

Greely's arktische Expedition.

# THE GREELY ARCTIC EXPEDITION.



AS FULLY NARRATED BY

**LIEUT. A. W. GREELY, U. S. A.**

AND OTHER SURVIVORS OF

**THE GALLANT LITTLE BAND OF HEROES.**



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*FULL ACCOUNT OF THE TERRIBLE SUFFERINGS ON  
THE ICE, AND AWFUL TALES OF CANNIBALISM!*

COMMANDER SCHLEY'S REPORT.

WONDERFUL DISCOVERIES BY LIEUT. GREELY,  
THE AMERICAN ARMY OFFICER,  
AND HIS LITTLE BAND OF HEROES.

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# THE GREELY ARCTIC EXPEDITION

AS FULLY NARRATED

BY LIEUTENANT GREELY, U. S. A.,

AND OTHER SURVIVING HEROES.

## TERRIBLE SUFFERINGS! ON THE ARCTIC ICE!

*"Men under such awful circumstances lose all control over their better natures, and may become even cannibals."*

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I wish first, in opening this narrative, to state the object of the Lady Franklin Bay Expedition. It was to establish at Lady Franklin Bay a polar station, one of the thirteen suggested by Lieutenant Weyprecht, of Austria, who discovered Franz Josef Land. Simultaneous observations of all physical phenomena were to be taken. The complete programme which was to be followed was arranged by an international polar congress, in which representatives of thirteen nations took part.

The observations in which the greatest possible accuracy was to be had were those of declination and deviation of the magnetic needle, temperature of the air and sea, height of barometer and mean and maximum rise and fall of tides. All explorations were incidental to the main objects of the expedition. The expedition was fitted out under authority of an act of Congress, approved May 1, 1880.

The party was composed of three officers of the army, one acting assistant surgeon and nineteen enlisted men selected by recommendation from the ranks of the army. Stores for twenty-seven months were put on the Proteus for the party. The Proteus steamed away from St. John's, N. F., July 7, 1881, with the party on board. She touched at Disco Island and Upernavik to procure sledges, dogs, skins and dog food. Two Esquimaux were added to the party at Proven.

Landing was made at Carey Island, in the north water, and provisions cached by Nares in 1875 in the Alert were found in good condition. At Littleton Island Lieutenant Greely personally recovered the English Arctic mail left by Sir Allan Young in the Pandora in 1876.

At Carl Ritter Bay, in Kennedy Channel, a cache of provisions for use on the retreat was made. It was the original intention to establish the polar station at Water-Course Bay, but the heavy masses of ice which were encountered rendered Water-Course Bay an exceedingly dangerous anchorage. Moving to Discovery Island, the station was there established on the site occupied by the English expedition of 1875. The erection of a house was at once commenced and the stores and equipments were landed. On the 28th of August came the parting between the Greely party and the men of the

Proteus. The little band gathered on the frozen shore and watched the Proteus as she steamed slowly down Lady Franklin Bay, leaving them to the mercies of the cruel north. On the evening of the same day the temperature sank below the freezing point, and the icy Arctic winter was on them in earnest. Their house was finished about a week after the Proteus left. It was named, in honor of Senator Conger, Fort Conger. During the first month the cold affected the men more than any subsequent time at Fort Conger. Later on in December the temperature sank to from 50 to 65 degrees below zero, and so remained for days at a time; but even in that weather the cook's favorite amusement was dancing bareheaded, barearmed and with slippers on the top of a snowdrift. During the day the men dressed in ordinary clothing, but their flannels were very heavy. Five of the men were generally for a part of the day engaged in scientific work under Lieutenant Greely's direction, and in the duties of the camp; the rest of the men were employed generally about one hour a day, and devoted the remainder of the time to amusement. All slept in bunks. The quarters were heated by a large coal stove, the average heat maintained being 50 degrees above zero. Playing checkers, cards and chess and reading were the amusements of the evening. The life was said by Lieutenant Greely to be far from a lonely one, and many of the men said they had never passed two happier years than those spent at Fort Conger.

On the 15th of October the sun left them for 135 days, and a twilight varying from half an hour to twenty-four hours succeeded. For two months it was so dim that the dial of a watch could not be read by it. On April 11 the sun came above the horizon and remained there 135 days, giving the party a great sufficiency of midnight sun.

During three months the stars were visible constantly, the constellations of Orion's Belt and the Great Bear being the brightest. The North Star looked down from almost overhead. Standing alone outside the fort on one of these nights the scene was weirdly grand. To the north flamed the aurora borealis, and the bright constellations were set like jewels around the glowing moon; over everything was dead silence, so horribly oppressive that a man alone is almost tempted to kill himself, so lonely does he feel. The astronomer of the party said that with the naked eye a star of one degree smaller magnitude than can be seen here in the same way might be discerned. The moon would remain in sight for eleven to twelve days at a time.

The thermometer registered on June 30, 1882, the highest temperature at Lady Franklin Bay which we knew during our stay. It was 52 degrees above zero. The lowest was in February, 1883, and was 60 degrees below zero. In this February our mercury froze and remained solid for fifteen days, so intense was the cold. The mercury in the thermometer invariably rose during storm and high winds. The highest barometer was slightly above 31 inches and the lowest slightly below 29 inches, showing a great range. The greatest varieties were in the winter. The electrometer, an instrument used to ascertain the presence of electricity, was set up, but, to the astonishment of Lieutenant Greely, not the slightest result was obtained. The displays of aurora were very good, but not to be compared to those seen at Disco Island or Upernavik. As far as Lieutenant Greely could observe, no crackling sound accompanied the displays, and the general shape was that of a ribbon. The south-western horizon was the quarter in which the brightest displays were seen.

Sir George Nares reported in 1876 that no shadow was cast by the aurora, but Lieutenant Greely says that he distinctly observed his shadow cast by it. There were no electrical disturbances save those manifested by a rumbling of distant thunder, heard twice far away to the north. In the course of the tidal observations made a very interesting fact was discovered, viz., that the tides at Lady Franklin Bay came from the north, while those at Melville Bay and Cape Sabine came from the south. The temperature of this north tide is two degrees warmer than that of the south tide at Cape Sabine. Why this was Lieutenant Greely would not venture to state. He used in measuring the ebb and flow of the tides a fixed gauge—an iron rod planted in the mud.

The average rise of spring tides at Lady Franklin Bay was found to be eight feet. At Cape Sabine the highest tides rise twelve feet. Surf was only observed twice during the two years. At Lady Franklin Bay the average temperature of the water was 29 degrees above zero, or 3 degrees below the freezing point. Wolves weighing ninety pounds were killed around Fort Conger, and there are foxes and other animals there. Of fish there is a wonderful scarcity. Perhaps the greatest surprise of the expedition was the taking from Lake Alexander, a fresh water lake fifteen feet above the sea level, a four-pound salmon.

From the bay or sea only two very small fish were taken during the entire two years, and very few are to be found north of Cape Sabine. The vegetation at Lady Franklin Bay is about the same as at Cape Sabine, and comprises mosses, lichens, willows and saxifrage. Snow storms are, of course, most frequent, and rainfalls very rare. The highest velocity of the wind was registered during a terrific snow storm—seventy miles per hour. Lockwood's trips to the north in 1882 and 1883 were productive of the most valuable results. Standing on the 19th of May in each year where Dr. Hayes had formerly stood at about the same day, Lockwood, from an elevation of 2000 feet, using his strongest glass on Hall's basin and Robeson's channel, could discern nothing but ice packs. Here it was Dr. Hayes claimed to have seen his open polar sea.

On the trip of 1882 Lockwood reached the highest latitude ever attained—83 degrees 25 minutes north. This was about 300 miles directly north of Lady Franklin Bay, but to get there he traveled over 1000 miles, the open water and broken packs frequently causing him to retrace his steps fifty miles. Lockwood sounded the sea both years between Cape Bryant and Cape Britannia, but could not touch bottom with 135 fathoms of line.

Markham, a few years before, about 100 miles to the west, got bottom at 72 fathoms. Lockwood found at his farthest north about the same vegetation as at Lady Franklin Bay, but no signs of a polar current or open polar sea. In 1883 he was stopped near Cape Bryant, 125 miles from Lady Franklin Bay, by an open channel extending west to the coast of Grinnell Land. The width of the channel varied from 200 yards to five miles, but on the north the ice packs extended as far as could be seen with a glass. With his supply of provisions, the failure of which had caused his return the year before, Lockwood was confident that he could have reached 85 degrees north if this open channel had not barred his way. No fossil remains were discovered on this trip, and the only ones found were the trunks of trees on the south-west coast of Grinnell Land.

The only sea animals seen by Lockwood at 83 degrees 25 minutes were the walrus and seal, and, strange to say, the walrus is not to be found at Lady

Franklin Bay. At 83 degrees 25 minutes the deflection of the magnetic needle was 104 degrees west, more than one-fourth of a circle. As far as Lockwood went the north-eastern trend of the Greenland coast still continued. The maps of the new regions he discovered are in the possession of Lieutenant Greely, and are very carefully made. All through the two years at Lady Franklin Bay the magnetic needle was never quiet except during storms. In February, 1883, preparations for the retreat were made by establishing a depot at Cape Baird twelve miles to the south.

Day after day the anxious men looked off over Lady Franklin Bay, expecting the ice to open, so they might commence their journey toward home. At last, on August 19, 1883, the welcome news that the ice was open was brought. All had been made ready, and that very day the party embarked in the little steamer launch. Behind them they left their dogs, as they could not be taken. Four barrels of pork and some seal oil were left for the animals. Lady Franklin Bay was crossed to Cape Baird, a distance of thirteen miles, and then the western coast of Grinnell Land was followed south as far as Cape Hawkes. Large quantities of heavy ice were met, and extreme was the danger that every moment the little launch would be crushed. The suffering of the men was very great. They were now within fifty miles of Cape Sabine.

Striking from Cape Hawkes direct for Bates Island, the party was caught in the ice pack and frozen in ten miles south of Cape Hawkes. In thirteen days they drifted south twenty-five miles on the floes, suffering horribly from the cold. So they drifted to within eleven miles of Cape Sabine, and were obliged to abandon the steam launch on September 10. The pack now remained motionless for three days, and several times the party got within two or three miles of Cape Sabine only to be drifted back by southwest gales. Five seals were killed and eaten while the party were drifting about. Eventually a heavy northwest gale drove them by Cape Sabine, within a mile of Brevoort Island, but they could not land. On September 22 there arose the most terrific gale they had yet seen on the Arctic Ocean. Their ice floe was driven hither and thither by the tempest, and the waves washed over them again and again, the spray freezing to them and causing them intense suffering. Night came on, one inky blackness. The wind threw the heavy floes together, and crash after crash of ice breaking from their own floe warned the men that death was near to them. No man knew at what minute, the floe might break up and the waters engulf them. The first faint light of dawn showed them that little remained of the floe upon which they were. The sea washed another close to them. Closer it came, and at last, at the word, the men succeeded in getting upon it. The storm slowly subsided and they gained land at Esquimaux Point, near Baird's Inlet, on September 29. Here winter quarters were built, and scouts were sent to Cape Isabella and Cape Sabine. In a few days they returned. Their report sent a thrill of horror to every heart. At Cape Isabella and Cape Sabine were found only 1800 rations, and from Garlington's records they learned the fate of the Proteus. Every one knew that death must come to nearly all of the party long before the ship of rescue could force its way into Melville Bay. Efforts were made to sustain the spirits of the men by lectures and light reading.

On October 15 the party removed to Cape Sabine. On January 18 Cross died of scurvy. In April the rations issued daily had dwindled to four ounces of meat and six ounces of bread. Man after man died, and all hope had fled







**LIEUTENANT ADOLPHUS W. GREELY, U. S. A., THE GREAT ARCTIC HERO.**

Lieutenant Adolphus W. Greely, der große arktische Held.

when on that stormy day the blast of the *Thetis* whistle roused the survivors from the lethargy of approaching death.

I do not think the North Pole can be reached unless every circumstance hitherto found to be unfavorable should prove favorable to the party attempting to reach the pole. If it is to be done at all it will be done by way of Franz Joseph Land. It could never have been reached by the *Jeannette's* route. That there is an open polar sea I am well nigh certain. This is proved by the drifting out of Muscle Bay and Spitzbergen in midwinter and the northern drift of the polar pack experienced by Pavy and Lockwood in 82 degrees 8½ minutes. Men can stand two winters very well at Lady Franklin Bay, but physical strength rapidly deteriorates. If we had had every supply and necessary of food we could have lived, perhaps, eight or ten years at Lady Franklin Bay.

### STARVING IN ARCTIC SEAS.

#### THE GHASTLY PRISON IN THE ICE-FLOES—CAMP SABINE'S HORRORS— THE FIRST SUSPICION OF CANNIBALISM.

We must now give space to the story of cannibalism, and allow such witnesses to testify as can best be relied on for the truth.

Very few of the crew of the two relief vessels which reached Greely's desolate camp were permitted to see the bodies of the dead. When their condition was discovered and the horrible fact was apparent that cannibalism had been resorted to, the officers of the two vessels took every precaution to keep the fact from the sailors. The officers, assisted by only a few sailors, uncovered the bodies and prepared the remains for removal to the ships. The gravel thrown over them was only a few inches in thickness at any place, while the heads and feet of several were exposed. The officers carefully shielded the bodies, and it was this act which first aroused the suspicion of many of the sailors. Blankets were taken to the camp from the *Bear*, and in them the officers rolled the bodies. Not until this was done were they confided to the care of sailors for transportation to the steam launch and to the ship. These coverings of blankets were never removed, and when the iron caskets were prepared at St. John's they received the remains without a single blanket having been disturbed, and the lids were riveted on the coffins. Clean white waste was packed about the bundles in the caskets, to prevent their rolling about. Everything was done in a careful, painstaking, reverent way, and only to the officers and a few sailors—not more than three or four—was it known for a certainty that

### THE BODIES WERE MUTILATED.

In handling the remains after they had been prepared by the officers, the exceeding lightness of some of them was remarked upon by the seamen, and a doubt was more than once expressed if more than half of a body was within the covering. This was noticed in removing the bodies from their shallow graves in the gravel at the Cape and again when they were placed in tanks on the *Bear* and *Thetis*—six in one and seven in the other. It is said that the body of the Esquimaux was not mutilated to any extent, but it was with reluctance that it was left at Disco, and then only by the imperative order of the inspector of Western Greenland. At Godhaven the Governor wished the body left, but he was prevailed upon to leave it with the others. At Disco, however,

the demand for the remains was imperative. Some of the men had been little more than skin and bones when they died, but the little flesh they had was gone in places, as on the calves of the legs, on the hips, thighs and arms. Some of this, it was asserted, was used as bait for shrimps, some to sustain the wasting life of the survivors. There seems, from the condition of the bodies, that there was no concerted action on the part of those remaining to sustain life in this way. None of the limbs were missing. But rather it seems that the perishing men went to the bodies when hunger became unbearable and supplied themselves as best they could.

The disclosure made by unearthing the bodies of the dead was generally discussed by the crews of all the vessels on the homeward trip. Giving due allowance for the imagination of the sailors, the hard facts of the few who saw the remains and related what they saw to others before silence was enjoined, show that terrible scenes must have been enacted by the famishing men in the Greely camp during the many long months that famine was with them.

The officers of the vessels, who alone could tell in full detail the condition of the dead when found, refused to speak at all on the subject. "There is this much about it," remarked one, "that if cannibalism was resorted to it can never be proved. No oath, however sacred, could make the survivors speak. So, I say, it can never be proved. Proof by circumstantial evidence? Yes. But nothing else."

Commander Schley received our representative in his cabin on the *Thetis*. "I suppose," he remarked pleasantly, as the reporter entered, "that you have come to interview me?"

"Yes, sir."

"I must decline to be interviewed," said Captain Schley. "I don't wish you to consider me impolite, but I can say nothing."

"I wished to ask you about the subject of the report of cannibalism. Can you tell me anything about it?"

"I can say nothing," said the captain. Nothing whatever. I mean no disrespect by declining. You do not, I think, appreciate my refusal from a military standpoint. It is under that that I can say nothing."

Captain Emery, of the *Bear*, was at his home in Long Island. Lieutenant Crawford, in command of the *Bear* as first officer, declined to have anything to say. Captain Coffin, of the *Alert*, also refused to talk on the subject, as did many other officers seen. They all seemed to feel that the report of the expedition having been made to the Navy Department they would render themselves liable to court-martial if anything was said. This same feeling extended to the crews, which stand in the same relative position to the officers of the vessels as the officers to the department.

"It is not only this," said one intelligent seaman, "but it is such a horrible thing that I dread to think of it, and I thanked God that as time passed the crew quit discussing it constantly. It sickened me."

"It was a common topic, then?"

"Yes, indeed. The few who had seen the bodies had no backwardness at first in telling their condition. Those who had not seen them knew from the first that something was wrong by the way the officers screened them from view. That was from no feeling of respect to the dead, however great the respect really was."

"Did you see the bodies?"

"If I did I am not at liberty to tell you anything of their condition."

“What was the talk of others who did see them?”

“That portions of the flesh had been cut away from different parts of the bodies. Some were nearly stripped of flesh—nothing but bones left.”

“Would not that have been the case had the bodies been long buried?”

“I think not. In that country flesh does not decay. There was no putrefaction. The bodies would shrivel and dry up in time. I am satisfied as to what occurred at that camp, but I cannot say anything about it.”

Five bodies of the dead were reported as washed away. Four of these wretched men died in June—the month of the greatest want and suffering. That they were mutilated like the others, perhaps even worse, is not at all improbable.

From all of the score or more of officers and seamen, seen by our searcher after truth, on the vessels of the relief squadron not a single denial of the reported facts was heard. Officers declined to speak of the matter, as did a few of the seamen, while all were careful of any statement they made. Some of the visitors at the navy yard seemed to wonder that the facts had not appeared before, and to have taken it for granted when the condition of the Greely party was first reported that cannibalism had been resorted to.

It is more than probable that when all details of the story are known Dr. Octave Pavy, the surgeon of the expedition, will be found to have shared the same or a very similar fate to that of young Charles Henry. The deaths of both men are entered under the same date on the ship's journal. Nothing is said about Henry's being shot. There is a blank left beneath the words, “Under the following order,” and the names of the two men are written at the bottom of the page. The order, which was written on a separate piece of paper, had not been copied into the book. Dr. Pavy's body was one of the four swept away to sea. It is said that most of the men who went with the expedition were under arrest earlier in the winter for the same offence which cost poor Henry his life.

With regard to a rumor that the men who perished in the Jeannette expedition shared a similar fate, a gentleman thoroughly informed of the facts said: “It is not true. The bodies of the Jeannette dead were all found intact. The nearest approach to any such thing was in the case of Dr. Ambler, who sucked the blood from his own fingers.

The reader of the foregoing will bear in mind that it leads up to the actual facts afterwards discovered, and that it is all interesting because of the persistence shown by those who caught glimmerings of the true state of affairs and who determined to know the best and worst.

Just about this time there were others at Portsmouth, N. H., (where survivors had arrived) endeavoring to get at bottom facts.

The recital of this new phase in the already frightful story of the last winter of the Greely party, how men, crazed or stupefied by the pangs of hunger and the terrible cold, fed on the bodies of their companions, created great excitement in the quiet town of Portsmouth, so closely interested in the unhappy expedition, and was received with a general feeling of horror. Not that the information was altogether sudden and unexpected, for indeed it had already begun to be whispered about. At the navy yard, almost from the day of the arrival of the ships of the rescuing squadron, there had been a feeling that there was some hidden horror still untold in the history of those dreary months among the ice and snow. Military and medical officials had been more than ordinarily reticent, and all the intricacies of red tape which could surround the convalescent survivors had been retwisted and redoubled.

Extraordinary precautions had been taken to prevent the arctic heroes from communicating with the other inmates of the yard hospital, and the miniature lawn, on which they were accustomed to take their daily exercise, was strictly guarded by rows of sentinels. These measures may have, of course, their warrant in the debilitated condition of Brainerd, Long, Connell, and the others, but nevertheless quite another interpretation was by some people put upon this isolation since these latter and terrible rumors had gained currency.

"I freely admit that we felt there was something exceedingly ugly behind all this," said an attaché of the navy yard to-day. Indeed it is not difficult to see that to some extent, among both officers and civilians, the heart-rending story of the distress and madness of the unhappy explorers finds a more than partial credence.

### LIEUTENANT GREELY,

with his wife and children, was in possession of a neat, unpretentious cottage on the banks of the river and within the limits of the navy yard. Sergeant Brainerd and the others were quartered at the navy yard hospital. Those of the party who were strong enough strolled about the grounds and even visited the city, but care was always taken to guard them from the questioning and conversation of strangers. The strictest orders were issued against the visits of the reporters of the press. In fact, so thorough was the seclusion of the survivors, that a seaman, an inmate with them of the hospital, stated that passing the time of day with one of them was the only communication during the time they had been under the same roof. One thing seemed assured, that the story of the tragic death of poor Henry and the desperate resort to the flesh of their dead comrades had not come directly from the lips of the survivors.

### THE TALLIPOOSA

lay at the navy yard pier, and Secretary Chandler, accompanied by one or two of the ship's officers, was pacing her quarter-deck. The Secretary seemed to be in a decidedly sombre mood. As to the reported acts of cannibalism by members of the Arctic party, he stated that he had nothing to say. He would admit nothing and deny nothing. The reports of Lieutenant Greely and Commander Schley would doubtless soon be made and would be straightway put before the public. He had no knowledge of any movements in official circles looking toward the calling of a court of inquiry; in fact, the Secretary went on to say, the convening of such a court rests with the Secretary of War.

General Hazen said: "Well, there may be something on which to base such a story. It is largely exaggerated, however. I glanced casually over the thing—the article, I mean—and I noticed a number of misstatements."

"What were they, General?"

"Oh, for instance, it was stated that the amputated limbs of men were even eaten. That is not so. The only amputation that occurred was that of a limb of one of the survivors after the rescue. Now there was plenty of good provisions aboard the rescuing ships, and, of course, there was no necessity for eating flesh in that shape."

"The main story, then, General, about the horrible events is substantially true?"

"Why!" exclaimed the General quickly, "they can't be so very horrible

I suppose there must be some warrant for men even indulging in cannibalism when they are reduced to the very verge of death by starvation. But then I have no knowledge which I will communicate upon this subject."

A German named Rujjesser, one of the seamen of the *Thetis*, who accompanied the officers to the graves of the Greely party who had perished, said:

"It was Second Lieutenant Colville who stood over me as I dug up the bodies. He and one other officer and myself were the only ones that left the boat to go to the graves. I had my shovel with me, as I was saying, but the first thing I saw was a naked corpse lying right out on the ground. On the calf of the leg and on the thigh there were deep cuts, as though a sailor's sheath-knife had carved away the flesh. The skin was drawn tightly over the rest of the body, and even in the places where the cuts were, not much flesh had been taken away. The man was too much a skeleton, too much wasted, to yield more than half an inch of flesh on any part of his body. The cuts looked as though some person had made a hasty slash with his knife in what were once the fleshy parts of the leg. The slashes were about eight inches long and three wide. They were on both legs and thighs—four cuts in all. We three stood there looking at it for some time. Of course, it wasn't my place to say anything and I kept my mouth shut. Lieutenant Colville was the first to say a word. He sent me back for some blankets, so I dropped my shovel and hurried away. When I got back with the blankets there were two other naked bodies lying side by side with the first mutilated body we had found."

"Then these three corpses had never been buried?"

"Buried? No. They had been stripped of their clothing as soon as they had died, and left naked on the ground. Some of the flesh had been cut away from the arms and shoulders. The cuts were rough and jagged, as if done at night, and at a time when the cannibal had to trust to his sense of feeling."

The story of the shooting of young Charles B. Henry, a private, who was buried at Cypress Hills, was said to be briefly this: When the game grew very scarce early in June, 1884, Greely called his men together and with them took stock of the food on hand. There were only a few days' rations, and these were equally divided. In the division Henry made a grab for more than his share. This was passed over, but next night he was caught stealing food. A council was called to act in his case. They were desperate men. They felt that their own lives lay in protecting their rations. It was necessary to make an example; and besides, with one man out of the way there would be one less mouth to fill. So with one voice the poor fellow was condemned to die. He was shot in the head and breast, and it was claimed that when the body was found the head was missing. The coffin buried at Cypress Hills, it was alleged, contained only a headless trunk. Such is the outline of the story told by a half drunken sailor.

Commander Schley said:

"Did I know of anything of the kind having been done I should refuse to gratify a morbid curiosity and create a sensation out of the sad misfortunes of these men by disclosing my knowledge to any but the proper authorities. Men in such a situation lose their reason, and are not strictly human beings. Starvation reduces men to brutes pretty rapidly, and they will resort to means of sustaining life which to us would seem appalling. If you and I were reduced to such a strait that one must eat the other or both die, then it is proper that only the fittest should survive. Yes, sir, we have experienced a good deal of hardship. As soon as we struck the ice I did not sleep more than two or three hours a day, and when asleep my mind was working hard, looking for a lead through the ice. I found Greely many times in my dreams,

to say nothing of the easy passage I discovered through interminable fields of ice. From fifteen to twenty-two and twenty-three hours a day I spent in the crow's nest looking in all directions for the safest and quickest passage."

#### LIEUTENANT GREELY'S REPORT.

"PORTSMOUTH, N. H., August 11, 1884.—Adjutant General, U. S. Army (through Chief Signal Officer, U. S. Army): Sir: I have the honor to report that on June 6, 1884, at Camp Clay, near Cape Sabine, Grinnell Land, it became necessary for me to order the military execution of Private Charles B. Henry, Fifth Cavalry, for continued thieving. The order was given it writing on my individual responsibility, being deemed absolutely essential for the safety of the surviving members of the expedition. Ten had already died of starvation and two more lay at the point of death. The facts inducing my action were as follows:

"Provisions had been stolen in November, 1883, and Henry's complicity therein was more than suspected. March 24, 1884, the party nearly perished from asphyxia. While several men were unconscious and efforts were being made for their restoration, Private Henry stole about two pounds of bacon from the mess stores. He was not only seen by Eskimo Jens Edwards, but his stomach being overloaded, he threw up the undigested bacon.

"An open investigation was held, and every member of the party declared him guilty of this and other thefts. A clamor for his life was raised, but was repressed by me. I put him under surveillance until our waning strength rendered his physical services indispensable.

"Later he was found intoxicated, having stolen the liquor on hand for general issue. A second time his life was demanded, but I again spared him. On June 5 thefts of provisions on his part having been reported to me, I then had a conversation with him, in which I appealed to his practical sense, pointing out that union was necessary to our preservation. Distrusting him, I issued a written order that he should be shot if detected stealing.

"On June 6 he not only stole part of the shrimps for our breakfast, but visiting unauthorized our winter camp, stole certain sealskins reserved for food. I then ordered him shot. On his person was found a silver chronograph abandoned by me at Fort Conger and stolen by him. In his bag was found a large quantity of sealskin and a pair of sealskin boots, stolen a few days before from the hunter.

"Suspecting complicity on the part of several, I ordered his execution by three of the most reliable men. After his death the order was read to the entire party, and was concurred in by every member as being not only just, but as essential to our safety. To avoid public scandal, I ordered that no man should speak of this matter until an official report was made of the facts.

"I have the honor to request that a court of inquiry be ordered or a court martial convened, should the Honorable Secretary of War deem either advisable in this case. I have thought it best not to ask the written statement of the surviving members of the party for appendices to this report, lest I might seem to be tampering with them. I have not asked since our rescue, June 22, whether opinions concurring in my action have changed or not, leaving such questions to your action if deemed requisite. I necessarily regret that circumstances imposed such a terrible responsibility upon me, but I am conscious that I should have failed in my duty to the rest of my party had I not acted promptly and summarily. I am respectfully yours,

"A. W. GREELY,  
First Lieutenant Fifth Cavalry, U. S. A., and Ass't Commander of L. F. B. Expedition."



## ENGINEER MELVILLE'S PLAN.

## HIS OPINION OF THE JEANNETTE RELICS—THE OFFICIAL LETTER TO THE DANISH CONSUL—PATH OF THE ARCTIC CURRENTS.

Engineer Melville, who was one of the officers of the Greely relief ship *Thetis*, returned to Philadelphia. He would not talk about the expedition, as he thought that all the facts would come out in the official investigation which would certainly be held. He was much interested in the report of the finding of relics of his old ship, the *Jeannette*, off the southeast coast of Greenland. The only thing which he looked upon as throwing doubt upon the report was that portion which alleged that the charter party and De Long's checkbook were found. He said that this was impossible, because he brought both the book and the charter party home with him. It appears now that the official report of the Governor of Julianshaab does not allege the recovery of either, but only a portion of a box in which they had been probably at one time deposited. The official letter as translated is as follows:

"On the 18th instant three Greenlanders picked up on an ice floe some effects and some partly torn papers belonging to the wrecked American Arctic *Jeannette* expedition, among which are the following:

"1. Two end pieces of a wooden box, on which is written with lead pencil, on one piece: 'General orders, telegrams, sailing orders, discipline, ship's papers, various agreements, charter party.' The last words are not very plain. On the other piece was: 'Before sailing.'

"3. A torn checkbook. On the back of one of the checks is printed: 'For deposit with the Bank of California.'

"4. A pair of oilskin trousers, marked: 'Louis Noros.'

"These effects, numbering twenty-one pieces (besides the papers), are in my possession. I am going home to remain during the winter. Should anybody want further information, such can be obtained by addressing

"KOLONIBESTYRER C. LYTZEN,  
Kongl. Gronl. Handels-Kontor,  
Kjobmhavn, K. Denmark.

"The Colony Julianshaab, in South Greenland, June 23, 1884.

"Respectfully, CARL LYTZEN

"To the Danish Consulate in New York."

