and a rope ladder extends up to it from the deck.

For directing the movements of the engine, a line extends from the after part of the crow's-nest to the bell-pull, by which the usual signals are given. For communicating with the helmsman on board the *Thetis*, an arrangement was used which had been suggested by Ensign Harlow. Three twine lines were run from the crow's-nest to the bridge, each having a play up and down of about a foot. On the bottom of

each of these lines, lead cylinders were placed, in full view of the quartermaster, one green, one red, and one green and red. A pull on the green meant "starboard," on the red, "port," and on the green and red, "steady." Two pulls meant "hard starboard," or "hard port," as the case might be. These simple little contrivances made it as easy to direct the ship from the crow's-nest as from the bridge, and avoided all calling out from aloft.

To an inexperienced eye, the first impression from the crow's-nest, in looking over the pack, apart from its extent, is the solidity and apparent impenetrability of the ice, and the first question that presents itself is how these qualities are to be overcome. At first nothing can be seen that gives a remote prospect of advance. Gradually, as the eye becomes accustomed to the work, dark spots appear under the glass, dotting the wide expanse, which are soon learned to be water-holes. Presently stringy black lines come out here and there, suggesting a break between floes, and the possibility of working through them to a point beyond. After a little while, it is to be noticed that the ice has a movement, sometimes slow, sometimes rapid and sudden, which may be closely connected with the wind, or with the ebb and flow of the tide. Where the tidal movement is strong, it is observed that the ice has a tendency to follow the axis of greatest motion, and that both tides running along the coast draw the ice away from the land. Winds from the southward and westward pack the ice, those from the northward and eastward clear it out. The closest watchfulness must be given to these two all-powerful influences, wind and tide, and it is upon this watchfulness that the ability to seize opportunities for advance depends.

There are also distant indications which have a peculiar importance. These are the "water blinks" and the "ice blinks." The water blink consists of dark clouds or spots on the horizon and is formed by the ascending mists which gather in clouds and hang over pools of water. It is always the herald of advance and is eagerly looked for. The ice blink, on the contrary, is distinguished by spans or bands of light just above the horizon, caused by the reflection from the pack into the atmosphere above it. It always indicates hard work and anxiety ahead, and is accepted as a warning, its intensity giving some idea of the penetrability or impenetrability of the pack.

With all the watchfulness and all the skill in the world, it would be futile to attempt to pass through the real ice-pack without a ship built for ramming. An ordinary ship may cross Melville Bay in an ordinary season late in July or early in August, and may pass through some loose streams of ice, but she can not pass the pack. Even with the *Thetis* and the *Bear*, the best fitted vessels for the purpose afloat, there were many days when they could not move a mile in any direction, because the ice was too dense and too thick to break. Whenever the work was done, it was done by constant ramming. A crack would open for a little way, and the ships were pushed in. When it came to an end, the advance ship, whichever it might be, would back a little to gather headway, put on full steam, and strike the ice fairly with her stem. In ice of ordinary thickness, if she got a square blow, she would run her length, perhaps twice her length, and often would open a crack beyond, which repeated blows would widen and lengthen. Sometimes a single blow, fairly delivered, would split a pan of ice 200 yards across.

If the lane ended in a point, the ramming ship, where there was room enough, would charge the ice on the side and crack off a large segment, repeating the process again and again, rather than ram directly into the point, where there was a possibility that she might stick fast. If the ice was in loose floes, mere pushing would often dislodge them, and open the cracks sufficiently to pass through. But during most of the time, advance was only made by incessant ramming.

After completing her preparations, the *Thetis* pushed on into the pack in the direction of Haroën Island, but found it slow and difficult work. Large pieces of the floe ice, called "pans" by the whalers, were forced aside or rammed, the blow giving a heavy shock to every one on board. The pack grew hourly denser, and each blow told less than the last, until the ship's headway was entirely overcome, and movement almost impossible. The ship was still three or four miles off the land and all leads appeared closed. The outlook from the crow's-nest was unpromising, and the position of the ship was such that her safety seemed to depend upon reaching the lee of a large berg a quarter of a mile to the northward.

The danger of the position was due to the tidal currents of Waigat Strait, which gave a powerful impetus to the movements of the ice, while the attempt to avoid them by seeking water to the westward would probably have resulted in being beset in the middle pack, and ultimately drifting helplessly back through Davis Strait. It seemed, therefore, most important to gain a position of temporary safety under the berg, and from there to take advantage of the first chance to escape to a point under the land, where the favoring winds and tides would probably give an opportunity to advance.

The wonderful changes of the ice, so often mentioned in accounts of Arctic voyages, enabled the *Thetis* an hour later to reach the iceberg, to which she was secured, and where she remained during that night in comparative safety from the grinding floes. The berg was two hundred feet high, several hundred feet long and broad, and was aground, but only, as was afterwards discovered, on its central point.

A strong current, perhaps two knots, was running at the time to the southward, carrying great floes past the berg, or piling them up upon its northern side. Against these it afforded during the whole night a secure protection, the ship being moored with ice-anchors to its southern side, where there was, as usual, a ledge ten or twelve feet high, outside the nearly perpendicular rise of the central mass. About six o'clock in the morning, however, the berg without a moment's warning pivoted on its centre and swung round with the current, exposing the ship, still held fast by the anchor, to the running floes. No time was lost in casting off the lines, but before the bow-line could be slackened the stern of the *Thetis* was caught in the current and swung rapidly round, and her bow was thrown up against the iceberg. It was an ugly situation; but fortunately no damage was done, except by carrying away a small part of the head-gear and mutilating the figure-head. Poor *Thetis* lost an arm and part of her nose, her dress was considerably torn away, her body was split in two, and altogether she came away from the iceberg in a dilapidated state.

After casting off the lines the ship worked to the south-east into a large water space, where she was forced to wait awhile, and where Sebree improved the opportunity to swing her for the local deviation of the compass, as was done on several other occasions.

Later in the day (the 26th) changes in the ice made it possible to work in further toward the land water, though heavy ramming was necessary at a number of points. Torpedoes were used with a view to reach open water on the north side of Haroën Island, but the jam was too formidable. Holes were bored with ice-augers in the ice ahead of the ship, and the torpedoes were exploded, but they did not produce the effect desired.

In general, the results obtained from the use of torpedoes were rather disappointing. There were a few, a very few occasions, when they produced a marked effect and enabled the ships to advance, but as a rule no absolute reliance could be placed on them, as their action was mainly local. This is not to be wondered at when it is remembered that although sea ice during the intense cold of winter in the Arctic is both hard and brittle, it loses these qualities with an increase of temperature, and acquires great toughness and elasticity. It is doubtful if the *Thetis* and *Bear* could have carried explosives enough to have blown their way through the pack for the 1,400 miles they were engaged in their ice battle. During nips, however, or to gain temporary advantages in leads, there can be no question that explosives are useful, and they should form a part of the outfit of every expedition fitted for Arctic work. In the case of nips they were used to soften the ice around the ships, and on one occasion they relieved the *Thetis* materially when she was severely pressed near Horse Head.

The explosives carried by the expedition were of gun-cotton and gunpowder. Both were contained in cylindrical tin cases, holding about five pounds, and fitted with electric fuses and connections. Experiments were made at Disko in

placing them on the surface, and at different depths, half way through the ice, just below it, and six feet under water, and it was found that the best results were obtained when the torpedo was well under the ice. Gunpowder was found to work better than gun-cotton. The instantaneous explosion of gun-cotton simply blew holes without shattering. Gunpowder, being a slower explosive, acted radially, and disrupted the ice about the water-cone formed in the upheaval.

It was now decided to attempt to gain the open water on the west side of the island, which was at last successfully accomplished. The advantage was held by standing north and south along the land. At this point the *Loch Garry* rejoined the *Thetis*. About two o'clock on the morning of the 28th the *Wolf* came up, a sealing steamer from St. John's. She was now on a whaling voyage, intending to follow the usual route of the Dundee fleet. Captain Burnett, who commanded her, came on board the *Thetis* to have a chat and a look at the ship. The *Wolf* belonged to the firm from which the *Bear* had been purchased, and was a sister ship of the *Bloodhound*, which the English Government had taken for the Nares Expedition, and renamed the *Discovery*. She was a staunch ship, and her Captain a fine seaman, who was intent on making up, by a good catch of fish, for past ill-luck. His ship was the first of the whalers that the *Thetis* met, and, with the exception of one of the Dundee ships, she held out longest in the race across Melville Bay.

The *Wolf* ran up to look at the ice across the Waigat, but found it too stiff to attempt until the tide changed, and she returned a quarter of a mile to the southward to wait. In the meantime another whaler came up, the *Arctic*, of Dundee, commanded by Captain Guy. She was a comparatively



BERG NEAR UPERNIVIK.

new vessel, built to replace the old *Arctic*, whose name was the most famous in the annals of the Dundee whale-fishery, and she was the vessel which Emory had mentioned as the "most dangerous competitor" of the relief squadron. Her captain was one of the best men in the service, and was determined that the reputation of the ship should lose nothing while she was under his command.

About eight o'clock in the morning, the four vessels took to the pack. The *Arctic* and *Thetis* succeeded in gaining open water first, followed at some distance by the *Wolf* and *Loch Garry*. The masses of ice were in motion, forcing the four ships into as many different routes. Soon after entering the pack, it was noticed that the *Loch Garry* was deficient in the turning power needed in ice navigation, and, therefore, could not follow quickly enough to keep always in the track broken by the *Thetis*. The *Wolf* balked her considerably, although unintentionally, the captain of the whaler striving with all his power to aid her. By the middle of the day, however, the land-water in the vicinity of Noursoak was reached, and a number of natives fishing in their kayaks were spoken. From them it was learned that the *Bear* had been detained at that point while waiting for the ice movement northward.

A dense fog now settled over everything, followed by a blinding snow-storm in the afternoon; a sudden fall of temperature coated the ship and rigging with rime. The land could not be seen, and it was next to impossible to discover the best leads. Under these circumstances, it was necessary to average courses by going east of one floe and west of another during the afternoon and night of the 28th. After a most exciting and anxious passage, the *Thetis*, on the morning

of the 29th, arrived safely off Upernivik. The strain of twenty consecutive hours in the crow's-nest can only be appreciated by one who has experienced it.

The *Bear* had arrived the night before from Brown Island, about eighteen miles north, and when the *Thetis* came in, she was found at anchor with the *Polynia*, *Triune*, and *Nova Zembla*, which had got in while she was to the northward. The *Arctic* and *Wolf* followed closely after the *Thetis*, and these, with the *Aurora*, *Cornwallis*, and *Narwhal*, which had not put in at Upernivik, but had stopped at Brown Island, made up the eight whaling ships with which the *Thetis* and the *Bear* were now to contest the honors of the passage of Melville Bay.

Soon after the arrival of the *Thetis*, Emory came on board to report his experiences and to get the mail which her later departure enabled her to bring. It was found that a rumor had reached Upernivik that five white men were to the north in the neighborhood of Cape York, and it was decided to push on at once. The collier was sent alongside the *Bear*, to fill the coal bunkers of the latter, and during this interval the commanders and officers of the relief ships called upon Governor Elborg, who showed them the same kindness which all explorers or voyagers in this region have received at his hands. He gave a discouraging report of the ice to the northward, but stated that the natives had reported a crack inside the islands leading as far as Tassuisak, which might be utilized if a native pilot could be secured. On being asked to name one whom he thought efficient, he said that a man named Ooloo, living at Kingitok, knew most of the coast and dangers to the northward. If he could be obtained, the chances of reaching Tassuisak at an early day would be good.

It was agreed that Governor Elborg should go on board the *Thetis* to Kingitok, to secure Ooloo's services, and at 5 P.M. the relief ships sailed northward.

At Upernivik, a second Eskimo, Nicolai, was engaged for the *Bear* as interpreter, as Hans, the man shipped at Disko as dog-driver, could not speak English.

As the ice in Melville Bay was too formidable for the collier, she was directed to remain at Upernivik and await the arrival of the *Alert*, which would convoy her across to Smith Sound. She was also directed to land fifty tons of coal as a base of supply on the return, and during her delay to secure herself against dangers from the ice.

The sailing orders of the *Alert*, issued before the departure of the *Thetis*, directed her to proceed at the earliest possible date to St. John's, thence to Godhavn and Upernivik, where information could be obtained of the advance vessels, and so on to Littleton Island, touching at Conical Rock, Cape Parry, and Cape Alexander to examine cairns.

At Littleton Island, if the *Thetis* and *Bear* were absent to the northward, a sledge party of eight persons, with provisions for fifty days, was to be sent to search the south coast of Kane Basin, as far as the Humboldt Glacier. As soon as the party had got off, the *Alert* was to proceed to Foulke Fiord, where the house brought from New York was to be landed and put up. In the house were to be stored all the provisions possible, leaving in the vessel only enough to supply the crew on the voyage back to New York. Forty tons of coal were to be landed, and the station was to be placed in charge of an officer and two men. The party was to be supplied with guns and ammunition, and a steam cutter and

whale-boat were to be left with them. During their stay they were to set up the instruments furnished by the Signal Office, and take the observations directed in its programme.

The *Alert* was intended to remain at Foulke Fiord until September 10th. If nothing was heard of the advance ships by that time, she was to run up to Littleton Island and over to Cape Sabine to look out for signals, and if nothing was observed, to return to Upernivik or Disko, to wait for tidings of the expedition. If no news came by September 25th, the *Alert* was to return to St. John's.

It was expected that the collier would meet the *Alert* at Foulke Fiord, and Coffin was directed to take the remainder of her coal cargo, and send her back to Newfoundland.

The inability of the *Loch Garry* to cross Melville Bay led to a modification of this programme. The *Alert* left New York on the date fixed, May 10th, followed by the same good wishes and popular demonstrations that had been given to the advance ships. As she got under way, the British ensign was hoisted at the fore, and was kept flying as she steamed down the harbor, the Navy Yard saluting it with twenty-one guns. Like the other ships, the *Alert* was provided with stores for two years, and carried on her spar deck the frames and lumber for the two houses for the winter quarters at Foulke Fiord, where it was intended to maintain a depot upon which to fall back, if disaster should overtake the advance ships. She reached St. John's on the 22d, and Godhavn on June 5th. At this point she took on board the twenty-five Eskimo dogs ordered by Lieutenant Garlington the year before, and engaged a dog-driver. Although it had not been intended to supply the *Alert* with dogs, it was afterwards deemed wise that she should carry them, and as this

team had been ordered by Garlington, and had been collected at Disko on the strength of this order, instructions for Coffin to take them had been left when the *Thetis* was at Disko. During the stay in port, the crew were practiced in the use of ice tools and torpedoes, and exercised in "abandoning ship," all hands landing at the drill upon the ice, and the boats being hauled out with thirty days' provisions. The ship sailed from Godhavn June 9th, and after a passage of very much the same character as that of the other vessels, reached Upernivik June 13th, about two weeks after the others.

The *Loch Garry* was awaiting her arrival, and Coffin received the instructions informing him that she was left behind to come on later under his convoy, the ice to the northward making it unsafe to venture with her so early. Under these orders the *Alert* was obliged to delay her departure until the condition of the ice in Melville Bay was favorable to the passage of the collier. The time was occupied in coal-ing and in exercises similar to those practiced at Disko. The *Alert's* bunkers were filled and a quantity of coal stowed on deck, so that if accident should befall the *Loch Garry*, the *Alert* would still have enough to make a depot at Foulke Fiord. This done, the two vessels waited for the moving of the ice.

CHAPTER X.

MELVILLE BAY.

AT five o'clock on the afternoon of May 29th, the *Thetis* and the *Bear* left their anchorage at Upernivik, and started on the passage of Melville Bay. The same stretch of water had been crossed by the *Proteus*, with Greely on board, in 1881, in thirty-six hours; by the *Neptune*, with Beebe, in 1882, in eighty hours; and by the *Proteus* again, with Garlington, in 1883, in seventy-two hours. All these passages had been made at least a month later in the season. But Melville Bay in June is a very different place from Melville Bay in July or August; and the *Thetis* and *Bear*, making every effort, seizing every opening and lead, and fighting for every inch of progress, were forced to consume twenty days in reaching Cape York.

After leaving Upernivik, the two vessels touched at one or two points to obtain seal-meat for the dogs, and arrived a little after nine o'clock p.m., at the island of Kingitok, formerly a Danish trading post. The settlement consisted of a few Eskimo huts, with an abandoned storehouse. Here the relief ships took up a berth alongside of the *Arctic*, the seven other whalers lying on the seaward side of the island. Governor Elborg was still on board the *Thetis*, and soon after the vessel had anchored, he sent for Ooloo, the native pilot whom he had hoped to secure for the expedition. Ooloo was an Eskimo of low stature, with a frank and intelligent face. He

was the head man of the settlement, and a man upon whom the Governor placed great reliance. Several interviews were held with him, but his wife had just died, leaving several small children for him to look after, and though the prospect of plenty of food and a warm sleeping-berth on board the *Thetis* was a strong temptation, he could not be induced to leave his family. His supply of English words was limited, but he managed to convey his ideas by saying: "Mi go muchee,—hab spleke pagoninnies, ketch plenty die. Come more time, pagonninny more big, Ooloo can go." All of which meant that he would like to go, and had spoken to his children, but they thought they would die if they were left alone; but when the ship came back, his children would be larger, and then he could go. While he would have been of some use in working through this dangerous part of the coast, it seemed rather hard to repress such commendable sentiments, and the effort was finally given up.

On the afternoon of Friday, the 30th, Elborg started back in his whale-boat, but returned in a little while, having been unable to get through the ice. He was off again in the evening, however, this time for good, and carried back to Upernivik a mail from the ships, which everybody sent as the last message for home and friends before an indefinite stay in the Arctic. The "last message" was picked up at Upernivik by the ships on their return, no opportunity having occurred to send it off in the meantime.

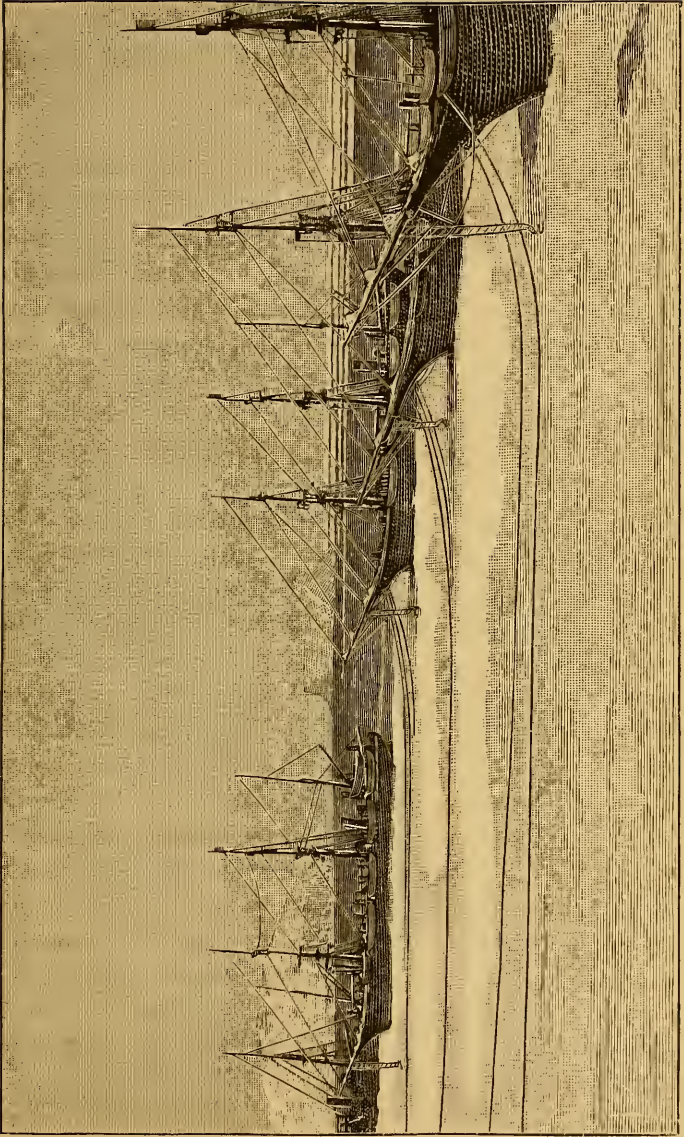
All the ships were detained at Kingitok for two days. Parties of officers were sent repeatedly to the hill-top with glassez, but no signs were visible of a break in the ice. On Saturday, the dog teams were exercised on the island. The whaling captains crossed the pool of open water in their

steam launches and visited the ships, and the *Bear* steamed about the harbor to ascertain the local deviations of the compass.

On Sunday, the first of June, a squall from the southwest broke up the ice in the harbor, destroying the ice-foot, and the ships ran around to the north side of the island to get out of the way of the running pack. Soon after, leads were discovered to the northward and westward, and all the ships cast off and followed them. By the afternoon they had reached a point east of Berry Island. Ahead, the way was blocked by impassable ice, and the ships were again tied up, three of the whalers being to the eastward, lying close under the land.

Soon after her arrival, the *Bear* discovered a lead inshore, and was pushing through it, leading the *Thetis*, when she ran upon a rock. The rock was just between two icebergs which were at least forty feet out of water, and at the usual ratio of one to seven between the heights of the exposed and the under-water surfaces, the depth at this point could not be less than 280 feet, or 47 fathoms. Every precaution had been taken on board the *Bear*—but no care will prevent a vessel from striking an unknown rock fourteen feet under water, where all the indications point to a considerable depth; and the *Thetis* was not without mishaps of the same kind.

The islands off Tassuisak were reached later in the day, and the injury to the *Bear* was examined by means of a water-telescope—a contrivance used by the whalers, made of ordinary stove-piping, with a glass fitted in the lower end to exclude water. It was pushed a foot or two under the water with the glass end down, and showed exactly the nature and extent of the injury. This was found to be less



RELIEF-SHIPS AND WHALERS MOORED TO THE FLOE.

serious than was at first supposed. Three or four inches of the stem-plate were broken off at the bottom, two keel-straps were knocked off, and a piece of the fore-foot and a little of the sheathing were gone. The wood ends were uninjured, however, and the leak, which was at first seven inches per hour, was very soon stopped.

During all the next day, everybody remained fast in the ice. Four of the whalers could be seen to the east near the land, and four to the west. There was so little movement in the pack that the four ships lying beset to seaward did not even shift their bearings during the day. All through the pack could be seen numbers of icebergs, of all shapes and sizes; the ice was studded with them. An attempt was made to force a lead by ramming, but after making a little progress the ice was found to be too solid, and it was abandoned.

On the 3d, some natives came off with sledges to the *Narwhal*, and Nicolai was sent to get information. As they reported clear water to the northward, the *Thetis* and *Bear* cast off and steamed in and out among the islands and icebergs, following such leads as they could find, which turned and twisted in every conceivable direction. At one time the *Thetis* passed so close to a berg that she had to brace her yards sharp up to get by. It goes without saying that it was impossible to take anything like courses here—or, in fact, anywhere else in Melville Bay at this season. When the ship was advancing, her progress could only be determined by taking bearings of an iceberg, and estimating its distance after passing a few miles beyond. The charts were of little help; in fact, part of the time the ships were steaming over places which the chart gave as land. In the afternoon a well-marked lead was followed for some distance by ramming, but it ended in

a bar, and the attempt to pass through was given up for the time, the ships again making fast to the ice near Wedge Island. Soon after anchoring, three natives came out with sleds from Titliasook, who contradicted the reports of the morning and gave the discouraging information that there was no open water to the north, and that the ice extended beyond Cape Shackleton.

During Wednesday, the 4th, the ships were visited by numbers of natives from Tassuisak, the northernmost of the Danish settlements, a little village lying embayed among the islands. These Eskimo are the most northerly of the native inhabitants under the Danish control, and like those seen farther south, were of medium stature, and covered with smoke soot, grease, and other dirt, which seemed to vary only with the age of the individual. As water never touches these people except by accident, the accumulation of dirt on their faces was a fair indication of their age.

The Governor of Tassuisak, Kleeman, also came off in his dog-sled, and by earnest representations of the danger of the exposed position in which the ships were lying, persuaded the Commander of the Expedition, rather against his judgment, to put into the harbor, where the ships were anchored to the ice off the governor's house. Within three hours after anchoring, the lead of the day before opened for several miles. Casting off their lines, and putting on full steam, they made a rush to get through, but were just too late. The *Thetis* was ahead and ramming her best at a place off Horse Head, where the lane narrowed down to a point, trying to crack off a piece of ice at the side, but not having room enough to strike fairly, she glanced off, and was driven into the sharp point of the crack. At the same moment the ice closed, and she was held fast in the nip.



THE THETIS NIPPED OFF HORSE HEAD.

As the *Bear* was clear, although she had no room for turning, hawsers were run to her bow from the stern of the *Thetis*, and both vessels reversed their engines and put on a full head of steam; but the *Thetis*, driven into the crack, like a wedge between the fibres of a tree, would not budge an inch, and a three-inch steel and six-inch manilla hawser were parted in the attempt to haul her out. Holes were then bored in the ice and torpedoes were exploded in them, to break a way before the ship. Five gunpowder torpedoes were first planted in the line of the lead ahead, about fifteen feet apart, and six feet from the surface, the holes being bored through two layers of ice, in all eight feet thick. The result of the explosion was a crack, and some lateral fracture, the crack reaching to the open water beyond; but the ship was not eased from the nip. A single gunpowder torpedo was next exploded on the port bow without results. An hour later five gun-cotton and six gunpowder torpedoes were exploded off the starboard bow and beam. The result was again disappointing, the gun-cotton making circular holes four feet in diameter, with no perceptible shattering, and the gunpowder making smaller holes with a few inconsiderable cracks. The only substantial effect of the torpedoes was in softening the ice at the side of the ship, which thus formed a cushion and relieved her from the heaviest pressure; but she remained fast in the grip of the pack, and no force could move her. The *Thetis* stood the strain handsomely, and while the nip lasted, it crushed up the ice against her side, and raised her bow three or four feet, but without starting a timber.