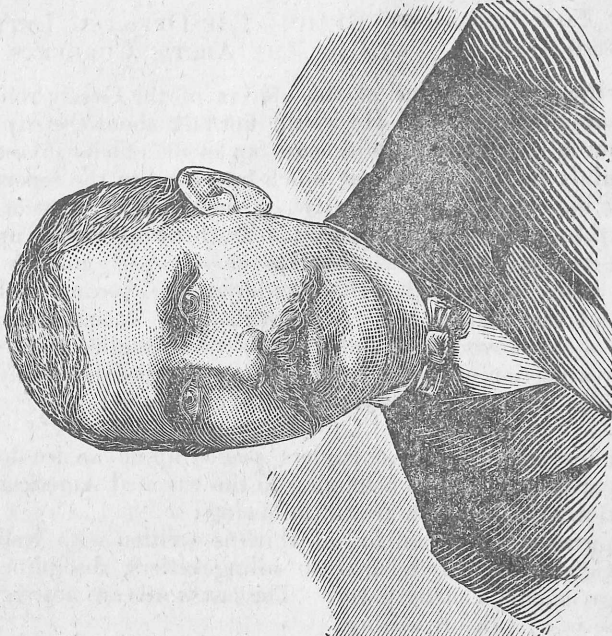
This authoritative statement establishes beyond a doubt the truth of Captain Wilson's story. The following interesting explanation of the manner in which the relics reached such an unexpected quarter is given by one of the owners of the *Fluorine*: "The course of the *Jeannette*, wedged in the ice, is true proof of a westerly current along this unexplored portion of the Arctic Ocean along the coast of Siberia. The ice would thus be taken between *Nova Zembla* and *Franz Josef Land*, where a strong westerly current sets against *Spitzbergen*, and thence southwardly around *Spitzbergen*, where an indraught of the *Gulf Stream* gives a northern direction to the current. This northern course, as you notice on the chart, continues to about latitude 80, longitude 10 east, where it meets the southward current pouring from the *Polar Ocean* and is carried down on the east coast of *Greenland*. When the ice got to *Cape Farewell* it was, very likely, carried around that corner of *Greenland* by *Gulf Stream* influence and floated to the very spot where it was found. In per-



**DOCTOR OCTAVE PAVY.**

Died June 16th.

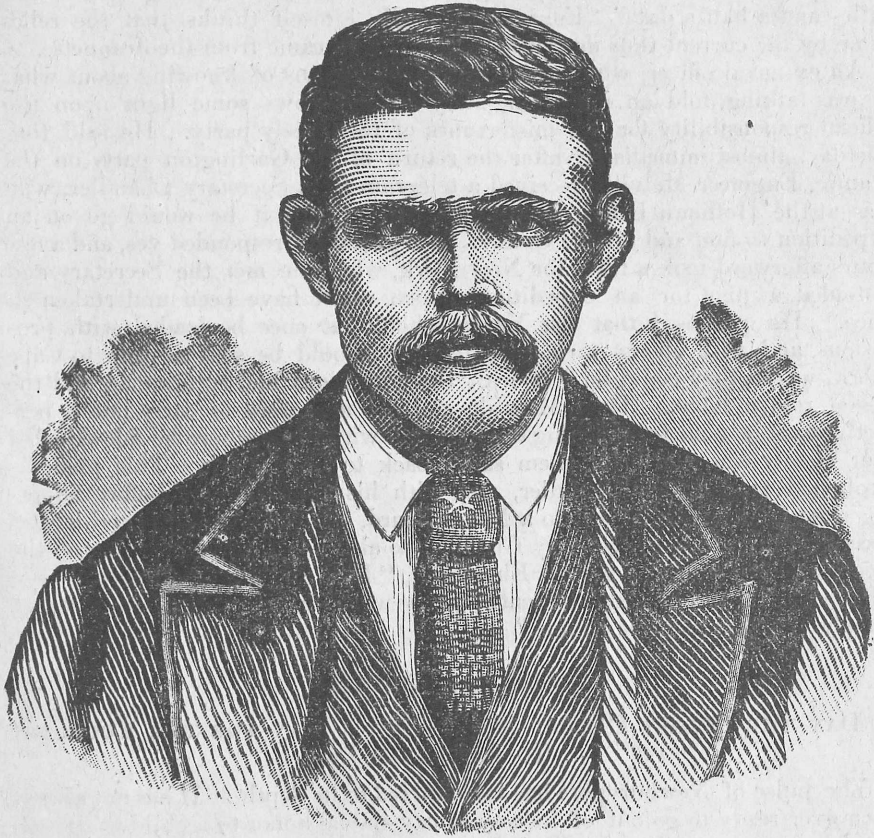
† Gestorben am 19ten Juni.



**SERGEANT JOSEPH ELLISON.**

Died after Rescue.

† Gestorben nach der Rettung.



#### PRIVATE HENRY.

Tried by Court Martial and shot by order of Lieut. Greely. This is a likeness of the German soldier about whose death the story of cannibalism was first started.

The will of Private Charles B. Henry, of the Greely Expedition, who was shot for stealing provisions, was filed yesterday for probate in Chicago. It is written in pencil on a scrap of paper about the size of a postal, torn from a blank book; is dated at Camp Clay, Ellesmere's Land, May 9, 1884, and reads as follows:

"I, Charles B. Henry, being of sound mind and health, do hereby declare this to be my last will and testament: All my property, pay due and that may become due, I bequeath to my parents, brother and sisters now alive, to be equally divided among them. William Helms, of 20 South Water street, Chicago, I appoint as my executor. Charles B. Henry, Private Fifth Cavalry, U. S. Army."

The will is witnessed by Lieutenant F. F. Kislingbury and Private Joll Bender. A postal card to Mr. Helms tells of the condition of the command, saying that "seven had already died and the remainder expected death."

forming this journey the relics of the *Jeannette* went about 2500 miles in about 1000 days, allowing for all the twists and eccentricities which the currents may be subjected to. This would give the floe an average travelling time of two miles and a half a day." Engineer Melville himself thinks that the relics came by the current thus described, if they really came from the *Jeannette*.

An ex-naval officer, who has unquestionable means of knowing about what he was talking, told an interesting story which throws some light upon the official responsibility for the misfortunes of the Greely party. He said that one day, almost immediately after the return of the *Garlington* party on the *Yantic*, Engineer Melville received a telegram from Secretary Chandler, who was at the Hoffman House, New York, asking him if he would go on an expedition to find and relieve Greely. He promptly responded yes, and a few hours afterward took a train for New York, where he met the Secretary and unfolded a plan for an expedition, which could have been undertaken at once. He proposed that the *Yantic* should at once be loaded with provisions, and with eleven men he (Melville) should be sent at once to Cape York, where they could be left with the provisions and equipment, and the vessel return home. Then Melville and his men were to carry out a perfectly feasible plan for reaching Cape Sabine with food, where he felt satisfied that Greely was, and bring them safely back to Cape York. This plan, as explained to Secretary Chandler, met with his approval, but before adopting it he finally submitted it to a Naval Board, which at once rejected it and succeeded in inducing Secretary Chandler to abandon the plan because of the Board's jealousy of the gallant Engineer. "Had this plan by Melville been adopted," said the officer, "the entire party would have been saved, because Greely was then at Cape Sabine."

### WELCOME HOME!

#### A DAY THE OLDEST CANNOT MATCH AND A DAY FOR THE YOUNGEST TO REMEMBER.

The pulse of Newburyport has been stirred to its depth. It has not always been over ready to go out of its way to pay special honor to a child of its soil who has won fame abroad. Christ's saying, "a prophet is not without honor except in his own village," has been especially true of Newburyport on more than one occasion. But the life of our young Arctic hero has been so full of modesty as well as of bravery and gallant achievement, that hardly a dissenting voice has been heard in the preparations for doing him honor. Nothing has been so remarkable about the whole affair as the general and deep-seated feelings in the breasts of all the community over the affair, following out, it must be acknowledged, in a large measure, a good, though somewhat blink instinct that the event was worthy the attention and mental strain it has imposed upon them. For there has been displayed on all hands a marvellous lack of definite appreciation of what Greely and his comrades have really accomplished, or of the real cause in which they labored and suffered. This ignorant sentiment was even voiced by one of the speakers of the day during the afternoon exercises. Among a large class there has a sort of chorus gone forth: "Oh these Arctic survivors ought to be honored for their bravery; but they were on a useless errand, and others ought to be stopped from following in their footsteps." There seems to be a prevalent vulgar notion that Greely and his mates were only bent on a vainglorious attempt to set foot on the particular

spot of earth known as the North Pole, with no other object than the boast of having been there, where none could reach before. No one seems to have had the simple sense to explain to the multitude that it is the observation of nature in the far northern region that is sought; that the Arctic circle is the veritable "Cave of the Winds" in ancient mythology; and that our bold bravers of the blasts of Boreas are bent on finding why the wind, "which bloweth where it listeth," should list to blow in this direction or in that, and will never rest until they obtain this information; and further, that the slightest additional hint on this subject is of incalculable value, affecting ages unborn, their comfort, their safety, and their means of improved existence; and above all, that while countless thousands die in ignominious strife against vice and squalid poverty, and heartless social oppression, the loss of myriads in such a cause as that of Arctic exploration is far to be preferred. No man's life is of more value than another's. We are all as sands of the shore, our snuffing out a moment sooner or later is of no more significance than the eccentric flashes of the firefly. If there is the remotest chance that an Arctic expedition will add a trifle to the stock of human intelligence, the sacrifice of life is well compensated. The lives would at best soon vanish; the knowledge lasts forever and benefits the millions of ceaseless cycles yet to come. The only thing which justifies the extraordinary interest and sympathy extended to Greely and his comrades, their joys and sorrows, while thousands of others are suffering and starving unheeded day by day, is the fact that Greely and his mates have been fighting the battle of humanity. It is a groping instinct anent this truth which has so awakened our citizens to such a demonstration as they have made, and which has impelled it on, in spite of inadequate time, often inadequate arrangements, and scanty means, to an almost unparalleled success as a demonstration of public feeling. It was the overmastering sense of interest in every participant, and appreciation that it was an honor to join in such an affair which has made Newburyport's reception of Greely the phenomenal success in our history. And this was the home of his aged mother.

At Newburyport, Mass., August 13, 1884, the people fairly rose at the reception given Lieutenant Greely, the Arctic hero. All along the route of the procession the streets were thronged with people, and what is very remarkable, so great was the crowd of strangers that Newburyporters seemed to be literally buried from sight, save, of course, those hiring the windows of stores, houses and halls; one would now and then go from fifty to a hundred feet along the sidewalks before recognizing a familiar Newburyport face. Whenever Lieutenant Greely was recognized some one would call for cheers, and they would be given with a will, and taken up and echoed and re-echoed along the great lines of humanity lining the streets, so that it can truly be said that almost from the time of leaving his mother's home in the morning until his return in the afternoon he received one continued grand ovation. When the procession stopped opposite the Mall after the countermarch, Lieutenant Greely's carriage was instantly surrounded by a great crowd of people who were so eager to speak to him that he would doubtless have been subjected to considerable annoyance but for the watchful care of his brother Sir Knights, who gathered with drawn swords upon either side of the carriage. The Mall was literally packed with people, the front being reserved for all the school children of the city: each one of the latter had a flag in hand, and when the procession moved again, and the children on the upper end of the Mall caught sight of Lieutenant Greely, they commenced waving their flags and set up a

joyous cry of welcome. This was taken up by the others along the line, the childish voices rolling along like unto the waves upon the seashore, increasing in intensity until there came welling up from childish throats one glad triumphant shout, accompanied by the waving of a perfect sea of flags. Lieutenant Greely appeared delighted with this outburst from the little ones, and kept bowing and smiling his thanks to them, which served of course to make the children more and more enthusiastic, and almost in an instant their enthusiasm spread to the crowd of men and women all about the Mall, grand stand, streets and sidewalks in that vicinity, and such a storm of cheers, clapping of hands, waving of handkerchiefs, followed, as has not before been witnessed in Newburyport for half a century at least. As the procession passed down State street a pretty bouquet came floating down from one of the windows; it was passed to Lieutenant Greely, who smiled his thanks to the fair donor. On Fair street, Orange street, Bromfield and High streets, there were pretty groups of little children, waving flags and trying in their childish way to utter words of welcome. It is needless to say that their cunning efforts were repaid by bows and smiles from the honored guest of the day. When the procession passed the home of H. P. Macintosh, that gentleman appeared in full Sir Knight uniform, bearing in his arms a little daughter of A. W. Teel. The little lady bore a splendid floral maltese cross, which she presented to Lieutenant Greely, saying "Lieutenant Greely, please accept this maltese cross as a token of the regard of Mr. and Mrs. H. P. Macintosh." He replied as follows: "Thank you, I thank you; I highly appreciate the gift." At the corner of Prospect and Lime streets his carriage was again stopped and little Miss Lulu Fowle presented him with a superb floral tribute. Lieutenant Greely took it from the hands of the little lady saying, "I am indebted to Miss Fowle," and the carriage drove on. As the procession passed his mother's home there was another outburst of cheers. Another brief halt was made at the residence of John H. Newman on High street, where Lieutenant Greely and his brother Sir Knights indulged in lemonade, which proved decidedly refreshing. As the carriage of the Lieutenant neared the home of Solomon Bachman, a party of ladies and gentleman already formed in line came tripping down over the lawn to the sidewalk where they halted and greeted him with cheers and waving of handkerchiefs, to which he pleasantly responded. At the Merrimac House a halt was again made. The Lieutenant said that he was highly gratified at the hearty welcome home he had received from his fellow townsmen. He said he felt very weary, but could not bear to leave the procession until after he had had a chance to thank the people for their many courtesies from the grand stand. As the procession passed the post office and his eyes fell upon the nineteen laurel wreaths surrounded by mourning badges, he was visibly affected, and softly murmured, "The boys." The procession halted in front of the grand stand on Brown square at 1.13 P. M., and Lieutenant Greely was escorted to a chair in the centre of the front row of seats, his appearance being the signal for another outburst of cheers and music. Governor Robinson was also greeted with cheers as he came to the front. From the grand stand there was a sight long to be remembered. To the right engine companies, accompanied by bands of music and gaily decorated machines, were parading; in front and around the grand stand was packed an immense crowd of people; to the left stood the Eighth regiment while here and there scattered among the crowd were horses and carriages literally wedged in. It was a memorable gathering.

## THE FORMAL WELCOME.

## THE EXERCISES AT THE GRAND STAND—MAYOR JOHNSON'S WELCOME AND LIEUTENANT GREELY'S SPEECH IN REPLY—A SPEECH BY GOVERNOR ROBINSON.

Arriving at the grand stand, Lieutenant Greely and guests took seats on the stage. After Carter's Band had played Keller's hymn, Rev. Dr Wallace of the Old South Church was introduced and invoked the divine blessing, praying :

"Almighty God, our Heavenly Father, we give thanks to Thee that thou crownest our lives with Thy mercies. Thou art the Creator of heaven and earth and all things therein ; our Sovereign Ruler and Disposer. Our help is in Thee. Thou art our God, and we will praise Thee. We render devout thanks to Thee for the occasion which has summoned us together, with one heart, to receive Thy servant, who comes to his native city after these years of toil and suffering in an inhospitable clime. We praise Thee for the success with which Thou dost crown his efforts to advance the interests of knowledge and humanity, and that his heroic fidelity and courage and sacrifices are receiving the plaudits of his approving countrymen. We especially render devout thanksgiving for the preservation of his life, when in imminent peril, that he was sustained in his extreme hour until succour came to him, and that he has been granted strength to appear among us to-day. We invoke the divine blessing upon him to implore that he may obtain complete restoration, and that it may be given him to possess length of days with ever increasing honor and usefulness, and at the end receive the benediction of the blessed, "Well done, good and faithful servant, enter into the joy of thy Lord." We commend to Thee the comrades of thy servant who survive, who were the sharers of his perils and sacrifices, and pray that their lives and health may also be precious in Thy sight, and that they may obtain the rewards of their faithful service. We bow in humble submission to the sad Providence that shadows our rejoicings, that so many of the expedition were called to sacrifice their lives, and commend to the Divine compassion the homes and communities which are in mourning because of their untimely death. We commend to Thee, O God, our beloved country, with all who bear rule in the several stations of responsibility, and pray that Thou wouldst bless our Army and Navy and ever give us prosperity both on land and sea. Bless our Commonwealth, and all who preside over its welfare. Bless this, our own favored community—our homes, our institutions, our charities, and grant that all our trusts may be so administered that we may lead quiet and peaceable lives in all godliness and honesty which is good and acceptable in the sight of God our Saviour ; Vouchsafe, O God, to be with us in the public and private rejoicings of this day, in our welcomes and rejoicings may we honor Thee ; Continue to raise up from among us those who shall gain just renown by their fidelity to truth and to humanity, and who shall worthily emulate the good and the honored who have preceded us. Hear these our supplications ; accept our thanksgivings which we render ; pardon all our sins : help us to consecrate to Thee all our days, and through Thy redeeming mercy bring us all at last to Thy heavenly presence, which we ask through our Lord and Saviour Jesus Christ, to whom with the Father, and the Holy Spirit, be glory and praise forever and ever, Amen."

Mayor Johnson then stepped forward and welcomed Greely, as follows :

"Lieutenant Greely : In behalf of the citizens of your native city, I welcome you home. From our hearts we rejoice at your safety and return. The honor you have brought, as well as the fame you have achieved for yourself, can never fade. So long as the world shall exist, so long will endure the name of Lieutenant A. W. Greely, of Newburyport."

Lieutenant Greely then rose, and after the applause and cheers had subsided, replied as follows :

"It is not possible for me to put in words an expression of what I now feel, at such a reception as this. On all previous occasions when I have returned here, from my experience, first as a private in the war, and then as an officer in the war, and as an officer in the regular service, I have always experienced the most kindly treatment from this, my native city. On my late return to civilization and my country, the first part of the coast to meet my eye was Newburyport, its hills, its spires, and its houses. In my passage to and fro through the streets of the city to-day words fail to express my feelings, or utter my thanks to you all. As I telegraphed from St. John, had I consulted my own feelings I should have preferred a more quiet occasion, but since you would have it like this, there is nothing for me to do but to once more thank you."

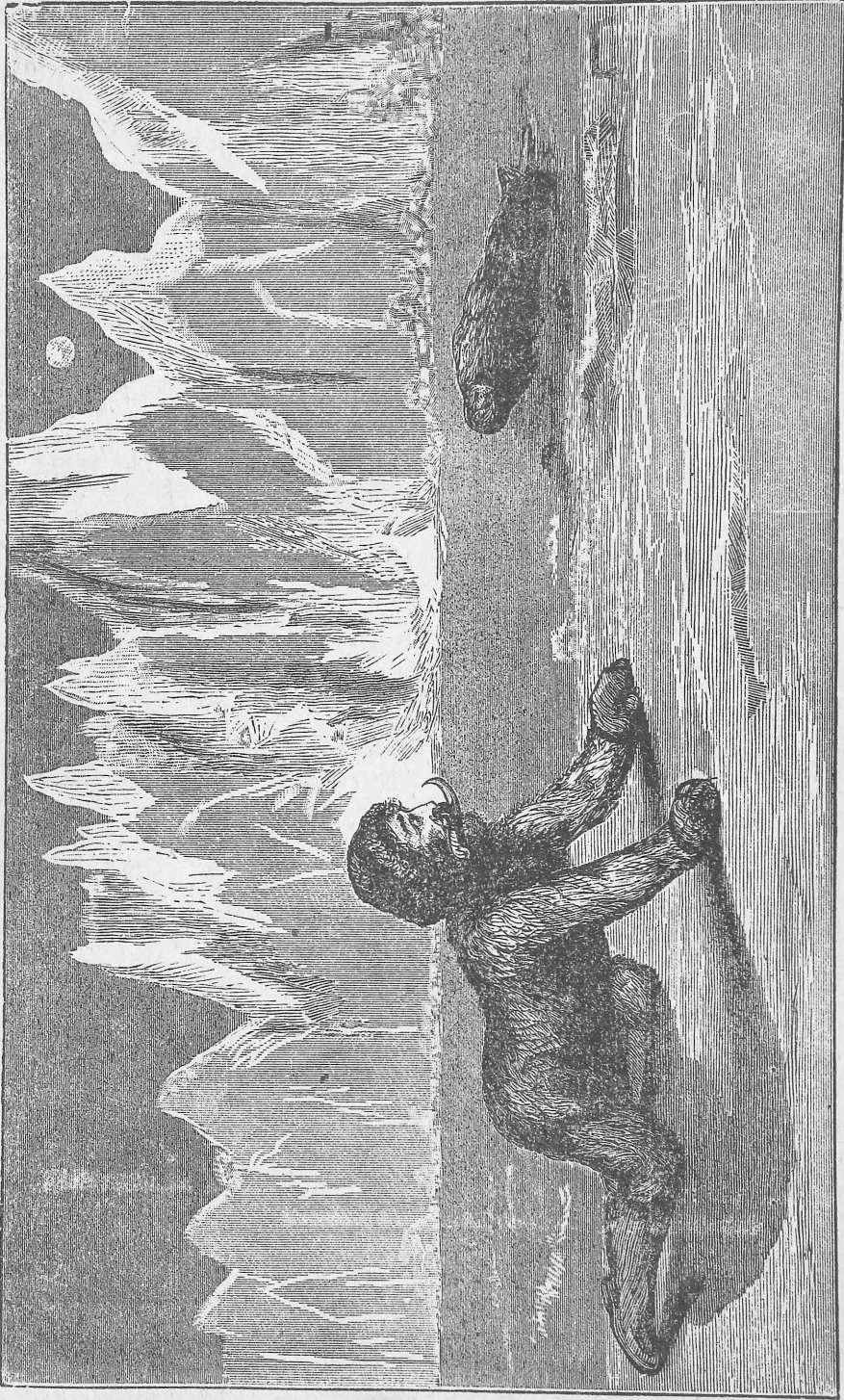
At the close of Lieutenant Greely's remarks, which were greeted with cheers and music, Mayor Johnson advanced and presented him, in behalf of the commonwealth, with a magnificent floral ship. The ship, the presentation of which was the signal for another great outburst of applause, was presented by S. W. Twombly & Sons, florists, of Boston, as the offering of the commonwealth. After Lieutenant Greely had expressed his warmest thanks for the gift, Mayor Johnson said : "Ladies and gentlemen : As Governor Robinson has been prevailed upon to say a few words to you, I have the honor of introducing that distinguished gentleman."

Governor Robinson was very cordially received, and spoke substantially as follows :

"Ladies and gentlemen, citizens of Newburyport and country roundabout : It may possibly be thought an intrusion for a stranger to step in and utter a word amid the joyous festivities over the return of one of your sons. While Lieutenant Greely belongs to Newburyport, he is yet of Massachusetts ; Berkshire claims him as much as Essex ; he belongs as much to the Connecticut valley as to the eastern section of the State ; and his welcome even is not to be confined within the boundaries of this State. His honored deeds, his heroism, his noble self-sacrifice, may be made the theme of song, the sentiment of the heart as well as the sentiment of martial music, of banner and of streamer, but what is grander and yet more grateful still to him, can be shown in the warm grasp of the hand when heart meets heart, eye looks into eye, and as friend to friend he tells what appeals to the heart more than this demonstration, which appeals to the ear. In view of the honored past let me say to you, Lieutenant Greely, that you are welcome home—home to Massachusetts, where you are sure of a warm, hearty welcome on every hand, if you will but wear your name in your hat. Imagination cannot fill up the picture now forming in his mind—no one can judge of the reality. It must seem like a very dream, this change from death to life, this change from cold and starvation to warmth and plenty, from disease and death, aye, from the very jaws of hell—to home, to wife and family, to Massachusetts, to Newburyport, to all that is dear, all that is necessary to complete the sunshine of happiness."







“I was starving and felt myself more like a beast than a man. With knive clenched between my teeth, half sliding, half crawling, I desperately approached the object I had marked for my food.”

„Dem Hungertode nahe war ich mehr Thier als Mensch. Mit dem Messer zwischen die Zähne geklemmt, theils auf dem Eise schleifend, theils kriechend, dem Körper, den ich mir zur Nahrung auserkoren hatte.“

In closing the Governor urged the fellow citizens of Lieutenant Greely in later days, should he need their sympathy, to remember the past and not fail to extend the warmest tokens of human friendship. The Governor was frequently interrupted by applause, and at the close was the recipient of a round of cheers.

Rev. Mr. Wallace pronounced the benediction, and this closed the noon exercises at the grand stand.

After Lieutenant Greely had been introduced to the guests present on the grand stand, he was taken to his carriage and driven home, while the guests all proceeded to the City Hall, where, after arranging of toilets, etc., they marched to Fraternity Hall, where refreshments were served.

### AFTERNOON EXERCISES.

#### INTERESTING SPEECHES, PRECEDED BY A BAND CONCERT.

Soon after 3 o'clock a great crowd of listeners assembled in front of the grand stand on Brown's Square and listened to a band concert and speeches interspersed. The musical programme, performed by Carter's Band, was as follows:

1. "San Francisco March" (composed by Sir Knight T. Morrill Carter and dedicated to Boston Commandery on their last year's trip to California).
2. Selections from "Beggar Student."
3. "Star Spangled Banner."
4. Galop by Strauss, "Dr. Picklehaub."
5. Song for cornet, by Victor. "Farewell."
6. "Coon Medley," by T. M. Carter.

Hon. E. F. Stone called the assembly to order and spoke as follows:

"Fellow Citizens: We give this day to services in honor of our fellow-citizen, Lieutenant Greely. It is a day of cordial welcome to our honored son, who comes home armed with glory and renown. We have received him with music and banners and gay decorations—the natural expressions of our joy and satisfaction at this wonderful deliverance from a peril so imminent that it seemed to leave no room for hope. I read on the arch that surmounts the doorway opposite to the City Hall, 'Newburyport honors her son.' Why does she honor him? It is meet to-day that we not only show our joy at his safe return by these outward demonstrations which make the day so gay and festive, but that we should take this occasion to say something of his virtues and of those high qualities which have distinguished him from a boy, and have made his life a success and an honor to his native city. How modestly he bore himself in the brief remarks he made upon this platform, and how truly he spoke when he said that some quiet, cordial reception would have been more agreeable to his taste than display and ceremony, but as we wished it, he yielded. His life is full of heroism and of those brave and resolute qualities which make the hero. When the rebellion begun, teeming with patriotism and impatient to engage in the contest, he enlisted, a mere boy, and by his good conduct, soon raised himself to the rank of lieutenant. Afterwards, when it became necessary to use the services of colored troops, without hesitation, in spite of the prejudices that then existed, he took a commission, and soon distinguished himself by his bravery and devotion to duty, rising to the rank of major before the war was concluded. When peace came, by his own efforts and merits he obtained a commission in the regular army, and since then has been constantly gaining in reputation and standing, winning the good opinions of those who knew him by those rare qualities of courage and

perseverance which have been his chief distinction through life. And this is why we honor him. Because he has exhibited in his whole life those high moral qualities which make the hero. And there is nothing that excites the admiration of mankind like the heroic quality—nothing that excites such genuine enthusiasm, as those deeds which imply courage and self-sacrifice. And as we honor Greely, and the more we reflect upon his life and career, the more we perceive that his success is not an accident to be explained by any of the methods or expedients which often account for the success of clever men, and will not bear examination, but the reward of genuine merit, and legitimate result of a life governed by high emotions, and devoted to worthy ends. But, fellow citizens, I am not here to sound his praises. We have men here who know his story and can recount his virtues and his deeds much more eloquently than I can; men that have observed his career with interest from the time that he was a poor boy, a pupil in our common school, till he took command of the Arctic Expedition, which he was so well fitted to organize and to lead. We have with us Maj. Ben Perley Poore, who is familiar with his history, and who is always interesting and entertaining when he attempts to speak. I present him to you, with great pleasure, and hope that he will now address you.”

Colonel Stone then introduced Major Ben Perley Poore, who spoke substantially as follows:

“I have known Lieutenant Greely more intimately at Washington than elsewhere. I knew him during the war, and when it was decided to arm those in whose behalf the war was fought he gallantly took command in a regiment raised in Louisiana. When the war was ended he was given a commission in the regular army. He went upon the plains fighting Indians, and afterwards he entered the signal service that was stationed at Washington, where he was employed in prophesying the weather. Here he conceived the idea of stations along toward the North pole. From that day you and the world know his history, and to-day we are gathered here to do honor to the man whose fame has gone forth around the whole world.”

Richard S. Spofford was the next speaker called upon. Mr. Spofford delivered the following eloquent and stirring speech:

“If there were ever contrasting events in human lives, more strange than any told in song and story, they are to be found in the experiences of Lieutenant Greely and his associate heroes.

“We behold him and his little band, on their perilous march from that point of duty where, for a period of years, as it were beyond the bounds of time and space—*extra flamantia mœnia mundi*—they had held the outposts of Science, against the beleaguering forces of Polar cold and death. Their presence but a mere speck of life in those dreary wastes which give to the Arctic region a deeper than the desert's solitude, above them and around them the lonesome light of the unfriendly and unsetting sun, reflected in spectral gleams from battlemented glaciers and plains, illimitable snow and ice, before them the untravelled and interminable way, with its hidden perils and alarms, so isolated are they that they feel no neighborhood but that of absolute negation, sole monarch of this unpeopled realm. In the midst of appalling silences, broken only by the crack and collision of the ice, the fall of the frozen drift, we follow them upon their desperate journey, their food scant, their strength half spent, their limbs frost-bitten, their eyes blinded, that awful suspense confronting them where years of absence shroud as with a pall knowledge of how much of home

the grave has swallowed, with no solace but the consciousness of achievement and with no cheers, but their abiding faith, that come what may, at the appointed time and place the great hand of their country will be stretched forth to meet them. All this we see as but the prelude to that awful moment when they suddenly awaken to the knowledge and realization that with their own duty done to the last mite of its requirement, done without the loss of life or limb, their country, for whatever reason, has failed in hers, and forsaken in those icy wilds there looms before them they know not what destiny of abandonment, of starvation, of agony, despair and death. This was an apprehension realized to its darkest detail when, wrapped again in the terrors of Arctic night, again in the long glare of undying day, those that survived saw their comrades yield one by one to the deadly summons of hunger and cold—saw the fierce ocean currents sweep away many of those over whom with pitiful hands they had scattered snow for earth in the committal of earth to earth, ashes to ashes, dust to dust, until at last, with diseased and disabled limbs, with powerless hearts, with delirious brains, without food, without fire, without strength, almost without life, they heard the cry of the rescuing voices when but another day would have made that rescue only the discovery of a frozen encampment of the dead.

To-day the contrast! Sunshine and summer, music and flowers, troops of friends, the plaudits of admiring crowds, the pomp of civic honor, home, wife, children, mother, country! How great a change! How marvelous a transformation! Oh, tired eyes, dazzled with the ice-blink, and so long familiar with the awful apparitions of the north, how sweet to you must be these green fields and these pleasant shores of your native river! How sweet the faces of old friends, the unforgotten haunts, the meadow levels, the spires, the hillside graves, the streets of Newburyport!

From that thrilling hour when out of the darkness and gloom surrounding Lieutenant Greely's fate there came, to the sudden amazement of the country, since no report from the Relief Expedition was expected earlier than September, the news of his rescue and of the circumstances attending it with all their tragic import, it has been gratifying to see with what demonstrations of gladness and of sympathy that event has been universally hailed. Looking upon Lieutenant Greely simply as an American citizen, whom we were proud to claim as our countryman, and upon his deliverance as one of the most brilliant exploits of the naval arm of our power, the people of Newburyport would not have been true to themselves or to their traditions if they had been indifferent to the occurrences to which I refer. But remembering Lieutenant Greely as their own townsman, familiar to all their hearts and homes, it needs only this day to show with how much more personal an interest their feelings have been quickened and their minds elated by every successive incident of his triumphal career. It has seemed to them well that the civilized governments of the earth, rejoicing with the government and people of the United States, should have exhibited by their messages of congratulation, sentiments so creditable to themselves and so consonant with the highest humanity. It was well that, upon their arrival at Newfoundland, the rendezvous of the returning fleet, within the dominions of that gracious Queen by whose ministry one of the ships of the relief squadron had been presented to our government, our brave heroes should have received the hospitality so lavishly thrust upon them there. It was well upon the arrival of that fleet within the waters of the United States, where the *Thetis*—rightly named for that sea-deity who bore the arms to Achilles—had brought the Arc-

tic dead to be bathed in the tears of the nation as the ancient Thetis preserved the body of Patroclus by bathing it in the nectar of the gods, it was well, I say, that under such circumstances our own country in her sovereign capacity, her chief magistrate represented by the heads of great departments, should with national ceremony and with naval display and armament—the State of New Hampshire and our sister city of Portsmouth impressively participating therein—have fitly commemorated so important a national and public event. All this, I say, was well, was precisely as it should have been, and it may be said with truth of the event last week at Portsmouth, that rarely, if ever, have there been witnessed scenes more memorable, more fraught from beginning to end with those elements which inspire appreciation of the majesty of national power, the dignity of municipal authority and the value of individual character. But here in Newburyport, here in his native city, it is not merely a public reception which we tender to Lieutenant Greely and his associates, celebrating those events whether gratifying or mournful that constitute the dramatic spectacle of which he is the central figure, not this alone but something more. Here it is intended to be, here it is in fact with all that the phrase implies, so happily employed in the city's official invitations, Lieutenant Greely's Welcome Home.

Whither, from his weary wanderings and unspeakable perils, from the mental and physical strain which he has endured so long, and from the torturing death which he has but just escaped should he turn his steps with a more confident assurance that loving arms would be extended to embrace him there, than to this his native town. Where so gladly as here could he bring the laurels he has won, that his native place might share the rewards of his victory and participate in his fame. Where, above all, if not here to his mother's home, to the community that have sympathized with her long suspense, and who have compassed her with sweet observances, where, I repeat, if not here, should his heart revert and his footsteps bend, with the first promptings of filial duty and love!

That Newburyport is not unappreciative of the affection with which her son in his hour of triumph turns toward her, is witnessed not alone by the action of her corporate authorities, but in the generous, the spontaneous uprising of the whole community. The City Fathers, they are here to do him honor by their presence. The people, in their various forms of social organization, they are here to see that no mark of courtesy or of respect be omitted. Those honorable Masonic bodies, almost coeval with the town itself, at their head the Knights Templar, in the ancient encampment of which Sir Knight Greely is an active member; the trades and artisans whose skill and superiority are valued far beyond our limits; the lads of that intrepid and faithful fire department, as ready to battle the terrors of flame as the heroes they honor have been to battle the terrors of the cold, and who are now, as they always have been, the reliance of the city that they so vigilantly protect; that famed regiment of the volunteer force of Massachusetts, whose record the country knows by heart, resplendent as it is with martial deeds; all these are here to augment the impressiveness of the occasion and to make this the most memorable day in the city's annals. Here, better than all, more beautiful than all—a feature which has distinguished every ceremony of a similar character in our local history, including the receptions to Washington and Lafayette,—with their bright expectant faces all aglow with youth and youth's exceeding beauty, the children of the public schools have ranged themselves in their lovely lines to see the hero pass, and, as it were, to utter beforehand

in his hearing the voice of posterity, as, in the Scottish legend, St. Dunstan's harp announced future events with its spontaneous sound.

It is Plutarch who has declared that the first requisite of happiness is to be born in a famous city, and it is no undistinguished roll of fame of which Newburyport in her exultant moods may boast, as she reviews her annals and recounts the names of the illustrious men with whom her life has been identified. Where the long role of the angry breakers, warders of the city's watery gate, sounds his eternal requiem, there lies in his yet unnoted grave, a proto-martyr of civil and religious freedom in the New World, the school-fellow of Cromwell, the companion of Milton and Sir Henry Vane, the banished liberal of 1637—John Wheelwright. Here, within those walls which have resounded to his rapt eloquence, stands the cenotaph beneath which rest the venerated remains of George Whitfield,—Whitfield whom Cowper sung—and of whom Buckle said that, if the power of moving the passions be the proper test by which to judge an orator, we certainly may pronounce Whitfield to be the greatest since the Apostles. Here rose among the earlier of our American jurists, Theophilus Parsons, sufficiently learned to be a recognized authority upon the British bench and with whom men who became no less distinguished than Rufus King and John Quincy Adams, studied law. Here lived and died that most versatile character of the generation to which he belonged, Caleb Cushing, scholar, author, lawyer, statesman, diplomatist, publicist. Here William Lloyd Garrison lived and labored, and here he founded the earliest of those anti-slavery societies which have given to his name immortal association with the emancipation of the slave. Here was the poet Whittier's early residence, whose hymns of labor and of freedom have made the world a better world in which to live; here both Longfellow and Lowell had their ancestral home; and here Pierpont, Lunt and Pike have mounted into the heaven of song upon no laboring wing. Here one of the foremost of her sons, considering his beneficent record, the mechanic and inventor, Jacob Perkins, grew to manhood, to whom it is rendering just, if tardy, homage to say that but for those ingenious processes by which he re-created, as it were, steel engraving, the most precious treasures of art would have continued to be the monopoly of the opulent few, and their copies now so indefinitely multiplied by the engraver's skill, would never have adorned, with all the refining influences, the poor man's dwelling, and that but for his success in spanning the Merrimac, well nigh a century ago, with its picturesque Chain bridge, no gossamer span would fling its airy flight between Brooklyn and New York, varying neither in design or principle from its prototype so familiar to us here. And here also George Peabody, the greatest philanthropist perhaps of any age, began his business life, fitly remembered to-day because of his munificent contributions to earlier Arctic Expeditions, and because one knows not how far his generosity to Newburyport, in his noble gift to the Public Library, may have stimulated, with the opportunities of study which it afforded, the youthful Greely's ambitions and so shaped his undaunted career.

But even with all this record of splendid names and with a history glowing upon every page with the brightsome light of heroic sacrifices and honorable deeds, I confess to-day, that, taking it for all in all, measuring it in just and unexaggerated proportions, the City of Newburyport has had no greater occasion, has scaled no loftier altitude than that which she now enjoys in giving welcome to the most illustrious of her living sons, who "fills the mighty space of his large honors" with her renown,—an occasion when, if

ever, the humblest of her citizens, pointing to that epigrammatic scroll, *Terra marique*, with which her municipal shield is emblazoned, may be permitted to vaunt her pre-eminence both by land and sea.

If it is asked by what instrumentalities, or with what sorcery and magic our fellow-townsmen had made fame his captive and enrolled his name among the names of the world's heroes, nowhere can the response be made so well as here. Those of us, at any rate, who have had the pleasure of his acquaintance, and who have followed the course of his shining career, have never for an instant doubted that in the perilous and arduous duty to which his country had assigned him he would exhibit all the elements requisite to crown the enterprise with success, let its dangers, its sacrifices, its labors be what they might. The event has shown how just were our anticipations. Notwithstanding all its misfortunes, the expedition commanded by Lieutenant Greely, —we have the assurance of his superior officers,—has been a complete success. Everything expected of it has been performed, and everything has been saved and reported of that official and statistical character for the attainment of which it was organized, and we know not how valuable its treasured archives may prove to be.

#### A STORY OF HEROIC ACHIEVEMENT.

Mr. George Kennan, of Washington, who has taken an active interest in recent attempts to relieve Greely's party, and who went before the Arctic Relief Board to urge the offering of such reward as would secure the co-operation of the whalers in the search, says :

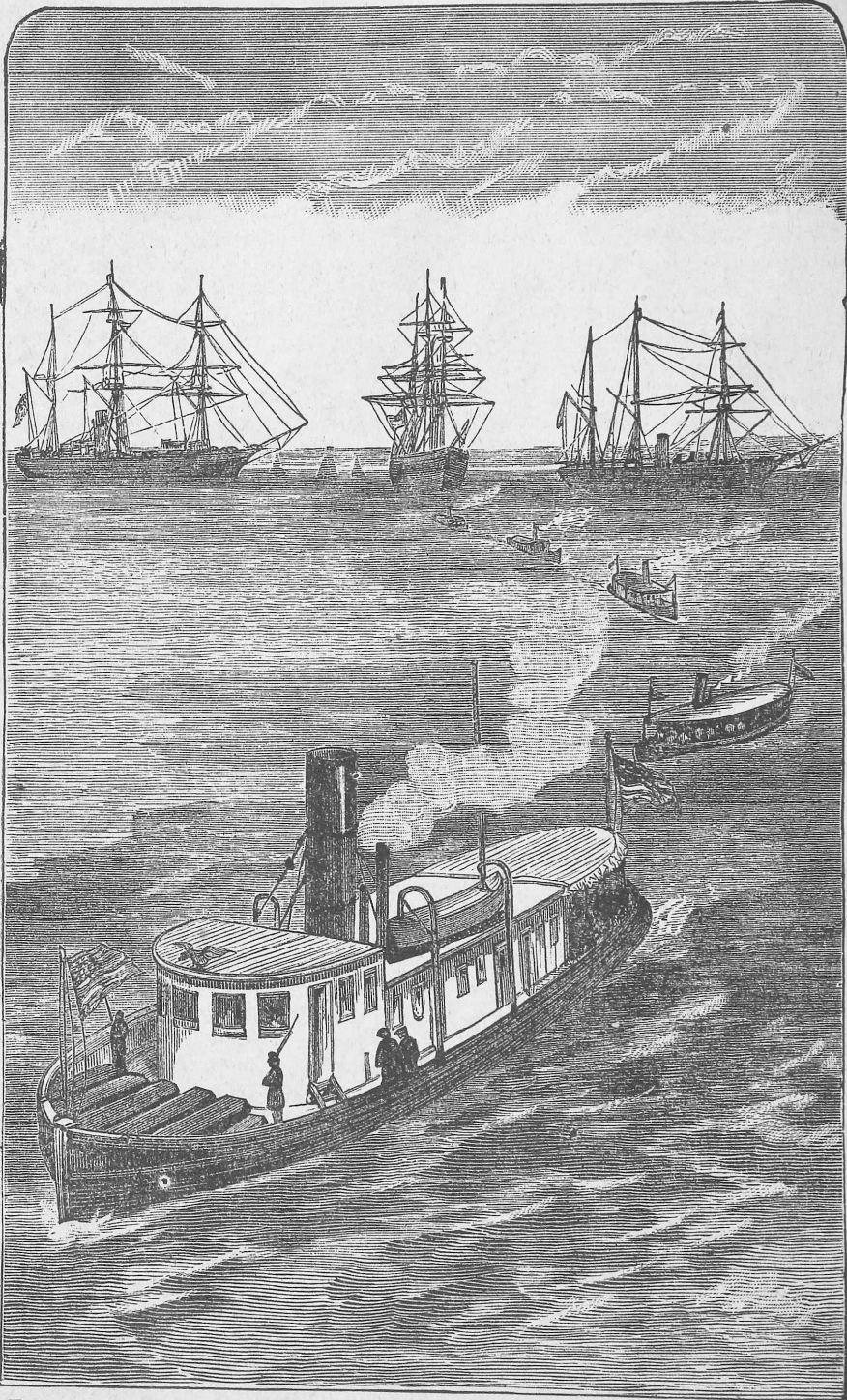
"It is a story of remarkable and heroic achievement in the field clouded by disaster, due to incompetence in Washington. If Lieutenant Greely and his party had all returned in safety to the United States, as they might have done had they been properly supported, the Arctic record, in point of skillful management and success, would have been unparalleled. No other Arctic expedition has ever spent two consecutive winters and part of a third in such high latitudes and achieved such results without a casualty or single case of serious illness. If Lieutenant Greely had found at the mouth of Smith's Sound the shelter and food which he had a right to expect there, he would probably have brought his entire party back to the United States in perfect health, after three winters in the highest northern latitudes that have ever been reached, and after a series of sledging campaigns, which for boldness and skillful execution have rarely, if ever, been surpassed."

"Could the disaster which befell his party have been averted with the knowledge available at the time the relief expeditions were fitted out?"

"Unquestionably; and that is the pity of it. It doubles the grief which must be felt in the face of such a terrible catastrophe, to think that two ships on successive years, and probably a third, were in a position to land stores which would have saved the lives of those eighteen dead men. Beebe, in 1882, anchored in Payer Harbor, just north of Cape Sabine, with a ship full of stores; Garlington, the next summer, anchored in the same place also with a ship full of stores; and a few days later the Yantic, with four months' provisions on board, was only thirty miles away. Any one of these three ships might have landed stores enough exactly where Greely afterward made his winter camp, to have carried that brave party through; but their commanding officers were not ordered to do so, and they did not think of it."







Transfer of the bodies of the dead heroes from the "Bear" and "Thetis" to Governor's Island, New York Harbor.  
Wegschaffung der Leichen der todtten Helden vom „Bear“ und der „Thetis“ nach Governor's Island, New York Harbor.

“If Lieutenant Garlington had landed stores on his way north at Littleton Island, in accordance with what was known as his ‘supplementary instructions,’ would such stores have been of any use to Lieutenant Greely?”

“As it turned out, not the slightest. There were a few hundred rations on Littleton Island, but Greely could not get across the tossing ice of Smith’s Sound to avail himself of them. The place to land stores, as pointed out by Dr. Hoadley, Mr. Merriam, and others, and as shown by the example of the Nares expedition, was the western coast of the Sound—the coast that Greely must come down—not the opposite coast, which Greely might never reach. It is to the caches made by the British expedition of 1875 on the western coast that the few survivors of Lieutenant Greely’s party mainly owe their lives.”

“How important are the discoveries made by Lieutenant Greely?”

“From the point of view of an Arctic geographer, they are of first-class importance. Lieutenant Greely has not only taken away from Commander Markham, of the British navy, the blue ribbon of Arctic discovery to the highest latitude ever attained in any part of the world, but he has greatly extended the limits of the Nares explorations, both in Greenland and Grinnell Land, and has given a severe blow to Captain Nares’ ‘Palæocrystic Ice’ and the theories which the latter founded upon it. The fact that two of Greely’s sledge parties were stopped by open water in the polar basin, and that both were at times adrift in strong currents which threatened to carry them helplessly away northward, would seem to show that the polar basin is not the solid sea of ancient immovable ice which Nares described, and which he declared was never navigable. Lieutenant Greely’s explorations extended over three degrees of latitude, and nearly forty degrees of longitude. He has virtually ascertained the true outline of Grinnell Land; has crossed from east to west and on the northern coast of Greenland; has gone one degree of latitude and ten degrees of longitude beyond the furthest point reached by Captain Nares’ accomplished sledging officer, Lieutenant Beaumont. These achievements alone reflect the highest credit upon Lieutenant Greely and his men; but to them must, of course, be added the great mass of scientific knowledge gathered by the party during their two years at Lady Franklin Bay, the records of which have fortunately been saved. When these observations shall have been collated and put in order they will, I think, be found not second in importance to any furnished by the circles of international polar stations.”

Dr. Bessells, Chief of the Scientific Staff of the *Polaris*, upon being asked what he thought of the work Greely had done, said:

“As to the real scientific work of the expedition we, as yet, know very little, but Greely probably followed his instructions and made all the observations required by the international conference held at Hamburg. As one of the geographical features of the expedition we may mention that Lieutenant Lockwood and Sergeant Brainard reached latitude 83 degrees 24 minutes north, getting about four miles north of the highest point reached by Captain Markham of the English expedition under Sir George Nares on May 12, 1876. The highest point reached by the international station officer is apparently an island, which they have named after Lieutenant Lockwood. From an elevation of 2,000 feet they saw no land to the north, which proves that Greenland actually does not extend beyond the 84th parallel, as I have proved myself several years ago on theoretic grounds by means of tidal wave observations. The tidal wave, following the east coast of Greenland, passes along its northern border and enters Robeson Channel. Another point of geographi-

cal interest is the fact that the expedition supposes that it actually sighted the west coast of Grinnell Land, running almost due south from the furthest point reached by Lieut. Aldrich in May, 1876."

Here Dr. Bessells referred to the dispatches, and with compass and pencil, marked out the points referred to and sketched the hitherto unknown western border of Grant Land. Lake Hazen, Ruggles River, Weyprecht Fiord, Conger Mountains, and Mount Arthur, he said, were newly discovered and newly named places. Continuing, Dr. Bessells said:

"That makes Grant Land a peninsula connected with Grinnell Land by an isthmus, as Boothia Felix is connected with the northernmost coast of the continent. Another point of geographical value is what they say about Hayes Sound—about the western extension of Hayes Sound—which increases the distance of the latter from its mouth by twenty miles. When the Polaris expedition, after having been shipwrecked, wintered near Etah, an Esquimaux settlement, they were informed by the natives that Hayes Sound was not landlocked, but that it connected with the western sea, thus making Grinnell Land an island. The English expedition under Sir George Nares, judging from the sluggishness of the tide, considered it a bay."

Dr. Bessells criticised with some severity the judgment of General Hazen in the organization of the relief expeditions. The first, he said, was placed in command of an intemperate man, and the second was under the control of a cavalry officer, who had never had any nautical experience, and whose orders were very vague. It would probably turn out, Dr. Bessells said that Greely had provisions enough to last a year at Lady Franklin Bay.

With respect to Commander Schley's report of the condition of the ice in Smith's Sound, Dr. Bessells said it was yet too early to form an opinion as to what the season would be. The ice never breaks up so early and it would be folly to attempt to pass north before the middle of August.

## PROOFS OF CANNIBALISM.

### GHASTLY TESTIMONY FROM THE GRAVE.

The family of Lieutenant Kisingbury, one of the Arctic heroes, who was buried with military honors at Rochester, N. Y., having consented to investigation, the remains were exhumed by undertaker Jeffreys. The work of opening the heavy iron receptacle was found to be comparatively easy, all there was to do being to unscrew the fifty-two iron bolts which held down the lid. The noiseless ease with which the latter was pried from its bed showed that there was an absence of gas, and it was feared that there might be no body in the casket at all. Between the cover and the contents of the coffin there was some rubber packing saturated with white lead, and white lead also surrounded the bolts and joints. Feeling his way into the mass of snowy cotton-waste which filled the coffin to the top, Mr. Jeffreys soon exclaimed: "He is there." A strong odor of alcohol, but no very pronounced suggestion of decay, emanated from the casket.

### THE CASKET

was next placed upon the floor and the unshrouded form taken from it and placed upon the table. The sheet was taken away and the tarred rope which entwined the blanket cut, and the work of taking off this last covering began.

Slowly and reverentially the blanket was removed and then there was a suppressed cry of horror upon the lips of those present. The half-body, half-skeleton remains lay outstretched in all their ghastly terror. The blackened, fleshless face, bearing marks of Arctic toil, had no resemblance to the dead man. The head was covered with long, matted, dark-brown hair and a lighter colored moustache cleaved to the upper lip, while a wool-like beard of the same color surrounded the lower portion of the countenance. The skin was dried to the skull.

### THE SKELETON

was shrunken. There was little, if any, flesh on the arms and legs, and the body from the throat down was denuded of its skin. The feet were incased in bluish woollen socks and were emaciated, but almost intact. Upon the right side of the breast, between the ribs, appeared two gaping wounds, which did not fail to inspire those present with a suspicion that poor Kislingbury might have been foully dealt with.

The physicians did not find any evidence of violence, and placed the body in its original position. Then the brothers were informed that the stomach and other internal organs were all present, and they were asked whether they desired the same to be opened in order to complete the examination and establish the cause of death. They answered that nothing should be left undone which could furnish proof upon that point. It was found that the intestines adhered to the sides of the abdomen, proving that there had been recent inflammation of the stomach and bowels. From the large intestine a ball of dark hair-like substance was taken, showing that the last thing eaten by deceased in his starving condition was probably portions of clothing or sealskin strips.

As it had been reported by the survivors that Lieutenant Kislingbury had sustained a rupture by falling off an iceberg, an examination was made of the lower portion of the body, but no evidence whatever was found that anything of the kind had occurred. No internal evidence of any wounds was found, and the conclusion reached was that the openings between the ribs on the right side of the breast were caused by the knives of those who stripped the body of its flesh and skin to still the terrible cravings of long-aggravated hunger. Lieutenant Kislingbury had died of starvation and disease, and his comrades had eaten his body, like those of others who had died before and after him.

His brother, J. P. Kislingbury, said "Dr. Buckley will take measures to ascertain whether he had subsisted on human flesh before he died."

W. H. Kislingbury, the other brother of the deceased officer, outlined the condition of things, which would lead to the belief that the Greely expedition was divided into two parties or factions, and one perished because the other had gained possession, by force, of the supply of food. In this ostracized party were Lieutenant Kislingbury and Dr. Pavy. The condition of Lieutenant Kislingbury's body shows that he died of starvation at a time when the others had some food supply. There was absolutely nothing in the stomach, and in the intestines was a lump of indigestible material. There were no indications of rupture, and the story that he injured himself was discredited.

In the opinion of Mr. Kislingbury, Dr. Pavy saw in advance the outcome of the desperate struggle for subsistence, and ended his life or fell a victim to the desperation of the immediate adherents of Greely. In other words, it was a case in which those not in favor with the commander were compelled to die

that the others might live. Lieutenant Kisingbury, it seems, was under the ban of Greely's displeasure from the beginning. This is the statement of W. H. Kisingbury.

The family was of course very much shocked at the condition of Kisingbury's body, and they were all loud in their demands for a thorough official investigation. They do not blame the survivors, for they can readily see that in some cases the eating of dead bodies is a necessity, but they are loud in their denunciations of the officials who sought to keep the matter from public knowledge.

[NOTE.—The Publishers of this book give the suspicions of the Kisingbury family for what they are worth and without further comment.]

## LIFE OF LIEUTENANT GREELY, U. S. A.

Lieutenant Adolphus W. Greely, a man whose name now stands prominently before the world as the leader of the expedition which has penetrated farther north than any other exploration party, was born in 1844, at Newburyport, Massachusetts, and consequently was at the time of his rescue (1884) just forty years of age.

He entered the army during the war as a private. On March 18th, 1863, he was made second lieutenant, and in April the following year he became first lieutenant. He was brevetted major March 13th, 1865, for "faithful and meritorious service." He was made captain of the Eighty-first Colored Infantry. April 4th, 1865, and in March, 1867, was honorably mustered out. Upon the reorganization, in 1869, he was assigned to the Fifth Cavalry, and became first lieutenant in 1873, which is his present rank. He is one of the oldest officers in the signal service, having become one of its officers when the bureau was formed. He is tall and slender, and apparently a man who could never survive the hardships of an Arctic expedition. He has a wife and two children. Lieutenant Greely was in his right place at the Signal Service Bureau, where his studious habits and intelligence were well appreciated and led to his selection for the dangerous but honorable command of the Arctic Expedition.

Although the Lieutenant gives in the earlier pages of this work an account of the origin of the expedition, his modesty caused him to omit mention of himself as far as possible—the omission of the personal pronoun I is characteristic of the man. Therefore we give another account, which comes from those best in a position to award bravery, deep study, and perseverance their just dues, as shown in this man's wonderful composition.

The expedition was a part of the plan adopted by the International Geographical Congress at Hamburg, in 1879, for the establishment of a series of circumpolar stations for scientific observations. On March 3, 1881, Congress passed a bill providing an appropriation for the support of observations and explorations in the Arctic seas, on or near the shores of Lady Franklin Bay. Lieutenant Greely was appointed to take command, and the point selected for the station was the most northerly and difficult of access of the whole series of stations projected by the Geographical Congress. The spot chosen was Discovery Harbor, latitude  $81^{\circ} 44'$  north and longitude  $64^{\circ} 45'$  west. Lieutenant Greely received his instructions in April, 1881. He and the other officers and men of the expedition were to go to St. John, Newfoundland, and charter a steam whaler or sealer to take the party to Lady Franklin Bay. Lieutenant

Greely went immediately to St. John, and there chartered the screw steamer *Proteus*, a vessel that had been previously in use for Arctic navigation. His assistant, Lieutenant James B. Lockwood, with fifteen men sailed from Baltimore for St. Johns on June 14, 1881. The *Proteus* sailed for Lady Franklin Bay on July 4th. One month later the party entered camp at that point, and the *Proteus* returned to St. John, bringing a cheerful letter from Lieutenant Greely, announcing that the party had settled at Discovery Harbor, and were all well. From that time, August 18, 1881, to July 17, 1884, no news was received from the expedition.

It was understood before Greely sailed that every year a steamer would be sent to him with fresh supplies and with recruits to take the place of the sick men in his party. In 1882, accordingly, the steamship *Neptune* was fitted out and placed in charge of Mr. M. W. Beebe. She sailed from St. Johns on July 8, 1882. On July 28th she passed the Carey Islands. On the 29th she passed Littleton Island, but encountered a barrier of ice that checked further progress. She made another effort a week later to reach the party, and succeeded in getting within one hundred and fifty miles of their camp; but the ice did not open, and accordingly caches were established on Cape Sabine and Littleton Island, and the *Neptune* returned to St. Johns, Newfoundland. The failure to reach Greely caused much disappointment, but no apprehension as to his safety.

In 1883 Lieutenant E. A. Garlington, of the Seventh Cavalry, was selected to command the second relief expedition. He sailed from St. Johns, Newfoundland, on June 29th, in the steamer *Proteus*, the ship that landed Greely at Lady Franklin Bay two years before. He was followed by the United States Steamer *Yantic*, which was to serve as a supply ship. The *Proteus* reached Pandora Harbor on July 22d. No ice was visible to the north, and Payer Harbor, near Cape Sabine, was entered the same afternoon. After a very short stop the ship proceeded until within four miles of Cape Albert, where the ice prevented further progress.

Garlington, against the wishes of Captain Pike, determined to make an effort to push through the pack. Soon after entering it the vessel was terribly nipped and the ice began to crush through her sides. The ship settled slowly, hung for a moment on the ice, and then sank out of sight, her yards catching on the ice floe on both sides, and breaking in two as she went down. Some of the stores that had been thrown upon the ice were landed at Cape Sabine. The party reached Upernavik in rowboats, and there boarded the *Yantic*.

The failure created a decided feeling of alarm for the safety of Lieutenant Greely. Congress voted ample funds to enable the Navy Department to fit out a third expedition. The *Bear*, a steam sealer, was purchased in Newfoundland, and the *Thetis*, a steam whaler, in Dundee, Scotland. The British Government presented the steamer *Alert*, and another vessel, the *Loch Garry*, was chartered as a collier. The expedition was placed under the command of Commander W. S. Schley, of the United States Navy. The *Bear*, commanded by Lieutenant Emory, sailed on April 24th. The flagship *Thetis* followed a week after, and soon after the other ships sailed. The expedition cost upward of \$1,000,000.

The rescue party had a continuous battle with ice, forcing their way by ramming and the use of torpedoes until June 18th, when they entered clear water off Cape York. Being then in a position in which information of Greely might be looked for, parties were at once sent to scour the adjacent hills for records.

In about an hour a cheer was heard, but in the high wind that was blowing it was impossible to locate the direction from which it came. Soon after a seaman came running toward the ship shouting, "We have found the Greely party!" Coming on board he brought records, which had been found by Lieutenant Taunt on the top of Brevoort Island. They were dated October 21, 1883, signed by Lieutenant Greely, and contained the news of the retreat from Fort Conger, the arrival of the party at Bird Inlet all well, the location of Camp Clay, and stated briefly the quantity of provisions available. The general recall was hoisted on board both ships, the whistles sounded to attract attention to it, and the Bear's steam launch, which had been lowered to assist in the search along the coast, was immediately sent, in charge of Lieutenant Colwell, to the scene of the encampment. Shortly after this Ensign Harlow signalled from shore, "I have found the Greely record. Send five men." He had discovered a record, dated October 23d, signed by Lockwood, and a cache, which contained the scientific papers and instruments.