On the next moving the pack slacked off a little and the *Thetis* was released. It was found that she had sustained no

injury. After she had extricated herself, she succeeded, by backing and ramming under full speed, in making her way through the obstruction and into the narrow stream of open water beyond, followed by the *Bear*. This stream continued to the northward, but for the rest of the day progress was slow. Icebergs were numerous, the leads were narrow and required frequent ramming, and it was only occasionally that large floes could be forced aside. Every mile of northing brought the ships into contact with heavier and more formidable pack. Cape Shackleton was passed at three in the afternoon, and at six the two ships were stopped by a barrier about five miles south of the Duck Islands, where they were moored to the floe. Here they came up with five of the whalers, which had passed them during the nip at Horse Head. A sixth, the *Polynia*, had followed through the leads astern of the *Bear*, up to the moorings; and the remaining two, the *Triune* and the *Nova Zembla*, were to be seen five miles to the southward in the offing.

On the morning of the 6th, the ships made an advance of two miles, and coming to an ice-bar, butted two or three lengths into the floe, and made a doek for themselves. The Duck Islands were still three miles away. In the afternoon slight changes appeared to the northward, and little openings could be seen here and there, inviting a fresh attack. The bar of ice lying directly in front of the ships showed no signs of weakening, but it was necessary to penetrate it before they could arrive at the leads beyond. In the evening an opening occurred just ahead of the *Arctic*, and that vessel and the *Aurora*, the most active of the whalers, charged the ice with the *Thetis* and the *Bear*. The two whalers forced their way through first, and worked up through the cracks beyond.

The *Bear* was the next to break through, and found a winding lead, just wide enough for her to squeeze into it. The *Thetis* followed close behind her, and the six other whalers came after in her wake, using the openings that had been cut through the bar. Later the *Thetis* and *Bear* changed places. It was about nine in the evening when the movement began, but the day was clear and fine, and the view from the crow's-nest extended over miles of glittering ice. The eight ships were under full steam, and they made a picturesque and beautiful sight in the bright sunlight as they wound their way in line ahead, through tortuous lanes and past lofty icebergs, each one with her bow almost over the taffrail of the next ahead, the captains hailing each other from the crow's-nests, and the ships glancing off on corners, and swinging round into the leads beyond. A little before one o'clock in the morning, the long fleet had reached the belt of open water just under the islands, and had moored to the ice-foot.

The Duck Islands are regarded as the outpost for advance through the much-dreaded waters of Melville Bay. Here the first problem to be solved before the passage can be undertaken is to determine the land ice from the floe. The line of land ice varies with each month of the short Arctic summer, breaking off further and further in as the season advances. Usually, the first break determines the line for about a month after it occurs, and, if the pack is still in the bay, a ship must wait for this break. As the floes detach from the land ice, they drift off under the influence of the wind or tide, leaving behind them the narrow lanes which are called "leads." Winds from the north or tides from the north are always favorable. Winds or tides from the south are always unfavorable and dangerous, as they drive the

whole mass of detached floe back against the land ice, and the point where they come together is the dreaded nip. Woe to any ship caught between these two masses! As the line of breakage, however, is always ragged and irregular, any movement of the floe parallel to the edge of the land ice will bring the projections of one opposite those of the other, so that when the masses are driven together again the edges do not fit. A ship working along the edge of the land ice can almost always find a refuge in case of a nip in the natural docks formed by these open spaces. It is in order to be in the best position for advancing through the lead as soon as it opens that it is so important to determine land from floe ice. Another reason for its importance is that there is always danger with northerly winds and the low temperature which they bring with them, if the ship is lying in the floe ice, that she will be frozen in, in which case she is likely to drift off with the pack, and ultimately to drive back through Davis Strait, as happened to McClintock in the *Fox* during the unfavorable season of 1857. If the ship is well in with the land ice she can moor to it, and if necessary she can ram or blow out a dock to avoid nips.

The next four days, from the 7th to the 11th, were days of anxious waiting and watching. The ships could not move from their anchorage. The weather was generally fine, though with occasional fogs and snow-storms. When it was clear, a lookout was sent to the summit of the hills on the islands to discover any possible chance of advance. Very little comfort was derived from these visits. The vast sea of ice lay unbroken to the north and west. Sometimes it seemed as if it would never break up. The countless icebergs lay in stately and silent splendor, with here and there a

slight pool of water about them. This last was a promising sign, and the expedition had by this time learned that the changes with every turn of a kaleidoscope are not more complete or surprising than those which follow a tidal movement or a gale in the ice.

The anchorage of the relief ships during the four days of waiting was close to the western end of Middle Duck Island. All the whalers, except the *Arctic* and *Aurora*, lay on the other side of the island. Occasional movements were made by one or the other of them, in an attempt to gain some little advantage, but none of the attempts came to anything. The *Wolf* and *Narwhal* steamed off five or six miles to seaward, where they were beset in the ice, and for the next two days they could be seen at intervals, through the fog, drifting helplessly in the pack, back and forth to the southward and westward. Early on the morning of the 10th, the *Aurora* tried her luck with much the same result, at first, and at midnight she could just be descried endeavoring to fight her way out of the pack. Her captain, Fairweather, was a shrewd young Scotchman, who never lost a good chance, but who never ventured on a bad one, and on this occasion, although he gained nothing at the beginning, he came out ahead in the end, for he was found the next day some miles to the northward. Among the captains who thought it wiser to remain stationary were the two who represented the extreme types of boldness and prudence in the fleet. These were Guy, of the *Arctic*, and Walker, of the *Polynia*. Guy was a gallant young fellow, ambitious and daring to a degree, and the ship he commanded, as has been already said, bore a name which had always been the most famous among the Dundee whalers. He was determined to

keep up the reputation of the *Arctic* on this cruise, and he had in view both the rescue and the summer's catch. Walker, on the other hand, who was the oldest and most experienced of the captains, a thorough seaman and a capable ice navigator, as well as a man of wide information and superior intelligence, represented the element of conservatism. His age and experience, and his position as the "Dean," so to speak, of the fleet, gave his opinion great weight with most of his companions, who always spoke of him respectfully as "the old man," and generally followed his lead. But the qualities which are perhaps the most advantageous for ordinary cruising after whales, are not those which will effect a rescue where competition is keen, and speed is an all-important factor in the result. This was shown in the subsequent movements of the whalers, by which they became separated into two parties, and the greater number following Walker were thrown out of the race, while the *Arctic*, *Aurora*, and *Wolf* kept it up nearly to Cape York.

Before the ships left the Duck Islands, the officers of the relief expedition had an opportunity to see the whaling vessels pretty thoroughly, and to learn the characteristics of their captains. Fine fellows they were, these ice-kings of the Dundee fleet, with their bronzed faces and their hearty laugh, and their broad Scotch accent; frank and genial, generous in their rivalry, always ready to give a friendly counsel or a helping hand, and taking a keen enjoyment in their difficult and dangerous work. Their equipment was generally inferior to that of the relief ships, which had been supplied with everything purchasable that it was supposed they could need. Of course the one great advantage possessed by the whalers was in their experience. It is a question, however,

whether the importance of this quality in such work as the expedition had on hand may not be overestimated. The purpose of the voyage was to make a dash into a difficult region, and accomplish the rescue of the missing party of explorers, and the first consideration was to get north at the earliest possible moment. In carrying out such a duty, it is often necessary to take risks which could not be justified under other conditions of service, and at which the caution which comes from experience would perhaps hesitate. Moreover, a man who is always on the watch, and upon whom rests the responsibility of directing the movements of one or two ships, gains his experience in these regions with wonderful rapidity. His eye soon becomes trained to the signs of coming changes, and he learns to think and to act with a quickness and accuracy that often surprise himself. The crow's-nest, during the first week in June in Melville Bay, is a great educator, and if a commander is lucky enough not to fall a victim to his inexperience during that week, he will find himself and his ship pretty well in hand by the end of it.

These views only serve to bear out the opinions expressed by one of our most distinguished and successful Arctic explorers, Lieutenant Schwatka, of the Army. In drawing up suggestions for the Greely Relief Board, Lieutenant Schwatka said: "I think it proper, in closing, to warn them (the Board) against too much reliance in the subject of experience, as applied to Arctic affairs. The whole history of continued Arctic expeditions under one commander, will show a far larger list of retrogradations than advancement in success; noticeably the continued expeditions of Franklin, Parry, Barentz, Hudson, Hall, Kane, McClure, Back, and probably a score of others who had served previously as com-

manders or in subordinate capacities : and all this I can account for only on the ground of a too rigid application of their principles of experience."

The whalers, as has been already stated, begin their annual cruise in January, or early in February. They go first to St. John's, where they take on board a large number of extra hands for the sealing cruise off the coast of Labrador. In these trips the *Thetis* often carried as many as three hundred men. A sealing captain supersedes the whaling captain, who remains on board, but generally as a looker-on. After the vessel arrives at the fishing ground, the extra hands are employed in killing seals on the ice. Immense numbers of seals are taken, and every corner of the ship is filled with them. Even the spar-deck is piled up with them, level with the gunwale, so that the crew walk over them when on deck. After the middle of April the catching of the young seals is forbidden by law, and the ships return to St. John's, unload their cargoes, discharge the sealing captain and crew, and prepare for the whaling cruise of the summer.

The whaling captain has now resumed his position, and late in April or early in May, according to the season, the ship leaves St. John's for the southwest fishing grounds, off the southern coast of Greenland. Here it is a great advantage to arrive first on the ground, as the whales are timid, and late comers are apt to find that the fish have been scared away.

After three weeks in this latitude the whalers steam to the northward, to Disko and Upernivik. It was while making this passage that they were first met by the relief ships. Heading for Cape York they cross Melville Bay, and after

reaching the north water they steer to the westward to Lancaster Sound, where their west-side fishing usually begins. If the Sound is open it is followed up to Prince Regent's Inlet, and the fishing is prosecuted with great energy during July and August. In September the whales begin to migrate southward, and they are followed along the west coast as far as Home Bay. By this time the falling temperature announces the approach of winter, and it is no longer safe to remain beyond the Arctic circle. The whalers then seize the first opportunity to work out of the ice, and by the middle of October they have returned to Dundee. As they generally cruise in company, the stronger and better help the weaker by breaking the way, or, if necessary, by towing them out of danger. A captain who would abandon another in the ice, when he could help him, would peril his future employment, if he escaped being stoned in the streets of Dundee. It is said of one of the captains, who some years ago abandoned a consort to her fate in the ice, that as he came in sight of the home port he preferred drowning himself off the heads rather than face the storm of indignation that would follow the disclosure.

While the relief ships were at the Duck Islands, the officers were initiated in the mysteries of a "Mollie." Whenever the whaling fleet is stopped for a number of days in the ice, it is the practice for the captains to assemble on board one or the other of the ships to discuss the prospects of the season's catch. These interviews are called "Mollies," and are announced by a bucket hoisted as a signal at the fore-royal masthead. The meeting is decidedly of a convivial character, and the current of conversation is helped on by frequent potations of hot Scotch whisky and beer; so that, generally speaking, a "Mollie" means making a night of it.

During the enforced delay at the Duck Islands, the time was occupied by the crews of the relief ships in visiting the whalers, and shooting, and in boat-sailing and fishing in a pool of water on the seaward side. Lieutenants Sebree and Crosby, the navigating officers of the *Thetis* and *Bear*, took the opportunity to make a survey of the islands. Instruments were got up, stations were established, a base line measured, angles were taken and plotted, and the local deviation of the compass was determined. The result of the observations showed the islands to be about six miles out of position on the chart. The surveyors were anxious to do more, but the open water to the southward and other signs gave hopes of a possible break in the ice, and the work was suddenly brought to an end.

The indications, however, proved somewhat delusive. At 6.45 on the morning of the 11th, the lines were cast off, and the ships got under way, but, after a run of four hours in a dense fog, it was found that the leads tended toward the land ice, and a short distance beyond they were closed up by the fresh northwesterly breeze that was blowing at the time. Captain Guy had, as usual, been the first to take advantage of the change, and had got off with the *Arctic* some little time before the relief ships. The three whalers which had already gone out, the *Wolf*, *Narwhal*, and *Aurora*, had extricated themselves during the night, and worked up to the northward, whither the *Arctic* had followed them, and all four were together at anchor three or four miles away, when the *Thetis* and *Bear* came to a stop. The latter had made an advance of thirteen miles in their four hours' run. Towards noon the weather cleared, and the *Polynia*, *Triune*, *Nova Zembla*, and *Cornwallis* came up to the relief ships and anchored near by.

The anchorage of the *Thetis* and *Bear* was on the edge of an ice-bar. Beyond the bar could be seen a fairly promising crack leading in the direction of the advance whalers. For a long time the bar was attacked by ramming, without success. By the middle of the afternoon the ice had slackened, and a passage opening, the ships went through it easily, and at the end of three miles stopped at the edge of a floe, alongside of the *Aurora* and *Narwhal*. The *Arctic* was not far off to the east, and the *Wolf* two miles away to the west. The other whalers had not moved from their last anchorage, which was now three miles astern of the relief ships.

At six o'clock the ice in the lead where the four ships were lying suddenly gave signs of closing, and there was a general scattering, the *Narwhal* moving off in one direction, and the *Thetis* and *Bear* in another, bringing up finally just astern of the *Arctic*. Captain Fairweather in the *Aurora* apparently thought that he had seen enough of the pack in this neighborhood, for he steamed back through the lead as fast as possible to the southward, but was caught before he could get through, and lay jammed all night. The outlook was indeed most unpromising; ice everywhere, and no leads except irregular little cracks, which were constantly opening and as quickly closing up again; and the islands were so far off that there was no fast ice, which was at least something whose position and stability could be more or less counted on.

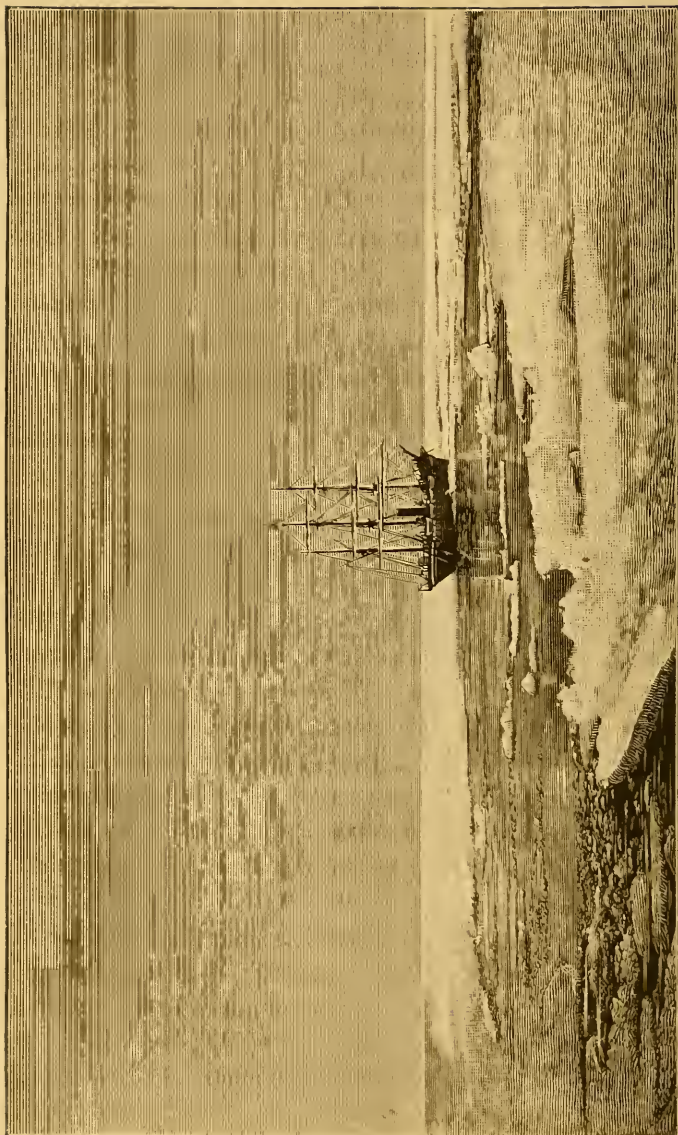
This appeared to be the opinion of the whalers to the southward, for the next morning, June 12th, they all put back to the Duck Islands and anchored securely to the ice-foot, where the *Aurora* had preceded them, having released herself from the jam. The *Arctic*, *Wolf*, and *Narwhal* still held their ground, the former in her advanced position, hav-

ing been joined in the last movement of the day before by the *Thetis* and *Bear*. There was nothing now to be done but to keep clear of nips. The wind had come out from the southward, and nothing short of a northerly gale would bring about a break-up.

In the morning the crews were exercised at abandoning ship. At two o'clock in the afternoon the tide turned, loosening the ice a little, and soon after three all the ships, except the *Narwhal*, got under way. They crept along through short narrow cracks for an hour and a half, moving very gingerly and feeling their way, not without considerable apprehension, for they were now in the midst of the pack, directly in the bight of the bay, and a sudden movement of the ice in any direction might place them in a critical position. At 4.45 the *Thetis*, *Bear*, and *Arctic* made fast again, the ice resisting all attempts to force a lead. The *Wolf* came up an hour later, but the *Narwhal* gave up the attempt, and steamed back to join the others to the southward.

The last move had resulted in an advance of one mile. It was hardly enough to be a source of much encouragement, but still a point in advance, and where progress could only be made by incessant struggling, inch by inch, it at least represented something for the day's effort.

Friday, the 13th, was another day of waiting. As the weather was good, and the ice solid in every direction, the crews of the relief ships were allowed to amuse themselves in hunting for bears and seals. The hummocky surface of the ice was favorable to the sport, but the men did not get anything. One of the seamen of the *Thetis*, a captain of the top, named Mitre, who had been separated from the rest of the party, was sauntering along on his way back, when a



THE ARCTIC WAITING FOR A LEAD NEAR THE DUCK ISLANDS.

young bear picked up his trail, and followed him to within a hundred yards of the ship, Mitre being all the while unconscious that the animal was behind him. The people on board the *Arctic* watched the pair for a time with much amusement, and when Mitre was safely over a crack that lay in his path, they chased the bear across the ice and shot him. After this, "Mitre's bear hunt" was a standing joke with the crew, and he was chaffed unmercifully by his companions during the rest of the cruise.

During most of this day none of the four ships moved from their anchorage. The *Wolf* was some little distance to the southward, but the *Arctic* still remained with the relief ships. The other group of whalers which had taken to the Duck Islands, had now made off to what they thought was a lead inshore, and they could be seen hull down, well away to the southeast, near the Sugar Loaf, a snowy peak on the Greenland coast.

Late in the afternoon the *Thetis* and *Bear* made a struggle to advance, the broken appearance about the edges of the large floes giving some little promise of success. After working for a couple of hours, they had made only two miles. Though the pack was broken, the pieces were too close to push through, and the blue flinty ice was really too hard to crack by butting. The squadron was now in advance of the whole whaling fleet.

The next two days were red-letter days in the three tedious weeks passed in Melville Bay. It was snowing on the morning of Saturday, the 14th, and there were no signs of any immediate change in the situation. The *Thetis* and *Bear*, now two miles ahead of the *Arctic* and *Wolf*, were drifting slowly northward with the pack. Early in the morning the *Thetis*

attacked the bar in front, but an hour's ramming only gained her a ship's length in advance. During the forenoon, however, both ships got under way, and by hard work increased their lead by two miles more. No sooner had they accomplished this, than a wide lane of water opened out to the northward, extending apparently several miles to the northwest. It was perhaps two or three miles away, and between it and the ships lay a stretch of the same tough ice that they had just passed through with such difficulty. This was now attacked, but it took more than two hours to smash through it. As luck would have it, the entrance to the lead extended down to the eastward of the advance position occupied by the relief ships, and in the movements of the ice, the pack to the southward had slackened sufficiently to give the *Arctic* and *Wolf* an easy passage in. Seeing their advantage, the two whalers immediately cast off, and putting on all steam, by heading first to the southeast and then to the north, succeeded in getting well into the lead before the *Thetis* and *Bear* had worked through the barrier in front. It was rather annoying to the relief ships to find that all their struggles of the past two days, and their advance of four miles, had only resulted, through a piece of sheer bad luck, in placing them in a worse position than that which they had left, and that the two whalers, which had not come up with them during this time, were now steaming by at full speed directly ahead of them, and rapidly disappearing to the northwest, with an unlimited prospect of clear water before them. However, by half-past four the barrier had been passed, the lead entered, the ships had been headed to the northwest, and were doing their best in the clear lane before them. Once fairly in the open water, they did not stop until they had made good thir-

ty-five miles. To those on board, who up to this point had not made more than fifty miles in an incessant struggle of sixteen days, the change was like magic, and eight knots an hour seemed like the speed of a lightning express train.

It was soon after entering this lead that the last glimpse was caught of the whalers inshore. They were beset near the land, and the *Cornwallis* had the appearance of being nipped. They had made a fatal mistake in going back, and they were now thrown completely out of the race.

Occasional obstructions were met in passing through the lead from loose streams of ice, but the ships kept steadily on, until two o'clock on the morning of Sunday, June 15th, when they came to a tight string of ice that barred further passage. The *Wolf* and *Arctic* were here at anchor, so that the latter had after all gained no permanent advantage by the start they had got the day before. A few hours later, to everybody's surprise, the *Aurora* came steaming along, and joined the others. Captain Fairweather, with his usual good sense, had not gone so far inshore as the five other whalers, and he was thus able to take advantage of the lead and catch up. He had left his companions fast in the ice, to the east of the Duck Islands.

At the point where the five ships were now lying, not far from the northerly Browne Islands, there was a pool of water around them two or three miles wide. To the north there was a clear view of the great glaciers and ice-covered mountains of the Greenland shore bounding Melville Bay. Inclosing the pool was the broad expanse of the pack, apparently solid, with hundreds of icebergs imbedded in it on all sides. There was not a sound to break the stillness.

At seven o'clock in the morning, soon after the *Aurora*

had tied up to the edge of the barrier, water-pools and strong black lines could be observed in the northwest; the ice began to slacken, and all the ships got under way. It was not long before they were stopped again. The ice was eight feet thick, and pressed up in many places to sixteen or twenty feet. It was of no use to butt into it, and the torpedoes produced only a local effect. So the ships once more came to anchor.

The first piece of good luck now came to the *Wolf*. As the ships were lying moored to the bar in front, side by side, but somewhat spread out, a crack suddenly opened close to the *Wolf's* moorings. Casting off hastily, she had no sooner entered it than it closed behind her, barring the way to the other ships. The *Wolf* steamed ahead, and by this little accident obtained a start of six miles. In an hour or two, however, the wind had gone down, and the pack loosened, and after following winding leads for a little while, all the ships found themselves in a wide clear lane along the land ice, and shot ahead at full speed. The lane was struck at five in the afternoon. At seven, the *Thetis*, finding that her slowness was keeping back the *Bear*, decided to let the latter make a trial of speed, and signalled to her to "go on ahead." The *Bear* then passed her, and gradually closed with the whalers, until at 3 A.M. of the 16th all the ships were stopped by the pack, after a splendid run of sixty miles.

The gains of the last two days had carried the relief expedition over the best part of Melville Bay. The point it had now reached was fifty-eight miles from Cape York. The ships had done their best, and it was clear that no efforts at any time would have availed to put them a mile further on their course. Beyond them still lay the pack, extending ap-

parently for sixty miles off shore. Small streaks could be seen to the south and west, but not a sign of water to the north. The five ships were lying in a pool, a mile or a mile and a half across, which was constantly changing its form and size. Across this the wind and tide were driving the ice in large floes, which were rapidly nipping and opening. The *Thetis* was unable to ram a dock, and made an attempt to cut one in the ice, but nothing could be done with the saws in ice of such thickness. The wind was blowing fresh from the southeast, making the position of the ships rather disagreeable, as it was necessary to keep them under way all night, dodging hither and thither, to avoid the running floes and bergs.

Several times during the afternoon of the 16th tempting leads would open for a short time to the southwest, but it would have been bad judgment, under the circumstances, to have left the neighborhood of the land ice to attempt hazardous openings away from it. The *Thetis* and *Bear* continued to keep the land ice close aboard, with confidence that the surest and safest opening would occur along its edge. This eventually happened.

The *Arctic*, however, whose captain, Guy, had before this made no mistake, attempted one of these enticing leads, at about seven o'clock on the evening of the 16th, but was caught soon after, two miles away, and could not extricate herself. Her stern was thrown up several feet, and she was badly squeezed. After this she did not join again during the cruise. The *Aurora* and *Wolf* barely escaped the same nip, the ice closing before they could get into the lead which they had started to enter.

On the morning of the 17th the wind moderated, and in

the afternoon it fell light. The day was clear, and the land could again be seen to the northward. During the day the ice remained obstinately firm, and there was no sign of encouragement inshore. By nine o'clock, however, the pack loosened, and the four ships got under way and entered it. Guy was now out of the race, still beset in the pack, which he had made the mistake of entering the day before.

From nine till eleven the four ships were working through narrow cracks, charging the ice from time to time. The *Wolf* and *Aurora* were ahead, followed closely by the *Thetis* and the *Bear*. Unfortunately, when about half-way through the stretch of pack, the *Thetis*, in backing to clear a false lead, fouled the pack and damaged her rudder. This occasioned a slight delay, and as the *Bear* was astern of the *Thetis*, and there was no room to pass, the whalers got a good start. In the pack, the effect of any stoppage is apt to be increased by changes in the ice, and, on this occasion, during the delay caused by the accident, the lead which the whalers had taken closed up, and the *Thetis* could only get through by breaking the ice over again. The *Bear* had just time to follow when the ice closed a second time.

At eleven o'clock the relief ships worked into a fairly clear lead, into which the two whalers had already made their way. Here they put on full steam. They were approaching Cape York, and there was a water-blink to the northward which might mean clear water, and consequently a straight-away course and a trial of speed. Every one felt that it would never do to let the whalers come in first at Cape York. The Cape was now so near that the race was becoming exciting, and as the ships pressed on, one after the other, through the long lane of water, each was doing her best. The efforts

did not count for much, however, as far as the advance ships were concerned, as the *Bear* came up with them at one o'clock on the morning of the 18th, and progress was stopped by a heavy bar. No sooner had the *Bear* arrived than all the ships attacked the bar, ramming their way in vigorously, wherever each one saw her best chance. After cracking and pounding for an hour and a half, pushing aside the loose floes, or crashing into them with the whole power of the engines, the four vessels, at half-past two in the morning, had passed the last obstruction, and slid out into a great space of open water. As they cleared the pack and steamed off one after the other, the crew of each ship gave three rousing cheers. No ice could be seen from the crow's-nest, and everybody thought that the North Water was reached at last.

Whether it was really the North Water is a question. So much ice was seen during the rest of the voyage that the water-space about Cape York was afterwards regarded as nothing more than a break in the pack. However that may be, it was a break, and it was determined to use it for all it was worth. As the *Thetis* was hardly up to the mark for racing purposes, orders were given to the *Bear* to go ahead, and ahead she went with a will. The whole engineer force was stationed in the fire-room, and the engines were worked to their full capacity. The *Thetis* and *Wolf*, which were abreast, were soon left behind, and after a hard tug with the *Aurora*, the leading ship, she also fell astern; and at half-past three on the morning of June 18th, the *Bear* touched the ice four miles off Cape York, the *Aurora* being a mile to the rear, and the others following in her wake.

From the crow's-nest it was discovered that the delusive sheet of water through which the ships had passed, did not

extend around the Cape, but that the pack stretched away for miles to the north and west. The three ships in the rear brought up against its edge, while the *Bear* worked in some distance further through the cracks.

As Cape York was now within striking distance, the first thing to be done was to send some one over the ice to communicate with the Eskimo, and find out if they knew anything of the missing explorers. The *Bear* therefore pushed on to the edge of the land ice and landed the party, which had been already told off for the work.

The landing party was composed of Lieut. Colwell, of the *Bear*, and three men, one of whom was Nicolai, the Eskimo interpreter. Colwell was naturally selected for the duty, from his knowledge of the locality and his experience in boat and ice journeys of the year before. Everything had been got ready in advance for the landing, and at 4 A.M. on the 18th, Colwell and his men were dropped on the ice with a dog-sled and a small dory, and ten days' supplies. The advantage of this combination is that when you are on the ice you put the dory on the sled, and when you come to water you put the sled in the dory. The party went over the ice a couple of miles, and then launched their boat. On the edge of the land ice, immediately below Cape York, they came across sled-tracks, and presently they fell in with a native who was seal-fishing, but nothing could be learned about Greely or his companions. The man was able to make it clear that the natives about Cape York had not heard anything of the white men in the north country. It was useless to go further, and Colwell retraced his steps towards the ship.

The *Aurora* and *Wolf*, the only whalers that were still in

the race, apparently now came to the conclusion that it would be as well to desist from the effort to get ahead of the relief ships. In fact, it was always a question whether the *Wolf* had ever intended going north or trying for the reward at all, her captain having too much at stake in the summer's catch of fish.

The *Aurora* had made no secret of her intentions, but Fairweather, her captain, now announced his purpose of making for the fishing ground in Lancaster Sound, having, as he thought, reached the North Water. Accordingly, he started off to the southward and westward, followed by the *Wolf*, both taking the open water along the edge of the pack. Before they got out of sight the *Arctic* was seen coming up, and she joined the others as they were making off to the southwest.

As there might be a chance of getting through that way, the *Bear* was ordered to steam off in the same direction, and if she found open water, to work north to Conical Rock, Saunders Island, Wolstenholme Island, and Cape Parry, and thence to Littleton Island, stopping at Cary Islands on the way. The *Thetis* was to remain to pick up Colwell, whose search might last some time, and to take her chances at Cape York, although the outlook for the moment was most unpromising.

Just before the whalers left the Cape, Captain Fairweather came on board the *Thetis* to say good-bye, and to wish her godspeed before he started for Lancaster Sound. His warm shake of the hand as he said farewell, in his rich Scotch accent, will never be forgotten. "Gude bye, Captain," he said, "we may live without fesh, but those poor fellows up there must have breed. God bless you! It's na use for us to go further."

CHAPTER XI.

CAPE YORK TO LITTLETON ISLAND.

QUITE in accordance with the general law of ice movements that the unexpected will always happen : before the *Bear* had been gone an hour, the pack moved bodily off from Cape York, leaving a lane of open water about fifty yards wide. The *Thetis* lost no time in pushing into it. It brought her along the edge of the land ice, so that Colwell, seeing her approach, after he had made perhaps a mile on his way back, waited with his men for her to come up. Hardly stopping, she picked up the party, which had only been absent three or four hours. They had seen only one man ; but his statements were conclusive, and the attempt to land and find other natives on shore would have involved a long delay, perhaps for the rest of the day ; and as the ice had so unexpectedly moved off, leaving suddenly the opening which every one had been hoping and longing for, it would have been folly to stop longer. The *Thetis* therefore continued her way alone, and reached Conical Rock with only occasional difficulty at a little before four in the afternoon.

Conical Rock is a barren island half a mile long, with a sugar-loaf peak, which marks out clearly the turning-point from Melville Bay into the triangular expanse of water, which for want of a better name, we have called lower Smith Sound. The *Thetis* was anchored to the ice on the northern side, about 200 yards from the island. Soon after



BOY OF THE THETIS IN THE ICE OFF CAPE YORK.

anchoring Sebree took a boat and landed with a party on the western side of the island. Here he built the first cairn of the expedition. It was placed on a level rock, 300 feet up from the water. The records for Coffin and Emory were placed in a bottle, which was sealed, and set up on the rock. Loose stones were placed around it until a pile was made about five feet high, and a flag-pole with a piece of black muslin was set up on top.

While Sebree was away making his cairn, the officers who were disengaged went out with the boats after birds, and shot three or four dozen auks and dovekies. By the time that the party had returned from the island, the outlook ahead had become unfavorable. The pack to the northward, which the *Thetis* had now come up with, was formidable, and the strong tides made its movements uncertain. For twenty-three hours the *Thetis* was compelled to wait, anchored to an iceberg or to the floe under the lee of Conical Rock. Once, soon after midnight, she ran up a mile or so, but the ice was too thick and heavy for passage.

At two P.M. on the 19th, the southerly wind ceased, while the floes were partially loosened by the tide, and the *Thetis* got under way for Wolstenholme Sound. Cape Dudley Digges was passed by ramming through the pack. Off Cape Athol, only five hundred yards of ice intervened between the ship and the open water of Wolstenholme Sound, but it took some time and hard work to cross the barrier. At this time torpedoes were found of real and unmistakable service—at one point especially where the *Thetis*, ramming her way violently into a narrowing crack, about two ships' lengths, found herself stuck fast like a wedge. Here she was perfectly helpless. There was no pressure from the ice,

but it was firm and unyielding, and the ship could not be moved. Backing was tried, but it was of no avail. At such a time all hands were at work, on the ice or the ship, wherever they could be of any use,—with a boat-hook, if nothing else. Some of the men were kept at work pushing the pieces of ice that had become loose away from the screw. But the really effective work was done by the torpedoes. These were planted, both of gun-cotton and of gunpowder, ahead of the ship, and on each side abreast of the foremast, a little abaft the bluff of the bow, where the ship was tightest; and, as usual, ten or twelve yards away from her side. The fractures caused by the explosion eased the ship from her jam, and she was able to push ahead once more through the pack.

Passing on through narrow leads and between heavy floes, the *Thetis* arrived at Wolstenholme Island a little after midnight. Here Colwell went ashore, and left a record in a small cairn, which he built on a slight bluff, just above a shallow cove, about midway on the western side of the island. The cairn was marked by a pole with a white flag. As soon as the party returned on board, the *Thetis* started for Saunders Island, where she arrived at 2.25 A.M. on Friday, June 20th, after a passage of an hour or two through rotten ice. She anchored to the ice, about two miles from the point where the relief expedition of the year before had landed on the night of August 2d, while on their retreat from the wreck of the *Proteus*, at the moment when the *Yantic* arrived at Cary Island on her way up.

At Saunders Island there were perhaps fifty Eskimo, but they had no information to give about Greely. They came off with their sleds to the ship, where they were well re-



THE THETIS WAITING FOR A LEAD AT CONICAL ROCK.

ceived, and given bread and pork, as well as broken oars and pieces of wood to mend their kayaks. They belonged to the same group as the Cape York Eskimo, and living as they do on the eastern shore of lower Smith Sound, their friendly offices may be of the greatest service to parties of explorers who have lost their ship, or who have been detached from their base of supplies on the coast of Grinnell Land or North Greenland.

As the *Thetis* could not approach nearer than a mile and a half to the land, Colwell was again sent in. This time David went with him. There was much snow on the island, and above it patches of flowering moss could be seen in bloom. Colwell found the settlement, consisting of ten tents and a hut. The natives were fat and dirty, as usual, and they had plenty of dogs and provisions, the latter chiefly seal-meat and birds. Colwell recognized among the natives two men whom he had seen at Cape York the year before. He also found here the dingy which he had left at the Cape, and which the Cape York men had brought around a month or two earlier. The cairn made by Garlington had been destroyed, and it was learned that at the time that the latter landed, there were three people on the island, one man and two women, who had stolen away and hidden themselves among the rocks. Garlington had seen no Eskimo on the island, but had found, as he mentions in his report, "an Eskimo dog, with one foot tied up to his neck." When Colwell pointed out the spot to David, to see if he could recall the visit of the year before, the Eskimo nodded his head and said, "Me savy," at the same time holding up his bent arm to his neck. The dog at Saunders Island was the only thing about the journey which he gave any sign of having remembered.

Information obtained here from the natives who visited the ship confirmed the belief that Greely could not have worked south over such ice as had been met so early in the season. In fact there had been no sledging up to Etah, the settlement in Foulke Fiord. An old man with a wooden leg, who appeared to be the chief of the party, said that earlier in the season, before the ice had broken, a hunting party had gone over the ice, well on towards the Cary Islands, but that no signs of white men had been seen. This made it clear that the ship must push on at once to the northward.

These Eskimo pass the winter at North Star Bay, where they live in their huts built of stone and turf; during the spring and summer they shift over to Saunders Island, where they live in skin tents, and occupy themselves in hunting and fishing for their winter supply. The island is a favorite haunt of walrus, seal, and duck. It was here that the first large walrus were seen by the expedition. During favorable seasons the natives work as far north as Lifeboat Cove, and south as far as Cape York. The usual mode of travel is by dog sleds along the ice-foot which everywhere skirts the land. Wherever a landing was made on the west coast of Greenland, beyond Cape York, tracks of sleds and human footprints were seen on the snow. North of Saunders Island there are two Eskimo settlements, one on Northumberland Island, and the other in Foulke Fiord, at the village of Etah. The number of the inhabitants has been growing steadily smaller year by year, and they are now a mere handful of people. The Saunders Island natives said that there were only four families at Etah. The two northern settlements seem to be closely connected with each other,

and interchange visits in much the same way as those at North Star Bay and Cape York. None of the people in the four settlements ever go south of the latter point, between which and Tassuisak the coast is one vast impassable glacier. There was a marked difference in appearance between the natives in the two regions; those to the north were fine physical specimens, and in their bear-skin suits appeared hardy and robust. Their good nature and laughing faces contrasted strongly with the surly expression and manner of those about the Danish settlements.

Although with an Eskimo food is usually the principal subject of concern, the Saunders Island natives seemed quite as anxious to procure broken oars, or nails, or pieces of metal. Whenever they came on board, however, it was noticed that they generally found the galley the most attractive part of the ship, and they were constantly hanging about it. Nothing in the shape of food seemed to go amiss with them; and it made little difference whether grease, or bone, or bird-skins, or vegetable parings were handed out,—they were always ready to eat anything, dirty or clean, hot or cold, cooked or uncooked.

As soon as Colwell returned, the *Thetis*, at 4.40 A.M., left Saunders Island for Cape Parry. The ice presented some difficulty, although after a great deal of winding about, the ship succeeded in making one or two good runs. The floes were loose, but the ice was piled up in large masses, and there were places where the heavier hummocks would only just clear the boats hanging at the davits, and occasionally the propeller striking a heavy lump would get a severe shock. The bumping never injured the screw, though it brought the ship up once or twice. On one occasion it car-

ried away the block holding up the reversing-gear of the engine, but as usual, Melville's resource prevented any detention, and the block was held firmly in place by means of a hydraulic pump, until secure straps could be made.

During this day's passage, large numbers of walrus were seen basking on the larger floe-pieces, and dropping lazily off into the water before the ship got within easy gunshot. Thousands of screaming little auks were found in the wide spaces of open water between the floes, but they were so small as hardly to make it worth while to waste ammunition on any but the larger flocks, and the sportsmen did not feel repaid unless each shot brought down two or three score of them. The beautiful ivory gulls too were seen, though they were not easily distinguished from the white snow lying over the ice. As they were useless for food, and were only prized as curiosities, none of them were killed.

Approaching Cape Parry in the forenoon the ice was found packed a long distance from the shore, and there was some doubt whether the *Thetis* could without a great deal of trouble work in near enough to send a party ashore with the record referred to in the instructions given to Coffin and Emory. It would have been easier to pass on to Northumberland and Hakluyt Islands, and leave a record there. The whole history of expeditions in this region, however, shows that it is a cardinal principle of Arctic exploration that when two parties are working in concert, and communicating by records left at pre-arranged points, they should carry out to the letter the terms of their agreement, and nothing short of an insurmountable obstacle should ever stand in the way of making the records at the designated points. Failure to do this is certain to throw the other party into confusion.

As Cape Parry was one of the pre-arranged points at which a record was to be left, and as notices left at Conical Rock and at Wolstenholme Island had reiterated it as one of the points *en route*, it was out of the question to pass on without effecting a landing, even though delay might thereby be occasioned. A lead was therefore followed to the open water to the westward, from which place an hour or two later it opened up to Cape Parry.

The *Thetis* arrived at Cape Parry at 1.30 P.M., and anchored within 200 yards of the land. The Eskimo sled tracks were again visible on the ice-foot. Lieutenant Lemly landed at the Cape, built a cairn, and left a record for the other vessels. The cairn was placed on a knoll, on the western point of the Cape, and marked by a white flag. The *Thetis* was under way again at 2.25 P.M. Soon after leaving the Cape she struck a sunken rock, not marked on the chart, but as she was going at a speed of only two knots at the time, she sustained no injury. Standing across Whale Sound, through loose broken floe ice, the *Thetis* passed around and between Northumberland and Hakluyt Islands, running closely in and examining them carefully, and continued on her way north at 9 P.M. From Northumberland Island to Cape Alexander, the way lay through twenty-four miles of enormous bergs, thickly studded together, often so close to each other that an opening could hardly be discovered until the ship was right upon them. During the night the wind came up fresh from the southward with flurries of snow. Later it increased to a gale, which continued with slight intervals during the next two days, the wind at times blowing with great fury. The direction of the wind was favorable, however, and good progress was made. About

twenty miles north of Northumberland Island, the ship succeeded in getting into the long sought-for North Water. This time there was no mistake about it. From this point there was but little ice; in fact, there was, to all intents, open sea as far as Littleton Island, and for the first time since entering the ice, seven hundred miles to the southward, the ship rose slightly to the motion of the swell.

Cape Robertson was swept with the telescope during the clear intervals in passing, but there were no signs of life to be observed there, nor on any of the land intervening between it and Littleton Island. Passing the points and inlets with their well-known names, Cape Saumarez, Cape Alexander, Hartstene Bay, Pandora Harbor, and Port Foulke, the *Thetis* at 2.30 A.M. of June 21st was abreast of Littleton Island. All hands were watching eagerly for signs of the missing explorers; but there was no trace of human life about the island, and the coal-pile was apparently undisturbed. As the *Thetis* passed up the west side, McGary Island gradually opened out, a rocky islet half a mile long lying off the northern side of Littleton Island, and separated from it by a passage one hundred yards wide. Norman, the ice-pilot, said that he had been through this passage, and the *Thetis* accordingly attempted it. Starting at low speed, she had not gone far before she struck a ledge, on which she hung for fifteen anxious minutes. After a little thumping, she was worked off with the help of the engine and head-sail, aided somewhat by the ebb tide. Fortunately she was not injured, and she steamed around, this time outside of McGary Island, to the north side of Littleton Island, where she was protected from the southwesterly gale. Here she made fast to a small grounded berg off the shore.

Parties were immediately landed, the Captain, Colwell, Melville, Norman, and others going ashore. Every part of the island where it was thought a cairn or a record could possibly be, was examined. Beebe's cache made in 1882 could not be found at first, even with the help of Norman, who had been with Beebe, as mate of the *Neptune*, when the cache was made. A stray sock was discovered on the northwestern end of the island, and a bundle of newspapers. More men came over and the search continued actively. Finally, one of the men, prodding the snow in a gully with a boat-hook, struck a barrel. Removing the snow, which was three feet deep, the cache was found intact, and the cans showed no signs of spoiling. The business-like address on the boxes, "Lieutenant A. W. Greely, Fort Conger, Grinnell Land, via St. John's and Greenland," had about it an air of grotesqueness that seemed almost like a mockery.

The cairns were found without difficulty. That of Nares was on the southwestern summit. Commander Wildes' cairn of the year before was found on the southwest point near the coal-pile, with the broken oar planted in it, and a letter from Commander Wildes to Garlington in a bottle, all just as it had been left. It was evident that Greely had not reached the island.

The greater part of the day was consumed in making the search of the island. During the morning the gale increased so much that landing on or leaving the high ice-foot of the island was dangerous and difficult. The wind brought with it a blinding snow-storm. It was late in the evening before all hands were brought safely on board, worn out with the work of the day. No landing had been made at Lifeboat Cove as yet, but if the explorers had been there, a record would cer-

tainly have been placed on Littleton Island, which was only half a mile from the Greenland shore. Moreover, in the intervals of the storm the beach had been swept with glasses, and no signals or signs of human beings were to be seen.

During the night the wind increased to a violent gale, and it was impossible to see half the ship's length away. Orders were given to Sebree to take a depot of provisions, amounting to 760 rations, which had been placed on deck, and land them as soon as a lull in the storm would permit. This was done about eight o'clock on the morning of Sunday, the 22d. The Beebe cache had been selected as the place for the depot. To reach it Sebree pulled a mile through the strait between McGary and Littleton Islands, because, if he had landed on the ice-foot, opposite the ship, he would have been obliged to sledge the provisions to the northwestern point. It was still blowing hard through the strait when Sebree landed from the boat and hauled his provisions up to a gully in the rocks, where the snow would cover them. After making his cache, he crossed over to the coal-pile and the Nares cairn, and left a record for Emory and Coffin.

There were now two sources of anxiety on board the *Thetis*. It was clear that Greely had not reached Littleton Island. It was just possible, though hardly to be hoped in view of the course of action agreed upon in 1881, that he should have remained at Lady Franklin Bay. The probability, however, was that he had moved southwards, but that failing strength, or loss of boats, or some other misadventure had prevented his reaching Smith Sound. Across the Sound, shut out from view for the moment by the blackness of the Arctic storm, lay Cape Sabine. It

could not be supposed that he had reached this point, for the provisions left there were not enough to sustain life during the winter, and the whale-boat on the Cape would surely have been sent over to the Island for the stores landed by the *Neptune*. Intense as was the desire to push on and solve the mystery, some apprehensions were felt for the *Bear*, which had parted company at Cape York, and which, besides having, as it had seemed, several hours the start, was the faster vessel. Before attempting the ice of Kane Sea, which had proved fatal to the *Proteus*, it was well for the *Thetis* to know something of the fate of her consort.

Nevertheless, it was determined to go over to Cape Sabine and await Emory at that point. The record left for him at Littleton Island was to inform him of this intention. At noon two men were sent out to cast off the lines of the *Thetis* from the iceberg. In a few moments they came back, and to the great relief of everybody, reported that they had sighted a steamer between McGary and Littleton Islands. A few minutes later the steamer was seen from the *Thetis* and at once recognized to be the *Bear*. At one o'clock she had made fast on the port quarter of the flag-ship.

Since parting from her consort off Cape York, the *Bear* had had a very uncomfortable time of it. On the morning of June 18th she first steamed to the westward with the whalers, following the edge of the pack, and on the lookout for a lead to the northward. Running about twenty miles in this direction without finding an opening, but on the contrary, meeting all the time with heavier and more dangerous ice, Emory wisely concluded to return towards the land. By noon he had reached a point within eight miles of

Cape York, but the *Thetis* had now disappeared, and the lead which had so happily opened for her, as well as the clear sheet of water where the ships had been lying, had disappeared also.

The position of the *Bear* off Cape York, where she was compelled to remain for nearly two days, was in many respects the most disagreeable she had yet found, and certainly she had at no time been in greater danger. During the afternoon of the 18th she was in a heavy fog which shut out everything from view, even the ice in her neighborhood. At three o'clock a fortunate lighting up of the fog showed that the crack in which she was lying was about to close. She got out just in time, for no sooner had she moored to the floe 200 yards away, than the edges of the ice where she had been anchored came together.

During all the afternoon and night, and well on into the next day, the *Bear* was obliged to keep a sharp lookout for the masses of ice which the winds and currents kept in constant motion about the Cape, grinding and crushing together on all sides. There was no possibility of telling, during most of the time, where or when the nip was coming, and the *Bear* several times shifted her berth to escape a possible squeeze. On the morning of the 19th two floes between which she was lying came together, rafting the crushed-up ice heavily just astern of her. She was just clear of the point of pressure. Had she been a few yards astern, she might have met the fate of the *Proteus*.

The whalers whom Emory had accompanied were not so fortunate. They also had turned back, and early on the morning of the 19th, the fog lifting, they were seen four or five miles to the southward beset in the pack. The *Aurora*



THE BEAR IN THE PACK.

had evidently been badly nipped. She had lowered all her boats on the ice, and the crew appeared to be making preparations to abandon the ship. The *Arctic* and the *Wolf* were doing their best to get out of the pack, but they were unsuccessful during all that day and the following night.

On the morning of the 20th, the fog settled down more heavily than ever, but the ice appeared to be slacking. At half-past five, steam whistles were heard not far off to the southeast, and at six the *Aurora* and *Wolf* came up, having extricated themselves from the pack. The *Arctic* was also near by, but was invisible in the fog. The *Bear* got under way soon after the others had come up, and started through the loosened pack. It was slow work during most of the time, although towards noon the ship had a fairly good three hours' run. The fog continued all day, and it was only at intervals that the land could be seen. From time to time one or another of the whalers could be descried through a break in the mist, struggling along through the winding cracks in the pack. In the afternoon very little progress was made, and midnight found the relief ship not far from Wolstenholme Island, having made in all about fifty miles.

The next day, Saturday, the 21st, was still less satisfactory. The fog continued heavy, and the ice was worse than the day before, compelling a tortuous course which brought the vessel no nearer to her destination at the North. In fact the whole day was passed in running out to the Cary Islands, where the ship arrived in the evening. The islands could only be seen at occasional moments, and the *Bear* found it necessary to run much of the time by guesswork. After she had been pushing about blindly for a long time, the

fog suddenly lifted, and Southeast Cary Island was seen two miles away.

Arriving at 8 P.M., Emory landed and examined the Nares cache. It was undisturbed, and the condition of the provisions seemed to be as good as at Garlington's visit of the year before. Greely had certainly not been here, and the *Bear*, at a little before midnight, got under way for Littleton Island. Three hours after leaving Cary Island she found herself in open water. At this point she saw the last of the whalers. They were far away to the south, and steaming to the westward, evidently making for Lancaster Sound. With the help of the southerly gale, the *Bear* made such short work of the rest of her passage, that in ten hours more she had covered the seventy miles that were left of her journey, and at one o'clock on the afternoon of Sunday, the 22d, as already related, she joined her consort at Littleton Island.

CHAPTER XII.

THE RESCUE.

As it was evident that Greely had not been at Littleton Island, it was decided to run over to Cape Sabine, take a look at the cairns and caches there, make a new depot of four thousand rations, as a supply on which to fall back in case of disaster, and push north at once. Leaving a final record for Coffin on McGary Island, the *Thetis* and *Bear* sailed from Littleton Island, at 3 P.M., on Sunday, June 22d, with a strong breeze, increasing at intervals to a heavy gale. Fortunately the strait, at this point about twenty-three miles wide, was comparatively clear of ice, so that no obstruction was met until the relief ships had arrived within a mile or two of their ice anchorage in Payer Harbor, an indentation of the coast on the west side of the Sound, partly enclosed by Brevoort, Stalknecht, and Payer Islands. The water in the bay is deep, but the anchorage is unsafe, being exposed to the heavy ice which drifts through the strait with the strong tides after the break-up of early summer has taken place.

Brevoort Island is the largest and most prominent of the islands, and for this reason doubtless was selected by Nares as the site of his cairn. It lies two miles south of Cape Sabine, around which, three miles to the westward, was the cache made by Beebe in 1882, and a mile further on along the same coast, the wreck-cache where Lieut. Colwell had

landed the stores saved from the wreck of the *Proteus* the year before. Stalknecht Island, a long, low strip of land connected at low tide with the mainland, lying W.S.W. from Brevoort Island, was the site upon which the English expedition had established their cache of provisions.