The rescuers were soon at the spot indicated and there witnessed a pitiful sight. The scene is thus described:

"Some one was seen on the ice signalling with flags. Colwell ran forward and took the message as follows: 'Send doctor with stretchers and Harlow with photograph machine; seven alive.' When it came to the last two words I made him repeat them. With what careful interest I watched them no one can realize. It might be D-E-A-D, but no; A-L-I-V-E waved plainly through the air, and the fate of the Greely party was known on board the Thetis. Boats were lowered at once, manned with strong crews, and a party of officers and men started for the shore."

"Passing a small fire on which pots of milk were warming we came to the tent, under which lay four of the poor fellows. Two lay outside, one with his face swollen so that he could barely show by his eyes the wild excitement that filled his being. The other was muttering in a voice that could scarcely be heard in the howling of the gale his hungry appeal for food. Pushing aside the flags of the tent we saw a sight, the like of which we trust never to see again. Crowded together in the little of the tent that was left standing lay Greely and three of his men in their sleeping bags, their faces black with dirt. Their hollow cheeks and their gleaming eyes made a picture that we will never forget, and told a story that has but few rivals in the histories of miserable sufferings. The short glance revealed four men with the hand of death laid upon them; one, indeed, was gasping his last feeble breath while food and stimulants were forced between his teeth. The death of the other three would have occurred, but for the arrival of relief, in a very few hours. They could not move, and the gale was killing them in their weak and exhausted condition. So there they lay, waiting for death, unable to cook the pitiful ration of tanned oil, sealskin and lichens that they called their meal.

"Our glance was a short one. They were placed on litters and carried on board; their rags were removed, and they were tenderly warmed and fed." One of the survivors, however, was past saving, and in spite of all that could be done for him he died on board the ship. Another party was sent to the camp to bring away the bodies of the dead. Twelve only were found, the other five having been swept away by the waves, owing to their having been buried near the surface. The survivors were too weak to dig a deep grave."

When they were sufficiently recovered, the survivors told their sad story. The most graphic version is that given by Sergeant Brainerd.







Arrival of the Arctic Heroes at Portsmouth, N. H. Extremely touching meeting, after the long separation, between Lieutenant Greely and his loving wife.

Ankunft der arktischen Helden in Portsmouth, N. H. Rührendes Wiedersehen des Lieutenants Greely und seiner geliebten Gattin nach langer Trennung.

"On landing," said Sergeant Brainerd, "we named our station 'Fort Conger,' in honor of Senator Conger. Observations meteorological, magnetic, tidal, astronomical, and other observations were begun at once, the first and third being taken hourly. A house was completed, and the party moved in during the first week in September. From this time we were employed during the remainder of the autumn in laying out depots and extending our knowledge of the country by interior explorations. Twenty musk oxen and a few ducks were shot soon after landing. Darkness began to creep upon us in the middle of October, though it was not until the latter part of December that it was finally upon us for the whole twenty-four hours. Winter amusements were then inaugurated, comprising debates, lectures, the publication of a newspaper, musical entertainments, etc. Each day was a counterpart of the one preceding it. Rules for health and exercise were prescribed and strictly enforced. They were, undoubtedly, of great benefit to us, especially the regulation insuring dryness of bunks and personal cleanliness. No scurvy or any other serious disease occurred during the two years' residence at Fort Conger.

"Christmas and New Year's Day were celebrated much the same as those days usually are in the Arctic regions, with games, good feeling, and sumptuous dinners. The thanks of the expedition are due to Mrs. Greely, the wife of the commander, for the crowning feature of the Christmas dinner—a superb plum pudding. Other friends had also remembered the party in a most substantial manner, as the abundance of confectionery and the other gifts would testify."

On January 16th they were visited by a terrific gale, which swept everything before it, stopping all observations for several hours, and confining the party to the house. It attained a velocity of seventy-five miles an hour, twisting the anemometer cups from their spindles and blowing them away. In the latter part of February an expedition was sent to examine the state of the ice in Robeson Channel. The report was favorable. On March 1st another party visited Hall's Rest, Thank God Harbor, and reached their destination on the evening of the third day, very tired, cold, and depressed, but were speedily restored under the genial influence of a thimbleful of the English red-heart, which by chance was discovered in one of their old rum casks. Although staunch advocates of the blue ribbon, this was an occasion when all felt that this course was not only justifiable, but that the case demanded some departure from the usual routine.

On April 3d Lieutenant Lockwood, Sergeant Brainerd, and the native driver Fred, with a team of eight dogs and a supporting party of six men, with Hudson Bay sledges, left the station to extend the exploration of the English expedition on the north coast of Greenland. Advancing all their supplies to the Polaris boat camp in Newman's Bay, they made their formal start on April 16th, crossing Brevoort Peninsula by the already historical Gap Valley. On April 29th the supporting party was turned back from Cape Bryant, and the little band of three men, with their dog team and provisions for twenty-five days, turned their faces resolutely toward the north, with the intention of doing all that lay in the power of man to do. The morning of May 5th saw them at Cape Britannia, and they unfurled the American flag over

#### AN UNEXPLORED LAND.

Before them all was new. They were passing up a coast which trended to

the northeast, and which before had never met the vision of civilized man. Their progress was greatly retarded by a severe storm, lasting for seven days; but they struggled along through the thick atmosphere and driving storms day after day, surmounting all difficulties that opposed them. Finally, however, while groping their way across a wide fiord, all traces of the coast were obliterated by the heavy drift, necessitating a delay of over sixty hours to seek shelter. In order to economize their provisions as much as possible they partook of only one meal every twenty-four hours. On May 13th the weary party had advanced as far as the state of their provisions would admit, and now stood on land at a higher northern latitude than was ever before reached by mortal man. For 275 years brave navigators had kept England's flag advanced beyond that of any other nation, but now the Stars and Stripes floated proudly in the chilling breezes at a higher point than the Union Jack had ever reached, in latitude 83 degrees 24 minutes north, longitude 40 degrees 46 minutes west.

After remaining at this point for two days, in order to obtain satisfactory observations for their position, the party began their return on the evening of May 15th, reaching Fort Conger on June 1st, after an absence of fifty-nine days. The farthest point reached was named Lockwood Island, and an adjacent island was called after Sergeant Brainerd, in honor of the two men who had advanced the Stars and Stripes to a point nearer the pole than any of their predecessors have ever reached.

#### EXPLORING GRINNELL LAND.

During the year 1882 Lieutenant Greely made two remarkable trips into the interior of Grinnell Land, making important discoveries, which not only added to their geographical knowledge, but also revealed physical conditions of the country hitherto unsuspected. His first trip was made in April with three men and Hudson Bay sledges. He was absent only eleven days, and travelled 250 miles, advancing into the interior by Conybear Bay.

His second trip of sixteen days was made in June and July. Only one companion, Sergeant Lynn, accompanied him. They carried packs during the greater part of the trip, the maximum weight being ninety pounds each. They travelled about fifty miles beyond the turning point of his former trips, discovering the Garfield and Conger range of mountains. Mount Chester A. Arthur, and several lakes and rivers. Lieutenant Greely ascended Mount Arthur 5000 feet, and was satisfied from the trend of the mountains that Grinnell Land, from Lieutenant Aldrich's furthest in 1876, extended due south. Although in the midst of the short Arctic summer, the sufferings and hardships endured by Lieutenant Greely and Sergeant Lynn were of such a character as to deter them from repeating the experiment at any later period.

Their sufferings on this trip stand out conspicuously as among the most trying in the annals of Arctic travelling.

#### PREPARING FOR A RETREAT.

The second winter's routine was almost a repetition of the first. During this year, as previously, all birthdays and festivals were celebrated by fine dinners and varied amusements. The sanitary rules were, if anything, more rigidly enforced than formerly. In addition to his other duties, which occupied his time for about eight hours daily, Lieutenant Greely conducted an evening

school for those who desired to attend. On February 1, 1883, twenty-six days before the return of the sun, Sergeant Brainerd was sent toward Cape Baird with a dog-team to establish a depot of provisions for the retreat in boats, in the event of a ship not arriving. The depot was supplemented by other loads during the following months, and a preliminary trip was made to Cape Summer, Newman Bay, starting on March 10th. Lieutenant Lockwood, Sergeant Brainerd, Jewell and Ellison, with the two native drivers, composed the party. A large cache of provisions placed at Cape Summer was the result of this trip. The same party, excepting Ellison, made their final start from Fort Conger on March 27th, with an excellent equipment, intending to travel northeast along the Greenland coast, and extend their discoveries of the previous year. In this they were fated to be disappointed. Six days of rapid travel brought them to Black Horn Cliffs, when their further progress was barred by a lane of water fifty yards wide extending along the coast. The interior of the country was thoroughly explored, but no practicable route for sledging was found.

### THE PERILOUS JOURNEY.

The ice began breaking up early in August under the influence of high southerly gales. On the 9th of that month a lane had formed across Archer's Fiord opposite the western entrance. Taking advantage of it the party ran across to Cape Baird with the *Lady Greely*, having in tow the *Valorous* and *Narwhal*. At this point the iceboat *Beaumont* and depot of provisions were taken, and the party assigned to boats. Leaving this place at midnight the boats passed around Cape Reiber, taking on the forty-eight rations of corned beef at Cape Crary. The depots at Carl Ritter Bay and Cape Collinson were taken. That at Collinson was found deficient of a barrel of bread, a keg of rum, a keg of alcohol, and all small stores—tea, sugar, potatoes, etc. About fifteen miles north of Cape Lawrence they were frozen in the ice for five days, but a northwest gale liberated the boats, and at the same time opened a lane for escape. After many trials, hardships, and narrow escapes from being crushed by the moving pack, the party reached Cape Hawkes on August 26th. Two of the party's boats, the *Lady Greely* and the *Valorous*, were abandoned on September 10th near Cape Camperdown, the party retreating over the floes toward land with their two remaining boats and provisions. They advanced at the rate of one mile per day, it being necessary to make four trips. Their only sledge having received a severe strain, it became necessary to abandon the boat *Narwhal* in order to save it, the loss of which would have been a fatal blow to the party. Twice the land seemed within their grasp, but both times they were driven back into Kane's Sea by southerly gales.

### STARVING AND FREEZING.

During a northwest gale the ice floe was caught among the grounded icebergs in Baird Inlet, and the party escaped to shore on the north side of the inlet on September 29th. They at once began the erection of winter-quarters, it being impracticable to cross to Greenland with the single boat and the channel full of rapidly drifting ice. Later the party established themselves at Camp Clay, four miles northwest of Cape Sabine, near the *Proteus* wreck cache. On November 1st their rations were reduced to eleven from thirteen

ounces. For a month previous to this they had been on half rations. By this date the caches were all collected, a careful inventory made, and their calculations made to extend them until March 1st at the established rations, leaving ten days on a slightly increased scale, to enable them to cross Smith's Sound to Littleton Island.

A miserable hovel had been constructed in October, twenty-two by twenty-five feet, covered with canvas, and into this the party crowded. Their sleeping bags were spread on the ground and became frozen down, so that it was impossible to move them. The frost penetrated to the interior of the bags, causing the party much suffering. A small pair of scales were made, and the work of issuing provisions was turned over to Sergeant Brainerd by the commanding officer. Rice, Lynn, Ellison, and Frederick were sent to Cape Isabella on November 1st to secure the 144 pounds of English meat. Ellison was badly frost-bitten during a severe gale, in a temperature of 30° below zero. He was brought in on the 12th of November. His feet were removed in February, and his fingers had also to be removed. The minimum temperature in January was 50° below zero. High gales prevailed all winter, preventing the Sound from closing.

The party now had to depend on their own resources for food. A few donkeys, ptarmigans, and foxes were shot in March, and a small bear and seal in April. The amount of meat furnished by all was very small.

The fatal blow to the party occurred on April 30th, by the drowning of their remaining native, Joens, and the loss of his kyack and best rifle. Without the kyack no hope for seals could be entertained. Rice and Fredericks volunteered to go to Baird Inlet to secure the English meat abandoned by them the previous autumn, when Ellison was frozen. Starting on April 6th they took seven days provisions, at the rate of about twelve ounces of food daily to each. They encountered terrific gales, and in one of them on the fourth day Rice died from exposure and exhaustion in Baird Inlet. He was buried in the ice by his companion, who himself narrowly escaped death. Words cannot convey the feelings of gratitude to those brave men for their daring efforts to succor their companions. Before the departure of Rice he had caught a few shrimps with nets, using donkey skins for bait. Sergeant Brainerd afterward became the shrimper, and continued in service until the last of the bait was used, a few days before the arrival of the relief ships. These marine animals were very small, there being about 800 to the ounce. By some they are known as sea flies. They possess very little or no nutriment, as the deaths in the party will testify. Sea-weed was also used in small quantities until the fisherman was too weak to get more. The last provisions were issued on May 12th, and from that date the party subsisted on lichens, moss, saxifrage, seal-skin, both boiled and roasted, and a little tea, until the arrival of the relief ships.

### RESCUED NONE TOO SOON.

When rescued, a southerly gale had been blowing for over sixty hours. The tents were blown down, and their weight were resting on the party, who were endeavoring to shelter themselves in their bags. For twenty-four hours they had eaten nothing, and their strength was passing rapidly. Connell would most likely have died in a few hours, and the strongest of the survivors would not have been alive in three days more.

The results of the expedition are thus summarized :

The Greely party, up to the day its struggle for life began at Cape Sabine, will be ranked by Arctic enthusiasts as one of the most brilliantly successful of Arctic expeditions. Geographers had hoped for great things from it. It took north a better outfit, especially for sledge travelling, than any preceding expedition. It was believed that, if circumstances were not greatly adverse, it would not fail to extend our knowledge of the shores that bound the great sea north of Grant Land. But the most sanguine geographers did not venture to hope that Greely would bring back with him the large amount of material he has gathered for completing the map of that part of the polar basin.

In a latitude where one season sufficed to wear out Nares' two ships' crews with scurvy, Greely's little band passed two years with health and vigor, that were impaired neither by Arctic nights one hundred and forty days long, nor by the terrible toils of the spring and summer travelling. In a latitude where Hall's boats and sledges advanced less than forty miles north of his winter quarters, Lockwood dragged his sledge about two hundred miles northeast of Discovery Harbor, four miles north of the highest latitude previously attained, and eighty miles further than the point reached by Beaumont on the same route. Dr. Pavy and Lieutenant Lockwood proved that Lincoln Sea during two successive seasons was full of floating ice, instead of being the perpetually frozen ocean that Nares described. Greely and Lockwood, in their journeys into Grinnell Land, virtually outlined its western shores for two degrees of latitude, proving that Grant Land is a peninsula connected with Grinnell Land by an isthmus.

But, after all, Greely's greatest achievement was his journey nearly two hundred and fifty miles down Smith's Sound, at a time of year when successful sledge and boat expeditions have never before been made in that terribly difficult channel. Most geographers believed that the advancing darkness of September, its wild storms, and the crashing and jumbling of the Smith's Sound ice floes, made it practically impossible for Greely to reach Cape Sabine in the fall. He triumphed, however, over nature, only to be nearly defeated at last by the inexcusable negligence of man.

Greely had plenty of food with him at Lady Franklin Bay, but he was ordered to retreat from there in the fall of 1883 if not relieved before. It was well understood that in such a retreat he could not carry provisions with him ; the Government therefore promised to deposit stores of provisions on his route. They failed to do so, and the horrors of Cape Sabine and the death of seventeen men are the direct results of their deplorable incapacity. Lieutenant Greely and the survivors would have died also, if Senator Ingalls and his supporters had succeeded in the efforts they made to delay the relief expedition.

### CRAZED BY STARVATION.

#### MORE OF THE SECRETS OF THE CAMP ON SMITH'S SOUND.

Among the many sensational reports given to the public, some have been verified whilst others will be investigated. The New York Times was conspicuous in this respect. We here give an extract from that paper :

"Until the death of Surgeon Pavy, of the Greely party, which occurred at the rapidly depopulated camp on June 6, three weeks before rescue came, the flesh cut from most of the dead bodies for use by the survivors as food and

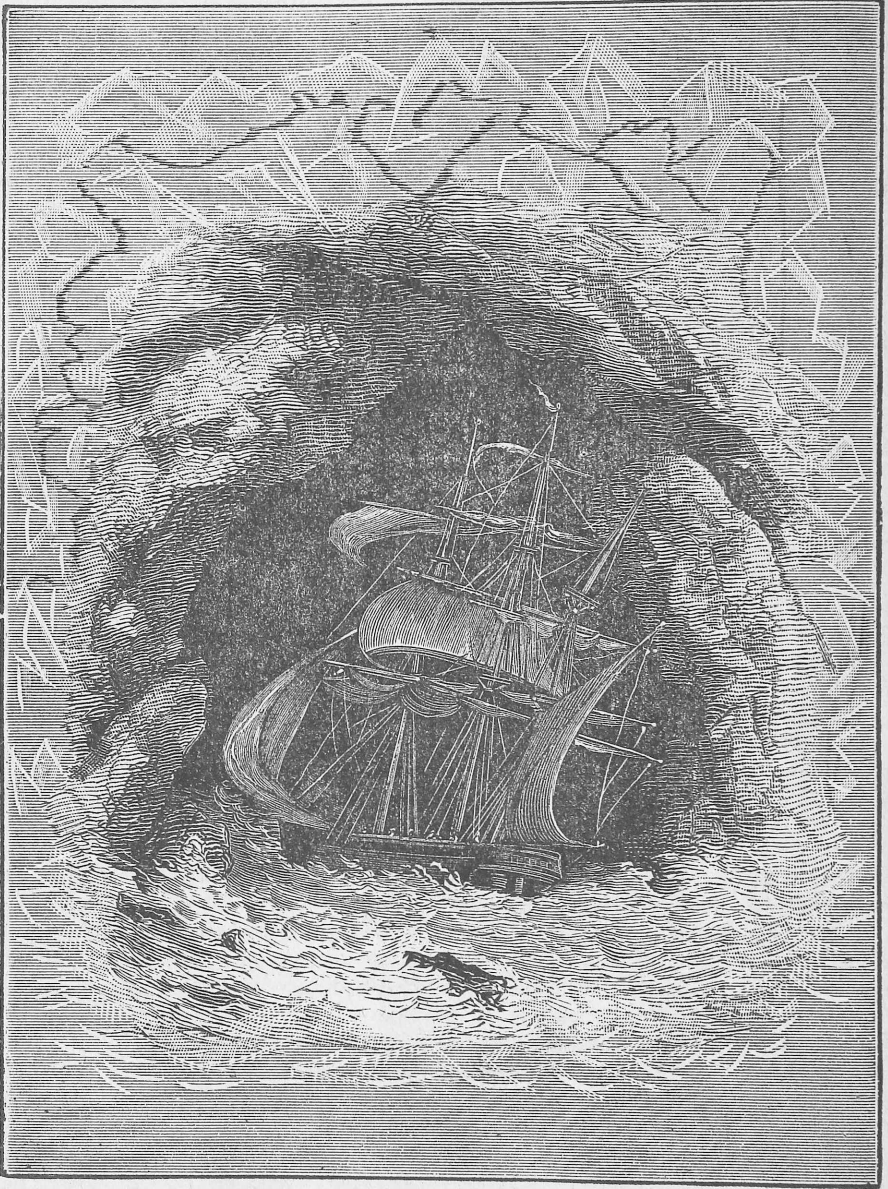
bait was removed by a hand skilled in dissection. A few of the bodies had the fleshy portions cut away entire. But with the majority the work had been so well done that a casual observer would not have suspected without further evidence, of which there was plenty, however, that the survivors had been reduced to cannibalism, and had for a long time been subsisting principally on the bodies of their dead comrades. It is not a coincidence that the body of Dr. Pavy, with those of two others who died after him, should be reported as washed away. With the Surgeon gone the scalpel could not be used. Before, the bodies had been left with little mark of the terrible work done. After his death the survivors were forced to dismember the bodies and denude them of flesh in a way that left nothing but bones. So these unfortunates were reported as buried in the ice floe and washed away, and to the list was added Corporal Sailor, who died on June 3, and Sergeant Rice, who died on April 9.

"On most of the bodies an incision was made from the clavicle downward below the ribs. The scalpel was then passed along under the skin, and the flap was carefully laid back on either side. The flesh was then removed from the ribs, the skin carefully joined so that there was no external evidence left of the ghastly work but a dark line. The thighs were treated in the same manner, the skin being replaced about the fleshless bones. The legs were stripped to the ankle joints and the arms to the wrists. The hands, feet and face were not mutilated. This was a work requiring skill, and must have been a long and careful operation. No one in the party except the Surgeon could so skilfully remove the flesh from a human body and leave the skin intact. How Dr. Pavy met his death has not been explained, but it was probably by the knife. With him gone, and every day the pangs of hunger growing more unbearable, the caution was relaxed, and the survivors ate of human flesh however they could easiest secure it.

"In the last days before relief came to the wretched men, it was the doctrine of the survival of the strongest that ruled. All sense of honor and of feeling had been lost. It was Sergeant Long who first saw the steam launch, and slid down the snow and ice to greet the rescuing party. His face and beard were covered with blood from a duck which he had recently shot and had been eating raw. It is stated that he stopped to conceal half the body of the bird before sliding down the snow. He was the strongest of the party, and, despite the frightful gale, was able to walk to the launch. Sergeant Fredericks also had considerable strength left, and clambered on board the Thetis almost unaided. After so many months in the desolate Arctic regions, after so much suffering, and passing through such scenes of horror, it was seldom that the men stood upright. They crawled about on their hands and knees over the rocks and ice, and when Sergeant Brainerd was undressed on board the Thetis, his knees were found calloused to a thickness of over half an inch. In the midst of such horrors it was wondered by the rescuing party how Greely and his few companions kept their reason. About the camp were scattered bones of the dead, and dissected and mutilated bodies were half exposed in the little burial plot back of the tent. It was a scene at which the rescuers shuddered as they looked and the truth stood revealed."







“Into this cave we were now fatally making our way!”  
„In diesen Abgrund führte nun unsere gefährliche Reise.“

## THE BODIES.

The bodies of those who died natural deaths were not mutilated where death had been caused by disease. As to how many died of scurvy accounts differ. Commander Schley reported seventeen as having died from starvation. Sergeant Cross, the first of the exploring party to die, passed away New-Year's-day, according to Commander Schley's report. He did not die of starvation, but from the use of liquor. He would drink anything that had a suspicion of alcohol about it, even paint. This love for liquor was so strong among some of the sailors of the relief party that the carpenter, using a little alcohol with which to mix shellac, was obliged to guard it as a miser hides away his money. Sergeant Connell, one of the rescued, says that Cross died of scurvy on January 18. At St. John's it was reported that one of the two men lost on April 9 died of scurvy. With several dead of scurvy and Henry shot, all did not die of starvation. Instead, it is feared that others met death as Henry did. It is known that court-martials were of frequent occurrence in the Greely camp. Dr. Pavy was on trial no less than three times. There were dissensions among the men, and as their condition grew more desperate these increased. Until weakened in body and mind by privation each did all he could for the others. But at the last the struggle for life became single. It was each man for himself.

The officers of the relief vessels still refuse to say anything on the unpleasant subject, as is their duty. Sailors talk freely. But some of the scenes they describe are too revolting for repetition. At the Greely camp matters were found in as bad a condition as it is possible to imagine. The disinterment of the remains of Lieutenant Kislingbury has shown only what could be revealed by the opening of any of the other iron coffins. Where only scattered bones were left no attempt was made to put them together, except in the casket marked Private Henry.

## GREELY'S UNEASY DOGS.

## THE UNSOCIABLE CANINES OF THE COLONY.

Four or five Esquimau dogs brought back by the officers lay on the quarter deck, lolling and wearing a look of abject homesickness. They are uneasy and wholly unsociable. They move about from one resting place to another, sometimes stretching out in the hot sun and again crouching in the shadiest places they can find. No chirruping or overture of welcome recalls them from brooding over their wanted ice fields. The common white stubby, snapping Spitz dog of civilized society is a degenerate beast compared with these specimens. The latter have the erect ears and wolfish look of our treacherous pets, but they have also dignity, muscle and generally a business-like appearance. Their covering has a base as thick as the wool on Merino sheep, but this is hidden by a semi-shaggy exterior of hair, the whole being of a yellowish brindle. They stand 18 inches high, and have a body long enough in proportion to constitute a shapely, don't-meddle-with-me sort of dog. A large number of them were taken aboard the Thetis and Bear on the way north, to be used for sledging in case of necessity. The officers who saw them at work say they are now able to understand how indispensable these creatures are to the natives of the north. They are at their best when harnessed to the sleds. When off duty they quarrel among themselves and are not over tolerant of familiarity on the part of their masters. They appear to be a purely

business dog. All they ask of mankind is to drive them and feed them. All internal affairs of their dog life they prefer to regulate themselves. In cheerful contrast with the Esquimaux on the quarter-deck there was a pure representative of Newfoundland dogs, the property of one of the officers. "He's worth a hundred dollars," said a sailor. When first seen by the writer he was lying at full length, with his eyes closed and his toes twitching, on the shady side of the companion-way, less distressed by the heat than the Esquimaux, but, like them, wearing a sad countenance from dreaming of the fog banks at home. "He knows how to cool off, when he gets warm," said the sailor. "He'd jump overboard now if I'd cast over this stick. Here Jack," said he to the dog, picking up the stick. The Newfoundland sprang to his feet and his whole look changed in a twinkling from sadness to the brightest and laughingest countenance a dog ever wore. His great black eyes fairly beamed with friendship and frolic. As dogs go, he stood up worth more than a hundred dollars. He had long, glossy hair, tipped in places with white, and was the picture of animal grace. He challenged the sailor to throw the stick overboard, but the latter said: "I don't dare do it. He belongs to an officer." He said, however, that the dog "made no bones" of jumping overboard into the sea whenever he felt like it. They had to help him up the side of the ship a good many times.

The Bear had been a good deal of a dog-kennel on the trip. When coming back with the Greely party the Esquimaux dogs she had taken aboard going were given away to natives and others in the far north, it not being deemed humane to bring so many of them to these lower latitudes. While on board the Bear I was attracted to the lieutenant-commander's cabin by a plaintive cry like that of a baby that will not be comforted. Lieutenant Colwell was there found dividing his attention between entertaining half a dozen ladies with crackers and water and trying to soothe an Esquimaux pup that was kicking about on the floor as if in the middle stages of fatal colic. No gentle device of the lieutenant nurse could persuade the distressed creature to give the ship surcease from its wails. "It will not live long," said the lieutenant. "It is the last of a family of ten that were born on board three weeks ago. We did everything we could to nourish them, but they died one after another in the same condition of despondency this one manifests. They seem to inherit the homesickness of their mother."

### A SAILOR'S DIARY.

Among some startling scraps of documentary evidence brought to light, and which has not yet been given to the general public, are some scraps of paper which are evidently parts of a diary started and discontinued by a sailor who died long before the arrival of the rescuing party. It is a disconnected story that these odd pages tell, but enough remains to be of great interest to the reader. At great expense we have been permitted to make copies of the originals. Were this book a romance, the writer could weave such a tale as would surely pale all previous efforts of the great authors. But we are dealing with facts; pure, unadulterated facts. The sailor who evidently started to keep this diary was one known on board the ship as "Scotty." Undoubtedly he commenced it sometime in 1883.

"Nov. 5th.—Our sufferings continue, but I am still in fair health—much better health than my companions, if I except Dr. Pavy, who alone seems best

to bear our hardships. Shall I ever see my home again? I doubt it. Oh, mother, my little sisters dear, how my love goes out towards you. I sink, I almost fall by the ice-side way. But I must brace up; this won't do. If we are doomed never to meet again I pray thee, O God, that these lines may meet the eyes of the loved ones. The icy hand of death has no terrors for us, for all is Ice, Ice, here. There it goes! I suppose that's a sort of joke, but it's a grim one. I found a wonderful thing, which was cast up by the elashing of icebergs evidently. It resembles a bright jew—". . . . .

Here the page is torn. One to read just so far and no farther, might, judging from what "Scotty" calls a "grim joke," conclude that a "bright jew—" was another effort in the funny line, but here is almost a full explanation, which we find on a page dated five days after the first one.

"Nov. 10th.—I am almost crazed with my discovery—it means great fortune, great wealth for me and mine, if I ever succeed in reaching my native land again. Beyond all doubt these are jewels of rare value. Pure as a polished diamond, and outweighing, when their size is compared, the heaviest of that precious stone, these far surpass in brilliancy all that the imagination can conceive. Think of all the beautiful stones you have ever seen; concentrate your mind on rubies, pearls, garnets, emeralds, the amethyst, the purest of coral, and the brightest sparkle of the rarest diamond; add to all this the prettiest rainbow you ever saw, and still my description must utterly fail to give you the fairest idea of my 'find,' my gorgeous jewels, for are they not mine? Mine by right of discovery! This will craze me; I dare not allow my mind too long to dwell on this subject. Weak and faint for want of sufficient food, yet this one thought of vast wealth nerves me, strengthens the body as by the flush, the heat of fever; yet the mind weakens, the brain threatens to overthrow man's physical structure. I must stop right here. The secret is mine, and mine shall it remain if I live, but should I find myself no longer able to hold out, my diary will be placed where future brave navigators of the Arctics may find it; have found, as yet, but three of my precious stones, which I have secretly named 'Artizeks.' Should my diary alone reach, and the jewels be lost, oh, ye doubting thousands, I charge ye, put aside your doubts, for I have seen, I know whereof I speak, and charge ye rest not, all brave and hardy explorers, until you have found as I have found, and thus prove to the doubting world the words that here, with a difficulty you can scarcely realize, I write for your benefit. 'Tis a desperation born of despair, for there gleams not the slightest ray of hope for me and my suffering comrades." . . . . .

Part of another page—No date:

. . . . . "bad case, think he will die—poor fellow, he was the life of our party. Rations cut again. Enough to make a man a thief. Steal food? Why, yes. It's done in the midst of civilized communities, where plenty abounds, and poor devils are shut out from the food that, under God laws, as shown in nature, belongs in common part to all.

"Tom . . . . . he died like a weak baby that is born to die in earliest infancy; never seemed to live."

"June ———. Dr. Pavy is gone. He was a noble fellow. God bless him! He scarcely thought of himself. It was he who stuck so bravely to the sleds, and brought back food, and failed not to support his fallen comrades, who fell in the ice-bound ways. Things are desperate. From the glaring eyes of some of my companions in this dreadful prison of glaring, glistening ice, I fear that the awful thought of cannibalism is gradually working upon their already overwrought brains."

In our possession we now find a half-page, partly obliterated:

"My God! is it any wonder? Men under such awful circumstances lose all control over their better natures, and may become even cannibals. . . . .  
 . . . . . I was starving and felt myself more like a beast than a human being. With knife clenched between my teeth, half sliding, half crawling, I desperately approached the object I had marked out for my food . . . . .  
 . . . . . Henry has been shot . . . . . took what we found . . . . .  
 living on meat found on skins. Tough? Yes, but *food*, even it be not life-sustaining . . . . . jewels, jewels! I'll never live to see them polished.  
 . . . . . hope! hope! hope on.

"The icebergs have at this season a magnetic quality; have seen them attracted toward each other as a needle towards a magnet. We've had a volcano in the ice. Looked that way. Rocks surrounded by everlasting ice. A vomit as if from the ice itself. Don't this account for my jewels? We drifted into an ice cave and fatally worked our way. How does science account for our drifting into an under-ocean? Will our navigators live to tell? And if some of us survive, can they explain? Beyond us lie such mysteries, that in the mere contemplation——"

It is with deep regret that we find no more stray leaves from this man's diary. Evidently he was a man of observation, and of some education. It is said that one of the survivors, or at least one of the rescuing party, has in his possession the jewels which "Scotty" so tenaciously clung to. Time alone will reveal all things, and if his jotting down of these items was the after effect on a mind already crazed, certainly the evident connection would point to the probability of a basis for the odds and ends which the stray leaves of his diary have given us.

### THE JEANNETTE SEARCH.

No history of the Arctic expeditions would be complete without an account of the Jeannette—the vessel fitted up at the expense of the present James Gordon Bennett and manned by U. S. officers and men. The name of Melville stands side by side with his fellow-hero Greely.

How men who stay at home do sometimes so eagerly attempt to belittle the heroes who go forth and face the brunt of the battle! whether it be in time of war, or for the advancement of science, and the penetration of unknown lands. So in the case of Melville. We append a comprehensive account of the Jeannette expedition.

Before the Jeannette Board of Inquiry Lieutenant Danenhower resumed his narrative of the retreat after the loss of the Jeannette:

"The most intelligent one of the natives indicated to us, by signs and a diagram upon the sand, the course we should take to reach Bulun. Neither of the natives, however, would go with us. The next morning we started out in the boat and worked all day to the eastward under oar and sail. About 5 P. M. we decided to turn back and find the natives if possible. The wind changed and a snow storm came on. I had been at the helm all day and was very tired. I got Leech to relieve me. At dark we made fast to tent poles driven into the mud and remained all night. At daylight on the 21st Bartlett and Wilson stood up in the boat, and the latter thought he saw the same land we had left the day before. We close-reefed the sail. I took the helm, and we stood in. It was then snowing very hard. We encamped in the muddy

beach, and spread the macintosh for shelter. After breakfast Manson went out and reported that there were huts around the point. We embarked and reached the point. There we met an old man and two young ones (natives). They assisted us to land, and said, 'Gasta gasta?' meaning 'How do you do?' They treated us very well, and agreed to pilot us to Bulun, where, they indicated by signs, there were houses and traders." Witness exhibited to the Court rough drawings made by these natives, shadowing the plan of the river and the manner in which the party were piloted by the native canoes. Witness said that he heard Bartlett talking to Mr. Melville and understood that a proposition was being discussed to send someone ahead, and suggested to Mr. Melville that if anyone was sent, he (witness) should go. It was, however, decided not to be practicable at that time. On the next day, the 22nd, the party started with the old man Williams ("Basheely") and two others, each in his canoe, as pilots. On Friday, the 24th, they came to some empty houses, which were in excellent condition, one of which they occupied. In the afternoon a party of natives—two males and two females—arrived, and occupied one of the other houses. Basheely took Mr. Melville and witness to their house, and a long interview took place. The natives seemed to know about the shipwreck. The next day Basheely informed them he could not proceed farther, but that three of the young men would go with them. The party embarked and worked all day to the southwest and encamped at night in an empty hut. About noon on Monday, the 26th, arrived at another village, and we were received by about a dozen men, women and children.

The sick people were carried up to the huts and Mr. Melville and witness were presented to the chief of the village. The village consisted of five houses, a church, and several storehouses. The chief seemed to be aware of the shipwreck, and entertained the party at his house, giving them a hearty supper of fish and goose, and informed them that it would require fifteen days to reach Bulun. On Tuesday the party again started on the journey, but after proceeding a few hours the guides signalled to turn back, and they all returned to the village and were quartered there. The condition of the party at this time was very bad. Mr. Melville was carried from the boat to the house on a sled, while Leech and Lauterbach were hardly able to stand. The next day (Wednesday) the chief asked witness for a writing, which he indicated he wanted for the priest at Bulun; accordingly they wrote letters in French, German and Swedish, and Newcomb prepared a drawing of the ship fast in the ice. These documents were sewed up in a cloth bag and given to the chief. He seemed to be in high spirits, and indicated that we would soon be in Bulun. On the next day the party was assigned to a hut which the natives had specially prepared for them. Mr. Melville announced to the men that scurvy had appeared among them, and advised them how to take care of themselves, and also told them that during his (Melville's) sickness, witness would be in command. At this time the natives were very friendly and furnished them with plenty of fish, taking a receipt for the same. At the end of the week, October 18th, they were surprised to see a Russian in the village.

Witness held an interview with him, and endeavored to persuade him to take (witness) to his house. Mr. Melville assented, and witness accompanied the Russian in his dog-team, reaching his house after a half-day's journey. That evening Kousma (the Russian) gave witness a bag of flour, some tea, sugar, and tobacco, and the next day killed a deer for him, saying he had paid money for it.

Witness told them, "as soon as we can telegraph to the United States we will have money, and will give you all you want." Kousma also told witness that two Russians would take their party to Bulun, and would start on the following Monday; that the natives were not reliable. Witness returned to camp, and Mr. Melville expressed great satisfaction at the results of his trip. Mr. Melville had greatly improved and again took command. The men one by one recovered, and were soon again able to do duty. When the party first reached the village Cale, Aniquin (the Indian) and witness were the only ones able to bring wood and water for the party.

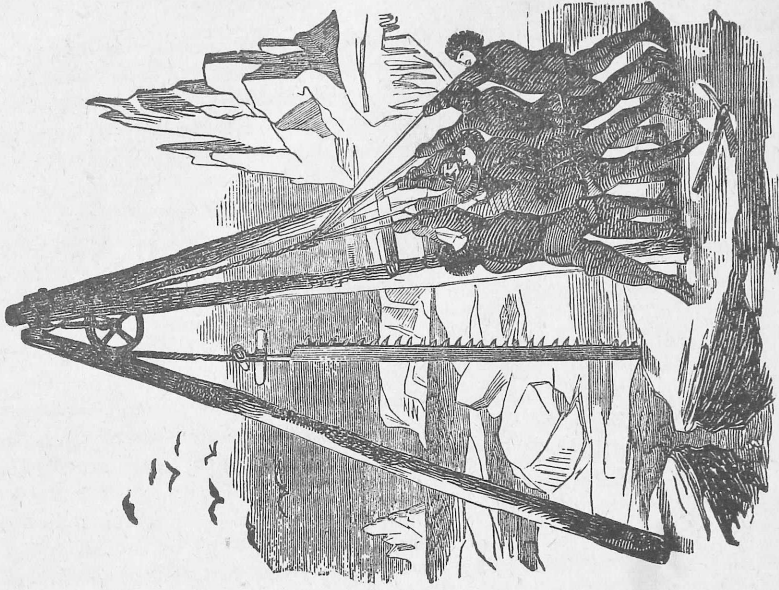
The fact that Lieutenant Danenhower offered no criticism upon the conduct of his fellow-officers in his testimony when asked to do so by the Jeannette Board of Inquiry caused comment among officials of the Navy Department and naval officers in view of the Dr. Collins' interview, founded upon what were alleged to have been statements of Danenhower. The charges against Captain De Long and Engineer Melville were generally discredited. A gentleman in a position to know the facts so far as they were set forth in the official records said that there was not a scrap of paper that should cause any uneasiness to either the friends of Captain De Long or Engineer Melville. Melville's testimony contained some things that explained much that was then to the public a mystery. It is strange that Dr. Collins should assert that Melville could have saved De Long and party, when the fact is Melville did not hear from Ninderman and Noros where the captain and party were until they were dead. And the charge that they played cards, chess and checkers, while some natives prosecuted the search, is as unreasonable as any statement can possibly be, when all who know Melville intimately assert that he never plays cards and understands nothing of chess and checkers; in fact, never in his life was given to any games of amusement. As to the charges that seaman Bartlett was purposely left in Siberia, it may be said that the only criticism offered by the officials of the Navy Department is that Melville allowed so many of the survivors of the expedition to come home instead of remaining with the searching party. De Long's diary contains not a word about Melville but in praise, and De Long wrote in his book everything that occurred. He stated in it that on one occasion Melville was the only one on the Jeannette who was able to work and perform his accustomed duties. Though knowing he would soon die, Captain De Long kept his journal in his hands so long as he could, and lest it should, when he was no longer able to hold up his head, fall into the fire before him, he so held it that when death came the book fell back of him. All of De Long's writings were given to his widow, but, previous to doing so, copies of everything were made for the use of the Board of Inquiry. The work of copying was done in several bureaus of the Navy Department, and so distributed was this task, no one copyist knew enough of the story to give much of its language.

### MELVILLE'S HEROIC SEARCH.

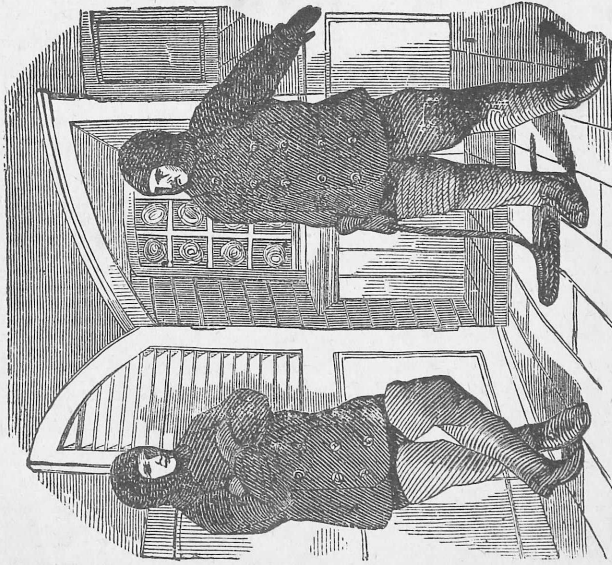
Melville's account of his efforts to save De Long and party is very interesting. The idea that Melville neglected any opportunity to find the starving party is preposterous. Melville and De Long were always on the most intimate terms, and the former lost no time in reaching the place indicated by Ninderman and Noros in the hope of finding the party alive. When the crew left the Jeannette Captain De Long gave Melville command of the boat







Cutting their Way through the Ice. The novel Saw and Derrick constructed. "Necessity the Mother of Invention."



Expeditionists in full costume.

For many correct Details, Points as to Locations, Description of Costumes, Habits of the Natives, and Gleanings from old Log Books, we wish to thank Messrs. Clarke, Burke, and Smith, of the Rescuing Party, who are now on a Lecturing Tour.

in which were Danenhower and other of the survivors of the expedition. Danenhower, being a line officer, was inclined to demur to this arrangement, inasmuch as Melville was merely a staff officer, but the latter replied: "The only power in the Arctic Ocean appointed me to take charge of this party, and I propose to exercise the authority conferred by that appointment, and you must be satisfied."

Melville's party landed near the mouth of the river which flowed by the scenes of so much suffering. Following up the banks of the stream a camp of natives was encountered. Melville could not make them understand that he wanted relief for others of the shipwrecked crew, and there were no persons in the party who could converse with the strange inhabitants. Melville made signs to them that he was searching for the lost party, but the natives thought he wanted to learn the way to the nearest village; but they refused to assist him in his search because he had neither money nor anything else of value with which to reward them. Melville grew desperate and forced them to go with him. At the village they found a native who could speak Russian, and he was made to believe that the white men were people of great distinction, princes and kings, etc., whereupon sledges and guides were quickly supplied. Written directions how to find De Long's party, prepared by the captain himself and left by Ninderman and Noros, were found at different points along the route traversed by the latter. The last one stated that De Long would go down the west side of the river, and Melville pushed down on that side as fast as he could, but the natives grew tired, and refused to go further. Melville, by threats of punishment, forced them to go on with him. A number of the searching party got sick and delay was caused in caring for them, and to this was added another difficulty. A severe storm set in, and for a long time the tracks left in the snow by De Long's party could not be found, but on reaching the group of dead heroes it was learned that all had died before Ninderman and Noros ever reached Melville, to inform him were the party were. De Long, instead of keeping on the west side of the river, crossed over to the east side. Had he not done so he might have been saved, for just prior to the date of his death, two hunting parties of natives were returning up the west side of the river.

Melville is of the opinion that the *Jeannette* was as well fitted to meet the difficulties of Arctic navigation as any vessel that floats. No ship, he believes, could have been saved from disaster in circumstances the same as those attending the loss of the *Jeannette*. A ship-builder recently asked the Engineer what construction in ship building he would recommend for Arctic navigation. Mr. Melville replied that if the heaviest plates of metal made were riveted together so as to leave a space between them, and that space were filled with melted metal and the whole so thoroughly welded together that it was compact and solid, yet would it fail to be strong enough to overcome the enormous power of the ice. In other words, no vessel can be built that will successfully navigate the Arctic ocean. The only way to reach the Pole, he contends, is to establish stations or colonies, which might be gradually extended north. He does not believe in an open Polar sea, and thinks the Pole can be reached by land.

Melville, while the *Jeannette* was in the ice pack, placed a cask containing directions to forward information to him when the same should be found. His idea in doing this was that the finding of the cask might demonstrate information of interest regarding the direction and speed of icebergs in their journeyings.

Melville has had his domestic troubles heralded to the world, but his friends in the Navy Department and in the navy, to many of whom Mrs. Melville is well known, do not blame him in any particular for the sad scene that occurred when the husband and wife met. Her unfortunate disposition was understood, and sympathy with the husband was general. When Melville left home he paid for three years' schooling for his children, and purchased fuel enough for three years besides various other articles necessary for the comfort of the family, but even Mrs. Melville could not eke out a living on ninety dollars a month, though a considerable sum in cash was left her by her husband. His friends urged him to procure a divorce.

### THE JEANNETTE BOARD OF INQUIRY.

The examination of Chief Engineer Melville was begun. He was asked to give a narrative account of the voyage of the Jeannette, and any important incidents connected with her management up to the time of her loss, and began his story with the departure of the ship from San Francisco, July 8th, 1879.

His narrative of the voyage up to August 31st was in the main a repetition of Lieutenant Danenhower's story. At this time the ship was in the Arctic ocean, heading north and west. The ice became heavier and headed the ship off more and more to the eastward until September 1st, when Herald Island bore west.

Witness continued: The ship was then worked through the ice, in and out the lanes of water, trying to make north and west, as the ice would permit. The pack was very heavy, but full of lanes and open leads towards the north. The pack proper extended from southwest to northeast. About September 5th the ship was forced into the ice as far as we could go to the westward, and anchored to a floe that night. We had passed through open water and some young ice that had made. The top-sails had been set to assist the steam in forcing through. The pack at this time was in motion to the eastward, and as we passed through it closed behind us. There were open leads to the westward that we were endeavoring to reach. On September 6th the young ice began to make around us and freeze fast the old ice, cementing the whole mass, so that it was impossible to move the ship. Captain De Long stated to me at that time that he had put the ship to westward in the hopes of reaching Wrangel Land, which was then in sight. He also said it was his intention to work along the coast-water to the northward, and in case he could not get the ship along, to use sleds when the sledding season set in, and explore along the coast, to see if Wrangle Land was a continent, as he had been led to suppose. At this time the general routine of the ship was carried on from day to day. Witness then described the daily occupation and amusements of the officers and men, and added: All things were cheerful and happy on board the ship.

Witness gave an account of the ineffectual attempt of the sledge party (of which he was a member) to reach Herald Island, an open lead of water from 700 to 1,000 feet wide all around the island barring the further progress, after having travelled about 25 miles over the ice. Witness read Captain De Long's orders to Lieutenant Chipp, who commanded the sledge party, which were to construct a cairn on the island, and to find if possible a suitable spot for winter-quarters for the ship if they should chance to drift down upon the island. At this time the whole pack was in motion.

Witness' account of the daily routine and occupations, games upon the ice,

bear hunting, etc., corresponded with Lieutenant Danenhower's evidence, as also his account of the nipping of the ship by the ice November 14th. Witness was ordered by the captain carefully to examine the condition of the ship in the vicinity of the engines and coal bunkers, and found that the ship had sustained no material damage and gave no signs of leaking.

Mr. Melville continued his narrative of the experiences of the Jeannette crew during the imprisonment of the ship in the ice. He stated that prior to November 25th preparations had been made to abandon the ship if it became necessary to do so. The crews were assigned to the boats, and the men were drilled. Sleeping bags were made and fur clothing prepared. From January 10th to 19th witness said there was great motion in the pack, accompanied with loud grinding noises. At this time the ship was in a solid bed of ice, and her bottom was continually struck and hammered by the ice passing underneath her. The surface of the pack seemed quiescent, and but for the noise and under-running of the ice, it would not have been known that the ice was in motion at all. On the 19th the ice seemed to be piling in toward the ship from all directions. About 10 A. M. water was found to be running in at the bottom of the ship. Previous to this she received several severe jars fore and aft, but no damage was detected until the people went below to get the supply of coal for the day. When it was found that the ship was making water the pumps were manned and witness was ordered to make steam at once. The forehold was broken out and the supplies were gotten out, mostly in good condition. Some flour was damaged. Witness described the improvising of a steam pump under his direction, by which the water was reduced so that the carpenters could work, and then detailed the further measures that were taken to stop the leaks and make the ship water-tight. This work occupied about ten days, during which time the steam pumps were kept constantly in motion. The damage to the forefoot at this time was caused by under-running ice, the ship being firmly imbedded in the ice, so that it was impossible to use a sail or thrum-mat for the purpose of stopping the leak. By January 31st the leak had so far been reduced that the ship could be kept free of water by using the auxiliary pumping boilers instead of the main boilers. The boilers and engine of the steam cutter were adapted to the work of the bilge pump attached to the main engine. While this work was going on the pump in the engine room was kept going all day long at the rate of 35 strokes per minute. Upon trying the engine and boiler of the steam cutter it was found that the main engine bilge pump was too large, so a new pump was made to fit them. By February 9th it was found that the water could be kept down by running the engine room pump only about 15 minutes each hour. On February 13th the fires were hauled in the main furnace, as it was found possible to do the pumping entirely by the auxiliary apparatus.

After about November 30th, 1879, all the water used on the ship for drinking and cooking was distilled, part of the time by means of the Baxter boiler, and a part of the time by means of the steam cutter boiler. During this time it was impossible to get snow that would make water sufficiently fresh for drinking purposes.

Chief Engineer Melville decided to work back upon Ninderman's line of retreat. They started on the 23d of March from Matvey and soon found the wreck of a scow for which they had been looking, as Ninderman felt it would be a surer guide than any other to the remains of his former shipmates. He had passed this wreck when in company with Noros the first day they had

separated from the main body, and was convinced, judging from the condition in which he had left his companions and the rate of travel they were able to maintain, that they had not advanced far beyond this conspicuous object. And so it proved, for after they had found the wreck they had not hunted along the bank more than about 500 yards when they came upon the barrel of a rifle, which, with the ends of four poles lashed together upon which it hung, was protruding from the snowdrift. The poles had been lashed together to support one end of the ridgepole of the tent, while the other extended back and rested upon the bank.

### A MOURNFUL DISCOVERY.

Two natives were at once set to work digging out the snow on either side of the poles, which here was about eight feet deep, and soon each came upon a body at the same time. Thus Boyd and Gortz were found, and Chief Melville, after directing them to clear away the snow towards the east, ascended the bank, here twenty feet above the level of the ice, to find a place from which he could take a round of angles with his compass. While proceeding in a westerly direction his attention was drawn to a camp-kettle about 1000 yards from the tent place, and, approaching, he nearly stumbled over a bare hand protruding up out of the snow. Stooping down and removing the snow, which was not over a foot in depth, he found the remains of the unfortunate commander of the expedition, Captain De Long, and within three feet of him lay Dr. Ambler, while "Sam," the Chinese cook, was stretched at their feet. All were partly covered by the half tent which they had brought up with them when their companions no longer needed it, and some pieces of blanket had also been used to secure a little warmth. Near by were the remains of a fire, and in the camp-kettle some pieces of Arctic willow, of which they had made tea.

### RECORDS OF THE DEAD.

On the ground near him lay Captain De Long's pocket-journal, a few extracts from which mournful record I have already sent you. It seemed apparent that he, with the surgeon and "Sam," had died the day of the last entry in this journal, and probably the book had not been returned to his pocket after making the entry, for his pencil was also on the ground near the book. He had ever been particular to make some entry in his journal each day, and when nothing transpired he desired to mention he merely wrote the date and the number of days since the vessel sank and the retreat commenced. The two boxes of records were found at the tent place below the bank, and a little further towards the east were the medicine-chest and the flag still upon its staff.

### THE OTHER VICTIMS.

The bodies of Iversen and Dressler were lying side by side just outside of where the half tent shelter had hung from the ridge pole, and that of Mr. Collins was further in rear on the inside of the tent. Lee and Knack were not discovered for some time, but by referring to the captain's journal the searchers found the statement that after they died their bodies were carried "around the corner out of sight" by the three officers, who, with the cook, were now the only survivors and too weak to bury their fallen comrades. By sounding through the snow toward the west the missing bodies were found in a cleft in

the bank near by. None of those found had boots on their feet, but instead had wrapped rags around and tied them on to protect them somewhat from the cold. In their pockets, however, were found the remains of burned skin boots, which showed but too plainly to what strait they had been reduced for food. The hands and clothing of all were burned, and it seemed that in their last despairing effort to gather some warmth they had actually crawled into the fire. Boyd was found lying directly upon the remains of a fire and his clothing was burned through to the skin, but his body was not scorched.

#### DISPOSITION OF THE BODIES.

It was Chief Melville's intention to bury the remains upon the bank where they were found, but the natives assured him that in all probability any tomb would be washed away, as when the river broke up in the spring there would be about four feet of water over the entire delta. He therefore had them all removed to the top of a hill of solid rock about 300 feet high, about 40 versts to the southwest, and there constructed a mausoleum of wood from the wreck of the scow near where they were found. First a gigantic cross was hewn out of a solid piece of driftwood and erected on the crest of the hill, and around it was built a box 6 feet wide, 2 feet deep and 22 feet long, placed exactly in the magnetic meridian. After the bodies had been placed therein the box was covered with timbers laid side by side and a ridge pole 16 feet long framed into the cross 5 feet above the lid of the coffin, the ends supported by timbers having the same inward slant. Against this ridge pole were placed timbers side by side until the whole formed a true pyramid, and then stones were heaped upon the entire structure, so that it looks like a pyramidal mound of stones surmounted by a cross. The cross itself is 22 feet high from the surface of the rock, is 1 foot square, and the cross beam is 12 feet long by 1 foot square.

#### THE INSCRIPTION.

On the cross is engraved the following inscription, cut in by the search party at their house at nights:

In memory of twelve of the officers and men of the Arctic steamer "Jeanette," who died of starvation in Lena Delta, October, 1881. Lieutenant G. W. De Long, Dr. J. M. Ambler, J. J. Collins, W. Lee, A. Gortz, A. Dressler, H. Erichsen, G. W. Boyd, N. Iverson, H. Knack, Alexia, Ah Sam.

Chief Melville has made arrangements to have the pyramid sodded this spring, under the direction of the commander at Bulun, in case he has finished his search in time to escape before the breaking up of the rivers. The structure is a very creditable affair, and conspicuous from the river at a distance of 20 versts.

#### RECORDS AND BOOKS.

\* When the records and books were found they were immediately closed, and no one permitted to examine their contents, with the exception of Captain De Long's pocket-journal, and of that only the month of October, in order to serve as a guide in prosecuting their further search. The articles of value and such things as would be of interest to friends of the deceased were also boxed up, and, together with the records and flag, were at once sent to Yakoutsk in charge of Mr. Bobookoff and the Cossack to be placed in the care of the governor of the district until the arrival of Chief Melville or instructions from the Navy Department concerning the disposition to be made of them.

Chief Engineer Melville resumed his testimony. His narrative of the breaking up of the ice on the morning of the 12th of June, and of the crushing of the vessel was purely corroborative of the account given by Lieutenant Danenhower.

During the afternoon the crashing and noise of the ice was very great. Two men—Boyd and Lee—were in the boiler-room attending to the distilling of water. Lee came on deck, and in a very excited manner shouted that the ice was coming through the ship. Captain De Long told witness to go below and make an examination, which he did, but found that no serious damage at that time had occurred to the hull of the ship. Witness returned on deck, and so reported to the commanding officer.

There was no confusion on board, the captain going about the deck as though no danger was imminent, evidently trying to impress upon the officers and men the same coolness which he himself exhibited. Later in the afternoon, on looking over the bow down through the water, the injury to the forefoot of the *Jeannette*, which had been received the previous winter, could be seen. Captain De Long told witness to get out the photographic instruments, and take a picture of the ship as she then lay; but while he was in the dark-room developing the plate the ice again crowded the ship, and the order was given to abandon her.

Witness left the apparatus where it was, and returned on deck. His duty in connection with the order of abandonment was to get out the chronometers, charts, etc., and to assist in getting out the provisions, etc., upon the ice. Captain De Long ordered the boats to be lowered, and taken to a safe place on the ice. The first and second cutter and whaleboat were lowered. Witness did not remember whether the two dingies were lowered at that time or were already on the ice. The provisions and supplies were hastily gotten out of the ship.

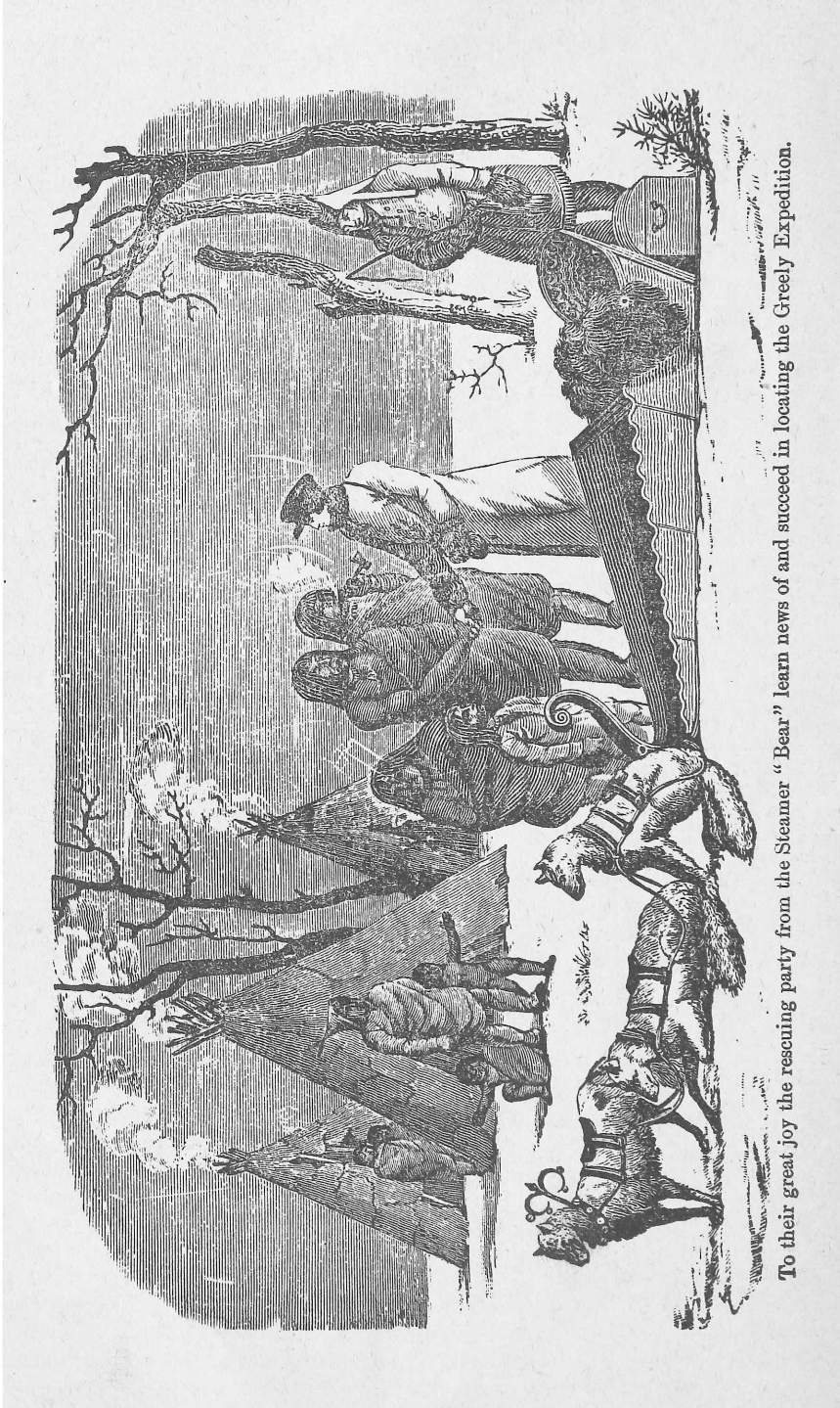
Mr. Chipp was very sick in his bed, but on being notified, got up, and with the assistance of Dr. Ambler and two others got over the ship's side, and on to the ice. Everything went on quietly and systematically, the men singing ship songs at their work.