The harbor was frozen over, and the ships were made fast to the northern edge of the ice, just off Brevoort Island. In order that no time should be lost, parties were detailed to examine simultaneously all the depots in the neighborhood. Lieutenant Taunt, with Seamen Yewell, Brock, and Mitre, were sent to Brevoort Island, and Ensign Harlow, with Seamen Coffin and McLeod, to the English cache on Stalknecht Island. A third party, composed of Chief-Engineer Melville, Dr. Ames, and Seaman Lindquist, went to the bottom of Payer Harbor to examine the coast line as far as it was accessible. A fourth party, in the *Bear's* steam cutter, afterwards known as the "Cub," was made up of Lieutenant Colwell, Chief-Engineer Lowe of the *Bear*, the two ice-masters, Norman and Ash, a coxswain and two men. They set out to go around Cape Sabine and look at Beebe's cache, and at Colwell's wreck-cache.

It was intended that, as soon as a satisfactory examination had been made and a depot landed, the ships should advance without delay into Kane Sea. There was no expectation of finding that any one had been at the Cape, or that the cairns or caches had been disturbed, as it was clear that if Greely had arrived he would have been short of provisions, and would therefore have sought to obtain those at Littleton Island; and nobody could have imagined for a moment that, with prospective starvation on one side of the strait, and a provision depot (although a small one) twenty-three miles



GREELY'S CAIRN ON STALCKNECHT ISLAND.

off on the other, a party supplied with a boat and oars would have preferred the former alternative. In fact, at the time the cutter started, the crew of the *Bear* were getting provisions on deck to be in readiness for the sledge-journey that was to be made northwards, after the ships were stopped by the fast ice. As the cutter left the ship, Colwell picked up a can of hard-tack and two one-pound cans of pemmican, as he thought that his party might be out all night, and a little of something to eat would not go amiss.

Within half an hour after the first parties had left the ship, cheers were heard above the roaring of the wind. At first it was impossible to tell from what quarter the sound proceeded, but soon the cheering was heard a second time more distinctly, in the direction of Brevoort Island. Almost immediately after, Ensign Harlow was observed signalling from Stalknecht Island. His message read: "Have found Greely's records; send five men."

Before this request could be carried out, Yewell was seen running over the ice towards the ships, and a few minutes later he came on board almost out of breath with the information that Lieutenant Taunt had found a message from Greely in the cairn on Brevoort Island. Yewell brought the papers with him, and called out, as he gave them to the officer of the deck, that Greely's party were at Cape Sabine, all well. The excitement of the moment was intense, and it spread with the rapidity of lightning through both the ships. It was decided instantly to go on to the Cape, and a general recall was sounded by three long blasts from the steam whistle of the *Thetis*.

The first thing to be done before taking definite action was to go carefully over the papers that Taunt had found.

All the officers who had remained behind in the two ships gathered around the ward-room table of the *Thetis*, and the records were hurriedly read aloud. As one paper after another was quickly turned over, until the last was reached, it was discovered with horror that the latest date borne by any of them was Oct. 21, 1883, and that but forty days' complete rations were left to live upon. Eight months had elapsed since then, and the belief was almost irresistible that the whole party must have perished during this terrible period of waiting and watching for relief. This was the brief story told by the records:

The International Polar Expedition was fitted out by the War Department of the United States, under the supervision of General W. B. Hazen, Chief Signal Officer.

Sailing from St. John's, Newfoundland, July 9th, it touched at Disko, Rittenbenk, Upernivik, Cary Islands, Littleton Island, Cape Hawks, Carl Ritter Bay, and was stopped by ice for the first time in Lady Franklin Bay, near Cape Lieber. It landed in Discovery Harbor, August 12th. The steamskip *Proteus* sailed August 26th.

The winter of 1881-82 proved to be of remarkable severity; the corrected mean for February of a thermometer on the floe was $-48^{\circ} 03'$. Musk-ox meat was procured in large quantities and other game to less extent. Lieutenant Lockwood, during the autumn, explored the "Bel-lows" and the valley of St. Patrick's Bay, and attempted in November, twenty-one days after the sun left us, to cross Robeson Channel, but was obliged by open water and heavy ice, to turn back several miles from Cape Beechy.

Starting eleven days before the sun returned, he examined Robeson Channel off Cape Beechy, and leaving March 1st, visiting Thank God Harbor *via* Capes Beechy and Lupton, returned *via* Newman Bay and Cape Sumner March 11th, having been detained two days by violent storm.

Dr. Pavy visited Lincoln Bay in September, established depots in Wrangell Bay in October, and near Mt. Parry in November, returning on the 8th, and between March 5th and 9th, 1882, established a depot near Cape Sumner. On October 2d, he started to visit Cape Joseph Henry, but was turned back by open water at the Black Cliffs. He

leaves March 18, 1882, to reach land, if possible, north of Cape Joseph Henry. Lieutenant Lockwood leaves April 1st, to explore the land north and east of Cape Britannia. The commanding officer proposes later an attempt to reach the western shore of Grinnell Land *via* Black Cliffs Valley.

The health of the command has continued excellent to the present time. No signs of scurvy except possibly Eskimo Jens; all well at present date (March 15, 1882). The winter has passed comfortably and pleasantly.

A. W. GREELY,
1st Lt., 5th Cav., A. S. O. and Ass't,
Commanding Expedition.

This record is deposited by Octave Pavy, who leaving Fort Conger, October 27, 1882, with party of D. L. Brainard—

October 31, 1882.

Taken up August 12, 1883, by Lieutenant Greely and party going southward to Littleton Island.

FORT CONGER, G. L., October 26, 1882.

During the spring and summer of 1882, the following trips have been made: A. A. Surgeon O. Pavy left March 19th to reach land north of Cape Joseph Henry, but returned May 4th, having found open water in the Polar Ocean, where he was for a time afloat with his party on the moving ice-pack. Lieutenant J. B. Lockwood left April 3d, and returned June 2d, having in the meantime discovered Hazen Coast, which extends northeastward from Cape Britannia to $83^{\circ} 30' N.$, and about $38^{\circ} W.$ He reached $83^{\circ} 24' N.$, and $40^{\circ} 46' W.$ No land directly north or northwest, although horizon was searched on clear days from altitude of over 2,000 feet. The coast still continued its trend to the N.E. (tr.) The commanding officer penetrating the interior of Grinnell Land in April, and again in July, discovered a lake about 60 miles by 8, called Lake Hazen, and reached Mt. C. A. Arthur $81^{\circ} 13' N.$, $74^{\circ} 10' W.$, whence from an elevation of 4,500 feet a view was had on a *very clear day*. Low land to the W.S.W. and S. as far as eye could reach. In W.S.W. in slight depression, from 75 to 100 miles distant a range of mountains which *possibly* are on a land separated from Grinnell Land by a narrow strait. During August launch *Lady Greely* ran to head Archer Fiord and part way into Howgate Fiord, which latter, inland from Miller's Island, receives the water of Lake Hazen *via* Ruggles River. No

casualties to date; all well at present. In case of no vessel, the station will be abandoned August 11, 1883, the party retreating by boats along the west coast of Kennedy Channel and Smith Sound.

A. W. GREELY,
1st Lt., 5th Cav., A. S. O. and Ass't,
Commanding Expedition.

Record left by Lieutenant Greely, Commanding Polar Expedition en route to Littleton Island with ultimate intention of reaching S.E. Cary Island :

I abandoned Fort Conger, G. L., August 9, 1883, at 3 P.M., with a party of twenty-five; all well. Reached Cape Baird August 10th, and left same evening near midnight, steam-launch *Lady Greely* towing boats *Valorous*, *Beaumont*, and whale-boat. On board 5,500 lbs. coal and over forty days' rations. Took up enough at Cape Cracroft to make forty-five days' rations. Had foggy weather with snow; met some ice. Reached Carl Ritter Bay about 10 P.M., August 12th, and took up cache, leaving at once with about fifty days' complete rations, except sugar. Stopped by floe about 80° 43' N., morning August 13th. Took up depot of 240 rations at Cape Collinson, August 22d, and at 1 P.M., August 23d, were tied up to ice-foot about two miles south of Cape Norton Shaw. Stopped by dense rubble-ice, which extended as far south as could be seen. All well at that time. Reached Cape Hawks August 26th, took up 168 lbs. potatoes, 111 lbs. pickles, 250 lbs. bread, 324 lbs. stearine. Left same afternoon, and were beset that night in about 73° W., 79° 25' N., in attempting to reach Victoria Head by direct course. All well August 27, 1883. No signs of a ship or of depots for us have been seen, although the shore has been carefully followed and watched. A N.E. gale forced us down to 79° 00' 06" N., 74° 45' W., when temperature fell, September 8th, to 0.8°, freezing in the party. It is the intention to abandon launch *Lady Greely* and one boat Monday, September 10th, and to reach Cape Sabine with two boats by sledge *via* Cocked Hat Island.

Party all well and in good spirits at date. Have about forty days' complete rations. It is the intention, as soon as separation shall be safe, to send an officer and two men to Brevoort Island to obtain record which should be there, of the movements of ship and location of depot this year. If boats have been left there, it will greatly facilitate our movements and increase our chances of safety. Abandoned launch and one boat September 10th, and later another boat. Driven into the middle of Kane Sea twice by S.W. gales; once from about three miles off Cocked Hat Island, and again from about same distance from Sabine; yet later,

when within two miles of Brevoort Island, driven by a N.W. gale and ice-pressure to north side Baird Inlet, between Leffert and Alfred Newton glaciers of Admiralty chart, or just north of Cape Patterson, Nares map. Reached land September 29th, with one boat, 12-man sledge, 25 days' rations. Party of twenty-five all well yet, and hopeful of future. Lieutenant Lockwood probably starts for Sabine October 1st, and will deposit this record. If no rations except English are found, they will be hauled away to this point, and Cape Isabella visited by sledge, in hope of finding another there; as a forlorn hope, when rations are reduced to ten days, an attempt will be made to reach Littleton Island by sledge, *leaving records and cairn here with boat*; records to be not exceeding 25 feet from boat. Pendulum and duplicate records will be cached at site of English depot by Lieutenant Lockwood. Hope to obtain game enough to keep us alive until February, when we will start for Littleton Island as soon as sun permits travelling.

A. W. GREELY,

1st Lt., 5th Cav., A. S. O. and Ass't,

Commanding Expedition.

September 30, 1883,

N. side Baird Inlet.

Visit Brevoort Island for maps and records in English cairn. Our party winter under desperate circumstances, in imminent danger of starvation, on N. side Baird Inlet. All well; twenty-five yet in party.

A. W. GREELY,

1st Lt., 5th Cav., A. S. O. and Ass't,

Commanding Expedition.

September 30, 1883,

N. side Baird Inlet.

Left Lieutenant Greely's party at north side Baird Inlet on October 1st, accompanied by one Eskimo, and arrived at Payer Harbor yesterday, October 5th. Encountered great difficulty in travelling. Rosse Bay and all its ramifications entirely open, and a strait found opening out to the west of Cocked Hat Island and separating Sabine from main land, had to be followed on the inside throughout its entire length.

Travelled through thick weather yesterday, and did not see cache lauded from wreck of *Proteus*, and mentioned in Lieutenant Garlington's notice, but found depot of 240 rations marked by tripod all right. Boat damaged as stated. The cache of clothing opposite the place has been scattered by bears. Two bags of hard bread found with the clothing; one partly destroyed (also some . . .). I shall now endeavor to examine the English cache so that we may know what to depend upon, but it is now a dense fog and the ice not very secure, and it is possible I

may have to return to my party without the information regarding the latter cache. It is impossible for Lieutenant Greely and party to move with their equipment to this neighborhood until later in the season, and it is my opinion he will go into winter quarters at his present position, and send for the provisions herein mentioned so soon as Rosse Bay freezes over.

I take up all records concerning us for Lieutenant Greely's information, as I can not wait to make copies.

Too cold to add further particulars. I start back at once.

GEO. H. RICE,
Signal Corps,

October 6, 1883.

Lady Franklin Bay Expedition.

My party is now permanently encamped on the west side of a small neck of land which connects the wreck-cache cove or bay and the one to its west. Distant about equally from Cape Sabine and Cocked Hat Island. All well.

A. W. GREELY,
1st Lt., 5th Cav., A. S. O. and Ass't,
Commanding Expedition.

Sunday, Oct. 21, 1883.

It was a wonderful story. It told how the expedition, during its two years at Lady Franklin Bay, had marked out the interior of Grinnell Land, and how Lockwood had followed the northern shore of Greenland, and had reclaimed for America the honor of "the farthest north." But there was no time now to think of what the expedition had accomplished,—that was already a matter of history. The pressing question was, where was Greely's party now? and to that question it was too probable that there was but one answer.

The records had named the wreck-cache as the site of Greely's camp, and preparations were made at once to go there. The cutter, with Colwell and his party on board, had not yet got away, having been stopped by the cries from the shore, and she now steamed back under the stern

of the *Thetis*. Colwell was directed to go to the site of the cache and look for the explorers; and if any were alive—of which the record gave little hope—to tell them that relief was close at hand. As he was about to leave, he called out for a boat-flag, and one was thrown to him from the ship. This was bent on a boat-hook, and set up in the stern of the boat.

Before the cutter had disappeared to the northward the commander of the expedition had gone on board the *Bear*, and the ship was under way, following the track of the cutter around the cape. The detachment under Harlow, which had found Greely's scientific records and instruments on Stalknecht Island, and the other party under Melville, some of whom had not yet returned, were to come after in the *Thetis*, which was left behind to pick them up. The passage which the ships and the cutter were to make was about six miles, although from Payer Harbor to the wreck-cache, in a straight line, across the rugged neck of intervening land, it was less than half that distance. Fortunately the southerly gale had set the ice off shore into Kane Sea, leaving a clear passage around for the vessels.

It was half past eight o'clock in the evening as the cutter steamed around the rocky bluff of Cape Sabine, and made her way to the cove, four miles further on, which Colwell remembered so well from his hurried landing with the stores on the terrible night following the wreck of the *Proteus*. The storm, which had been raging with only slight intervals since early the day before, still kept up, and the wind was driving in bitter gusts through the openings in the ridge that followed the coast to the westward. Although the sky was overcast, it was broad daylight,—the daylight of a dull

winter afternoon,—and as the cutter passed along, Colwell could recognize the familiar landmarks of the year before; the long sweep of the rocky coast, with its ice-foot spanning every cove, the snow gathered in the crevices, the projecting headlands, and the line of the ice-pack which had ground up the *Proteus*, dimly seen in the mists to the north, across the tossing waters of Kane Sea. At last the boat arrived at the site of the wreck cache, and the shore was eagerly scanned, but nothing could be seen. Rounding the next point, the cutter opened out the cove beyond. There, on the top of a little ridge, fifty or sixty yards above the ice-foot, was plainly outlined the figure of a man. Instantly the coxswain caught up the boat-hook and waved his flag. The man on the ridge had seen them, for he stooped, picked up a signal flag from the rock, and waved it in reply. Then he was seen coming slowly and cautiously down the steep rocky slope. Twice he fell down before he reached the foot. As he approached, still walking feebly and with difficulty, Colwell hailed him from the bow of the boat:

“Who all are there left?”

“Seven left.”

As the cutter struck the ice, Colwell jumped off and went up to him. He was a ghastly sight. His cheeks were hollow, his eyes wild, his hair and beard long and matted. His army blouse, covering several thicknesses of shirts and jackets, was ragged and dirty. He wore a little fur cap and rough moccasins of untanned leather tied around the leg. As he spoke, his utterance was thick and mumbling, and in his agitation his jaws worked in convulsive twitches. As the two met, the man, with a sudden impulse, took off his glove and shook Colwell's hand.

"Where are they?" asked Colwell, briefly.

"In the tent," said the man, pointing over his shoulder, "over the hill—the tent is down."

"Is Mr. Greely alive?"

"Yes, Greely's alive."

"Any other officers?"

"No." Then he repeated absently, "The tent is down."

"Who are you?"

"Long."

Before this colloquy was over, Lowe and Norman had started up the hill. Hastily filling his pockets with bread, and taking the two cans of pemmican, Colwell told the coxswain to take Long into the cutter, and started after the others with Ash. Reaching the crest of the ridge, and looking southward, they saw spread out before them a desolate expanse of rocky ground, sloping gradually from a ridge on the east to the ice-covered shore, which at the west made in and formed a cove. Back of the level space was a range of hills rising up eight hundred feet, with a precipitous face, broken in two by a gorge, through which the wind was blowing furiously. On a little elevation directly in front was the tent. Hurrying on across the intervening hollow, Colwell came up with Lowe and Norman, just as they were greeting a soldierly-looking man who had come out from the tent.

As Colwell approached, Norman was saying to the man:

"There is the Lieutenant."

And he added to Colwell:

"This is Sergeant Brainard."

Brainard immediately drew himself up to the "position of the soldier," and was about to salute, when Colwell took his hand.

At this moment there was a confused murmur within the tent, and a voice said:

“Who’s there?”

Norman answered, “It’s Norman—Norman who was in the *Proteus*.”

This was followed by cries of “Oh, it’s Norman!” and a sound like a feeble cheer.

Meanwhile one of the relief party, who in his agitation and excitement was crying like a child, was down on his hands and knees trying to roll away the stones that held down the flapping tent cloth. The tent was a “tepick” or wigwam tent, with a fly attached. The fly with its posts and ridge-pole had been wrecked by the gale which had been blowing for thirty-six hours, and the pole of the tepik was toppling over, and only kept in place by the guy ropes. There was no entrance except under the flap opening, which was held down by stones. Colwell called for a knife, cut a slit in the tent cover, and looked in.

It was a sight of horror. On one side, close to the opening, with his head towards the outside, lay what was apparently a dead man. His jaw had dropped, his eyes were open, but fixed and glassy, his limbs were motionless. On the opposite side was a poor fellow, alive to be sure, but without hands or feet, and with a spoon tied to the stump of his right arm. Two others, seated on the ground, in the middle, had just got down a rubber bottle that hung on the tent pole, and were pouring from it into a tin can. Directly opposite, on his hands and knees, was a dark man with a long matted beard, in a dirty and tattered dressing-gown with a little red skull cap on his head, and brilliant, staring eyes. As Colwell appeared, he raised himself a little, and put on a pair of eye-glasses.

"Who are you?" asked Colwell.

The man made no answer, staring at him vacantly.

"Who are you?" again.

One of the men spoke up: "That's the Major—Major Greely."

Colwell crawled in and took him by the hand, saying to him, "Greely, is this you?"

"Yes," said Greely in a faint, broken voice, hesitating and shuffling with his words, "Yes—seven of us left—here we are—dying—like men. Did what I came to do—beat the best record."

Then he fell back exhausted.

The four men in the tent with Greely were two Sergeants, Elison and Fredericks; Bierderbick, the hospital steward; and Private Connell, who with Brainard and Long were all that remained of the twenty-five members of the Lady Franklin Bay Expedition. The scene, as Colwell looked around, was one of misery and squalor. The rocky floor was covered with cast-off clothes, and among them were huddled together the sleeping-bags in which the party had spent most of their time during the last few months. There was no food left in the tent but two or three cans of a thin, repulsive-looking jelly, made by boiling strips cut from the sealskin clothing. The bottle on the tent-pole still held a few teaspoonfuls of brandy, but it was their last, and they were sharing it as Colwell entered. It was evident that most of them had not long to live.

Connell was for the moment in the worst condition of all. When Colwell first saw his nearly inanimate body, it seemed that life was extinct; and in fact he had almost ceased to breathe. He was speechless, his heart barely pulsating, his

body cold, and all sensation gone. The brandy which his companions were giving him revived him a little, and with returning consciousness, he could just gather the idea that relief had come, and that he must brace himself to live.

Elison, who was next him, though not in such dire extremity, was little better off. His hands and feet had been frozen off in a journey made seven months before, in a vain attempt to get the English meat at Cape Isabella, and all that time he had lain helpless in his sleeping-bag. Cared for by the others, his mind and body had wasted somewhat less than theirs, but he had nearly reached the limit of his endurance.

The two others in the tent, Sergeant Fredericks, and Bierderbick, the hospital steward, were too weak and exhausted to stand long, much less to walk. Their worst symptom, apart from their weakness, was their swollen condition. In their experience of the last six months, when they had seen the others pass away, one after another, they had learned to recognize this as the surcest sign of the approaching end, and although now their faculties were more or less blunted, they had realized that the hand of death was on them, and that a little more would put an end to the horrors of existence.

Except Connell and Elison, the feeblest of the party was Lieutenant Greely. His strength was failing fast. He could not stand upright, and for some time he had not left his sleeping-bag. He lived on the food which the others brought him, but all pangs of hunger had ceased, and his wasted form and sunken eyes and swollen joints told plainly enough what was in store for him.

The two other survivors of the party, Long and Brainard,

who had been first found, were in somewhat better condition. They were men of more than ordinary endurance, and it is of course idle to speculate upon what might have been their end if relief had not been at hand. Brainard, though much weakened, had latterly been Lieutenant Greely's right-hand man. Long had been the hunter for the starving party, and it was necessary to increase his pittance of food above that of the others, so that he might have strength for his work, but the effects of his continued effort could be seen in his wasted body. His journeys had grown shorter and shorter from week to week, and in the stormy weather which prevailed during much of the time at Cape Sabine, he could not go at all.

As soon as Colwell understood the condition of affairs, he sent Chief-Engineer Lowe back to the cutter to put off to the *Bear* with Long, to report what had happened, and bring off the others with the surgeon and stimulants. Fredericks and Bierderbick presently got up and came out. Colwell gave them, as well as Greely and Elison, a little of the biscuit he had in his pocket, which they munched slowly and deliberately. Then he gave them another bit, while Norman opened one of the cans of pemmican. Scraping off a little with a knife Colwell fed them slowly by turns. It was a pitiable sight. They could not stand up and had dropped down on their knees, and held out their hands, begging for more. After they had each been fed twice, they were told that they had had enough, that they could not eat more then without danger; but their hunger had now come back with full force, and they begged piteously to be helped again, protesting that it could do them no harm. Colwell was wisely deaf to their entreaties and threw away the can.

When Greely found that he was refused he took out a can of the boiled sealskin, which had been carefully husbanded, and which he said he had a right to eat, as it was his own. This was taken away from him, but while Colwell was at work trying to raise the tent, some one got the half-emptied can of pemmican, and by the time it was discovered the party had scooped out and eaten its contents.

The weaker ones were like children, petulant, rambling and fitful in their talk, absent, and sometimes a little incoherent. While they were waiting for the return of the boat, Colwell and the ice-masters did their best to cheer them up by telling them that relief was at hand, and that the others would soon arrive. They could not realize it, and refused to believe it. So they were humored, and by way of taking up their thoughts, Colwell told them something of what had been going on in the world during their three years of exile. Curiously enough, there was much that they knew already. It turned out that among the stores from the *Proteus* were two boxes of lemons, and the fruit had been wrapped up in scraps of English newspapers—"those lemons which your dear wife put up for us," as one of them said to Colwell, in a moment of wandering fancy. The latter could only disclaim the imaginary obligation to an imaginary person, but the impression had already faded.

As Greely complained of cold, Colwell gave him his gloves, and persuaded him to go back to his sleeping-bag. This was lying under the fallen tent-cloth, which the party had been too weak or too discouraged to raise up and disengage. Where the single remaining pole supported the tent there was a clear space of perhaps six feet, just enough for a man to stand upright, but around it the canvas was

lying on the ground. The bag, from which Greely had hardly moved for a month, was found under the canvas, and by the united efforts of the three men the tent was partly raised.

Meanwhile the *Bear* had arrived and Lowe had gone off in the cutter, taking with him Sergeant Long. Long was too weak to get on board without assistance, and was lifted over the side by some of the crew and taken to a chair in the ward-room. In reply to questions about the party and their condition, Long, in a husky voice, told his story: that all were dead except Greely and five others, who were on shore in "sore distress—sore distress"; that they had had a hard winter, and "the wonder was how in God's name they had pulled through." No words can describe the pathos of this man's broken and enfeebled utterance, as he said over and over "a hard winter—a hard winter"; and the officers who were gathered about him in the ward-room felt an emotion which most of them were at little pains to conceal. The first sign of the relief expedition which had reached the camp was the sound from the steam whistle of the *Thetis*, recalling the shore parties at Payer Harbor. Lieutenant Greely, lying on the ground in his tent, had heard it, as it was borne faintly over the neck of land, but the others had not noticed it in the roaring wind, and when he told them he had heard a steamer's whistle, they thought it only the impression of his disturbed imagination. Long crawled out of the tent and bracing himself against the wind, struggled up to the ridge; but nothing could be seen but the rocky coast, and the ice-foot, and the chopping sea with the pack stretching off in the distance. It was a bitter disappointment. Long went back disheartened, but after waiting un-

easily a little while longer, he mounted the ridge a second time. Still there was nothing to be seen but the same hopeless prospect, and he was about to return again when the cutter came into view around the point above. After all these months of waiting it was hard to believe that he was not dreaming, but when he saw the coxswain wave the familiar flag, he knew that relief had come at last.

This was Long's story. While he was telling it the cutter had taken on coal and water, and supplies for the starving men on shore—condensed milk, beef extract, and stimulants. The doctor gave Long a milk punch and some beef tea, and leaving him in charge of Lieutenant Crosby, a party composed of the Commander of the Expedition, Lieutenant Emory, Ensign Reynolds, Dr. Ames, and several men from the crew, started in the cutter for the shore. The gale had made a heavy sea, and although the shore was not far off, everybody was wet through before reaching it. As the cutter approached the ice-foot Norman was seen on shore. Following his indications the party landed at the deep cove filled with ice to the westward of the camp, and from here they hurried up the ridge to the tent.

As soon as the first greetings were over, preparations were at once made to apply restoratives to the weakest of the survivors, and to give them suitable food. Soon after, the *Thetis* came in sight, and signal was made to her to send her surgeon, with stretchers and more men. In reply to this signal, Lieutenant Usher and Ensign Harlow, Chief-Engineer Melville, and Dr. Green, with a party of seamen, came ashore from the *Thetis*, and joined the others at work around the tent. The doctors, with the assistance of some of the officers and men, kindled a fire near the tent, under the lee of a



THE TENT AT CAMP CLAY.

rock, using charred bits of wood that were lying about, the remains of former fires. Over this, and over an alcohol stove which had been brought ashore, milk punch and beef extract were warmed, and given every ten minutes or so, for the next two hours, to the invalids who were lying in and about the tent.

Gradually, all the survivors were restored, though they remained still in a dazed condition. Before the rescue, all seemed to have given up hope. They had ceased to think much about anything, or even to feel much. The craving for food was almost gone, and it was not until they had had some that it came back, like a drunkard's craving for rum. As soon as they had taken a little food, they wanted to eat voraciously anything they could get. If they had had good weather they might have been much better off, but the storm, which had kept up for two days with incessant fury, had weakened them, broken their spirits. They could not go out for food, for they were too weak to stand against the wind; and their tent, which had made at least a habitation, had been wrecked the day before, and although it had fallen down almost on them, they could not raise it up. A little more and the other pole would have gone, leaving them buried in the covering, or if they had managed to crawl out, without shelter from the wind.

With most of them the rescue hardly made a revulsion of feeling. Except the commander, they took it as a matter of course. There was a little, a very little excitement, and they were perhaps more than ordinarily talkative, but in general they did not seem to rise or fall much above or below the level of ordinary good spirits. Probably of tough fibre to begin with, their year of privation and hopelessness

had blunted or deadened their recollection of the world, as they had known it, and the feelings to which the recollection gave rise. In one thing, however—in their treatment of the helpless ones in their diminished party—they appeared to the officers of the relief ships to have shown thoughtfulness and care. When Fredericks and Bierderbick took down the bottle, it was to give the best part of the last brandy they had to Connell, of whom all hope had been given up. Elison had been cared for through seven months, his companions keeping him supplied with food from their scanty stores, which they were each day less and less able to replenish.

Notwithstanding his interview with Colwell, Greely's first question, when the party from the *Bear* came up, was "whether they were not Englishmen?" and upon being told that they were his countrymen, he said, "I am so glad to see you." There was some little talk with him, and with the others of the party about their families, of whom the relief expedition had happily nothing but good news to give; for care had been taken, the last thing before sailing, to get word from the friends of all who had been at Lady Franklin Bay, and it had been learned that the nearest and dearest of all, without exception, were still alive and well. "This seems so wonderful," said Greely; and when he was told that the pictures of his wife and children were on board the *Thetis*, he added, "It is so kind and thoughtful."

All the survivors were eager to leave the place which had been their refuge for the past eight months. When Long had once got off to the ship, although he had left the tent expecting to return, he had no wish to go back, even for a moment. The only feeling among them all was a desire to

get away from the scene of their sufferings; and when in answer to their questions, they were told that the surgeon must decide when they could be moved, Greely said plainly: "It seems so long to wait."

While the doctors were applying restoratives and preparing the sick men for transfer to the ships, a look was taken at the camp and its surroundings. The plain or level space in which lay Camp Clay, as it had been named by Greely, was about two hundred yards long, running east and west, and extended back to the southward perhaps one hundred and fifty yards from the shore, but separated from it by the ridge on which Long had first been seen. On the land side it was shut off by the chain of rocky, snow-covered hills, divided by ravines filled with glaciers. Near the western end, where the cove made in, was the hut in which the party had lived during the winter, and from which they had moved only a month before. The walls of the hut were made of loose rocks filled in with moss. They were three feet thick and very solid, and the labor of building them must have cost no slight effort. The hut was twenty-five feet long and seventeen feet wide, and barely held the whole party. It was four feet high, and had been roofed in with the canvas that had been saved from the *Proteus*, stretched over a whale-boat, which had been turned bottom up and placed on the walls as a ridge-pole. This was the boat which Beebe had left at the Cape in 1882, and which, when Greely arrived, was sound except for a little hole which had been covered by a patch of lead. The hut was placed in a hollow not far from the ice foot, and in May the occupants (there were seventeen still living) were driven from it by the water from the melting snow and ice, and moved to the

tent, which was pitched on higher ground, one hundred and fifty yards away. After the hut was deserted, the boat had been taken down and broken up for fuel, and nothing was left of it but the fragments of its bow.

Fifty yards beyond the tent, on a slope that formed the eastern side of the plain, were the graves where ten of the party were buried—the two Lieutenants, Kislingbury and Lockwood, the Eskimo Christiansen, and seven others, Cross, Linn, Jewell, Ellis, Ralston, Whisler, and Israel. The grave of Sergeant Cross, who was the first to die, was marked by a row of stones surrounding it, and the next two or three also showed signs of having been made with care. But after these, the survivors growing fewer and weaker, the later graves showed less and less of preparation, until at the end there was little done besides placing on the body a thin covering of the gravelly dust that formed the only soil about the place; and from one or two a hand or foot protruded.

It is not easy to give an idea of the desolate and horrible aspect of this bleak and barren spot, as it looked to those who reached it on that memorable Sunday in June, 1884. In front lay the sea with its ice-pack stretching away to the northward, and at the back the glaciers and rocky precipices of the mountains. On one side was the slope with its rude graves, and on the other the deserted and roofless hut, with the ice-foot below it; while between them was the wrecked tent, in which lay the remnant of the expedition, half dead with cold, and hunger, and distress. Everywhere was the barren rock, except where the snow still lay deep in the hollows. There was no soil, except the sandy disintegration of the rocks themselves, and but little of that. On



THE GRAVES.

the southern slopes, here and there, were little patches of flowering moss, the only vegetation that could find support in this Arctic wilderness. At the foot of the ridge that faced the shore lay the body of Schneider, who had died four days before, and whom the others had been too weak to bury. Everywhere, around the hut and around the tent, were scattered broken cans, rude cooking utensils, and tattered clothing.

It was determined soon after the camp was reached, that the bodies of the dead should be brought back with the living to the United States. Greely remonstrated at this decision, and spoke of the desire of his men to lie where they had died, or, as he said of one of them, "in the ground consecrated by his great achievements." However reasonable might be this sentiment, it was felt that the friends of the dead would have wishes which deserved at least equal consideration, and the pains and expense which the Government had willingly borne to bring from Siberia the bodies of De Long and his companions made it clear that the relief expedition would fail in its duty if it left these other explorers in their rude graves at Cape Sabine.

As soon as the surgeons had reported that the survivors were sufficiently restored to make it safe to remove them, they were taken to the ships. Five of them, Lieutenant Greely, Sergeants Brainard and Elison, and Bierderbick and Connell, were placed upon stretchers and carried down to the ice foot of the cove, where they were put in their sleeping-bags on board the boats. Fredericks insisted that he was strong enough to walk, but such strength as he could put forth was largely due to excitement, and it was found that he needed the help of two strong seamen to support

him on the way down. Leaning on their shoulders, he followed the slow procession as it wound its way around the rocks and through the snow-filled hollows to the sea.

The gale had now increased almost to a hurricane, so that work with boats was full of danger even in crossing the short distance of a hundred yards or so to the ships. Several times the seas broke over the gunwales of the boats and nearly filled them. The survivors were got on board safely, but with difficulty,—Lieutenant Greely, with Brainard, Bierderbick, and Connell, in the *Thetis*; and Long, Fredericks, and Elison in the *Bear*. No amount of care could prevent their having a severe wetting, but fortunately it did them no harm. They were saved, and had left behind them Camp Clay and its horrors. Greely fainted after being taken below, but he was shortly revived by spirits of ammonia. His clothes were carefully cut off and heavy flannels which had been warmed were substituted for them; and after taking a teaspoonful of raw fresh beef he was made as comfortable as possible in Norman's berth in the ward-room.

Meantime Emory was carrying out the orders given him some time before to collect the property belonging to the camp and to exhume and bring off the bodies. Articles of all kinds were scattered about the tent,—clothing, sleeping-bags, note-books and diaries, guns and ammunition, empty tins, cooking utensils roughly constructed,—the débris of the winter, most of it little better than rubbish. Everything of value was first carefully collected, to be returned to the owners,—or to their representatives, for most of the owners, unhappily, lay on the ridge across the hollow. One of the seamen found a pocket-book containing a large roll of bank

bills, which the owner, for what reason it is hard to say, had carried with him to Lady Franklin Bay. Within the tent, near each sleeping-bag was found a little package of cherished valuables carefully rolled up, and addressed to friends or relatives at home. It was not alone to the dead that these belonged; the survivors, too, had already made up their little packages.

The work of taking up the bodies was one of little difficulty. It was only needed to remove the thin covering of sand from the mounds that formed the graves. Little could be seen of the condition of the bodies, as they had been clothed, and all that appeared was intact. In preparing them subsequently, it was found that six, those of Lieutenant Kislingbury, and of Jewell, Ralston, Henry, Whisler, and Ellis, had been cut, and the flesh removed. Care was taken that there should be no mistake about their identity, and as each one was taken up, it was given a number corresponding with a number on a drawing made of the burial-ground. The names were afterwards designated by Brainard, who had been in charge of the burials, so that the identification was complete.

The bodies were carefully wrapped in blankets and carried from the graves to the boats. The shrivelled form of poor Schneider, who had perished only four days before, was brought up from the edge of the cove, where it lay covered with a blanket, and placed with the others. It was hard work to bring them safely off to the *Thetis*, which was to receive them. The ships could only with difficulty be kept head to wind, and the frequent squalls knocked them off, broadside to, when their rail would be driven almost into the water. The boats in coming off were nearly swamped,

and several times they were in danger of losing their freight, if not of sinking with it. As one of them came alongside the *Thetis*, two of the bodies were carried out by the swash of the sea, but they were recovered by one of the seamen before they could sink.

It was near midnight, and the last boat was about to return to the shore for the few who had been left there, when Colwell strolled off with Ash, the ice-master, to take a look at the stone hut. The same confused heaps of clothes and rubbish were to be found there that they had seen about the tent. Among the clothes Colwell recognized his uniform coat, which had somehow or other found its way ashore after the *Proteus* wreck. Looking out from the side of the hut to the ice-foot, his attention was fixed by a dark object outlined on the white snow. Following a path which led to it from where he stood, Colwell found the mutilated remains of a man's body. It was afterwards identified from a bullet-hole as that of Private Henry, who had been executed on the 6th of June. Wrapping it in a blanket, Colwell carried it to the landing-place, where a seaman took the bundle on his shoulder. Presently the boat came off, and all who had remained on shore were taken on board the *Bear*.

The ships now steamed back to Payer Harbor, where they lay until the next morning to give the men a little rest after the labor and excitement of the past fifteen hours. At eleven o'clock on the forenoon of the 23d, Lieutenant Emory was directed to return with the *Bear* to the wreck camp. Sebree, Melville, and a number of men from the *Thetis* were detailed to go with him, to make another search, more extended than that of the day before, and to include the

coast from the ice limit, half a mile west of the camp, up to Cape Sabine. Two parties were landed, in charge of Sebree and Crosby. The search lasted several hours, and added nothing of importance to that already made, but everything was brought off, no matter how valueless or insignificant. During the *Bear's* absence the tin boxes containing Greely's scientific records and the standard pendulum with its long narrow case, which had been set up on end in the cairn, were brought to the *Thetis* from Stalknecht Island, where Harlow had discovered them.

At 5 P.M. the *Bear* returned to Payer Harbor. The wind had meantime slackened, and the ice in Kane Sea was moving rapidly to the southward, so that as the *Bear* came steaming along it closed up just astern of her the narrow passage through which the vessels had passed and repassed around Cape Sabine, and which had only opened at their arrival. So closely was the *Bear* followed by the incoming pack that she barely escaped the crush of ice off the Cape.

CHAPTER XIII.

CAPE SABINE TO DISKO.

AT four o'clock on the afternoon of June 23d, the work of the relief squadron having been accomplished, and all that was left of the Lady Franklin Bay Expedition having been found and taken on board, the *Thetis* and the *Bear*, driven out by the ice, left Payer Harbor and started on their return voyage. It was perhaps with some little feeling of regret that there was not an opportunity even to attempt the passage of Kane Sea and Kennedy Channel: for there is always the enticing possibility of success, and it does not often happen that an Arctic expedition finds itself so well equipped, and certainly none had ever been so far north as Cape Sabine by the 23d of June, on its first season. The best prospect of success in reaching a very high latitude, apart from the chance of just happening upon an exceptional and extraordinary condition of the ice and water, is to be found in going up early and watching for an opportunity to make a dash in the first summer. If the conditions for advance, either by ice or by water, are highly unfavorable, it would seem to be better to return to the south and try another season, rather than make the attempt with a crew exhausted by an Arctic winter.

The ships reached Littleton Island at 8 P.M., and transferred to the *Bear* five of the bodies of the dead explorers, in addition to the one—that of Henry—already on board of that vessel, with instructions to prepare them for transporta-

tion in alcohol. These preparations were made on board the *Thetis* by Dr. Green, Chief-Engineer Melville, and Ensign Harlow, and on board the *Bear* by Dr. Ames, Lieutenant Crosby, and Lieutenant Colwell. The work was done on the forecastle, across which a sail was rigged as a curtain. During the process of preparing the bodies, they were examined and fully identified. Some of the dead could be recognized by the aid of the photograph of the Lady Franklin Bay Expedition, which had been taken before they started, a copy of which was on board the *Bear*. The others were known by some characteristic mark or peculiarity, so that the identification in the case of all of them became a matter of absolute certainty.

Of the surviving members of the expedition, the three who were in the best condition—Brainard, Fredericks, and Long—began already to show signs of improvement, and it was clear that their recovery was only a question of time, and a short time at that. Of the others, the hospital steward, Bierderbick, was also doing well, though suffering from rheumatism. With Lieutenant Greely and Private Connell the effect of exposure and suffering had gone so far that for some time their lives were trembling in the balance, and they were only brought around by the skill and close watchfulness of the surgeons. For poor Elison the medical officers had grave apprehensions. As soon as he had healthful food, the circulation of blood would give new life to the injured parts, and inflammation would doubtless set in. If his strength could first be re-established, amputation might save his life; but it was feared from the first that his chances were slight.

At Littleton Island, where the ships passed the night,

game was abundant and the shooting fine. If it had been necessary thousands of eider ducks and brant geese could have been secured. The former, when dressed for the table, weighs about five pounds, and the latter about six or seven. As the birds in the high latitudes are covered with a down which is tedious to pluck, and the skin has a fishy taste, they are generally skinned. Nothing can be found in these regions more delicious to the taste than the plump breasts of these birds. McGary Island appears to be the haunt most preferred by them; thousands of them congregate on its sunny southern side, where their nests are made from down picked from their own breasts. The eggs of the duck are about as large as those of the Muscovy duck, and make excellent omelets. The shell is bluish, mottled with dark brown spots, and thicker and stronger than that of the domestic duck.

As the season is short, the operation of hatching is quickly finished; the ducklings as soon as they break from the shell take to the water, and with their mothers begin to paddle south with increasing speed as they grow stronger. The same migratory instinct is found in all the birds hatched in these latitudes.

The fresh beef remaining on board from the supply received at St. John's was reserved for the invalids, but the quantity was not large, and as the rapidity of their recovery depended somewhat upon the amount of fresh food that could be given them, the opportunity was taken to shoot enough game to last until the ships could reach the settlements on the Greenland coast. Guns and ammunition were served out to all who cared for the sport, and during the whole night the reports could be heard among the hills

of the islands. It was a continuous fusillade. Great numbers of birds were bagged and scores of eggs were brought in. The shooting was somewhat promiscuous, and was sometimes carried on without much regard to other sportsmen in the line of shot, but fortunately no accident occurred. The amount of ammunition expended was nearly equal in weight to the game taken. It was amusing to watch the surprise of the sailors when they missed easy shots. Some of them would make an examination of the gun, as if it was responsible for the failure. Others were confident that the duck had carried away the entire load in his back. The sport was thoroughly enjoyed all the same, and though many of the amateur sportsmen came back empty-handed, the two ships were supplied with all the game that they could use. The *Bear* had four hundred ducks hanging that morning in the rigging.

The ships left Littleton Island at 6.30 A.M. on June 24th, after depositing a record for the *Alert* in the Nares cairn, announcing the result of the expedition, and directing her to return to Upernivik or Disko, where the other vessels would await her. The *Thetis* got under way first, having been moored to a berg. While the *Bear* was getting up her anchor, an oomiak and a kayak came alongside, filled with natives. The oomiak is an open flat-bottomed boat, made of skins, and large enough to hold several persons, while the kayak is a canoe only large enough for one man. The oomiak was pulled by seven Eskimo, men and women. One of the women was tattooed, which showed that she came from the western side of the Bay, probably from the neighborhood of Pond's Inlet. Some of the others may have belonged to Etah. They had seen the ships when the latter

came up two days before, but had been unable to reach them on account of the gale.

The women of the party were fine-looking and well dressed, and as usual brought off a number of walrus teeth and narwhal horns to exchange for provisions. As the spring advances and the ice clears out, the Eskimo are obliged to move north to follow the seal and walrus and to obtain birds and eggs on the breeding grounds about Cape Ohlsen and Littleton Island. This appears to be the northern limit of the migrations of the natives. Here they take the birds in great numbers, and these, with seal and walrus meat, constitute their winter fare. Undoubtedly these people had been about Littleton Island for months, and the Etah Eskimo had been there during the whole of the past winter.

An open season in the Arctic, though coveted by the explorer, is always dreaded by the Eskimo. It increases the difficulty of capturing seals and walrus, and often obliges them to go to great distances to procure the meat and oil needed for their long winters. Cold weather and exposure seem to have no terrors for them, but when the temperature rises above the freezing point they suffer with heat.

Leaving Littleton Island, the *Thetis* and *Bear* steamed to the entrance of Foulke Fiord, which was frozen solid. Here they remained until driven southward by the ice floes moving down Smith Sound from Kane's Sea. The *Bear* was directed in case of separation to rendezvous at Upernivik. On the way to Northumberland Island the same enormous icebergs, in great numbers, were found as on the way up, mile upon mile of them lying closely together. The close pack was met again late in the evening, and towards midnight the *Thetis* anchored to a floe near Hakluyt Island.

The *Bear* was caught in the pack in mid-channel, and after drifting with it for a time, at half-past two in the morning she worked in and made fast by the *Thetis*.

Early on the 25th the ice opened in small leads and the ships worked around to the southwest side of Hakluyt Island. After another delay they succeeded during the afternoon in ramming their way past Northumberland Island. No leads could be found to the southward across Whale Sound, and the ships were moored to the best place they could find on the edge of the floe, although the position might have been unsafe if the ice had set in towards the shore. In the evening the ice was loosened by a turn of the tide, and after close and anxious watching, open water was discovered six miles away towards Cape Parry. No time was to be lost, and by dint of heavy ramming the barrier was crossed, and the ships arrived at Cape Parry soon after ten o'clock. Lieutenant Lemly visited the cairn made on the passage up, and left a new record for Commander Coffin, bringing off the old records.

As soon as Lemly returned the expedition started again on its way south, and steamed through leads and loose ice towards Wolstenholme Island. Soon after midnight, on the morning of the 26th, five steamers were sighted ahead. The relief ships came up with them at three o'clock, and found that they were all whalers, of which three, the *Narwhal*, *Cornwallis*, and *Nova Zembla*, were among those left behind at the Duck Islands, while the two others, the *Esquimaux* and *Jan Maen*, had joined the belated fleet in Melville Bay. The point where they now were, 100 miles distant from Cape Sabine, was the most northerly that they had attained, and they had reached it six days after the

Thetis. The *Esquimaux*, which had left Upernivik on the 11th, thirteen days after the relief ships, brought letters from Ensign Chambers on board the *Loch Garry*. At the date of writing he was still waiting for the *Alert*. The relief ships received letters from the whalers, to be mailed on arrival at St. John's.

The news of the rescue was given to the whalers, so that they should not be tempted farther north, and the officers of the relief ships bade them a final good-bye. The Dundee sailors were parted from with regret. They had shown a cordial and friendly spirit in their rivalry on the common errand, and they had generously given such aid as they could to the relief expedition on the way up. Had an accident befallen the expedition some of them would doubtless have made their way to Cape Sabine, although too late to have rescued all of those who still survived on the Sunday when the *Thetis* and the *Bear* crossed over to the Cape.

On the forenoon of June 26th, both ships were anchored to a sheet of ice near Saunders Island. The *Triune* and *Polynia*, the last of the Dundee fleet, were sighted near the Island. The relief ships remained here all day, as the wind blew strong from the north, and the barometer had fallen to 29.16. Nothing was now to be gained by hurrying, and it was the best plan to keep a secure position as long as the indications of bad weather lasted.

As the whalers had been at Saunders Island they had doubtless supplied the natives with everything that the latter needed, so that only a few came off with their sleds to the ships on the second visit. One of the dog teams contained several fine animals which the officers wanted, and trading was actively begun, various small articles being used

for barter. Among the objects prized by the Eskimo were needles, food, buttons, which are used principally as ornaments by the women, and clothing, which has a peculiar value in that region. Ensign Harlow was successful in making a trade and secured a fine-looking, handsomely marked animal, which had, however, an unusually surly disposition. He refused to associate with the other dogs, or to partake of the same food. While all the others were skylarking about the decks or on the ice, the new dog was content to mope about the rigging near the mainmast, where he would snarl at every kindly interference. He seemed to be afraid to eat, and he never dared to bite. An Eskimo dog with no appetite and no bite in him was so much of a curiosity in those regions, where everything is hungry and where everything will bite, that all understanding of his nature was baffled. Harlow strove hard to make him take to the other dogs, but in vain. Only upon one occasion did he come out of his torpor, and that was fatal to him. He attempted to walk on the main rail amidships, but fell overboard and was drowned.

Notwithstanding the barometer, the weather continued fine, and in the evening an advance was made towards Conical Rock. The ice was loose but heavy, and towards midnight a shift of wind to the southwest packed it tightly, and both ships were anchored to icebergs. While the *Thetis* was being secured in a strong tideway, she came into collision with a berg, carrying away her head-booms. Two or three hours later the berg to which she was moored pivoted around, exposing the ship to the heavy floes that were driven by the wind and tide up lower Smith Sound. As the *Bear's* anchorage appeared steadier, the *Thetis* steamed over and sent her a line to hold on by; but the freshening wind soon

slipped the *Bear's* ice anchors, and the ships then steamed into the soft floe ice, where they remained during the rest of the night.

On the morning of the 27th a lead opened towards Conical Rock. While the ships were steaming through it, Hans, the Eskimo dog-driver of the *Bear*, jumped over the rail, and starting at a run over the ice floes, made for the shore two miles away at the Petowik Glacier. It was afterwards found that his mind was disordered. The ship followed in among the leads to head him off, and at a favorable moment two of the seamen went after him. After an exciting chase of half an hour he was captured and brought back to the ship. During the chase one of the men fell through the ice, and got a ducking, but his companion managed to haul him out.

Shortly after this adventure, the ships reached Conical Rock, where they were secured to grounded icebergs, and a record was left for Commander Coffin in the cairn built on the way north. After a two hours' delay, they were again under way, forcing a passage by ramming through heavy bars, and in and out of tortuous leads, until they were nearly abreast of Cape York, when a dense fog set in, with snow. The ice-pack off Cape York compelled a detour to the westward of eighteen miles, after which the ships slowly and with difficulty worked their way back into open water near the Bushman Islands, east of Cape York. It was next to impossible to distinguish leads in the fog and driving snow, and at one time the *Thetis* came up against the land ice in a bight, and butting it at full speed ran up half a length on the ice. It became apparent that nothing was to be gained by hurrying under such circumstances, and the



CONICAL ROCK WITH CAIRN ON THE SUMMIT.

ships were therefore anchored to the land ice, to wait for clearing weather.

During the night of June 27th, the wind though very light hauled to the eastward, and by the morning of the 28th it had cleared sufficiently to show open water near the grounded McClintock icebergs, thirty miles to the southeast of Cape York. For four hours, the ships were able to make good progress in this direction, but at one o'clock in the afternoon, a bar of ice made it necessary to secure them to the edge of the pack and wait. Here they remained at anchor between two large bergs.

On this day, the condition of Sergeant Elison began to give great anxiety. He was delirious most of the time, and he seemed to be threatened with congestion of the brain. The two surgeons were in frequent consultation, but his symptoms grew steadily worse during the next week.

The others were all on the mend. Even Lieutenant Greely and Connell, though still very weak, and with a morbid appetite, had begun to sleep naturally; their muscles were filling out, their voices were stronger, and their disturbed nerves had become more tranquil. On the 28th Greely was dressed for the first time and sat up for two hours.

On the morning of the 29th the ice bar which had delayed the ships began to loosen, and they got under way and passed through it. They were now driven eastward under full speed in order to gain every inch, for by this time it was evident that without a vigorous effort, they might be delayed here as long on the return as on the way up. The advancing season helped somewhat, but the Bay was still blocked with ice, contrary to the usual conditions at this time

of the year, and bade fair to remain so for some time. During a part of the afternoon the ships had a clear open lead, and went along smoothly; but at other times it was necessary to ram continually under a full head of steam through the broad sheets in order to pass along the land ice from one water space to another. The success of thus vigorously attacking the pack justified the effort, for before midnight, the expedition had gained sixty miles to the eastward. A final attempt at ramming brought the *Thetis* solidly up against the pack as if she had butted a wall, knocking down everybody on deck, and nearly throwing the Captain out of the crow's-nest. The ship rebounded twenty feet from the shock. After this, the effort was abandoned for the night, and the ships were moored to the land ice in a narrow ice dock or canal of open water left between the closing floes, with the coast in plain sight around the curve of the Bay.