The captain moved about giving his orders, and all hands performed their duty. The ship began to make water rapidly, and all were satisfied that she was doomed. There was ample time, however, for all hands to save their personal effects. The alcohol, which was stowed in the after-hold, had to be removed from the water.

In getting out a barrel of lime juice, seamen Starr, at the risk of his life, swam in the water, and succeeded in getting it out. We all considered it of vital importance on our march in preserving us from scurvy, and witness heard Captain De Long speak of this action at the time in the highest terms of commendation. Captain De Long, Dr. Ambler, and witness did not go down to supper, but remained on deck. At the time the order was given to leave the ship the water was up to her main deck, the sheathing was all broken in, and the iron work about the smoke-stack twisted. All hands left the ship about 11 P. M. Witness detailed the incidents of the first night upon the ice. About 4 A. M. of the 13th of June, as the watch was being called, he heard one of the men call out, "there she goes; there is the last of the old *Jeannette*." The next morning witness accompanied Captain De Long to the spot where the ship went down in thirty-eight fathoms of water. A camp-chest, box of provisions, and one or two other things were all that were found.







To their great joy the rescuing party from the Steamer "Bear" learn news of and succeed in locating the Greely Expedition.

## HONORS TO MELVILLE.

Despite the attempts of envious souls to belittle the achievements of Melville we find a grand dinner given in his honor, and at the board many representative men of our country.

Chief Engineer George W. Melville and his companions, W. C. F. Niderman and Wm. Noros, together with Lieutenant Berry, were given a dinner at 'Delmonico's', New York city. At 8 P. M. the company marched into the large ball-room on the second floor, which had been profusely trimmed with flags. The walls bore shields surrounded with small flags and large flags were draped behind the table where the chairman and the guest of the evening sat. In front of Engineer Melville was a circular plaque bordered with silver flowers and foliage, and showing in relief a part of the Arctic ocean, and the land about the mouth of the Lena river. Large bouquets were placed in the centre of each table, and on two of them were pyramids bearing the letter "M," and also the names of the following Arctic explorers: Ross, Franklin, Parry, McClintock, Wrangell, Hall, Hayes, Kane, Payer, Weyprecht, Nares, De Long, Danenhower, Kipp, Melville and Collins. Five tables were ranged lengthwise in the room, and a sixth, for the speakers, at the head of the others on a raised platform. At this were seated Judge John R. Brady, who presided, and on his right hand Engineer Melville, ex-Mayor W. H. Wickham, Rufus Hatch, Captain L. A. Kimberly, U. S. N., and Chief Engineer B. F. Isherwood, U. S. N. At the chairman's left were Mayor Grace, Senator C. W. Jones, of Florida, and Colonel William C. Church. Places were also reserved at this table for Russell Sage and Lieutenant Berry, but they were not present. Perry Belmont, W. E. Robinson, S. S. Cox, General Anson G. McCook and General Daniel E. Sickles were selected to preside at the other tables, but the last three named were not present. The time of year prevented the attendance of many who were invited, as they were out of the city. Nevertheless about 150 persons sat down to the tables. Among them were the following:

Collector W. H. Robertson, Surveyor Graham, Postmaster Pearson, General H. A. Barnum, Judge Charles P. Daly, John Roach, George W. Quintard, Commodore J. H. Upshur, F. S. Fithian, Thomas Rowland, Stephen B. French, Robert B. Roosevelt, John H. Starin, James Starin, P. H. Dugro, W. Weletsky, Consul-General of Russia; Paymaster Skelding, U. S. N.; David Wetmore, Chief Engineer J. J. Barry, Chief Engineer L. J. Allen, Chief Engineer Charles H. Loring, Chief Engineer Edward Fithian, Chief Engineer Theodore Zeller, Chief Engineer Robert Danby, Chief Engineer George W. Magee, Professor R. Ogden Doremus, Alexander Henriques, William Delamater, Charles Mallory, Henry Mallory, Thomas J. Brennan, Colonel Andrew J. Smith, Civil Engineer C. F. Brindle, U. S. N.; Arthur Leary, Captain S. H. Gillis, U. S. N.; Commissioner Hubert O. Thompson, Captain Jas. Parker, Medical Inspector Bloodgood, U. S. N., and General James McQuade.

Many of the guests were introduced to Engineer Melville and his companions in the parlors before the dinner was served. At 10 P. M., after the tables had been cleared, Judge Brady rapped for order and said:

"We have met here to honor an American, who, I am not sorry to say, was born in the city of New York. [Applause.] We have met to do honor to a man who has distinguished the American name in the Arctic regions, one

of the gallant band who risked their lives in the attempt to further the cause of science. Our guest has certainly shown us by his virtue and heroic efforts that he has all the elements of heroism that should make us proud of him as an American citizen. [Applause.] But while the National heart throbs with pleasure, and his name is as dear and familiar throughout the land as household words, I would turn your minds to the unfortunate comrades whose lives were lost in the same enterprise. I ask you for one moment to turn your thoughts to them, and to drink their memory, standing in silence. And now, turning to the living, I propose in the enthusiastic manner that distinguishes old New York nine cheers for Engineer Melville." [Tremendous applause and cries of "Melville!"]

Mr. Melville rose slowly and said:

"Gentlemen, in behalf of myself and my two comrades I will say only a word. In the presence of this concourse of so many eminent men I would prefer to say nothing. But for my comrades I will say that we tried to do our whole duty, and any one who would try to do less would be no man at all." [Applause.]

The chairman then read letters from S. S. Cox, the Rev. Henry Ward Beecher, and ex-Senator Roscoe Conkling. Mayor Grace being called upon spoke as follows:

"Words seem poor when we consider how insufficient they are to convey the feeling of those who are lovers of heroism. These survivors and their companions have given to the world an exemplification of heroism such as is seldom seen. After twenty months the staunch ship failed them, and they were left in the darkness of Arctic night. Then came want, cold, hunger and death. But their hearts were stauncher than their ship, and never failed them. So that you, sir, and all your crew, from the gallant leader to the humblest seaman, have shown by their fidelity to duty that the American navy, though wanting in iron hulls, still had hearts of gold. [Applause.] When that company of two was cheered as they went forth to seek assistance, the last words they heard were: 'Remember us when you get to New York.' We do remember them [applause] and their courage to dare and endure. I am not much versed in Arctic exploration, and have much doubt if the benefit to science will compensate for the lives which have been lost. Yet it seems that every man must grow nobler in contemplating their deeds, and so nothing may be lost. It is because these gentlemen have shown the highest type of devotion that the city of New York welcomes them with joy only tempered by sorrow for the loss of their noble companions."

Chief Engineer Isherwood then said that the members of Engineer Melville's corps felt no disappointment at hearing of Mr. Melville's exploits. What he did was precisely what they would have expected of him. He did what was to be expected of a thoroughly trained engineer who knew what he could do, and had the will to do it.

Senator Jones, of Florida, spoke of the suffering of the crew, and its lesson upon the world.

Among the other speakers were Rufus Hatch, Captain Parker, Colonel Andrew Smith, John Roach, General McQuade, Richelieu Robinson, Captain Cimperley and Corporal Tanner.

## OFFICIAL RECORD.

WRITTEN BY CAPTAIN DE LONG.

Now the reader is asked to examine and consider the official record written by Captain De Long at intervals during the first and second years of the Jeannette's imprisonment in the pack, and found beside his dead body in the Lena Delta. The report covers the history of the Jeannette's cruise and drift from the time of her departure from San Francisco in July, 1879, to the 1st of January, 1881. After relating with great fullness of detail the incidents of the Jeannette's cruise from San Francisco to Behring's Strait and of his attempts to learn something from the Siberian natives with regard to Nordenskjold's ship, the Vega, Captain De Long gives the following account of the Jeannette's experience and of his own motives and plans during the four or five critical days in September which preceded the ship's imprisonment:

"We are now fairly at the beginning of our Arctic work, and the lateness of the season made it extremely questionable whether or not we had any chance of accomplishing anything before the winter set in. As the commander of a Polar expedition my chief desire was to get north, and I had already come so far to the westward in carrying out department orders, that the sooner I started in a northerly direction seemed the better for the object in view. Additional time would be lost were I to attempt to get a more easterly position before heading to the northward, particularly as from the experience of American whalers and the ships of the English Franklin relief expedition, there was nothing to indicate there a better chance of progress. On the other hand, we were within 220 miles of Wrangell Land.

"With land so near us offering a chance of exploration of a winter harbor from which a higher latitude might be attained by sledges, and perhaps presenting what was naturally to be expected, land-water along its eastern coast, in which case a good northing might be made by the ship herself before any exploration or sledge journey might be undertaken, I concluded that I was exercising good judgment in considering that land as a kind of support for the first winter's campaign, and I accordingly shaped a course north by west true, proceeding with all speed."

Captain De Long then describes the manner in which the ship made her way northward through loose streams of floating ice until she reached a point, about forty miles southeast of Herald Island, where she was stopped by what seemed to be impenetrable pack ice. That night a promising lead opened to the westward, and Captain De Long decided to enter it. "Believing as I," he says, "that the best chance for an advance would be land-water extending along the eastern coast of Wrangell Land and hoping that the promising lead to the westward would conduct us to it." Captain De Long continues:

"At that time I hoped we were destined to reach this land. Though our lead had abruptly terminated at a wall of ice the surface of the floes was cut up here and there by ponds and small lakes which any movement of the ice might unite into a lane of navigable water. Instead of opening, however, the ice closed, and on the following day the Jeannette was beset, never again to be released. My choice of plans was limited by the surroundings. To advance was impossible, even if a chance existed of doing so, and holding our present location meant wintering in the pack and drifting we knew not where."

## THE LAST OF THE JEANNETTE.

The report continues with a description of the preparations for abandoning the ship, should it become necessary, and an account of the daily life on ship-board during the ice siege. Captain De Long describes with great fullness of detail, and with many pen-and-ink diagrams and illustrations, the long battle of the Jeannette with the ice and the devices and expedients which were resorted to to repair damages and to strengthen the ship for future ordeals. He pays a glowing tribute to the faithfulness of carpenter Sweetman and seaman Ninderman, who worked night and day repairing the damages. The last entry in the record is dated December 31, 1880, and is as follows:

“During the past sixteen months we have drifted 1300 miles—far enough, if it had been in a straight line, to carry us to and beyond the pole; but we are yet only 220 miles northwest of where we were first beset. We have suffered injury, and danger has often confronted us. We have been squeezed and jammed, tossed and tumbled. We have pumped a leaking ship for a year, but we are not yet daunted, and we are as ready to dare everything as we ever were. And we face the new year firmly, hoping to do something worthy of ourselves and of the flag above us.”

In less than ten months after these words were written the Jeannette was at the bottom of the Arctic Ocean and De Long lay dead in the Lena Delta.

## MELVILLE'S STORY OF THE JEANNETTE EXPEDITION.

The winter of 1879 and 1880 passed quietly with the usual routine of occupations and amusements. The officers employed nearly all their time in reading when off duty. Usually after dinner and supper there was a general conversation among the officers upon religion, politics and other subjects. The general tone of the messes was very pleasant, and there was less of disagreement among the officers in the Jeannette's mess than in most of those I have been in during my twenty-one years service in the navy. On Sundays we had a better dinner than usual. It seemed to be the desire of the commanding officer—who messed with us—to bring on a general conversation, and we would discuss almost anything that happened to be uppermost in our thoughts. In the first part of the cruise the captain, the doctor, Mr. Collins and Mr. Dunbar, and occasionally Mr. Chipp, would play cards for amusement. I never played cards; never knew how, and don't know now. During the daytime any person, officer or seaman, might take his gun and hunt over the floe for any distance, the only restriction being to be on board ship by sundown or at the dropping of the ball at the masthead. During the winter-time the hunters shot a number of bears. I believe Mr. Dunbar was accredited with the greatest number, fireman Bartlett and seaman Ninderman being the most persistent hunters. I believe they were accredited with the greatest number of seals and walrus. The most of the seal and walrus, however, were obtained in the spring and fall. About the middle of March the sun commenced to get pretty strong. The snow was removed from the ship's sides and a trench dug all the way around the ship to ease her in case she should attempt to rise, as she would naturally do, being lightened by the amount of coal and provisions which had been used during the winter.

We found as spring approached and the ship loosened in her bed she invariably arose in the water. About March 18, 1880, we had drifted so far to the southward and eastward as to bring the mountain-peaks of Wrangell Land

in sight. I mention this fact to show that the drift was not continuously to the northward, but that the whole flow was found to be drifting at various times to all points of the compass, apparently governed by the winds and currents. During the month of March the weather was disagreeable and there was much fog. After April 1 the spring and summer routines were enforced, such as changing the meal hours, and the exercise on the ice was discontinued. The weather being fine, it was natural to suppose that the people would take sufficient exercise at all times to maintain good bodily health. In the spring the store-rooms were broken out, the bilge pump was removed from the engine-room and placed in the fire-room hatch aft. The ship being set by the stern, the water that had accumulated there was pumped out. I would here state that I had orders from the commanding officer to attend to the heating of the quarters of the officers and men, and those orders were during the winter-time to maintain a temperature of 60 degrees Fahrenheit as steadily as possible.

Toward the latter part of May the fires in the stoves in the cabin and fore-castle were discontinued between 9 A. M. and 6 P. M. To avoid the expenditure of coal in the galley the tea-water was heated on the cabin and fore-castle stoves. About the 1st of June the decks were cleared up, the ship was painted, the running-gear was attended to, and the ship got ready for sea. About July 1 long leads of water commenced to make in all directions, but none directly in toward the ship. It was impossible to travel more than a mile in any direction without the use of a boat, or, as the hunters managed it, by paddling across the leads of water on a piece of ice. About this time Mr. Chipp and the captain discussed the possibility of blasting the ice between the ship and the nearest lead to which the ship could be worked, and the conclusion they came to was that there was not powder enough in the ship to effect it. Mr. Chipp was directed to make torpedoes. He devised fuses and insulated wire for torpedo purposes to be used with what powder he had, provided the leads made closer to the ship. Later in the season the ice thawed astern of us, making a short lead nearly at right angles to the line of the ship, but not leading into any of the main leads. The ship's forefoot was resting on a large sunken floe piece, which it was supposed at the time might strain the ship and open the old wound in her forefoot. An effort was made to heave the ship astern into the open water. An immense mass of ice was removed from under her counters, the people working up to their waists in water. Finally the ship was hove astern a short distance, the large floe piece rising under her bows. The ship settled down on nearly an even keel and the leak in the bow was closely watched. It was found to have increased considerably. As there was still a piece of ice under her forefoot it was thought best to let the ship lay as she was.

During the summer the carpenter's force altered the shape of the deck-house, putting it over the fore-castle hatch and skylight for the purpose of making it warmer and dryer. During the first winter, when she leaked badly, the ship was very wet, because in filling in the space between the frames and putting in the water-tight bulkhead, the fore-castle deck being below the water-line, the water found its own level above the fore-castle deck and at times ran along over the deck. As soon as the leak was sufficiently stopped the water was allowed to flow aft of the pumps, and this relieved the fore-castle of much of the moisture. Witness thought from what he had read of other Arctic ships that the *Jeannette* might be considered a dry ship. Toward the latter part of August the propeller was put in place, and the ship and engines were

gotten ready in case the floe should break up. About September 15th the deck-house was erected on the forward part of the ship, and covered with sails and awnings for the winter. The pemmican was removed from the lower hole and stowed in the deck-house for emergencies. The crew's knapsacks and spare clothing, the tents, cook-stoves, and all the small gear intended for use on the retreat in case of fire or disaster to the ship were always kept on deck or in a convenient place to be readily passed over the ship's side on to the ice, the alcohol alone being stored below under the main hatch for safety. At times some of the alcohol was stowed on the spar deck and covered with a tarpaulin, but as some of the cans were found to leak, they were stowed under the hatch. November 1st the winter routine was again put in force, including the customary exercise on the ice and the examination of the officers and crew by the medical officers.

During this winter, as well as the previous one, the people amused themselves as they saw best during the two hours' exercise on the ice, walking, hunting, or kicking foot-ball. The officers read more than during the previous winter, and there appeared to be less playing of games among them, none of them seeming to be in as good spirits as they were the winter before. The life was dull and monotonous. Even the capture of a fox was hardly considered as a thing of interest. There was very little movement of the ice during the fall and winter of 1880, and the ship lay very quietly in her bed.

### ARCTIC PERILS.

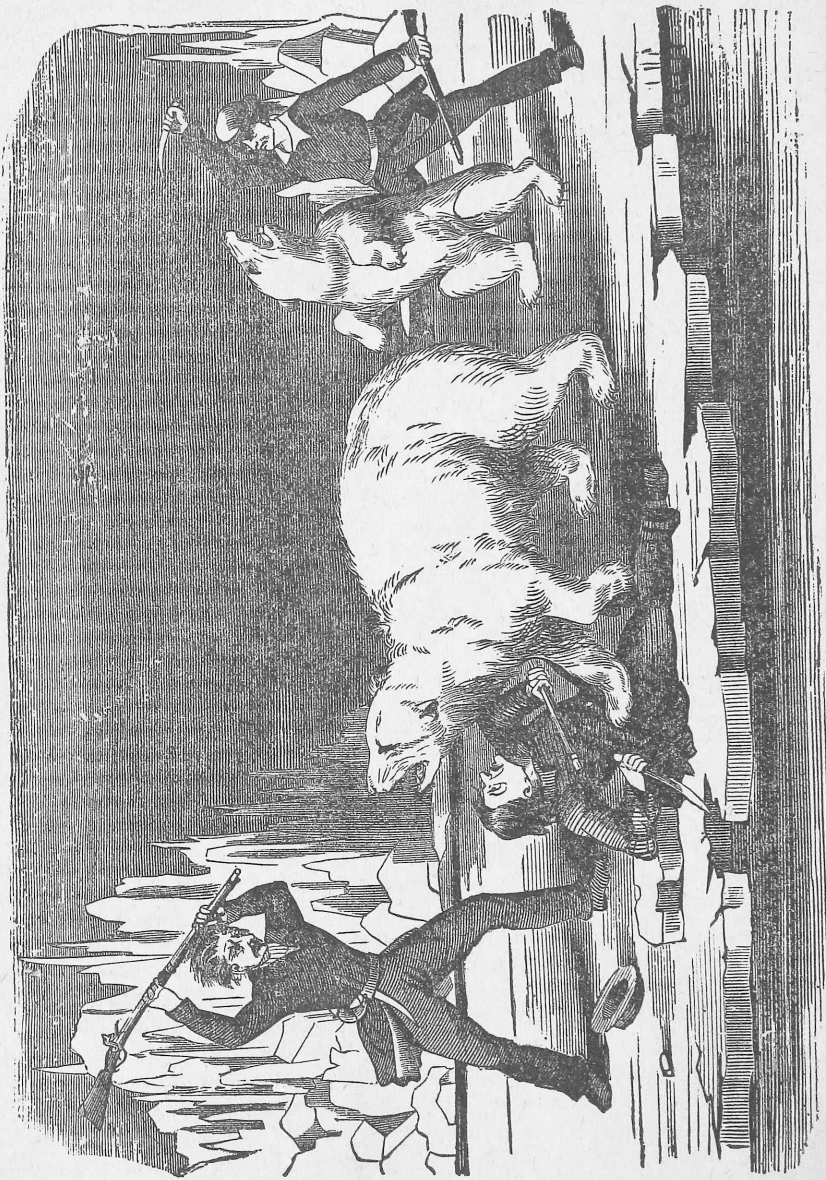
#### LOSS OF MASTER PUTNAM OF THE RODGERS EXPEDITION.

We have obtained the following facts from the officers of the Rodgers, and particularly from Master G. M. Stone, and Passed Assistant Engineer A. V. Zane. Referring to the loss of Putnam :

On January 10th, the weather being fine, the party left the North Head for the Wood House, Mr. Putnam driving his own team, and Mr. Hunt riding on the sled with him, Dr. Castillo riding with Ehr Ehren—the principal native of the party—and Mr. Zane riding with another native. Dr. Castillo was going up for the trip only, and had made arrangements with a native at St. Lawrence Bay to bring him back. They had not proceeded far when Putnam's sled broke down, and, although repaired by his men, Hunt was obliged to ride with the third native. It is hard to say whether this little accident caused the loss of Putnam or the safety of Hunt. Towards noon the sky became overcast. A wind sprang up from the northward and soon increased to a terrific gale, filling the air so thickly with snow, that it became impossible to see the route, and consequently the natives lost their way. They kept on, however, making the dogs face the gale until 6 P. M., when the natives deemed it expedient to camp where they were for the night. It was absolutely necessary to come to a halt, because it would have been death to the dogs to compel them to face the gale longer. The air was so thick with the drifting snow that the lead dogs could not be seen by the drivers. This was a night of most intense suffering, sometimes sitting on the sleds to try to get a little sleep and compelled to move about to get warm. The thermometer registered 30° Fahrenheit, and they were obliged to remain in this temperature, without even protection from the winds, from 6 o'clock in the evening until 8 next morning. In the morning it moderated a little, and they decided to return to St. Lawrence Bay and wait until the weather became more suitable







Terrible and Fearful Conflict between the Expeditionists and Polar Bears.

for travelling. The storm increased in violence all the time, but as the wind was now behind they had no trouble, and the bay was reached in safety. There being no dog food at North Head it became necessary to go to the south side. The bay was crossed, arriving on the southern shore about one and a half miles from the village of Nutapinwin, their destination. All the heavy gales during this season of the year were from the northward and westward. Just before getting to the village, it was necessary to make a sharp turn to the right, and go in the teeth of the gale for about two hundred yards. The order in which the sleds were proceeding was Castillo and Ehr Ehren, Putnam, Zane, and Nortung, and Hunt and a native, who were some distance behind. Proceeded along well until they made the turn to face the gale, when Putnam, not having the ability to control dogs so well as the natives (it is difficult to force the dogs to go to windward in a severe storm), or probably not knowing of the abrupt deviation from his course, as he could not see the other sleds turn, probably kept straight on. Zane, being familiar with the locality, recognized some landmarks when near the village, but Putnam could not recognize the marks, as this was his first visit to the place.

About this time Zane overtook Putnam, and when their sleds were abreast remarked, "Well, Put, it seems that we are all right, after all." Putnam answered, "I hope so." They were the last words he was ever heard to utter, and that was the last seen of him. His sled fell a little behind. The natives made the turn with some difficulty, but Putnam missed it, partly owing to his being unable to see them. It is thought that as the wind was quartering he was sitting on his sled back to the wind, which, being very strong, gradually edged his sled out of the track towards the ice, which was but a short distance off. However, he got on the ice, and the supposition is that after going some distance out he became aware of his mistake, and not being able to see which way to go, and his shouts not being heard in such a violent gale, he camped, deciding to wait for clear weather, and also knowing that a search would be made for him as soon as he was missed. On reaching the village, in about five minutes after speaking with Putnam, Mr. Zane went immediately into a house, as he was almost frozen. It was soon discovered that Putnam was missing, and, thinking he had made some mistake, a native started down to the beach to look for him, and when Hunt came along on his sled he found Nortung (the native) yelling with all his might, but thinking this noise was to guide him, kept on to the village. Here he ascertained that it was Putnam he was seeking. Hunt went in and inquired of Zane if Putnam had arrived; this was the first intimation Zane had of the unfortunate occurrence. Both then started for the beach to assist in the search; they were both now thoroughly alarmed, for they could appreciate the danger of being lost in such a storm. They offered every inducement, entreated and ordered the natives to hitch up the dogs, and hunt for the unfortunate man, but they would neither hitch up their dogs nor allow them to use their own dogs, saying that the gale was too heavy, they could not see, and that probably next day would be fine, and then all would go out and hunt. All threats proving unavailable, nothing could be done but to wait for the morrow. The gale was increasing in violence every moment. After going down to the beach it was impossible to get back to the houses, the wind blew so strong in the face. During the night the heavy wind detached the ice from shore, and carried it to sea. Next morning, at daylight, they again went on the search. Hunt and Zane started along the beach, and natives taking various other directions to look for him. The wind

had gone down some, but it was still blowing so hard as to make travelling very difficult. The morning was clear, however, and a considerable distance could be seen. Hunt and Zane gazed on the place which the night before had been one sheet of ice, and saw that it was now clear water, with no ice in sight. They walked along the beach about a mile until they came to a bluff which they knew it would have been impossible to pass on a sled, and satisfied themselves that he was not on the beach. It was almost certain that he had camped on the ice and been carried to sea with it. The only chance for his safety seemed to be that the wind would spring up from the southward and drive the ice in shore, or that it would become calm and allow the new ice to form between the old and the shore, so that the unfortunate man could walk over it.

The next day Hunt and Zane, with three natives, started for North Head to notify Waring of the sad accident. Castillo was left at South Head to look after Putnam if he should come ashore. After crossing the bay they met Waring and told him of the calamity. He told them to proceed to the Wood House in obedience to the orders of Lieutenant Berry, and he would immediately set out on a search along the coast for Putnam. The Wood House was reached on the 13th, where they found Lieutenant Berry busy in making preparations for a sledge journey along the coast to the westward, expecting Putnam to accompany him. When Waring heard of the accident, he was on his way to South Head to get some walrus meat, provisions at his village being scarce; he gave the charge of everything at North Head to Stony, and went on to search to the southward. At half-past 2 that afternoon (13th) he received a note from Cahill, one of the crew stationed at South Head, stating that Putnam had been seen on the morning of the 13th, on an icefloe about three miles from shore. The natives would not launch their skin boats on account of the intervening thin ice (which is even worse on the boats than heavy ice), though every effort was made by Cahill, who offered large rewards to induce them to do so. Late in the afternoon of the following day word was received that Putnam had been seen from a village six miles south of South Head on the ice eight miles from shore, and that the natives were making preparations to rescue him. Waring pushed on to the village, reaching it that night through a heavy wind and snow storm, blowing hard off shore. It was here ascertained that on the preceding day an attempt had been made by four men of the Rodgers crew, assisted by two natives, to rescue Putnam, but after proceeding nearly three miles they were forced to return, the boat having been cut through in so many places that they were barely able to keep her afloat until shore was reached. Another severe off-shore storm was now raging, and the unfortunate man was lost sight of. The natives were confident that the ice-floe would be driven inside of a point some distance down the coast, and preparations were immediately made to go down to the point as soon as the weather would permit. Now there was trouble in procuring dogs to travel, because the natives at both North and South Head were afraid, on account of some previous difficulty with the natives at Indian Point, to go down the coast or to allow their dogs to go, saying they would be killed. At last, however, a team was scraped up from four villages, ranging over a space of thirty or forty miles. It was the 17th before another start could be made; it opened stormy, but soon moderated, and the search continued with one native and a team of eight dogs. The coast was skirted to the sixth settlement, about thirty miles, but no news was heard; the off-shore wind had

driven the heavy ice to sea. The next day, not being able to get dogs to continue the journey, he was compelled to return to the village next to South Head.

Several dogs came ashore, but the natives could catch only three. The natives said that all came ashore without harness. Whether the dogs really came ashore without harness or whether the natives, fearing the dogs would be claimed and taken from them, told this story to make Waring think they did not belong to Putnam is not known, but the dogs were positively recognized as belonging to the team Putnam drove on that fatal day. Rumors of Putnam's having been seen were constantly coming in, and after being weather-bound for three days, Waring, on the 2d of February, started down the coast to verify them. He kept steadily on, searching the whole coast minutely from South Head to Plover Bay. He communicated with several natives who spoke good English, and they were satisfied that Putnam had never come near the shore.

At Engwort (sixty miles from South Head) another dog, with a pistol-shot wound in his neck, came on shore ten days previously and was recognized as belonging to Putnam's team. This dog—as, indeed, all were—was very thin and emaciated, covered with ice, and had every appearance of having been long in the water. He had probably shot this dog intending to use it for food, but he had succeeded in escaping. In all six dogs out of his team of nine came ashore. At Marcus Bay and Plover Bay letters were left for the whalers informing them of the condition of the wrecked crew and urging them to hasten to their assistance. Mr. Waring was more than a month on this trip, getting back on the 18th of February, and did not return until he was fully satisfied that there was no hopes of his safety.

It is known that Putnam was not dead the third day after being lost, and how much longer he survived can only be conjectured. All this time the temperature was from 20° to 40° below zero, and he had no protection from the piercing winds. True, he was very warmly clad. He probably killed one or more of his dogs for food; he surely did not die of starvation. The floe that he was on doubtless broke into fragments during one of the gales, and he was drowned. It would not seem so awful if he had perished in a shorter time; at least it would be some consolation to know that his sufferings were not so prolonged. Some spoke of there being a possibility of his having drifted down to St. Lawrence Island, and thus being saved, but we spoke to some natives from the island while on our way down in the Corwin, and they knew nothing of the accident. Thus the last hopes of his shipmates were destroyed. The natives gave all the assistance in their power to aid in the search. News of the loss was known all along the coast (and men were placed on the lookout) within two days after it occurred.