Early on the morning of the next day, the 30th, the wind hauling to the eastward, the ships were again under way and steamed through an open lead for five or six miles, passing many large icebergs. Again they met heavy ice, from three to five feet thick, and they continued ramming their way from lead to lead, through the waste of floes and broken bergs, until ten o'clock in the forenoon. At this point the *Thetis* was beset. While trying to free herself by going astern to gain room to charge the large floes ahead, she backed into a smaller floe and twisted off her rudder head. It was the second injury to the rudder, but it was temporarily repaired by Lieutenant Sebree, and the ships continued on their way. The Devil's Thumb and Sugar Loaf Mountain were now in sight, prominent points on the Greenland coast to the north of the Duck Islands, and the work of crossing Melville Bay was nearly over.

At four o'clock on the afternoon of the 30th, the *Alert* and *Loch Garry* were discovered beset in the ice-pack. The *Thetis* and *Bear* immediately broke their way through and released them. The last mail from home was brought by the *Alert*. The two ships had left Upernivik on the 19th of June, and with much difficulty in passing through heavy ice, succeeded in making the Berry Islands, where all the leads closed. Here they were anchored to the ice to await an opening. On the 24th a gale sprang up which made it necessary to cut an ice dock for the *Loch Garry*. This was done in the way suggested by Commander Markham. The ice was four feet thick, and two hours finished the work and the docking of the ships. Next day the gale ceased, and the ships worked to the northward, following the inshore leads past Cape Shackleton and the Duck Islands, where they were again stopped by solid ice. Owing to the smaller engine power of the *Alert*, she was obliged to keep out of the ice when in danger of being beset, or resort to docks to avoid nips, or to torpedoes to force a lead,—difficulties which the *Thetis* and *Bear*, with their greater power, usually overcame by ramming. Moreover, the *Loch Garry*, being nearly helpless in the ice, was a constant source of difficulty and delay. Frequently the *Alert*, after getting successfully through a lead, was compelled to return and extricate the collier, as the latter was caught by the swiftly closing floes. During the 26th and 27th, the *Alert* worked continuously, day and night, to gain only eight miles. When found, she was off the Devil's Thumb, in latitude $74^{\circ} 30' N.$, and within the dangerous navigation of Melville Bay.

The four vessels now started on their way southward, but the leads closing under the influence of a flood tide and a

southerly wind, and a dense fog setting in, they were anchored for the night to the floes. Next day, July 1st, the wind was still from the south, and the ships got under way, the *Thetis* leading, followed by the *Bear*, *Alert*, and *Loch Garry* in line astern, to take an inshore lead, which appeared to extend to the Duck Islands. Numbers of icebergs were lying in their way, and the passage through the ice was difficult and dangerous. At eight o'clock the *Loch Garry* stuck fast in a floe, and the *Bear* went to her assistance and got her out, after which the collier took the second place in the line. The fog now settling again, speed was reduced to two knots an hour, and fog signals were sounded frequently to indicate position. The ships felt their way slowly and cautiously up to the floe-edge and anchored.

In the afternoon the fog lifted and the fleet was again under way, the *Thetis* and *Bear* breaking leads for the other ships. As they approached the Duck Islands, the *Alert* was caught by the floes, which had closed up after the passage of the advance ships, and the latter were obliged to return and release her. Moving on from the Duck Islands, which had been the scene of the long detention of the *Thetis* and *Bear* on the way up, the fleet passed Cape Shackleton, Horse Head, and Tassuisak. There was plenty of floe ice, but its character had completely changed in the past four weeks; the floe pieces were smaller and less compact, and the ice showed none of its former hardness, yielding readily to ramming.

It was on the morning of this day that Lieutenant Greely, to the delight of every one on board, first made his appearance on the deck of the *Thetis*. Before the fog had set in, the day was clear and bright, the sky blue, and the sun

shining. Greely had waked up in the morning after a refreshing sleep, feeling better than at any time since the rescue. He enjoyed his breakfast of oatmeal and broiled beefsteak, and seemed to have lost his perpetual craving for more. After breakfast he was helped up on deck, and sat in the air, well bundled up, for an hour. From this time on, with the exception of one or two little set-backs, he was steadily gaining. He began to walk a little without assistance, and was encouraged to take such exercise in the open air as he could on board the ship.

By this time, as most of the survivors had recovered their strength, the officers of the relief ships had learned the wonderful story of the expedition. The history of the station at Fort Conger had been briefly stated in the record left on Brevoort Island,—the two years passed at Discovery Harbor, and the successful work of exploration, which had resulted in the completion of an accurate map of the whole interior of Grinnell Land, and of a long stretch of the north Greenland shore. The record stopped with the arrival of the expedition at Cape Sabine, and the tragic story of the winter's sufferings at Camp Clay could only be learned by the recital of the survivors during the passage across the Bay. The brief outline of it may be given here, as the relief officers heard it from the actors themselves.

Soon after the landing of the party from the ice floe at Baird Inlet, Lieutenant Greely sent Sergeant Rice and Jens, one of his Eskimo, to Cape Sabine, to find out what stores had been placed there. Rice accomplished the journey with difficulty, although the distance was not great, perhaps fifteen miles in a straight line; but it was found that Cape

Sabine was on an island, and that a strait—now called Rice's Strait from its discoverer—extended from the head of Rosse Bay to Buchanan Sound. This strait was not yet frozen over, and cut Rice off from the Cape, compelling a long detour to the westward. He returned on the 9th of October, and reported to Lieutenant Greely the news of the wreck of the *Proteus*, and the state of the three supply depots as far as he could ascertain it. Roughly speaking, there were in the three caches 1,000 rations, or forty days' full supply for the party. Greely did not allow himself to be discouraged at the prospect, but determined to move his command to the neighborhood of the depots, and the 21st of October found him established at Camp Clay.

The hut, which has been already described, was built on low ground not far from the ice-foot, at a point sheltered by the ridges from the northerly and southerly gales. On the ground were spread clothing, buffalo coats, and sleeping-bags. The hut was barely large enough for the whole party to squeeze into it, when lying at full length, and the air-space gave an allowance of only seventy cubic feet to each man. In this they passed the winter.

On the 1st of November, Lieutenant Greely took an account of his stock of provisions, and it was determined to divide them so that they would last until March 1st, putting a little aside from time to time, so that at the end they would still have ten days' supplies left with which to start on the proposed journey to Littleton Island. It was intended to make this journey whenever the intervening strait was frozen over. Smith Sound, however, remained open, in part at least, during the whole winter, and none of the party ever crossed. The whale-boat left by Beebe at

the Cape was used as the ridge-pole of the winter hut, and another whale-boat, which had been abandoned on the way down, and which had drifted ashore from Kane Sea, was consumed for fuel.

The provisions found at the Cape were mostly in good condition, except those in the Nares cache, which Lieutenant Greely stated as having in great part deteriorated. The daily allowance established early in November, by which forty days' rations were to be made to last four months, was made up as follows:— $4\frac{1}{2}$ ounces of meat and blubber, $6\frac{1}{2}$ ounces of bread and dog biscuit, $1\frac{2}{5}$ ounces of canned vegetables and rice, $\frac{3}{4}$ of an ounce of butter and lard, $\frac{9}{10}$ of an ounce of soup and beef-extract, and 1 ounce of berries, pickles, raisins, and milk, making altogether 14.88 ounces of food a day for each man. The food was only warmed, as there was not fuel enough to cook it. The idea upon which the party based their mode of life was to approach as nearly as possible to a condition of hibernating, and only the cooks and hunters made much exertion. These received a double ration. The others generally remained in their sleeping-bags, and slept sixteen or eighteen hours out of the twenty-four.

Early in November, a party, composed of Sergeant Rice, Elison, Linn, and Fredericks, was sent to Cape Isabella to obtain the 150 pounds of meat left there by Nares. The temperature was now thirty degrees below zero, and the party was without shelter. Their sufferings from the cold and exposure were such that the only wonder is that any of them returned alive. Struggling on with a courage and perseverance that were nothing less than heroic, they reached the Cape and secured the meat; but on the return they were

compelled to abandon it at Baird Inlet. At Rosse Bay, Elison became helpless, his hands and feet being frozen. Rice then set out alone to the camp to get assistance, the others remaining with Elison in his sleeping-bag, and so keeping him alive. Relief parties were at once sent out, and the sufferers were brought back to the hut, but Elison lost his feet and a part of his hands. In this condition he remained during the winter and spring, cared for by his companions, and thus he was found when the party was rescued.

A little while before this, Long, who was the best shot of the party, had been sent with the two Eskimo to a point a little to the westward of the camp, near Rice's Strait, to look out for game. They took a tent with them, and remained for several days, but they only succeeded in catching two seals. During the rest of the winter, hunting was impossible on account of the cold and the darkness. A few foxes were killed near the camp, and in the spring a bear was shot which yielded perhaps three hundred pounds of meat. These with two or three score of dovekies,—a bird weighing about a pound,—were all the supplies of game which could be secured at Cape Sabine.

During the winter every one did his best to keep up the spirits of the party. There was not fuel enough to make any artificial heat in the hut, and the temperature was generally from five to ten degrees above zero. In March the whole detachment came very near dying from asphyxia. Some one had lighted the alcohol stove to cook a meal, but had forgotten to remove the cloth that covered the smoke-hole in the roof. The oxygen of the air in the hut was quickly exhausted, and before anything could be done all

the inmates were attacked with faintness and dizziness, and it was only with great difficulty that they stumbled out into the open air, many of them falling unconscious to the ground as soon as they got out, although the temperature was 46° below zero. The after-effects of this accident were felt for a long time.

During March another hunting expedition was undertaken by Long and his Eskimo, but without success. Up to this time, wonderfully enough, considering the circumstances, only one death had occurred, that of Sergeant Cross, who died of scurvy on Jan. 18th. In April, the effects of the winter's privations began to tell fatally, and six of the party died during the month. Of these, Lieutenant Lockwood, Sergeants Linn and Jewell, and the Eskimo Christiansen died at the camp. Sergeant Rice perished in an attempt to obtain the English meat which had been left at Baird Inlet in the preceding November. Fredericks, who accompanied him on the journey, returned alone, after burying his comrade in the ice. The meat could not be found. The last death during the month was that of Jens Edward, the second Eskimo, who was drowned while hunting for seals in his kayak.

By May the last vestige of the regular rations was exhausted, and the survivors of the party kept themselves alive for a time on sand-shrimps and moss. The shrimp is a minute shell-fish, a quarter of an inch long, about four-fifths of its substance being shell, and one-fifth meat. The allowance of shrimps was from one to three ounces a day, according to the catch. A little sustenance was got out of boiled reindeer moss, and as a last resort, the sealskin linings of the sleeping-bags were cut into strips and boiled, making a kind of jelly.

Early in May, the water invaded the hut, making it uninhabitable. The tent was then pitched on an elevation, and the exhausted party removed to it. During May and June eleven deaths occurred, the last on the 18th, four days before the relief ships arrived; and had these been delayed but a few hours, the death-roll would have had other names. Of the suffering and horror of those last three weeks, it is needless here to speak; and the story, if it is told at all, must be told by the survivors themselves.

It was only gradually, and with frequent interruptions, during the passage from Littleton Island to Upernivik, that the experience of the explorers at Cape Sabine was learned by the officers of the relief ships. At first, they were not encouraged to talk, but as they gained strength from day to day, the reminiscences of those whose health was best, shaped themselves into a connected narrative, until by the time that the *Alert* was met, every one had become familiar with the events of that terrible winter.

Early on the morning of July 2d, the fleet reached the neighborhood of the Berry Islands, and the dangerous waters in which the *Thetis* and *Bear* had already had a disagreeable experience. The ice, jammed in against the land, left only a narrow lane off the islands filled with sunken rocks, none of which are marked on the small-scale charts of the Greenland coast. An occasional bump under such circumstances was to be expected. At three o'clock in the morning, the *Thetis* was leading, and the others keeping in her wake, the speed of the ships having been reduced to two knots. Although the *Bear* was following the *Thetis*

closely, the tide set her in a little, and she had the misfortune to run upon a rock, which the *Thetis* by good luck must have barely grazed. After hanging for two hours, the *Bear* was pulled off by her consorts without any injury.

Half an hour later, upon reaching the Brown Islands, 18 miles north of Upernivik, signal was made to the *Alert* to proceed to Disko with the *Loch Garry* under convoy, and to await there the arrival of the *Thetis* and the *Bear*. The latter put in at Upernivik, arriving at 11 A.M., July 2d, and anchored in the outer harbor, after a passage of less than five days from Cape York.

The approach of the squadron had been seen in the early morning from Upernivik, and the village was alive with excitement. It was conjectured that its early return had a decisive meaning. Governor Elborg was too restless to wait for the arrival of the ships in port after he had seen them heading in, and pulled off three miles in his boat to meet them and learn the news. Reaching the deck, he rushed up to the commander, exclaiming, "Mein Gott, Captain, what news have you brought?" The story of the expedition and the rescue aroused the good fellow's warmest sympathy. He wanted to see Lieutenant Greely, and was eager to do what he could for him. After a brief interview, he returned on deck, and told the story to his Eskimo boatmen.

As the ships came up the harbor, all the inhabitants of the settlement,—there were less than two hundred of them,—could be seen standing on the hills and about the beach, their dark forms plainly outlined above the rocks. As soon as the vessels were secured, the Governor went ashore, and the natives gathered eagerly about him to learn the news. Great was their consternation when they learned that their coun-

trymen, Jens and Christiansen, the two Eskimo from Proven, were among the lost. The two men had been among the foremost of the native population which centered at Upernivik; and at no place was the disaster felt more keenly than at the little Greenland village, whose people were the first to receive the news that was later to shock the civilized world.

The ships remained for two days at Upernivik. The Governor was unceasing in his kindness. The Danish colors of the settlement were kept at half-mast as long as the ships were there. At Elborg's suggestion the body of Christiansen was retained on board, to be carried to Godhavn for burial. The two Eskimo dog-drivers, Hans and Nicolai, were discharged, and the dogs from the *Thetis* were landed, seven of them as a present to the Governor.

As the *Bear* was most in need of coal, the sixty tons landed by the *Loch Garry* were taken on board in a lighter, which came near swamping during the operation. Elborg had been promoted to be Governor of Christianshaab, one of the more southerly settlements, and at his request, the whale-boat which Colwell had given him the year before, was taken down to Disko by the *Bear*, to be forwarded to its destination.

During their stay, the relief ships had a little experience of the difficulties of lying in Upernivik harbor. A little before noon, on the day that they arrived, the wind blew up fresh from the southwest, with stiff squalls, driving both ships from their moorings, and great difficulty was found in securing them in the deep water and bad anchorage of the open roadstead, where the holding ground was mostly smooth rock. Danish Harbor was inaccessible, being filled with icebergs. During the gale the *Thetis* was secured to a

grounded berg, which later in the day capsized. The *Bear* was driven from her moorings and exposed to imminent danger, from which she was only extricated by good judgment and seamanship.

In the outer harbor of the port there is a ridge with nine or ten fathoms of water upon it, shelving both ways into very deep water. As the wind was from the southwest, Emory intended to anchor on its western side, so that if his ship should drag it would be up hill. During a violent squall about noon, the *Bear's* anchor started and soon passed over this ridge into deep water, with sixty fathoms of chain up and down. The ship drove rapidly towards the rocky cliffs to leeward, and the promptest action was required. The danger was imminent, but at the proper moment the *Bear's* engine was backed and the ship's stern turned to windward and away from the cliff. The manœuvre was most admirable and seamanlike, for as the ship's head fell off to leeward she just cleared the rocks upon which a few moments before she had been driving. The *Bear* then got her anchor and steered for a small island on the south side of the port, where she lay in security. Later in the day the *Thetis* was driven from her anchorage, and was forced to seek shelter under the same island on the *Bear's* port bow. Dragging here, she fouled the *Bear's* chain, and for a moment it seemed that both ships must be driven together. The *Bear* veered chain while the *Thetis* was started ahead at full steam, with a starboard helm, clearing the *Bear's* head-booms by a yard or two. This manœuvre cost the *Thetis* an anchor, but it prevented a smash-up.

On the afternoon of July 3d, after bidding the excellent Governor a last good-bye, the *Thetis* and the *Bear* got under

way for Disko. As they stood out of the harbor, Elborg fired a salute of six guns from the little fortification at the settlement. As there were no guns on board the ships, the salute was returned by dipping flags and sounding the steam whistles. Soon after clearing the harbor, the *Thetis* struck a rock, but moved over it without injury.

The ships had now passed from the region of dangerous ice. On the way south they met occasional floes, and passed numbers of imbedded icebergs, but these were of slight importance after all that had been gone through in Melville Bay, and they were avoided in the clear weather with little difficulty. After crossing the mouth of the Waigat, the wind, which had been northerly, shifted to the southwest. The pack-ice was finally left behind, and the ships found themselves in a moderate sea.

During the 4th of July the *Thetis* and *Bear* continued on their way southward without interruption. At noon the ships were dressed with flags in honor of the day. The ensign was hoisted at the peak and the fore royal masthead, the pennant at the main, the flag of the American Yacht Club at the mizzen, and the Jack forward. At half-past three on the morning of the 5th, the ships arrived at Disko, where they found the *Alert* and *Loch Garry* awaiting them.

As the other ships had reached Disko two days before, the result of the expedition had been made known, but a keen desire was aroused to hear from the *Thetis* and the *Bear* the actual circumstances of the rescue, and to see the survivors of the expedition. As soon, therefore, as the relief ships had anchored in the shoaler water of the inner harbor, from which the ice had now entirely passed away, the inspector and the governor came on board to welcome them



PASSING AN ICEBERG OFF THE WAIGAT.

and to offer their sympathy to Greely and his companions. After the inspector's visit, the natives came off to the two ships to hear the story from the Eskimo interpreter.

A great change had taken place about Godhavn during the absence of the expedition. The ice and snow had disappeared; grass covered the soil between the rocks, and wild flowers were opening here and there under the genial influence of the summer sunshine. The officers occupied their spare time in fishing, and large numbers of rock cod were caught, a fish similar to that found about the rocky shores of Cape Ann, in Massachusetts. The fish gave an additional variety to the somewhat monotonous bill of fare of the invalids.

Most of the members of the party were now so much improved in health that they were able to move about the ship, and do very much what they liked. Elison's condition, however, had grown steadily worse from day to day, and it was now most critical. A consultation was held by the surgeons of the three ships, and it was determined to amputate his feet as the only chance of life left to the sufferer. The operation was performed on the 5th, immediately after the arrival of the *Bear* at Disko. His system, however, had become so depleted by exposure and want of food during the eight months, since his journey to Cape Isabella, that he had no strength left to fall back upon. In spite of the skill of the surgeons, he grew rapidly worse, and on the third day after the amputation, at 3.30 A.M., July 8th, he passed away quietly and without apparent suffering.

In accordance with the wish of the Inspector of North Greenland, it was decided that the body of Christiansen should be buried at Disko. Preparations were accordingly

made, and on the afternoon of July 7th, the body was landed from the *Bear*. There were two boats from the *Bear*, one from the *Thetis*, and one from the *Alert*. They set out from the *Bear* in line ahead, with their flags at half-mast; the first boat carrying the body, which had been placed in a coffin covered with dark blue cloth, and draped with the red, white, and blue of the national flag. As the boats left the *Bear*, the colors were half-masted on all the ships, and immediately after, those on the flagstaff of the settlement, while minute-guns were fired from the little battery. The boats were met at the landing by the Inspector and the Governor, and the body was taken upon the shoulders of six seamen, and followed by the Greenland officials and by twenty-five officers and men from the squadron. The minute-guns continued firing as the funeral procession wound its way up the hill to the little chapel of Disko. At the door of the chapel the Inspector received the body, and addressed it with a few words of singular simplicity and pathos. Turning to the dead man, he said in English:

“As head of the Danish Government in North Greenland, I have received your body, and in the name of all the Danish and Greenland people I will say you farewell! Your last master, Lieutenant Greely, has said you were a good and a brave man; he has promised me to send for your tomb a monument as a sign for your countrymen that he will never forget your service nor will he ever forget the poor Eskimo from Upernivik, who has lived and suffered as a comrade with the United States friends. We will all follow you to your last resting-place, and beg God to save your soul and give consolation to your poor family.”

By this time the chapel was filled with men, women, and children, all of whom, notwithstanding their stolid Eskimo temperament, seemed to be overcome with grief, which was all the more singular as Christiansen was not a Disko man,

and none of the people about Godhavn had ever seen him. The services began with a hymn, which was sung by Madame Thygussen, the native wife of a deceased Danish official, after which the minister, also an Eskimo, delivered a funeral address in the native language. The quaintness and simple beauty of this funeral discourse make it well worthy of reproduction here.* The pastor said :

“What man is he that liveth and shall not see death ? Shall he deliver his soul from the hand of the grave ?

“Thus questioned David as he prayed to the Lord his Creator and Benefactor for help, and we also who this day behold death pass near us must question in like manner ; for no man will escape from the hand of death, and numberless are they who each day, over the whole world, lose their dear ones and mourn their loss ; and thus it will continue to the end of the world. So it is for Danes, Americans, and Greenlanders ; all shall see death, and all will mourn for the dear ones who are taken from us to be laid in the ground. Sorrow has taken up her abode here, and there are many who mourn. As of old in Egypt, there is no house which has not been visited by the angel of death, and overwhelmed with sorrow ; no heart but has seen the visit and felt the horror of death. When we therefore to-day carry to his last resting place, this our brother, who was a stranger, and whose face we did not know, we shall think of the friends he leaves behind, who mourn his loss and who would wish to be with us at the grave to greet their beloved one for the last time.

“No man knows the thought of God concerning us. He whose soulless body we to-day are to bury, and the other, his companion, who perished in a kayak in the northern regions, did not think their days were numbered when they took leave of the wives they loved and of the children who were to be their support in their old age. They thought they would be better able to support their families when they returned, and they begged them to pray for a happy meeting. But they were never to be made happy by seeing each other's faces.

“The dear ones whom they left behind hoped for everything good when the ship returned, and were happy ; but when she lay at anchor the hope of their lives was extinguished as they heard that those for whom they had so long and so sincerely been longing had perished. We

* The English translation is made from a Danish version written by Madame Thygussen from the original Eskimo.

will hope that they who have become so wretched may draw a Christian's consolation from above, and find that Jesus can soothe their sorrowful hearts and heal their wounds. Now, dear friends, when death breaks asunder the tie between husband and wife, and between parents and children, we are grieved, but we as Christians have consolation in the hope that those who are separated by death will meet again in the heaven of the believers.

"God has also brought help in this world for the dear ones these men have left behind, as those who were with them on the voyage will be a support to their families.

"Again, we pray to God that He will assist these strangers in the far country to whom the angel of death has also come.

"Peace be with their dust.

"In the name of Jesus, Amen."

When the sermon was ended, the procession again took up its line of march, followed by the natives, to the little graveyard half a mile away across the ravines and gullies of the island. The people closed around the grave, and after a last prayer had been offered by the minister, the body was laid away in its final resting-place.

The day after the funeral of Christiansen, July 9th, was fixed for the departure of the squadron. During the four days spent in port, preparations had been made for the voyage to St. John's. The engine of the *Alert* required repair, and the rudder of the *Thetis* had been so badly damaged in the ice that it was unsafe to go to sea with it. It was therefore unshipped, and the spare rudder which had been brought from New York was put in its place. The house carried by the *Alert* was transferred to the *Loch Garry*, and the *Thetis* took on board ninety tons of coal from the collier. All the dogs were sent ashore, four of them being given as a present to the Eskimo David, who was discharged at this time.

Godhavn, like the other leading settlements on the

Greenland coast, is visited during the summer by a brig sent out from Copenhagen by the Danish Government with a mail and supplies. There are three of these brigs which make summer trips to different points. Another visits Greenland in the spring, arriving about April, but it goes only to Holsteinborg, where it finds the single mail which has been collected in the early spring from more northerly points. While the relief expedition was waiting at Godhavn to sail for St. John's, it was learned that the supply vessel had been detained beyond her usual time of arrival, and the food supply was so reduced that the Inspector was afraid that the settlement would be in want before her arrival. In view of the uniform kindness of the Greenland officials, and of the substantial assistance which they had given to the ships, it was with no small satisfaction that the commander of the relief squadron, upon learning the state of affairs, directed the landing of 200 rations of bread, meat, and soups, and was thus enabled in a small degree to return the obligations under which the kindly Greenlanders had placed all our expeditions.

CHAPTER XIV.

THE RETURN HOME.

THE fleet left Godhavn at 6.30 A.M. on July 9th, for St. John's, the *Alert*, whose engines were still partly disabled, being in tow of the *Loch Garry*. The day of sailing was beautiful and bright, with a fresh northeasterly breeze, which carried the ships along at a speed of eight knots an hour. After clearing the harbor a signal was made directing the ships to take position on the quarters of the *Thetis*, and a rendezvous was designated twenty-five miles northeast of Cape Spear, where the ships were to wait before going into St. John's, if separated by gales or fogs on the passage down. During the first few days the weather was fair, and Greely and the others were on deck at intervals during each day. When there was a heavy sea, some of them were seasick, but Greely, who had suffered from sea-sickness on his trip north in the *Proteus*, escaped entirely on the journey home.

On the second day out the snow-covered mountains of Greenland were lost sight of, the last of them that was seen being the Sukkertoppen, near Holsteinborg. As the ships made over towards the west side of Davis Strait, they fell in with large icebergs, but these were looked upon with none of the concern and anxiety which they had excited on the way up. The hundreds which had been met and often used for shelter in Melville Bay and Smith Sound had made them

every-day objects, and close contact had robbed them of all their terrors. They were the last remnants of Arctic ice seen by the expedition.

On the 15th of July, when near the Funk Islands, off the coast of Labrador, a fresh southeast gale sprang up, which lasted through the night, with thick fog and heavy sea. The *Loch Garry* labored so much in the sea that she cast off the *Alert*, which she had been towing all the way from Disko, and took a position six cables' length astern of the *Thetis*, the other ships being at three cables' distance on the starboard and port quarters. As the wind and sea increased, the course was changed off shore, and the speed reduced to two knots, to enable the *Alert* to keep up. She gradually fell astern, however, and at 2.30 on the morning of the 16th, her lights were lost sight of in the thick fog. When daylight broke nothing was to be seen of her. The other vessels stood on under low speed for the appointed rendezvous, but as the thick weather continued, it seemed to be useless to delay longer there, and the course was shaped for St. John's.

The fog continued to envelop the ships as they advanced, shutting out the land from view. Positions could only be determined by dead reckoning,—a very unsatisfactory method in this region of uncertain currents and outlying dangers. As the squadron approached the mouth of St. John's harbor, the fog-trumpet at Cape Spear was heard, and the ships were kept off the land to the westward; but their position was too uncertain to justify an attempt to enter the harbor. Fortunately, on the morning of the 17th, when the squadron was just abreast of the entrance, which, although only half a mile distant, was still invisible, the

town-clock in St. John's was heard to strike eight, and the exact position of the harbor was discovered. The ships were headed to the west, and an hour later they had entered the port. The dense fog outside the headlands hid the vessels from view until they were actually inside and about to anchor.

As soon as the relief ships were recognized from the shore the excitement was intense; the city was all agog, and the wharves were instantly crowded with wondering people. The early return of the expedition was interpreted to mean that some result had been accomplished, but what the result was could not be conjectured; and before many moments had passed, boats in great numbers put off to learn the news. It was only after a despatch had been sent home that this curiosity could be fully gratified. The first news of the result of the expedition belonged to the Navy Department, and arrangements had been made before going up to hold the cable for the official message. An officer was sent on shore at once with the despatch, and fifteen minutes after the vessels had dropped anchor, the report was on its way. The officer by whom it was sent carried also the first message from Greely to his wife.

The telegram to Washington was as follows :

ST. JOHN'S, N. F., *July 17, 1884.*

HON. W. E. CHANDLER, *Secretary of Navy*, Washington, D. C. :

Thetis, *Bear*, and *Loch Garry* arrived here to-day from West Greenland, all well, separated in gale from *Alert* yesterday 150 miles north. At 9 P.M., June 22d, five miles west of Cape Sabine in Smith Sound, *Thetis* and *Bear* rescued alive Lieutenant A. W. Greely, Sergeant Brainard, Sergeant Fredericks, Sergeant Long, Hospital Steward Bierderbick, Sergeant Elison, and Private Connell, the only survivors of the *Lady Franklin Bay Expedition*.

Sergeant Elison had lost both hands and feet by frost-bite, and died at Godhavn July 8th, three days after amputation, which had become imperative. Seventeen of the twenty-five persons composing the expedition perished by starvation at the point where found; one was drowned while sealing to procure food; twelve bodies of the dead were recovered and are now on board *Thetis* and *Bear*. One Eskimo, Frederick, was buried at Disko in accordance with the desire of the Inspector of North Greenland. Five bodies buried in ice-foot near the camp were swept away to sea by winds and currents before my arrival and could not be recovered. Names of dead recovered with date of death as follows: Sergeant Cross, January 18, 1884; Frederick, Eskimo, April 5th; Sergeant Liun, April 6th; Lieutenant Lockwood, April 9th; Sergeant Jewell, April 12th; Private Ellis, May 19th; Sergeant Ralston, May 23d; Private Whisler, May 24th; Sergeant Israel, May 27th; Lieutenant Kisingbury, June 1st; Private Henry, June 6th; Private Schneider, June 18th. Names of dead buried in the ice-foot with date of death whose bodies were not recovered as follows: Sergeant Rice, April 9, 1884; Corporal Salor, June 3d; Private Bender, June 6th; A. A. Surgeon Pavy, June 6th; Sergeant Gardiner, June 12th. Drowned by breaking through newly-formed ice while sealing, Jens Edwards, Eskimo, April 24th. I would urgently suggest that bodies now on board be placed in metallic cases here for safer and better transportation in a sea-way; this appears to me imperative.

Greely abandoned Fort Conger August 9, 1883, reached Baird Inlet September 29th following, with party all well. Abandoned all his boats and was adrift for thirty days on ice floe in Smith Sound. His permanent camp was established October 21, 1883, at point where he was found. During nine months this party had to live upon a scant allowance of food brought from Fort Conger, that cached at Payer Harbor and Cape Isabella by Sir George Nares in 1875, but found much damaged by lapse of time, that cached by Beebe at Cape Sabine in 1882, and the small amount saved from the wreck of *Proteus* in 1883 and landed by Lieutenants Garlington and Colwell on beach where Greely's party was found camped. When these provisions were consumed party was forced to live upon boiled sealskin strips from their sealskin clothing, lichens, and shrimps procured in good weather when they were strong enough to make exertion. As 1,300 shrimps were required to fill a gill measure, the labor was too exhausting to depend upon them to sustain life entirely.

Channel between Cape Sabine and Littleton Island did not close on account of violent gales all winter, so that 240 rations at latter point

could not be reached. All Greely's records and all instruments brought by him from Fort Conger are recovered and on board.

From Hare Island to Smith Sound I had a constant and furious struggle with ice. Impassable floes and solid barriers were overcome by watchfulness and patience; no opportunity to advance a mile escaped me, and for several hundred miles ships were forced to ram their way from lead to lead through ice ranging in thickness from three to seven feet, and where rafted much greater.

Thetis and *Bear* reached Cape York June 18th, after passage of twenty days in Melville Bay, with two advance ships of the Dundee whaling fleet, and continued to Cape Sabine. Returning seven days later fell in with seven others of the fleet off Wolstenholme Island, and announced Greely's rescue to them, that they might not be delayed from their fishing grounds, nor be tempted into the dangers of Smith Sound in view of the reward of \$25,000 offered by Congress.

Returning across Melville Bay fell in with *Alert* and *Loch Garry* off Devil's Thumb struggling through heavy ice. Commander Coffin did admirably to get along so far with transport so early in the season before an opening had occurred. Lieutenant Emory with the *Bear* has supported me throughout with great skillfulness and unflinching readiness in accomplishing the great duty of relieving Greely. I would ask instructions about *Loch Garry*, as the charter party held by her master differs in several important particulars from mine.

Greely party are much improved in health since rescue, but condition was critical in extreme when found and for some days after. Forty-eight hours' delay in reaching them would have been fatal to all now living. Season north is late and closest for years; Kane Sea was not open when I left Cape Sabine. Winter about Melville Bay most severe for thirty years.

This great result is entirely due to the prompt action and unwearied energy of yourself and Secretary of War in fitting this expedition for the work it has had the honor to accomplish.

W. S. SCHLEY, *Commander.*

The Secretary of the Navy was at this time at West Point, from which place he telegraphed on the same day the following answer :

July 17, 1884.

Commander W. S. SCHLEY :

Receive my congratulations and thanks for yourself and your whole command for your prudence, perseverance, and courage in reaching

our dead and dying countrymen. The hearts of the American people go out with great affection to Lieutenant Greely and the few survivors of his deadly peril. Care for them unremittingly, and bid them be cheerful and hopeful on account of what life yet has in store for them. Preserve tenderly the remains of the heroic dead ; prepare them according to your judgment, and bring them home.

WILLIAM E. CHANDLER,
Secretary of the Navy.

All through the morning and afternoon of the day on which the ships arrived, they were visited by throngs of people anxious to hear the story of the rescue as told by those who had participated in it. Persevering but well-meant efforts were made to obtain interviews with the survivors of the expedition, but the mere excitement of arrival was enough, without the trying ordeal of answering questions, and sympathetic curiosity was obliged to content itself with a sight of the rescued explorers. During the afternoon Lieutenant Greely went on shore to try his muscles after their long disuse, but his halting gait and weary look after a walk of a block or two made it clear that his strength had not yet come back. Of course he was a marked man in the streets of St. John's, and he was soon obliged to retreat to the ship to escape the too expressive sympathy of the kind Newfoundlanders.

The *Alert* came in on the evening of the 18th, having delayed her arrival by standing off and on in the vicinity of the appointed rendezvous, near Cape Spear, in obedience to orders, hoping to meet the other ships when the weather cleared. After waiting a day, the fog lifted, and as nothing could be seen of the other ships, Commander Coffin bore up for St. John's, feeling sure that they had already arrived.

The squadron was detained for a week at St. John's, and

this little period of relaxation was thoroughly enjoyed by the officers and men of the expedition after the hard work and anxiety of the voyage. Sir John Glover, the Governor of Newfoundland, and Lady Glover were unremitting in their courtesies, and their hospitality, as well as that of the officials and of the principal residents of St. John's, seemed to know no limit. Indeed it was impossible during the week to find time to accept all the attentions that were lavished upon the officers. The Consul, Mr. Molloy, whose services had been in frequent demand for three years on account of the Lady Franklin Bay Expedition, gave the survivors a warm welcome, and took Greeley under his hospitable roof. The crews of the three vessels were given plenty of opportunities for a run ashore, and contrary to the usual habit of blue-jackets, they did not abuse the privilege, while they came in for a large share of the colonial hospitalities.

As the *Thetis* and the *Bear* could not be used for a pleasure-party, however informal, it was decided, by way of returning the kindness and cordiality of the people of St. John's, to receive them quietly on board the *Alert*, on the 24th. The guests came off in the morning, and were welcomed on board by all the officers of the squadron who could be spared from their work. Two or three hours were passed quietly and pleasantly in looking over the ship, in talking, and at lunch in the ward-room. There was no ceremony, and there was a genuine pleasure in playing the host after all that had been done for the officers on shore.

On the 25th a despatch was received from the Secretary of the Navy, then at Portsmouth, N. H., asking on what morning the ships might be expected to enter Portsmouth Harbor. As the metallic cases which had been ordered for

the bodies were completed on^d this day, everything was in readiness for departure, and a reply was sent designating the 2d of August as the probable date.

At ten A.M. on the 26th the squadron left St. John's for Portsmouth. It was escorted out of the harbor by a fleet of tug-boats and launches, crowded with people, who had come off to have a last look at the ships. When they had got well out to Cape Spear, the steamboats passed around the ships in succession, saluting with their whistles, and the people on board giving a farewell cheer.

Leaving their escort behind, the relief ships continued on their course, rounding Cape Race in a fresh sou'westerly breeze and a chopping sea, and headed for Portsmouth. The passage down was uneventful. The weather was fine in spite of occasional fogs, but the invalids suffered somewhat from the dampness and the summer heat, which produced a temporary prostration. Except for this, and for their aching joints and muscles, they were all fairly convalescent. By the end of the voyage Greely had recovered his normal weight—at least his weight when he left Fort Conger—having gained fifty pounds in six weeks.

It was intended to reach Portsmouth on the 2d of August, but the winds which are commonly at that season from the westward changed to the east, and the ships were carried along under sail almost without help from the engines. This gained them a day, and brought them in before the date that had been assigned. As they neared the coast, on the 31st of July, a dense fog settled down, and speed was somewhat reduced in consequence, although the soundings gave a sure indication of correct position. At daylight on August 1st the fog lifted and the lighthouse on the Isle of Shoals was

sighted about ten miles off. Standing on towards Portsmouth as the day advanced the squadron discovered several ships of war in the lower harbor, and presently the *Alliance* came out to meet it and delivered orders from Acting Rear-Admiral Luce, the Commander-in-chief of the North Atlantic Squadron, to delay arrival until August 2d, which had been fixed as the day on which the expedition was to be formally received. The relief ships accordingly steamed to the northward and anchored near Boon Island Light.

Considering, however, that the friends of all on board the vessels, including the rescued party, were waiting on shore to greet them, it would have been little less than cruel to have kept the squadron out any longer. The programme was therefore sacrificed; the order to delay entering was revoked, and the *Thetis*, *Bear*, and *Alert* once more got under way and headed for the harbor.

The reception which greeted the squadron at Portsmouth was an ovation which took its officers and men wholly by surprise. The North Atlantic Squadron was lying in the lower harbor, composed of the flag-ship *Tennessee* and the *Vandalia*, *Swatara*, *Yantic* and *Alliance*. Two ships of the training squadron, the *Portsmouth* and *Jamestown*, were also present, and the practice ships from Annapolis, the *Constellation* and *Dale*, were lying at the Navy Yard. The Secretary of the Navy and the Chief Signal Officer of the Army had come down to Portsmouth to give an official welcome, and the friends of the members of both expeditions had been sent for. The shores of the river, on both sides, were lined with people, and the harbor was filled with steamers, sailboats, and small craft of every description, all of them dressed with flags and streamers.

At two o'clock on the afternoon of a beautiful August day the *Thetis*, *Bear*, and *Alert*, led by the *Alliance*, steamed into the harbor. As they passed the ships of war in succession, the crews of the latter swarmed in the rigging. As the relief ships came to anchor the band of the flag-ship played "Home Again," and the crews in the rigging gave them cheer upon cheer which was caught up and carried along the shore. At the same moment, the Secretary's barge left the flag-ship with Mrs. Greely, who was the first person to come on board the *Thetis*. Poor Greely was waiting for her in the cabin, and there the first meeting took place.

Immediately after, the officers of the relief squadron went on board the *Tennessee*, where they were received by the Secretary and the Admiral with an uncommonly hearty greeting. Later in the afternoon the Secretary, accompanied by Admiral Luce and General Hazen, went on board the relief ships to welcome Greely and to give their congratulations to the officers and men on the decks of their own vessels.

During the next three days the relief ships were the centre of interest, and filled with visitors from morning till night. On Monday, the 4th, the city of Portsmouth gave a civic reception to the rescued party and to the officers and men of the relief squadron. It was another warm ovation. In fact, the expedition was in danger of being overwhelmed with the heartiness of its welcome. The survivors, fortunately, had been transferred to quarters at the Navy Yard, where they were free from intrusion, and they were carefully looked after by the physicians, who prevented them from being killed with kindness. At the civic reception, they sat for an hour on the grand stand, and watched the procession,

but after that they were quietly taken back to the Yard. It was just as well for them, as the transition from Camp Clay to Portsmouth on the 4th of August would have been a severe strain to the toughest nerves. What with the processions, and brass bands, and citizen soldiery, and blue-jackets, and distinguished visitors, the rural streets of the staid old New Hampshire town were transformed beyond all recognition.

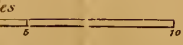
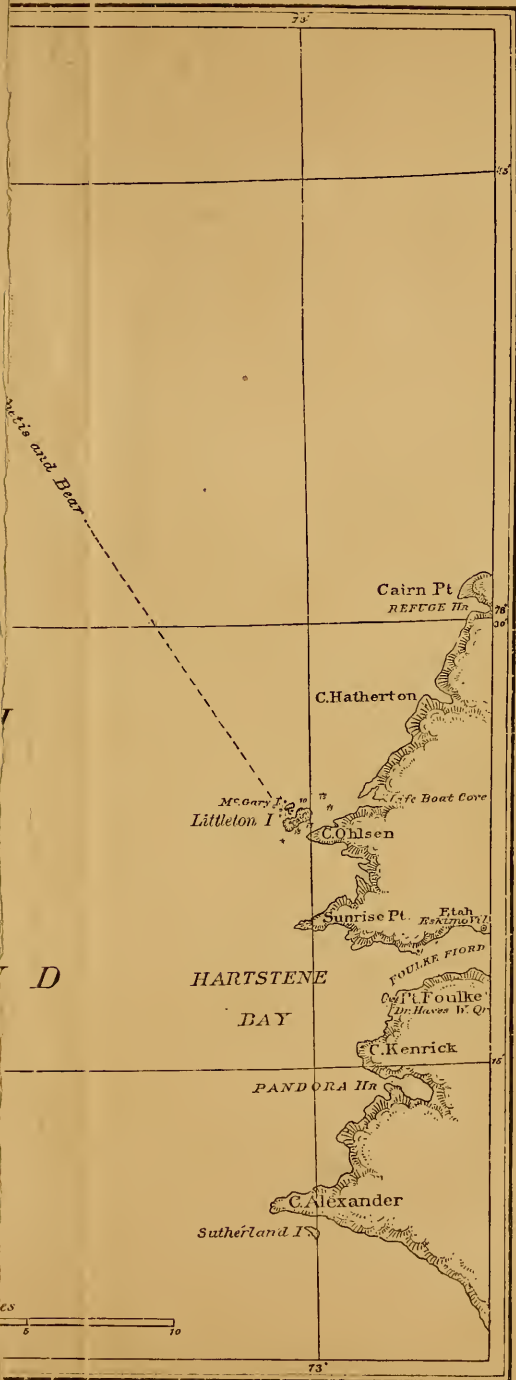
The relief squadron was ordered to sail for New York on August 5th. Early in the morning of that day, the body of Sergeant Jewell, a New Hampshire man, was landed in compliance with the wish of his friends. The body was taken to the Navy Yard, and carried to the slope just above the wharf. A little group, composed of the Secretary, the friends of the dead man, and a few of the officers, gathered around while the burial service was read in the open air. The body was then taken over to the city in the steam tug, and put on board the train at the station.

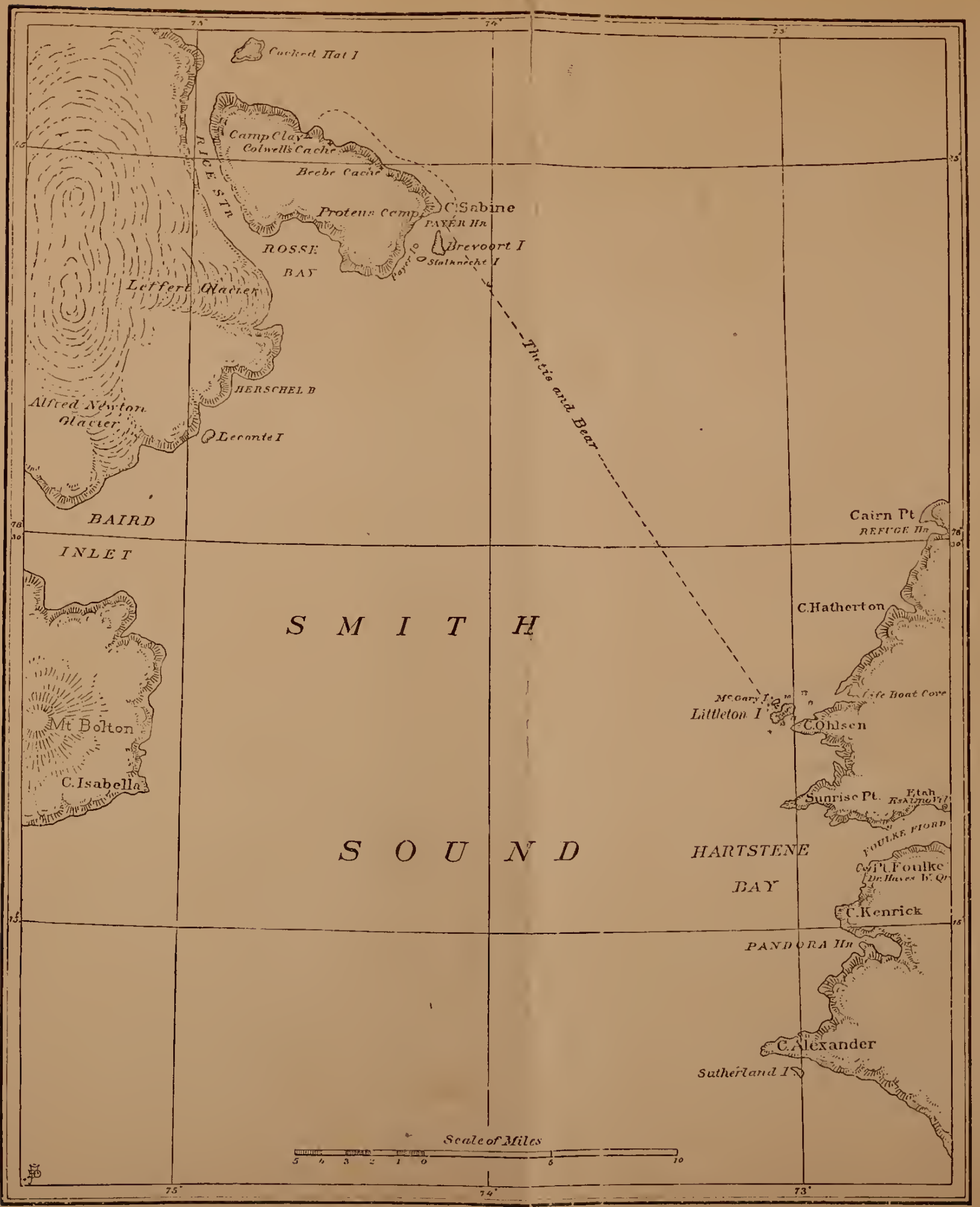
At the same hour, the relief ships sailed for New York. After a slow passage, they arrived on the morning of the 8th, and were saluted with twenty-one guns from Fort Columbus. The batteries of the 4th and 5th Artillery were drawn up on the wharf at Governor's Island, to receive the dead. There were also present the Secretary of War, General Sheridan, General Hancock, General Hazen, Commodore Fillebrown, and other officers of high rank. The bodies were transferred soon after arrival to the steam tug *Catalpa*, belonging to the Brooklyn Navy Yard, and a little before one o'clock the *Catalpa* steamed up to the dock, while minute-guns were fired from the shore. The commander of the expedition went on shore, and formally de-

livered the bodies to General Hancock, representing the War Department. They were placed on artillery caissons, and taken to the chapel, the long line of troops drawn up along the wharf presenting arms to each body as it passed. At the chapel, all but two were delivered to the friends of the deceased. These two—those of Privates Henry and Schneider—were taken to the Cypress Hills National Cemetery, where the former was buried. The body of Schneider was afterwards placed on board the steamer *Ems*, for transportation to his friends in Germany. Immediately after the ceremony, the instruments, relics, and all other property found at Camp Clay and in the cache on Stalknecht Island were delivered to the Post Quartermaster.

The relief squadron had now performed its last duty to the Lady Franklin Bay Expedition, and its work was finished. The ships proceeded directly to the Navy Yard at Brooklyn, where they were shortly after laid up. The officers were detached, and the greater part of the crews were discharged.

The work done by the Relief Expedition of 1884, whether little or much, may be judged by the light of the record. But no account of it in which the Commander of the Expedition has a hand would be complete without a statement on his part of the gallant and efficient service done by the officers and men of the three relief ships who served under his command, not only in their untiring and unhesitating zeal in meeting the ordinary calls of duty, but in their hearty co-operation at all times with the efforts of their commander, and in their loyalty and devotion to the purposes which the expedition had in view.





75°

74°

73°

Cuckered Hat I

Camp Clay
Colwell's Cache

Beebe Cache

Proteus Camp

C. Sabine

PAYER In.

Brevoort I

Stahnkecht I

ROSSE
BAY

Letferd Glacier

HERSCHEL B

Alfred Newton
Glacier

Leconte I

BAIRD

INLET

S M I T H

Mt Bolton

C. Isabella

Cairn Pt
REFUGE In.

C. Hatherton

McGary I.
Littleton I

C. Ohlsen

Sunrise Pt.

Ft. H. H. H.

HARTSTENE
BAY

FOULKE FJORD

C. Foulke
Dr. Hayes W. Q.

C. Kenrick

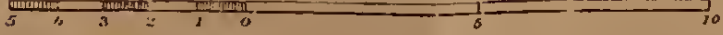
PANDORA In.

C. Alexander

Sutherland I.