### PROFESSOR NORDENSKJOLD

thus describes life in the Polar regions: It is impossible to form an idea of a tempest in the Polar sea. The icebergs are like floating rocks whirled along a rapid current. The crystal mountains dash against each other backward and forward, bursting with a roar like thunder and returning to the charge until, losing their equilibrium, they tumble over in a cloud of spray, upheaving the ice-fields, which fall afterward like the crack of a whip-lash on the boiling sea. The sea-gulls fly away screaming, and often a black, shining whale comes for

an instant puffing to the surface. When the midnight sun grazes the horizon the floating mountains and the rocks seem immersed in a wave of purple light. The cold is by no means so insupportable as is supposed. We passed from a heated cabin at 30° above zero to 47° below zero in the open air without inconvenience. A much higher degree of cold becomes, however, insufferable if there is wind. At 15° below zero a steam, as if from a boiling kettle, rises from the water. At once frozen by the wind, it falls in a fine powder. This phenomenon is called ice-smoke. At 40° the snow and human bodies also smoke, which smoke changes at once into millions of tiny particles like needles of ice, which fill the air and make a light, continuous noise like the rustle of a stiff silk. At this temperature the trunks of trees burst with a loud report, the rocks break up, and the earth opens and vomits smoking water. Knives break in cutting butter. Cigars go out by contact with the ice on the beard. To talk is fatiguing. At night the eyelids are covered with a crust of ice, which must be carefully removed before one can open them.

A very interesting account of the northeast passage by the steamer *Vega*, which has brought such renown to Professor Nordenskjöld, is given by Lieutenant Palander, who commanded the *Vega*. There is no doubt the *Vega* would have made her entrance into Behring Strait the same season in which she started on her voyage but for the exceptionally unfavorable condition of the ice. She had passed the real points of difficulty and danger, and was within 120 miles of Behring Strait on the 28th of September, 1878, when the ice closed in upon her, and she was unable to move until the 18th of the following July. The region in which she passed the winter is well known to explorers and whalers, many of whom have passed through the same waters, encountering no ice even as late as the 1st of November. Now that the passage has been shown to exist, the question whether it can be made commercially useful is the next in interest. If vessels can get through in two months, as Lieutenant Palander says they may, if no unanticipated obstructions intervene, considerable commercial use may be made of the passage in trading with the natives along nearly one thousand miles of habitable coast. But this question of an open passage is one that Lieutenant Palander is not prepared to answer. That open water near the coast does exist during the summer and autumn months admits of no doubt in his mind. The difficulties to be met with at and around the northernmost cape of the Siberian coast—Cape Tchelpuskin—and Taimyr Island are such as to make it doubtful whether ships can get through without wintering over. That a passage is to be found there once or twice Lieutenant Palander does not doubt, but it may occur so late that winter will set in before Behring Strait is reached. In summing up Lieutenant Palander says: "The northeast passage cannot, therefore, in its entirety be made available for the purpose of commerce; but still an annual traffic might easily be carried on from the westward to the Obi and the Yenisei and from the eastward to the Lena. Unquestionably the way now lies open to Siberia's three greatest rivers; and that land, so rich in minerals, timber and grain, whose export and import trade have hitherto been conducted by means of caravans, ought now to obtain a practical route as a connecting link between the Old and the New World." Vessels designed for this hazardous traffic will have to be specially constructed to push their way through fields of drifting and newly-formed ice and be coaled and provisioned for an ice blockade lasting from eight to nine months.

The song of the icy sea is a very peculiar one, and can scarcely be described

so as to convey any clear idea of its nature. It is not loud, yet it can be heard to a great distance. It is neither a surge nor a swash, but a kind of slow, crashing, groaning, shrieking sound, in which sharp silvery tinklings mingle with the low, thunderous undertone of a rushing tempest. It impresses one with the idea of nearness and distance at the same time, and also that of immense forces in conflict. When this confused fantasia is heard from afar through the stillness of an Arctic night the effect is strangely weird and almost solemn, as if it were the distant hum of an active, living world breaking across the boundaries of silence, solitude and death.

On June 25th the steam whaler *North Star*, the first ship of the season to reach Point Barrow, steamed up a long lead, which ran in a northeast direction about six miles from the shore, until she came opposite the signal station, when she made fast to the grounded ice. On the 8th of July she made her way into a small inlet in the shore ice, about three miles from shore, with the hope that the projecting ice capes, grounded in fifteen fathoms, would withstand the pressure and protect her until the current should change, or a favorable opportunity for making her escape should occur. It soon, however, became certain that this hope was vain, for the pack kept on its way slowly and steadily, but as relentless as fate. The ice capes were ground into powder, and melted away before the resistless pressure as if they were not a straw's weight instead of millions of tons. The grounded mass around the ship soon followed, and the ill-fated *Star* was caught and ground to pieces as if she were no stronger than a child's card-board toy. Never was destruction more complete. Her great masts and massive ribs of solid timber cracked and broke as if they were pipe-stems, and in an hour from the time the pressure first reached her nothing remained of the great ship that looked so beautiful and strong in the bright sunshine a few minutes before but two or three boats, a little hard bread, a few bags of flour and forty-eight homeless men. What assistance could be given was furnished by the party at the signal station. All that had been saved from the wreck was brought on shore, tents and provisions were furnished to the shipwrecked men until the 14th, when the whalers *Bowhead* and *Belvidere* came up and took them off to be distributed through the rest of the fleet. On the 15th the pack had nearly all disappeared, and the barrier of anchored ice was then about two miles wide, but it broke up rapidly, and on the 22d no ice was visible.

The following interesting story should certainly find a place in this work. It gives a vivid description of the trials and characteristics of the wretched dwellers amid Arctic snows. It relates to the strange life of the officers and crew of the *Rodgers* among the *Thchouktchis* on *Corwin Island*, and on the mainland after the burning of the *Rodgers*.

After the crew were proportioned out among the several settlements, there began a struggle to get food enough to sustain life. The natives are rather improvident, seldom preparing for hard times by laying up a reserve stock of walrus or seal meat, so when so many extra men were thrown upon their hospitality, food soon became scarce, and everybody had to go hunting. It frequently happened that they were not successful in the hunt, and then they would be compelled to go for days without food. It was very revolting at first to be obliged to live in the filthy huts of the natives. The odors were sickening. The huts were circular at the bottom with a conical top, and earth thrown around the bottom outside to prevent the snow from driving under. They have a frame of light poles stuck in the ground and covered with wal-

rus hides and seal skins, the entrance or door being an oblong hole large enough to crawl through. Inside the huts are stowed the whole effects of the family (or the several families) occupying the house, and the amount of grease, decayed meat, and refuse that accumulates in a short time can scarcely be imagined. Frequently the dogs are allowed inside. The houses are seldom more than 20 or 25 feet in diameter. In the centre is the fireplace where everything is cooked. A kind of tripod is used to suspend the pots over the fire. There is usually a small hole left at the apex of the cone to allow the smoke to escape. This carries it off very imperfectly, and when the fire is burning the quantity of smoke in the house is almost unbearable. The sleeping apartment is made of the best deer skins that the owner can afford to get, and is separated from the main apartments by a large drop curtain of reindeer skin. This one apartment serves as the sleeping-place of the whole family and whatever visitors they may have, everybody turning in naked. At night a lamp is kept burning, and this heats the place to a temperature of from 70° to 90°, the usual temperature of the houses in winter. This lamp is a large bowl—either earthen or wooden—filled with seal oil, and having a wick of dried moss, which has been saturated with the oil, around the edge. Of course the castaways had to throw aside all their reserve and prejudices, and adopt the manners and customs of the natives. The natives knew the difference between an officer and a shipped man. While the officers in nearly every instance were obeyed and treated with a certain degree of respect, the sailors had no influence over them at all.

Frequently the people had to go hungry when the only chance to get anything to eat was to go out and kill their own game. A seal or walrus at such times was a godsend. Imagine a man out hunting with the thermometer standing 40° below zero, when it was either success or starvation. How interesting it was to go some distance out on the ice, and watch over a seal hole for hours, when the watcher has eaten nothing for probably two days, waiting for a seal to make its appearance, and when at last it would come up, the hunter would be so cold and benumbed that he could hardly aim the gun. Such was not an infrequent experience at St. Lawrence Bay. At such times they were not particular in having the seal cooked before satisfying their hunger. Seals are by no means so easy to capture as one might suppose. When they haul out on the ice they lie close to the air hole, and unless killed instantly are sure to escape. During warm weather seals sink when shot in the water; in cold weather, however, they invariably float. Walrus float when killed. Ducks and rabbits were also frequently hunted and killed. Deer were scarce and were seen only many miles in the interior. It was a very erroneous idea entertained by many people that the crew would be able to procure plenty of reindeer during the winter and would never suffer for want of food. In the first place there are but few deer near the coast. In the second place, even in that country, people don't part with their stock without some remuneration, and but very few trade goods were saved from the burning ship. What goods were saved had to be traded for clothing—as much of a necessity as food. The report that one of the Russian Governors in Siberia had sent trade goods to Lieutenant Berry is false, or, at least, none were ever seen or heard of. The crew went through the suffering from hunger and exposure that usually falls to the lot of Arctic explorers. Those who lived with poor huntsmen fared worse than the others, and had to skirmish round more for themselves, though the natives are very kind, and will always share their last



seal with a family that has none. Mr. Stoney, unfortunately for him, though fortunately for the native, was quartered in a house with a very poor hunter, and did most of the hunting for the entire family. Nearly every day that the weather would permit he would take his gun and hunt, sometimes from necessity, and at other times for exercise and recreation. He became a great favorite, and the man of the house would follow him around on his hunting expeditions like a faithful slave, looking out for his safety. When the ice was thin in many places in the fall and spring, this native would precede Mr. Stoney, and try the surface with a long pole before he would allow him to venture across suspicious-looking places. During the winter it is usual to hunt several miles off shore, and it is very hard and fatiguing work to drag a large seal that distance over hummocky ice with from one to three feet of snow on it. When there would be a long spell of bad weather, preventing the hunters from going out, there would be almost a famine in the villages.

A piece of walrus hide, dog, or putrid walrus meat would then be considered a luxury. Five days without food. Dogs dying a natural death were eaten; one mad dog killed for food. It is true that they were sometimes compelled to eat meat so rotten that they had to shut their eyes and hold their noses while dining, and it would rasp their throats while swallowing it. Their stomachs would frequently revolt at this; but it was eat or starve. The natives relish their meat, more especially walrus meat, after it has been killed a long time, and has arrived at a certain state of putrefaction; they say it is then more tender (which it undoubtedly must be) and sweeter (which is contrary to the belief of their guests). Another favorite dish is what the sailors called "slum gullion," a mixture of grass and oil, more than half oil. At meal times a long wooden trough of food is set on the floor; all gather around the trough and begin operations, the quickest man getting the lion's share. As soon as he could bring himself down to eat what the natives do Jack became very nimble. I heard one sailor say that at first he was slow, and got very little to eat, but in a short time he could compete favorably with any two of the natives. This eating trough is kept in the filthy condition that characterizes all the surroundings. The natives are very particular to eat in courses (when they have anything to eat). Thus: First, raw fish (bones and all), pronounced excellent; second, "slum gullion;" third, walrus skin, raw; and fourth, walrus, said to be the finest dish ever set before man. The officers were as highly regarded in the houses they lived in as any of the family. The household would go without food to keep their guests from suffering. They would make clothes for them, and when put on would stand off and admire them, inspecting them in every different position, and appear as pleased as a mother would over her child. When one of the strangers would feel a little down-hearted, and could not eat what was set before him the native would say, "Why no eat? you no eat me no eat," and thus almost compel him to eat whether the meat was revolting or not. Sometimes when one would be caught thinking and apparently depressed, the kind-hearted native would say, "Me think you homesick; never mind, ship by and by come; no too long; one moon." They count time entirely by moons. A certain amount of exercise was necessary almost daily to prevent the scurvy from taking a firm hold on them. Exercise was secured by long walks, hunting or sledging when a team could be procured. Stoney and Waring would sometimes make short excursions inland, go to the deer man's camp, occasionally travelling seventy miles a day.

## ANTARCTIC ICE-BARRIERS.

The transient visit of the *Challenger* to the antarctic ice-barrier gave her scientific staff the opportunity of examining the structure of the southern icebergs, which altogether differs from that of the icebergs with which our northern navigators are familiar—these last being now universally regarded as glaciers, which have descended the seaward valleys of Greenland and Labrador, and have floated away when no longer supported by a solid base—and the information they have gathered is of considerable interest as helping us to form a more definite conception of the condition of our part of the globe during the glacial epoch. A number of independent considerations now lead almost irresistibly to the conclusion that the icebergs of the antarctic region are for the most part detached portions of a vast ice-sheet, covering a land-surface—either continuous, or broken up into an archipelago of islands—which occupies the principal part of the vast circumpolar area, estimated at about four-and-a-half millions of square miles—or nearly double the area of Australia. Of this ice-sheet, the edge forms the great southern “ice-barrier,” which presents itself, whenever it has been approached sufficiently near to be distinctly visible, as a continuous ice-cliff rising from two hundred to two hundred and fifty feet above the sea-level. The icebergs of the Antarctic Sea are as a rule distinguished by their tabular form, and by the great uniformity of their height. This, in bergs which show the least sign of change since their first detachment from the parent mass, seldom varies much from two hundred feet above the sea-line. The tabular surface of the typical berg is nearly flat, and is parallel with the sea-line. Its shape usually approaches the rectangular, and it is bounded all round by nearly perpendicular cliffs. From a comparison of the specific gravity of berg-ice with that of sea-water, it appears that the quantity of ice beneath the surface required to float that which is elevated above it, must be about nine times as great. In other words, supposing that a berg had the regular shape of a box, its entire depth from its upper surface to its base must be ten times its height above the sea-level. Consequently, if the latter be two hundred feet, the entire height of the mass would be two thousand feet—which might thus be assumed to be the thickness of the ice-sheet from whose margin it was detached. This estimate must not be accepted, however, as other than approximative. The dimensions of these bergs vary greatly. Those seen from the *Challenger* were generally from one to three miles long; but single bergs are reported of seven or even ten miles in length, and an enormous mass of floating ice, probably composed of a chain of bergs locked together, forming a hook sixty miles long by forty miles broad, and inclosing a bay forty miles in breadth, was passed in 1854 by twenty-one merchant ships, in a latitude corresponding to that of the northern coast of Portugal.

Speaking of the intensity of Arctic cold the chronicler of Lieutenant Schwatka's expedition in search of the remains of Sir John Franklin records some interesting facts regarding the great cold of the Arctic regions. The lowest temperature met with by the company was  $103^{\circ}$  below the freezing-point, or  $71^{\circ}$  below zero, Fahrenheit—a degree of cold almost impossible to imagine by the people of more temperate climes. The effects of such intense cold upon the human system were not so marked in the Lieutenant and his companions as might be supposed; and even during the month in which the average temperature was  $65^{\circ}$  below zero, the health of the party remained

unimpaired. The men adapted themselves as much as possible to the habits of the natives, feeding largely upon blubber and fat meat, by which the vital heat was sustained. Plenty of game was found by the adventurers, who were able to secure with their repeating rifles enough reindeer at one time to last them for several days. The difficulty of approaching these animals was very great—for in the still cold air the step of a man upon the snow could be heard two miles away, and the grating of sledge-runners resounded like the clashing of tempered steel. It was not an easy matter to keep guns in working order in this climate—for at 60° below zero, strong oak and hickory would break like icicles, and all lubricants harden and interfere with the working of the locks. When the guns were brought into the warm atmosphere of the huts to be cleaned, they would at once become coated with moisture, and every part had to be carefully wiped and dried, lest the hunter on stepping into the cold air again would find a useless block of ice in his hands. A bottle of whisky which was in the stores was congealed to the consistency of thick syrup by the intense cold, and the cup from which one of the travelers essayed to drink actually froze to his lips. The low temperature of this latitude permitted some of the Esquimaux to practise a terrible revenge upon some wolves which had attacked them. They set upright in the ice several keen knife-blades, and covered them with blood. These the wolves licked, slicing their tongues, but being prevented by the cold from feeling the wounds at the time; and their own warm blood tempted them to continue licking until their tongues were so scarified that death was inevitable.

#### A BALLOON EXPEDITION.

Commander Cheyne, the Arctic explorer, lectured in New York before the Academy of Sciences and explained his plans for reaching the North Pole, one of the principal objects of the proposed expedition being to give aid to the Jeannette, then uppermost in the minds of those who were interested in the possible fate of that vessel.

"I purpose," he said, "to take on the expedition seventeen men, including Lieutenant Schwatka, who has kindly volunteered to join the expedition. We will take with us boats, balloons, dogs, provisions for two years and a half, and other equipments. We will go up to the coal mine that has been discovered at the end of Smith's Sound, and there we will be left by the vessel, which will return. We will then be 496 miles from the North Pole. I will relate, as showing the dangers of voyaging in these waters, the narrow escape we had in the enterprise commanded by Sir James Ross. We were lying fast by an iceberg. The wind was blowing and we had just double-reefed our topsails when we heard an avalanche coming down the iceberg to which we were fast. The order was given to cut the hawsers. It was none too soon. As we drifted off we were caught between two icebergs that closed gradually upon us. They came closer and closer till it seemed that they must crush us. Sir James Ross stood quietly by the wheel, and we were expecting to go to the bottom. But the icebergs had caught us so far aft that, as they came together, they urged the ship forward, and we slipped through as a nut slips through your fingers when you press them over it.

"Near St. Patrick's Bay will be our winter quarters. If we were going on towards the Pole in the usual manner and had more men, we would have, perhaps, six sledging parties of five men each. Each man would have to drag

215 pounds. I think the journey could be performed by sledges, as I have not the most remote idea that there is an open sea about the Pole. Starting in April or early in May with our six sledges, we would go fifty or sixty miles on our journey, and then sledge No. 6 would stop and bury in some safe place all its spare supplies as a depot for the return journey, and that sledge would return to the ship. After going fifty or sixty miles more the fifth sledge would stop in the same way, bury its spare provisions and return to the ship. The first sledge would keep on until the Pole was reached. In this way the journey might be made in 106 days.

"But I have an easier plan. I want you to examine it carefully and to criticise it narrowly. I propose to have three large balloons; the cost will be about £4000 each. They will be large enough to carry one and a half or two tons each. There will be three men to each balloon. These balloons will carry dogs, provisions for fifty-one days, and stores of various kinds. I have proposed a new balloon which will have two envelopes of silk instead of one, with a layer of gold-beaters' skin between. Each of the balloons will have a trail-rope that will keep it at a uniform height of about a thousand feet. It is asked, How are you going to get your balloons to the Pole? I do not believe in either driving or steering a balloon. We shall calculate the wind-curve. I shall establish three observatories, a central station at our wintering quarters, one to the north about fifty miles and one to the south about fifty miles. These stations will all be connected by telegraph, and reports will be made every hour of all the meteorological facts. We shall then be able to determine where the centre of the currents of wind are, and we can find the wind that will take us to the North Pole, which we can reach in eighteen or twenty hours. But how can we get back? If we get there we will get back. We can store up some gas in cylinders to make good the necessary loss, or we can break up one of the balloons and use the gas in the other two. If we are unable to get back the way we came, Lieutenant Schwatka and I are willing to try a means of getting away that will make people think we are mad to suggest even. There is a possibility, though not a probability, that we may go back the other way and land somewhere in Russia, where we can communicate with the civilized world." [Applause.]

A resolution was passed by the Academy expressing approbation of the views of Commander Cheyne.

### FATE OF SIR JOHN FRANKLIN'S EXPEDITION.

#### NARRATIVE OF THE CRUISE OF THE STEAM YACHT FOX IN THE ARCTIC SEAS—THE EXPLORATIONS OF CAPTAIN McCLINTOCK AND HIS OFFICERS IN THE HYPERBOREAN REGIONS—THE RELICS OF THE LOST VOYAGERS.

As a fitting companion piece to the Greely Expedition we now give the narrative of screw discovery vessel Fox, Captain McClintock, which vessel went out in search of the remains of Sir John Franklin's expedition, known to have left their bones on King William's Land, in lat. 70 N. and long. 98 W. Mr. Rae had been twice in search of the lost navigators, and was once directly in the vicinity of King William's Land, but they, at that time, had not left Wellington Channel. In 1854 he went over nearly the same ground again, and obtained from the Esquimaux the relics of Sir John Franklin's

party which he took to England, and which was the first authentic evidence of the fate of the party. Lady Franklin then fitted out the *Fox*, which steamed as low as Bellot's Straits, from which place parties on sledges went down to King William's Land. From this point we commence this interesting narrative of discoveries:

The winter was unusually cold and stormy. Arrangements were completed during the winter for carrying out our intended plan of search. I felt it to be my duty personally to visit Marshall Island, and in so doing purposed to complete the circuit of King William's Island. To Lieutenant Hobson I allotted the search of the western shore of Boothia to the magnetic pole, and from Gateshead Island westward to Wynniatt's furthest. Captain Allen Young, our sailing master, was to trace the shore of Prince of Wales' Land, from Lieutenant Browne's furthest, and also to examine the coast from Bellot Strait northward to Sir James Ross' furthest. Early spring journeys were commenced on the 17th of February, 1859, by Captain Young and myself. Captain Young carrying his depot across to Prince of Wales' Land, while I went southward towards the magnetic pole, in the hope of communicating with the Esquimaux and obtaining such information as might lead us at once to the object of our search. I was accompanied by Mr. Peterson, our interpreter, and Alexander Thompson, quartermaster. We had with us two sledges drawn by dogs. On the 28th of February, when near Cape Victoria, we had the good fortune to meet a small party of natives, and were subsequently visited by about forty-five individuals. For four days we remained in communication with them, obtaining many relics, and the information that several years ago a ship was crushed by the ice off the north shore, off King William's Island, but that all her people landed safely, and went away to the Great Fish river, where they died. This tribe was well supplied with wood, obtained, they said, from a boat left by the white men on the Great River.

We reached our vessel after twenty-five days' absence, in good health, but somewhat reduced by sharp marching, and the unusually severe weather to which we had been exposed. For several days after starting the mercury continued frozen. On the 2d of April our long projected spring journeys were commenced, Lieutenant Hobson accompanying me as far as Cape Victoria; each of us had a sledge drawn by four men, and an auxiliary sledge drawn by six dogs. This was all the force we could muster. Before separating we saw two Esquimaux families living out upon the ice in snow huts; from them we learned that a second ship had been seen off King William's Island, and that she had drifted ashore in the fall of the same year. From this ship they had obtained a vast deal of wood and iron. I now gave Lieutenant Hobson directions to search for the wreck, and to follow up any traces he might find upon King William's Island. Accompanied by my own party and Mr. Peterson, I marched along the east shore of King William's Island, occasionally passing deserted snow huts, but without meeting natives till the 8th of May, when off Cape Norton we arrived at a snow village containing about thirty inhabitants. They gathered about us without the slightest appearance of fear or shyness, although none had ever seen living white people before. They were most willing to communicate all their knowledge and barter all their goods, but would have stolen everything had they not been closely watched. Many more relics of our countrymen were obtained; we could not carry away all we might have purchased. They pointed to the inlet we had crossed the day be-

fore, and told us that one day's march up it, and thence four days overland, brought them to the wreck. None of these people had been there since 1857-8, at which time they said but little remained, their countrymen having carried away almost everything. Most of our information was received from an intelligent old woman; she said it was in the fall of the year that the ship was forced ashore; many of the white men dropped by the way as they went towards the Great River; but this was only known to them in the winter following, when their bodies were discovered. They all assured us that we would find natives upon the south shore, at the Great River, and some few at the wreck; but unfortunately this was not the case. Only one family was met with off Point Booth, and none at Montreal Island or any place subsequently visited. Point Ogle, Montreal Island and Barrow Island were searched without finding anything except a few scraps of copper and iron in an Esquimaux hiding-place.

Recrossing the Strait to King William's Island, we continued the examination of its southern shore without success until the 24th of May, when about ten miles eastward of Cape Herschel a bleached skeleton was found, around which lay fragments of European clothing. Upon carefully removing the snow a small pocket-book was found, containing a few letters. These, although much decayed, may yet be deciphered. Judging from the remains of his dress, this unfortunate young man was a steward or officer's servant, and his position exactly verified the Esquimaux's assertion that they dropped as they walked along.

On reaching Cape Herschel next day, we examined Simpson's Cairn, or rather what remains of it, which is only four feet high, and the central stones have been removed, as if by men seeking something within it. My impression at the time, and which I still retain, is, that records were deposited there by the returning crews and subsequently removed by the natives.

After parting from me at Cape Victoria, on the 28th of April, Lieutenant Hobson made for Cape Felix. At a short distance westward of it he found a very large cairn, and close to it three small tents, with blankets, old clothes, and other relics of a shooting or a magnetic station; but, although the cairn was dug under, and a trench dug all round it at a distance of ten feet, no record was discovered. A piece of black paper folded up was found in the cairn, and two broken bottles, which may, perhaps, have contained records, lay beside it among some stones which had fallen from the top. The most interesting of the articles discovered here, including a boat's ensign, were brought away by Mr. Hobson. About two miles further to the southwest a small cairn was found, but neither records nor relics obtained. About three miles north of Point Victory a second small cairn was examined, but only a broken pickaxe and empty canister found.

On the 6th of May, Lieutenant Hobson pitched his tent beside a large cairn upon Point Victory. Lying among some loose stones, which had fallen from the top of this cairn, was found a small tin case, containing a record, the substance of which is briefly as follows: "This cairn was built by the Franklin Expedition, upon the assumed site of Sir James Ross' Pillar, which has not been found. The Erebus and Terror spent their first winter at Beechy Island, after having ascended Wellington Channel to latitude  $77^{\circ}$  N., and returned by the west side of Cornwallis Island. On the 12th of September, 1846, they were beset in lat.  $70^{\circ} 05'$  N. and long.  $98^{\circ} 23'$  W. Sir J. Franklin died June 11, 1847. On the 22d of April, 1848, the ships were abandoned five leagues to

the N. N. W. of Point Victory, and the survivors, 105 in number, landed here under the command of Captain Crozier." This paper was dated April 25th, 1848, and upon the following day they intended to start for the Great Fish river. The total loss by deaths in the expedition up to this date was nine officers and fifteen men.

A vast quantity of clothing and stores of all sorts lay strewn about, as if here every article was thrown away which could possibly be dispensed with—pickaxes, shovels, boats, cooking utensils, ironwork, rope, blocks, canvas, a dip circle, a sextant engraved "Frederic Hornby, R. N.," a small medicine chest, oars, etc. A few miles southward, across Back Bay, a second record was found, having been deposited by Lieutenant Gore and M. des Vœux, in May, 1847. It afforded no additional information.

Lieutenant Hobson continued his search until within a few days' march of Cape Herschel, without finding any trace of the wreck or of natives. He left full information of his important discoveries for me; therefore, when returning northward by the west shore of King William's Island, I had the advantage of knowing what had already been found. Soon after leaving Cape Herschel the traces of natives became less numerous and less recent, and after rounding the west point of the island they ceased altogether. This shore is extremely low, and almost utterly destitute of vegetation. Numerous banks of shingle and low islets lie off it, and beyond these Victoria Strait is covered with heavy and impenetrable packed ice. When in latitude  $69^{\circ} 09' N.$  and longitude  $99^{\circ} 27' W.$ , we came to a large boat, discovered by Lieutenant Hobson a few days previously, as his notice informed me. It appears that this boat had been intended for the ascent of the Fish river, but was abandoned apparently upon a return journey to the ships, the sledge upon which she was mounted being pointed in that direction. She measured twenty-eight feet in length by seven and one-half feet wide, and was most carefully fitted, and made as light as possible, but the sledge was of solid oak and almost as heavy as the boat. A large quantity of clothing was found within her, also two human skeletons. One of these lay in the afterpart of the boat, under a pile of clothing; the other, which was much more disturbed, probably by animals, was found in the bow. Five pocket watches, a quantity of silver spoons and forks, and a few religious books were also found, but no journals, pocket-books, or even names upon any article of clothing. Two double-barrelled guns stood upright against the boat's side, precisely as they had been placed eleven years before. One barrel in each was loaded and cocked; there was ammunition in abundance, also thirty or forty pounds of chocolate, some tea and tobacco. Fuel was not wanting; a drift tree lay within one hundred yards of the boat.

Many very interesting relics were brought away by Lieutenant Hobson, and some few by myself. On the 5th of June I reached Point Victory without having found anything further. The clothing, etc., was again examined for documents, note books, etc., without success, a record placed in the cairn, and another buried ten feet true north of it.

Nothing worthy of remark occurred upon my return journey to the ship, which we reached on the 19th of June, five days after Lieutenant Hobson. The shore of King William's Island, between its north and west extremes, Capes Felix and Crozier, has not been visited by the Esquimaux since the abandonment of the Erebus and Terror, as the cairns and articles lying strewn about, which are in their eyes of priceless value, remain untouched.

If the wreck still remains visible it is probable she lies upon some of the off-lying islets to the southward between Capes Crozier and Herschel.

On the 28th of June Captain Young and his party returned, having completed their portion of the search, by which the insularity of Prince of Wales' Land was determined and the coast line intervening between the extreme points reached by Lieutenants Osborne and Browne discovered; also between Bellot Strait and Sir James Ross' furthest in 1849, at Four River Bay.