Thetis and Bear

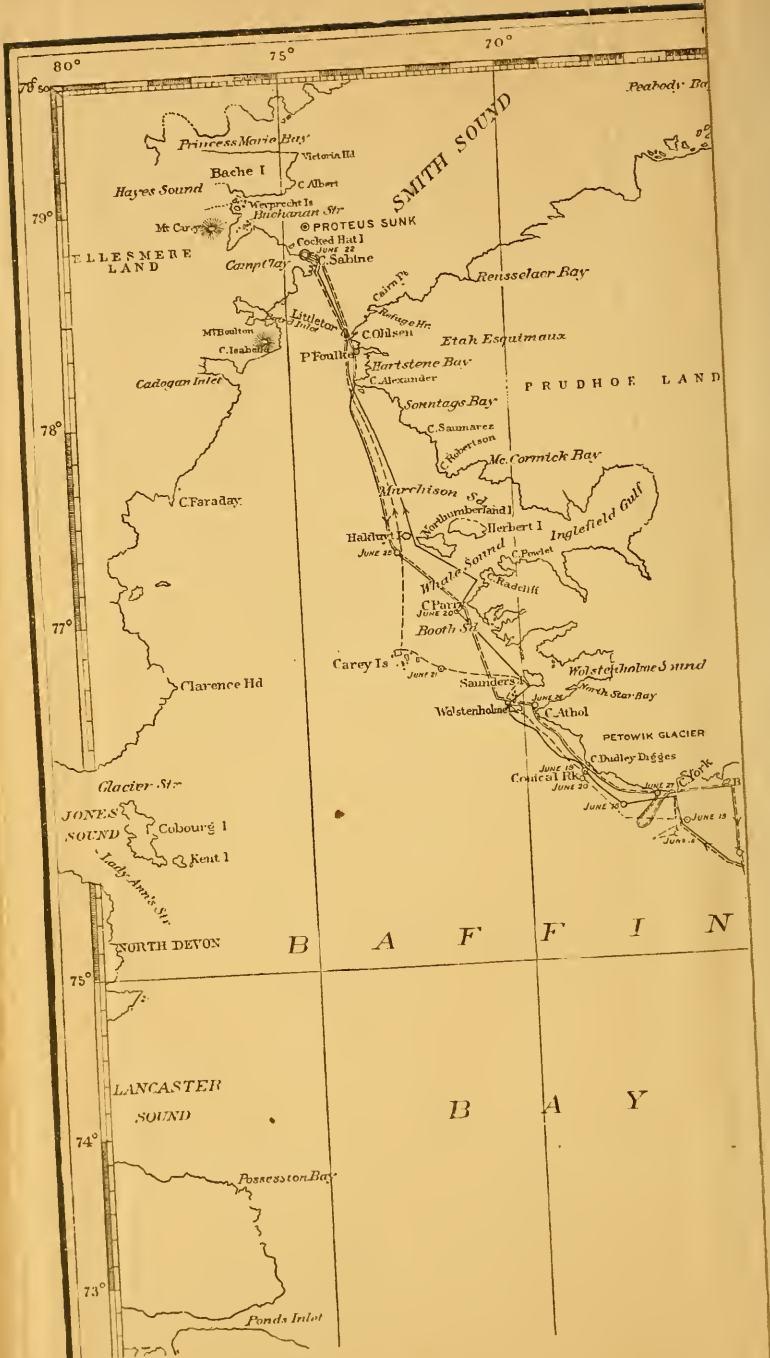
Scale of Miles

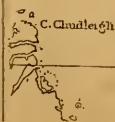


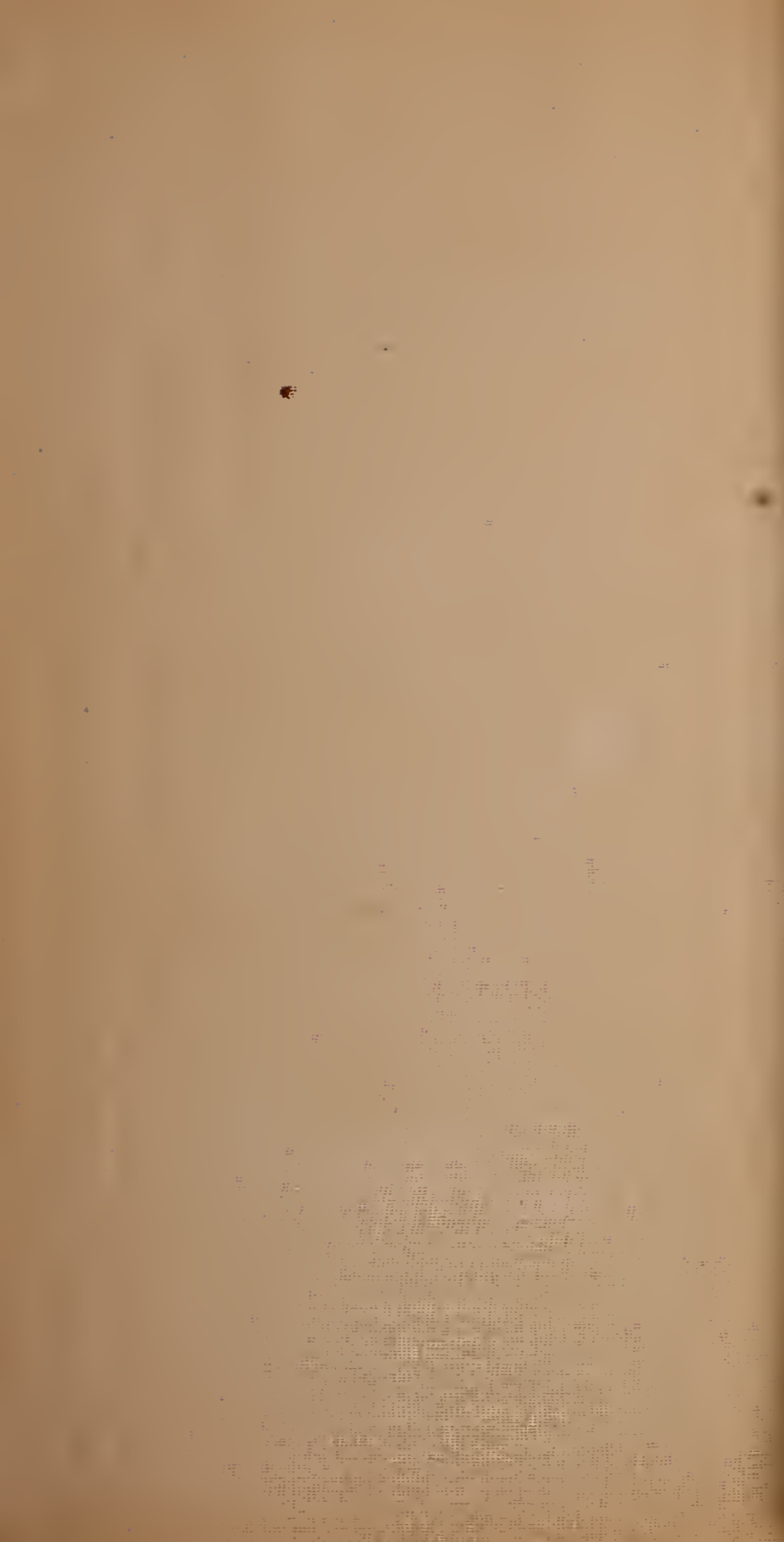
75°

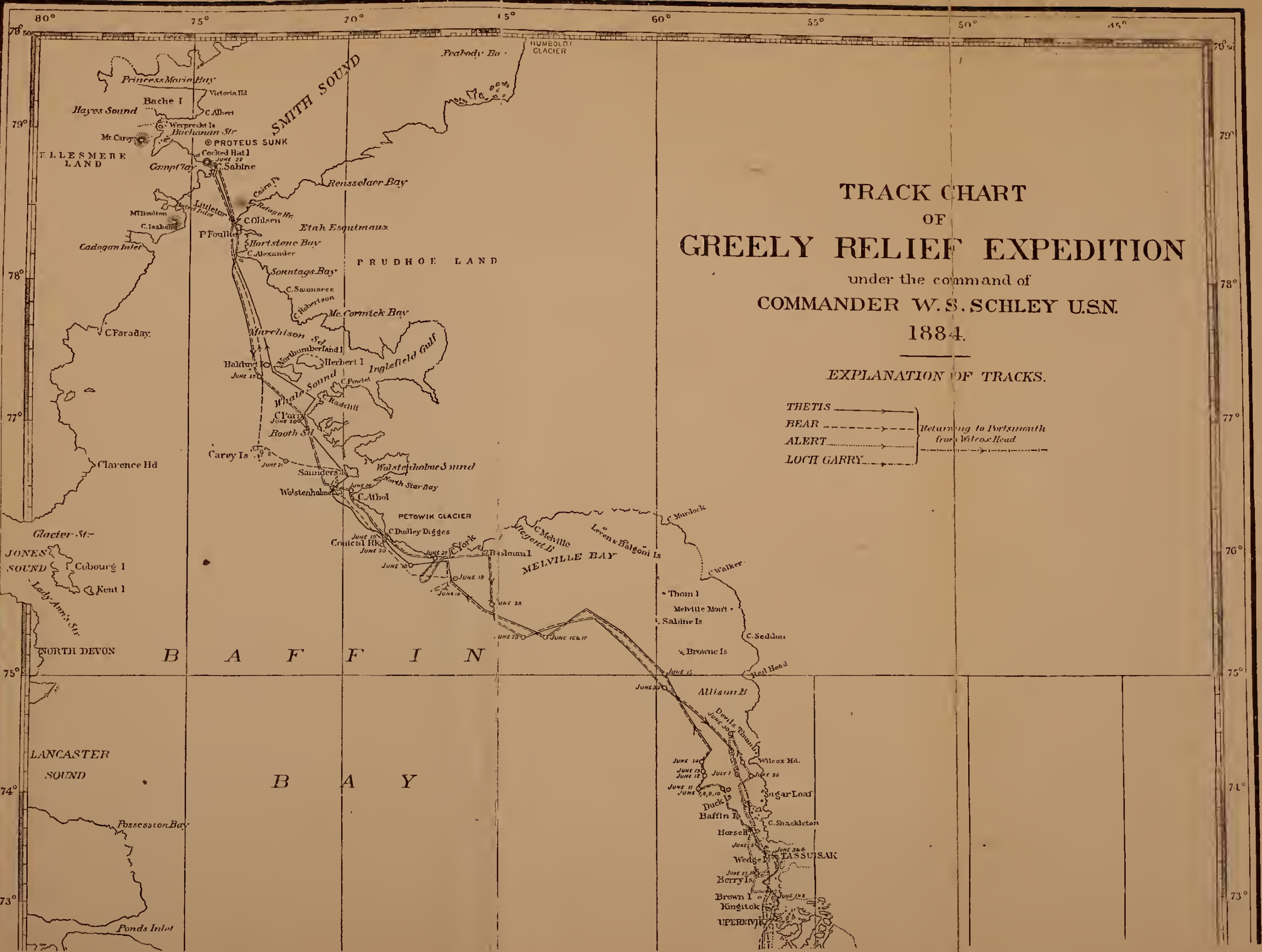
74°

73°







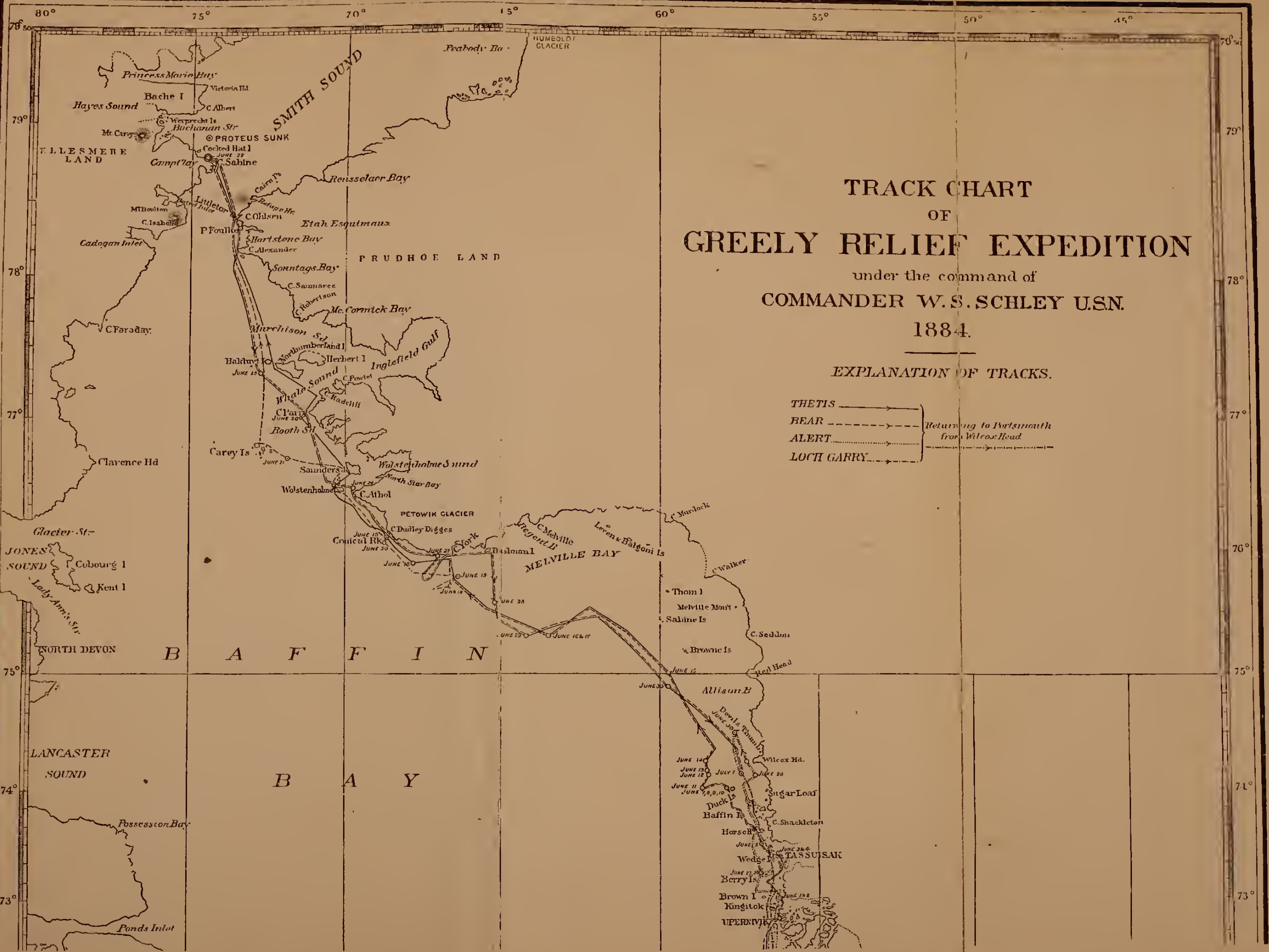


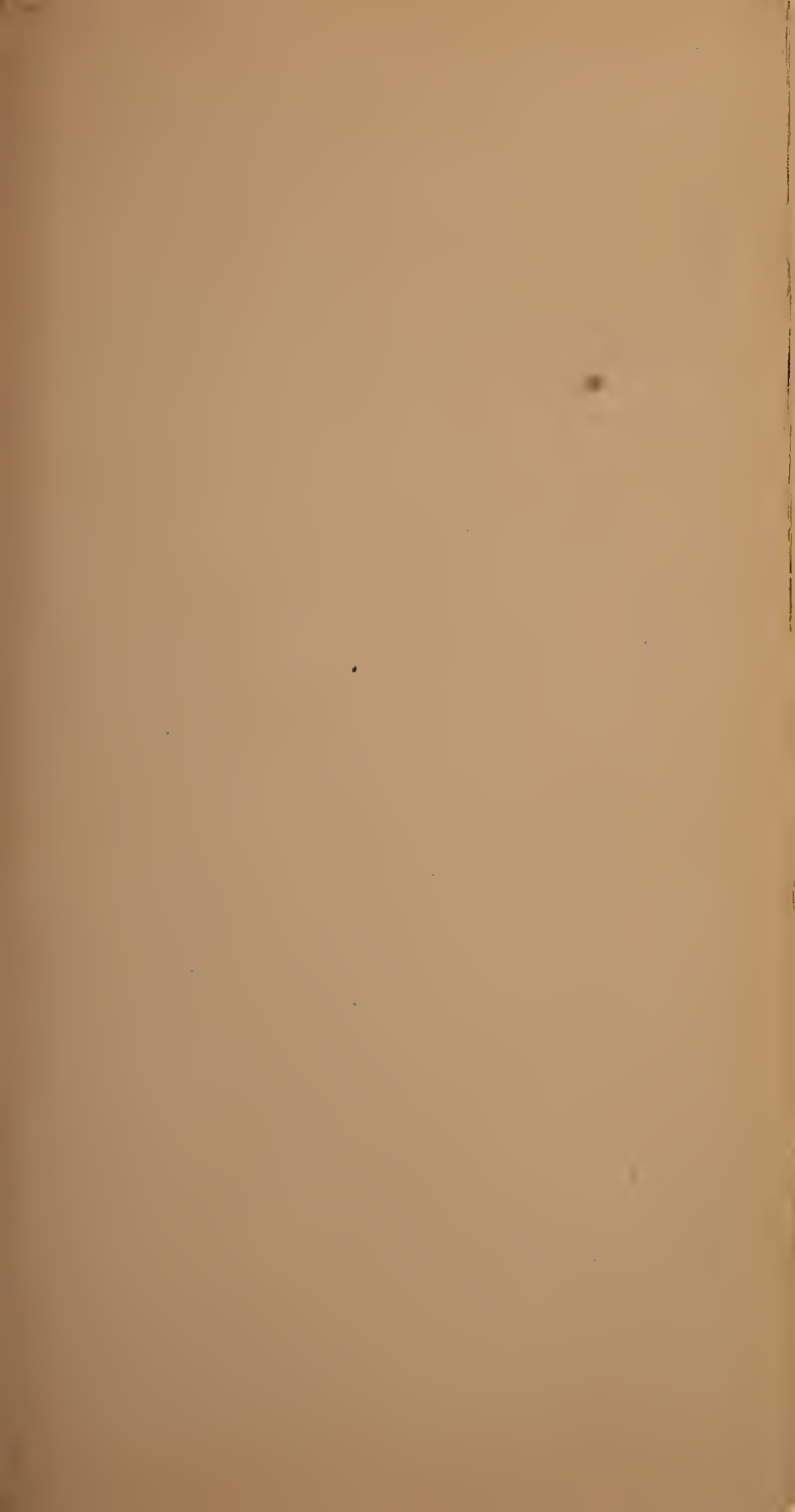
TRACK CHART OF GREELY RELIEF EXPEDITION

under the command of
COMMANDER W. S. SCHLEY U.S.N.
1884.

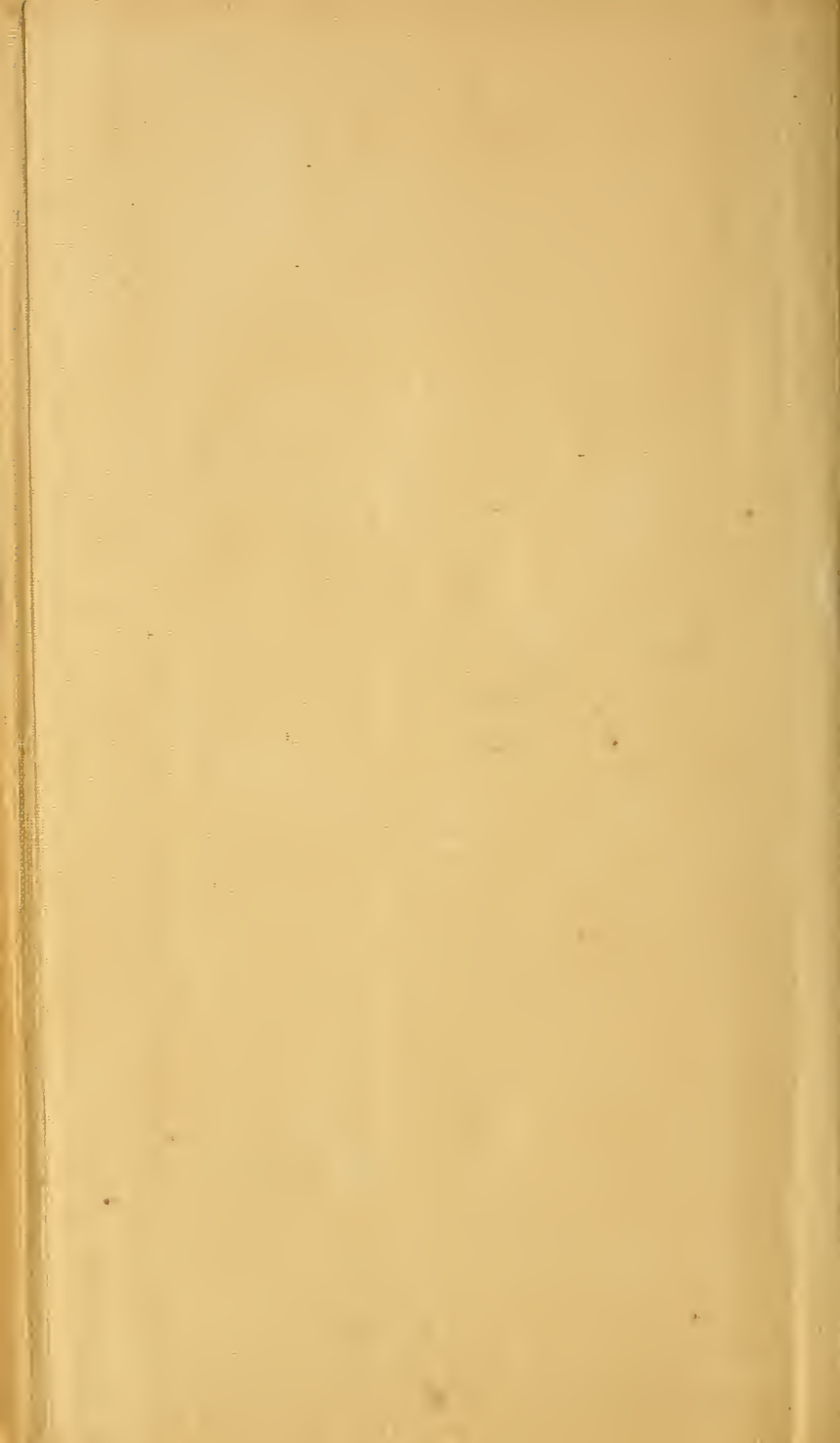
EXPLANATION OF TRACKS.

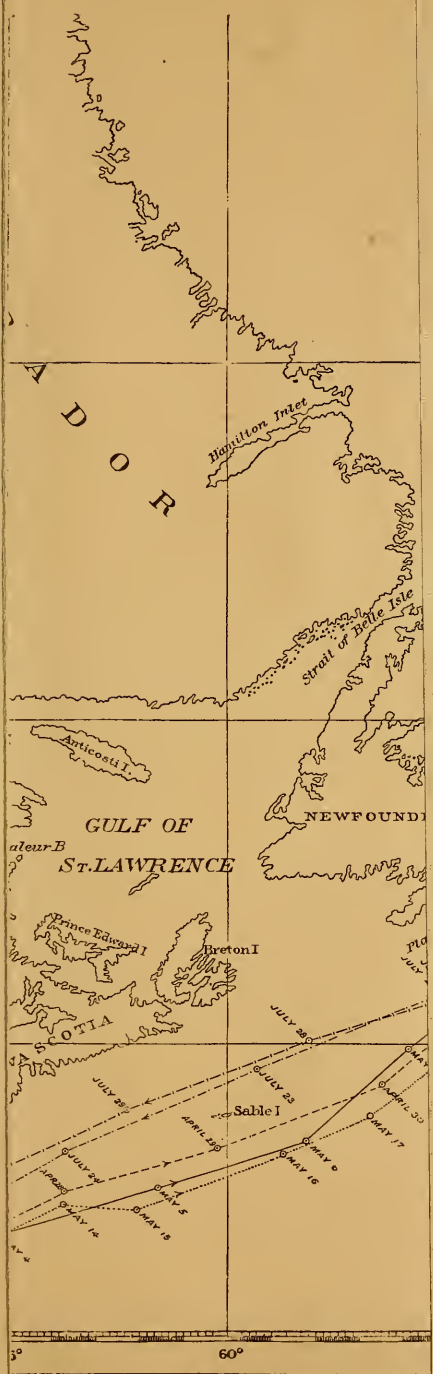
- | | |
|--|---|
| <p>THETIS —————→</p> <p>BEAR - - - - -→</p> <p>ALERT - · - - - -→</p> <p>LOCH GARRY - - - - -→</p> | <p>Returning to Portsmouth
from Wilcox Head</p> |
|--|---|















E E N

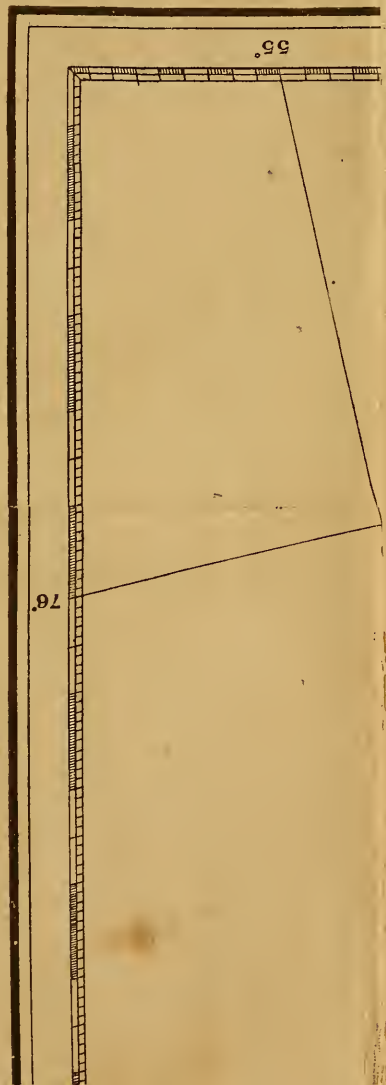
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NORTH AMERICAN
COASTAL REGIONS
FROM THE GULF OF MEXICO TO LINCOLN

the most recent dis-
coveries. Including those of
the expedition in 1871-2 under
the command of Commodore
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Richard D. Meade

SOUNDINGS IN FATHOMS
HEIGHTS IN FEET





NORTH AMERICA
 POLAR REGIONS
BAFFIN BAY TO LINCOLN SEA

Showing the most recent discoveries
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 U.S.S. *Polaris* Expedition in 1871-2 under Captain C.F. Hall
 The British Arctic Expedition in 1875-6 under Captain G.S. Nares, R.N.
 The Lady Franklin Bay Expedition in 1881-3 under Lieutenant A.W. Greely, U.S.A.

SOUNDINGS IN FATHOMS
 HEIGHTS IN FEET

Note
 The coast of Greenland east of Beaumont Island
 and the interior of Grinnell Land are from the
 explorations of the Lady Franklin Bay Expedition.

ARTHUR

Blackwood
Ch...



80°

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