Fearing that his provisions might not last out the requisite period, Captain Young sent back four of his men, and for forty days journeyed on through fogs and gales, with but one man and the dogs, building a snow hut each night; but few men could stand so long a continuance of labor and privation, and its effect upon Captain Young was painfully evident. Lieutenant Hobson was unable to stand without assistance upon his return on board; he was not in good health when he commenced his long journey, and the sudden severe exposure brought on a serious attack of scurvy; yet he also most ably completed his work, and such facts will more clearly evince the unflinching spirit with which the object of our voyage has been pursued in these detached duties than any praise of mine. We are now, at length, all on board again. As there were some slight cases of scurvy, all our treasured resources of Burton ale, lemon juice and fresh animal food were put into requisition, so that in a comparatively short time all were restored to sound health.

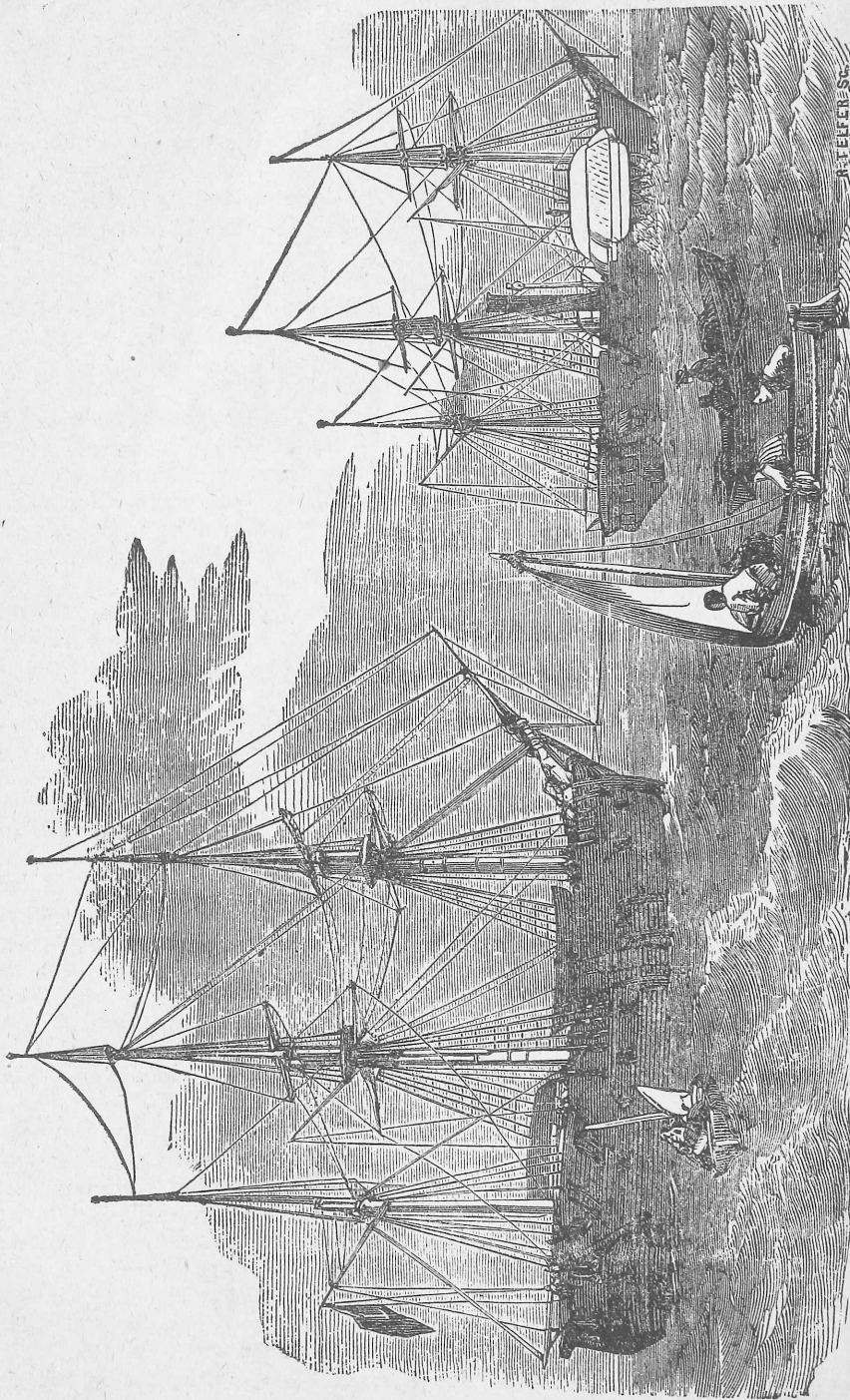
The rest of the narrative relates his return voyage. Accompanying the narrative is a description of the relics of Franklin's party brought home and those seen.

From all that can be gleaned from the record paper and the evidence afforded by the boat and various articles of clothing and equipment discovered, it appears that the abandonment of the *Erebus* and *Terror* had been deliberately arranged, and every effort exerted during the third winter to render the travelling equipments complete. It is much to be apprehended that disease had greatly reduced the strength of all on board—far more, perhaps, than they themselves were aware of. The distance by sledge route from the position of the ships when abandoned to the boat is sixty-five geographical miles; and from the ships to Montreal Island 220 miles.

Baron Nordenskjöld's report of his journey into the heart of Greenland states that during the march the ice was sometimes so uneven that no tent could be pitched; sometimes it was so soft and slushy that a dry spot could not be found; and sometimes it so abounded with small cavities that it was impossible to avoid putting the foot in them. These cavities have a curious interest. The interior seems to abound with them, and, besides, they were found to contain a muddy sediment, which Nordenskjöld named kryokonite. This, he believes, is formed of dust driven over the inland ice by wind, but mixed with what Nordenskjöld is convinced is metallic dust from cosmical space. Altogether, there must be a vast quantity of this substance spread over the interior; it appears to melt the ice beneath it, and when the thaw comes sinks down into these cavities, which, curiously, never freeze over sufficiently to bear the weight of a man. Vegetation was met with, but this was everywhere over the ice itself, microscopical and fungoid in character, and finding a holding-ground in the widespread kryokonite referred to. Not the least curious occurrence noted by the explorer was that of a dry, warm mist that descended on him and his companions, and which had the curious effect of drying their damp clothes.







The "Erebus" and "Terror," the two vessels in which Sir John Franklin and party, numbering 140 souls, sailed on his last Exploring Expedition.

## THE CHRISTMAS TIDE ON THE ARCTIC ICE!

HOW WE PASSED OUR CHRISTMAS JUST BEFORE THE RESCUE—LIEUTENANT LOCKWOOD'S DIARY—"THINK IN MID-WINTER OF THE LITTLE BAND OF HEROES, AND WHEN SITTING BY YOUR CHEERFUL FIRE-SIDES, WITH WARMTH ABOUT YOU, WARMTH WITHIN YOU, THINK OF US, AND IMAGINE US IF YOU CAN"—CHRISTMAS AND THOUGHTS OF HOME!—CHRISTMAS.

IN 1879, while all were joyously preparing for the festival that this day brings to the Christian world, or while merrily enjoying the day, a little band of men were far away, bound fast by drifting snow and eternal ice, slowly nearing horrible death in the cruel ice-king's home.

They were as gallant, as brave, and as true a band as ever followed the blast of trumpet into battle and to death; and they, too, in their best way, celebrated the day, and shortened their lives that they might do so.

The story of that Christmas day at Cape Sabine, of Greely and his men, is by far the most pathetic and pitiful that the world has ever read, yet in the lines written by one brave man there is no word of complaint from his brave soul.

Lockwood, the noble gentleman, the brave man, the gallant soldier, and the true heart, wrote of that time to tell how brave men look calmly into the grave and grasp hands with death, no matter how horrible his shape may be, and lay down to eternal sleep.

In October Greely and his comrades reached Cape Sabine in their southward search for succor, and on the 20th of the month occupied the hut of snow and ice that formed the last home on earth of some of the party. Very soon the scant food remaining to them became so much reduced that the daily story, written alike by the rescued and the dead, was of the dread battle with the fiend of hunger.

Lieutenant Lockwood wrote all of his daily histories in "shorthand," and his diaries transcribed are the most voluminous of all, making many volumes of manuscript. In these daily writings he formally notes the temperature, and the constant record of 23° or 34° tells of the suffering by cold, even were there no words to tell of frozen hands and feet, or of sleepless nights.

As the rations grew smaller the record tells of how the thought of all turned on the good things "at home" to eat and drink. Even while writing of some event a gap will come, such as "Memorandum—cranberry jelly," and the narrative goes on.

Officers and men join in talk of "home" and "America," and of the sweets of life and food there, and gleefully plan grand feasts, set dinners, and exchange hospitalities. Lockwood says: "Brainard is to come to supper at my home on reaching Washington, and I have promised him sally lun, stewed oysters, smarkase, and preserved strawberries with cake. After supper a smoke, and then wine and cake, and some singing by Mary Murray (the home name of a sister). I have invited Fredericks and Long to come to the house and eat some preserved strawberries and black cake." "The other mess had a growl to-night about their soup—'got it cold,' they said."

Again: "Memorandum—leaf dough biscuit (same principle as the pie-crust biscuit, eaten hot at home)."

The long months of night and the bitter cold and storm and starvation, the days and even the hours were counted. "We count the days from one Sunday to another, and to solstice and Christmas." The winter solstice marked to these the passage of half the tedious night, and the return of the sun meant the loosening of the mighty bonds of surrounding ice and probable rescue. They looked forward to Christmas, and in a small way, pitifully small, a commemoration of the day. December 18 Lockwood thinks of a new dish for a Christmas dinner dessert, "oranges and pineapples cut up together, and eaten with grated cocoanut," and then says: "My mind dwells constantly on my childhood's home. Oh, my dear home, and the dear ones there! Can it be possible I shall some day see them again, and that these days of misery will pass away? My dear father; is he still alive? My dear mother and sisters, Harry and my nieces and brothers-in-law; how often I think of them."

December 21.—After a burst of joy at reaching "the top of the hill," and the turning southward of the earth to find the long-absent sun. "By a great effort was able to save one ounce of my bread and about two ounces of butter for Christmas. I shall make a vigorous effort to abstain from eating it before then." Think of that! A "vigorous effort" to keep from eating an ounce of bread. And he "put it in charge of Biederbeck as an additional safeguard." Shooting a fox that same day made "an extra one for Christmas."

December 22.—"We look forward to to-morrow and Christmas," and "I offered to give any one a roast turkey on reaching home for a single dog-biscuit now, but found no takers." The next day, "I saved nearly all my hard bread for Christmas, though I needed it sorely."

It was a wretched day, and he and others were very weak, and he hopes "Christmas will be better than to-day," and to make his dinner grander he made a tremendous effort and went without his rum "in order to have it for Christmas" to add to the punch.

Christmas eve came, and he added to his scanty savings for the next day's feast half of his bread and his piece of lemon. Ah! Christmas eve had greater power there than even here in warm homes, by well-spread boards, to turn the thoughts to the absent ones. The devoted and faithful son and loving brother wrote: "To-night is Christmas eve, and my thoughts are turned toward home. God preserve me to see this day next year and enjoy it home with those I love. To-morrow is to be pretty much a repetition of Thanksgiving. I have saved up my bread and rum. I think of the children at home; the Christmas tree to-night, and the toys, etc. But my fingers are too cold to write more. . . . I picture to myself my dear father and mother, sisters, Harry, my niece and brothers-in-law all sitting around the table to-morrow. Turkeys and mince-pies are strewn on the table. Many thoughts are turned toward me and where I am at this moment."

At last comes the Christmas all have looked forward to for so long, and the diary tells this story: "December 25—Barometer, 29.93; thermometer, 35.5. Christmas. We have all been talking and waiting anxiously for the hour, and now it is here and (five P. M.) nearly gone.

"Breakfast consisted of thin soup of peas and carrots, with a little blubber and some spoonfuls of potatoes. This we had at six o'clock. Cloudberries served out (two cans to each mess).

"At one P. M. Long lighted up for the event of the day—dinner. Dinner consisted of a fine, rich stew of all seal meat, with onions, a little blubber, potatoes, and bread crumbs. After this we had, in the course of an hour or so, a fine, nice stew, with raisins, and a little blubber and milk.

"These were pretty much the same as Thanksgiving, but the cooks made a great deal on that day, and the meals seemed better. The cooks are now preparing some fine chocolate, and that will be followed by a punch of one gill of rum to each man.

"The party have been in fine spirits to-day. Cheers were given after breakfast for Lieutenant Greely, Corporal Ellison, Rice, and the two cooks. It was agreed that we should give to each of the two Esquimaux fifty cents from each member of the expedition, to be kept for them for next Christmas.

"Yesterday has passed," he writes the next afternoon, "but I find my notes of yesterday very imperfect. The day was a great success. We all had enough, or nearly enough. I had eight ounces extra which I had saved up, one ounce of butter besides, and the rum of the Sunday before.

"It was agreed early in the morning that nothing should be said to mar the pleasures of the day. Many kindly thoughts were expressed for those at home, and oh! how often we spoke of what was going on at our several homes.

"Many of the party gave the bill-of-fare at their homes. Of course, I did not forget to mention roast turkey, cranberries, and mince pie.

"Reminiscences of home, invitations to future Christmases, arrangements for future Christmas meetings, paleocrystic, and to the Ann Harbor hotel. The reading of the record. Some songs in all languages, including French, German, Danish, and Inuit. The birthday bills-of-fare were read by me: six pounds rice, three pounds milk, two pounds coffee, two and a quarter chocolate, five pounds raisins, twelve and a half lemons, nineteen pounds bread and bread toast, two pounds lard, three pounds blubber, eight pounds cloudberry, one pound sugar, 25 ounces carrots, 50 ounces peas in the stews, 6 ounces extract of beef, 12 to 14 ounces seal meat, 4 ounces rum to each man—somewhere about thirty-six ounces of solid food to each man.

"The supply in the morning was pretty much the same as usual, but the seal-stew was voted by all as delicious and extremely satisfactory. The rice was the same, and many were the praises given to each. The punch was extremely fine. Chocolate about seven o'clock, and by this time most of us were too full for utterance, and the conversation gradually slackened off, and, with the songs, the day ended.

"To-day we have all been feeling extremely well all day—nice and warm and comfortable in the extreme. Some of us ate too much yesterday, but only so much as to feel a little uncomfortable at times, but we all slept well.

"The cooking was a great ordeal to the cooks on account of the smoke, there being very little wind, but the cooks were given an extra half gill of rum. They did nobly. Bender relieved Fredericks to-day, his eyes hurting him a good deal.

"Our talk this morning was of home and our families. Dr. Pavy, Rice, Israel, Brainard, and others expressed themselves as having conceived a very high idea of my father, from what they had heard from Lieutenant Greely and from me. I have invited them to come to the house particularly. I have extended a general invitation to all the members of the expedition. I spoke this morning of the reunions of my family, and how enjoyable they are. My remarks about my father brought tears—the first time I have shed tears since I have been in this country; if I except the occasion at Esquimaux point, when Rice returned with the records; the only time I spoke also of my sisters and of Mary Murray, whose many virtues I highly eulogized.

“Kislingbury was kind enough to make for each of the party a cigarette. Many of us are now out of tobacco entirely.”

Could so terrible a story of suffering and privation be told more graphically? And who to-day will not offer a pitying prayer for the brave, good soldier and son and his comrades, who laid down their lives so uncomplainingly!

### LIEUTENANT GREELY'S NEW COMPASS!

THE NORTH POLE AND THE NEEDLE—FIVE ROUTES SUGGESTED AND BUT ONE FEASIBLE—HOW THE NEXT ARCTIC EXPEDITION WILL START OUT.

“It has been intimated that my opinion upon the propriety and advisability of future Arctic exploration, as well as regarding the methods to be adopted therein, would be of interest to the general public.

“Sir Edward Parry, the most successful of all Arctic explorers, after his remarkable voyage in 1819–20 through Lancaster and other sounds to Melville Island, enunciated the law of successful ice navigation in the Polar seas. He said: ‘It can never be performed with any degree of certainty without a continuity of land. It was only by watching the openings between the ice and the shore that our late progress to the westward was effected, and, had the land continued in the desired direction, there can be no question that we should have continued to advance, however slowly, toward the completion of our enterprise.’

“I think all Arctic authorities now concur in Sir Edward’s opinion. To this has been added another proposition, which originated, I believe, with Sherard Osborne, but has of late years been strenuously supported by Commander Markham, R. N.: ‘To penetrate far into the unknown region, it is necessary to find a coast trending northward with a western aspect.’ This is negatively substantiated not only by the loss of the *Jeannette*, but by the fact that the shores of East Greenland are practically inaccessible, while Spitzbergen can rarely, if ever, be coasted along its eastern side. Positive and convincing evidence is presented by Barent’s voyage to the north point of Nova Zembla, Parry’s to Melville Island, McClure’s to Mercy Bay, Kane’s to Van Rensselaer Harbor, Hall’s to Thank God Harbor, Nares’ to Floeberg Beach, Leigh Smith’s to Eira Harbor, as well as by the whalers’ yearly experiences in reaching the north water of Baffin’s Bay. The cause of this may in a measure depend on the rotary motion of the earth or other complicated phenomena, but a reasonable explanation is, perhaps, to be found in the northeasterly winds which prevail to such an extent in the Arctic regions.

“Long sledge journeys are necessary for successful exploration even after the vessel is in harbor at a high latitude. The easier the harbor is of access, so much greater will be the chances of ultimate success. These conditions—continuity of land, with northern trend and western aspect, a secure harbor easy of access, together with good ice for sledging operations—are all fulfilled in the fifth route, via Franz Joseph Land.

### THE BEST ROUTE TO THE POLE.

“Ever since my attention was first drawn to Arctic work, I have regarded this as the true route to the Pole. The voyage and experiences of Leigh

Smith in 1880, 1881 and 1882, leave no doubt that at some season of every year Franz Josef Land may be reached by a well-fitted steamer. His experiences at Eira Harbor in the winter of 1881-82, show that the explorer can depend to a certain extent on the game of the country as a means of sustenance. Lieutenant Payer's sledge trips of 1884 indicate a much greater proportion of smooth ice than has been found in any other route. In thirty days he made a round trip of about 325 miles, reaching, April 1, 1874, Cape Fedgely,  $82^{\circ} 05' N.$ ,  $58^{\circ} E.$  From that point he observed open water of no great extent along the coast bordered by ice, reaching in a north and northwesterly direction to masses of land, whose mean distance from this highest point might be from sixty to seventy miles.

"Cape Vienna, the most northerly point seen by Payer, is laid down by him as situated on the 83d parallel. The extent of land beyond that point is, of course, problematical. The distance from the southern coast of Franz Josef Land to the northernmost point of Nova Zembla is about 180 miles. In case of disaster a retreat by boat is practicable. Weyprecht, in 1874, after the abandonment of the Teggetthof, and Leigh Smith, retreating in 1882 in consequence of the loss of the Eira, made the journey successfully.

"This route then presents unusual chances of success, with the minimum of danger. It is more than possible that an English expedition will enter these waters. Chief-Engineer Melville, U. S. N., has in view an expedition by this route, and his varied Arctic experiences and indefatigable energy mark him as a man peculiarly fitted for this work. It is, therefore, to be hoped that he will be given the desired opportunity. Two ships with about sixty men and officers would be needed. One vessel should winter in Eira Harbor or some secure point near by, while the second should be pushed as far northward as possible, preferably by Austria and Rawlinson's Sound, but, if that is not possible, along the west coast of Franz Josef Land beyond Cape Ludlow. The vessels should be provisioned for three years, and the crews should be quartered in temporary houses to be erected on shore. Quarters on land are recommended as being freer from moisture than is possible on ship-board, a fact which to my mind has an important bearing on the question of health. A depot of supplies for use in case of disaster might be established on the northern coast of Nova Zembla. With two vessels this would not be indispensable, but none the less wise and prudent.

"Although not a seaman, I think the following views fairly cover the essential points regarding vessels and navigation. Small, easily handled steam whalers of good speed should be selected. I have nothing to say as to the best method of strengthening them, but presume those adopted in regard to the vessels of the recent relief expedition leave nothing to be desired in that direction. It is essential that each vessel have a steam whale-boat. It is universally admitted that navigation is impossible through close pack ice. In consequence, the utmost care should be taken to avoid besetment. Ross has truly said, that patience and caution are indispensable to an Arctic navigator, and to no greater advantage can these qualities be exercised than in avoidance of dense pack ice. A ship should maintain almost constant motion and only moor when absolutely necessary, and then only to an iceberg. Careful observations of the currents and of the ebb and flow of the tide are of the greatest importance. Marked movements of the ice are most liable to occur after the turn of the tide, and the probable effect of such changes must be foreseen and discounted. It was mainly by increasing watchfulness of winds, currents and

tides, and by sound judgment regarding their effects, that Sir George Nares succeeded in working his vessel from Sabine to the Polar Ocean and back during two unfavorable ice seasons. It was from similar observations that I was enabled during the retreat in 1883, in a like unfavorable year, and on the same coast, to bring my boats in safety from Discovery Harbor to Cape Hanks.

#### HOW TO ENTER THE POLAR REGION.

“The expedition should receive its final supplies from Tromsø, and should not leave that port before the latter part of July. August and September there, as in Smith Sound, are undoubtedly the most favorable months for ice navigation. In case of a bad year for ice, the vessels should rather return, to renew the expedition the year following, than adventure the experiences of the *Tegetthof*. The question whether dogs or men should be employed in hauling, is debatable among Arctic men. I unhesitatingly assert that with dogs, nearly double the distance can be made that is possible with men. Shelter, fuel, drink, sleeping-gear and extra clothing, which form so large a proportion of constant weight, are not needed for dogs. Lockwood's great northing was made by a combination, the supporting sledges being drawn by men, the advance sledge by dogs. He travelled far enough in ninety days the first spring, after the sun's return, with his single team of seven dogs, to have reached the Pole and return, had it been in a straight line. In 1883, depending on dogs alone, he reached the shores of the Polar Ocean, in less than half the time taken by men and dogs combined the previous year.

“The qualification of the commander of an expedition need not be dwelt on. Much and varied previous service is indispensable, but, in addition, he should be a man who has carefully studied the plans and equipment of all his predecessors in active work. He should not be above five and forty. Subordinate officers should be under thirty-five, enterprising, fond of field-service, and thoroughly dependable—men who will work loyally and faithfully under any and all circumstances, and never give mere passive obedience. Officers with varied talents and special training should be selected. One should be a photographer. The men should be as far as practicable of one nationality, of sociable nature, sunny disposition, intelligent, observant, self-reliant, patient, persevering and moral, and of that class which has seen some hard service. They should be unmarried, and between twenty-five and thirty-five years of age. No man should be taken who has ever been addicted to the use of stimulants. Only in exceptional cases should a man be enlisted who had served in a previous expedition. They should be selected and kept under discipline some time before sailing, in order that those unfit might be weeded out. Some should be good hunters, and as many useful trades represented as possible. Perfect health is necessary, but especial attention should be given in medical examination to the condition of the eyes, lungs, teeth, circulation of blood, and as to rheumatic tendencies.

“Regarding food, there should be a great variety, and no set programme as to the order in which it is to be issued. Calculations should be made for five pounds per man daily, and one and one-half pounds per dog. Bacon, corned (not salted) beef, ham and pemmican are the standard meats. Freshly killed meat should be taken in large quantities in refrigerators. Birds killed by us in July in Greenland were eaten the next June at Conger. Soups, canned and dried fruits, and vegetables of all kinds are specially important. Fresh bread should be had daily. Macaroni, condensed milk, oatmeal, butter, lard, cheese,



pickles, preserves, condiments, and tobacco should be liberally provided. The regular use of highwines should be discountenanced. About one gill weekly per man was consumed by my party, but I should recommend not exceeding half a gill more, or preferably half a pint of vin ordinaire. For dogs dried fish or meat must be provided; they will not eat dog or other biscuit unless nearly starved. While working, meat should always be fed to them. The value and utility of skin clothing has been largely overrated. Thick woollen garments of smooth finish, and heavy flannel underclothing of excellent quality are enough for all ordinary travel. For unusual exposure, an overcoat slightly lined with dogskin, or a heavy woollen *temiak* (a hooded shirt, generally of sealskin) is sufficient. Any well-lined skull-cap, with ear-flaps, will do for head covering. No satisfactory means of protecting the face is known. Woollen, with outer sealskin mittens, form fitting hand-gear. No single kind of foot-gear is suitable for all conditions. Moccasins and Esquimau seal boots should be taken in quantities. Leather boots do well in summer only. Heavy woollen stockings, half short and half reaching to the knees, are best for general use. Sleeping socks should be of dogskin. Well-tanned, selected buffalo robes made into two-men sleeping-bags are best.

“The Greenland and the Siberian sledges are recommended for dogs. In case hauling is to be done by men, then the McClintock and Hudson Bay sledges should be taken. The Melville sled is excellent for retreat where heavy boats are to be hauled. Sledges are inexpensive, and conditions of travel so vary that all contingencies should be provided against. Alcohol is the best field fuel. Copper-bottomed, fireproof cooking-pots with cylinder in centre, are excellent for sledge trips. There is but little choice regarding tentage, but rubber tent-cloths should be taken.

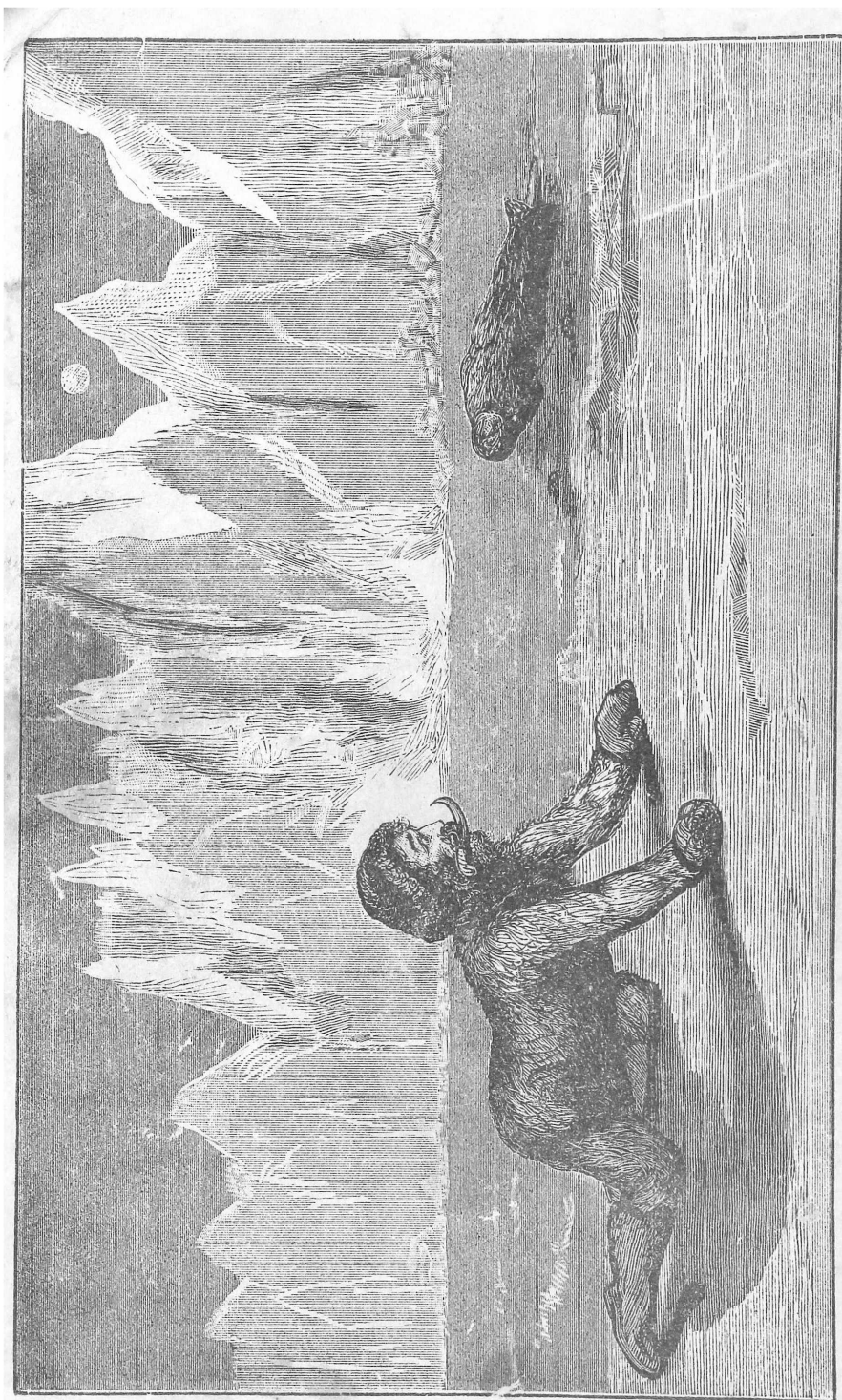
“Regarding medicines, iron was most in demand with my party, except lime-juice daily issued. I doubt governmental aid being extended to Arctic exploration for years to come, but none the less believe in the propriety and certainty of future Arctic work.

“The expedition suggested by Lieutenant Ray, United States Army, at the meeting of the British Society for the Advancement of Science at Montreal should receive the attention and support of scientific men. The magnetic pole of Bothnia Felix Land, located by Ross in 1831, has probably changed its position in the past fifty years. Its re-location would be an important contribution to science. With a home station at Repulse Bay, or in Wager River, I believe this work could be done without great expense or serious danger. The benefits to be derived from such an expedition would not be confined to terrestrial magnetism. As regards the ethnology, botany and natural history, the country around King William Land is substantially a blank.

“A. W. GREELY, U. S. A.”



On board the Ship—The last Good-bye!



"I was starving and felt myself more like a beast than a man. With knife clenched between my teeth, half sliding, half crawling, I desperately approached the object I had marked for my food,"

**„Dem Hungertode nahe war ich mehr Thier als Mensch und näherte mich, das Messer zwischen die Zähne geklemmt, theils schleichend, theils kriechend, dem Körper, den ich mir zur Nahrung auserkoren hatte.“**