boats landed on a small point of rocks, at the place (as I suppose) which appeared accessible to us in Piner's Bay, whence the Vincennes was driven by a violent gale; this he called Clarie Land, and testifies to his belief of the existence of a vast tract of land, where our view of it has left no doubt of its existence. Ross, on the other hand, penetrated to the latitude of 79° S. in the succeeding year, coasted for some distance along a lofty country connected with our Antarctic Continent, and establishes beyond all cavil the correctness of our assertion, that we have discovered, not a range of detached islands, but a vast Antarctic Continent. How far Captain Ross was guided in his search by our previous discoveries, will best appear by reference to the chart, with a full account of the proceedings of the squadron, which I sent to him, and which I have inserted in Appendix XXIV. and Atlas. Although I have never received any acknowledgment of their receipt from him personally, yet I have heard of their having reached his hands a few months prior to his Antarctic cruise. Of this, however, I do not complain, and feel only the justifiable desire to maintain the truth in relation to a claim that is indisputable. The following narrative must, I feel satisfied, leave no doubt in any unprejudiced mind of the correctness of the assertion that we have discovered a vast continent; but I would ask in advance, who was there prior to 1840, either in this country or in Europe, that had the least idea that any large body of land existed to the south of New Holland? and who is there that now doubts the fact, whether he admits it to be a vast continent, or contends that it is only a collection of islands?

Examine all the maps and charts published up to that time, and upon them will any traces of such land be found? They will not, and for the very best of reasons—none was known or even suspected to exist. We ourselves anticipated no such discovery; the indications of it were received with doubt and hesitation; I myself did not venture to record in my private journal the certainty of land, until three days after those best acquainted with its appearance in these high latitudes were assured of the fact; and finally, to remove all possibility of doubt, and to prove conclusively that there was no deception in the case, views of the same land were taken from the vessels in three different positions, with the bearings of its peaks and promontories, by whose intersection their position is nearly as well established as the peaks of any of the islands we surveyed from the sea.

All doubt in relation to the reality of our discovery gradually wore away, and towards the close of the cruise of the Vincennes along the icy barrier, the mountains of the Antarctic Continent became familiar and of daily appearance, insomuch that the log-book, which is guard-

edly silent as to the time and date of its being first observed, now speaks throughout of "the land."

After leaving Sydney we had, until the 31st December,* fine weather and favourable winds. We took advantage of these, and all sail was crowded on the vessels of the squadron. At the above date we had reached the latitude of 43° S.

Under such circumstances, the usual order of sailing, in a line abreast, was easily maintained, and the communications between the vessels were frequent. On the 31st of December, I issued the sailing instructions for the cruise, which will be found in Appendix XXV.

During this favourable weather, all hands were employed in tightening the ports, in order to secure the interior of the vessels as much as possible from the cold and wet, which were to be apprehended in the region to which we were bound. For this purpose, after calking all the openings, the seams were covered with tarred canvass, over which strips of sheet-lead were nailed. The sailors exhibited great interest in these preparations, and studiously sought to make every thing snug; all useless articles were stowed away in the hold, for we were in truth full to overflowing, and places at other times sacred were now crowded.

It was fortunate that the weather for the first few days was so favourable; for so full was every place, that we had been compelled to stow bread in the launch and cutter, and this in bulk; for the quantity was so much beyond that which had been carried on any former occasion, that a sufficient number of bags were not to be had, and in the hurry of its reception on board, time had not been found to provide them. Every ounce of bread thus exposed was looked to with solicitude, for there was a chance that all of it might be needed.

Among other preparations, rough casings of boards were built around all the hatches, having doors furnished with weights and pulleys, in order to insure that they should not be left open. Having thus provided for the exclusion of cold air, I contented myself with preparations for keeping the interior of the vessel at a temperature no higher than 50°. I deemed this preferable to a higher temperature, in order to prevent the injurious effects which might be produced by passing suddenly from below to the deck. I conceived it far more important to keep the air dry than warm, particularly as a lower temperature would have the effect of inducing the men to take exercise for the purpose of exciting their animal heat.

* During the 29th, 30th, and 31st December, the sea was very phosphorescent; temperature 56°.

Aware that warm and dry clothing was an object of the first importance, inspections of the men's feet and dress were held morning and evening, in which the wearing of a suitable number of garments was insisted upon, as well as the greatest personal cleanliness. With the same views, the drying-stoves were particularly attended to; and that every part under deck might be effectually and quickly freed of moisture, additional stoves had been procured at Sydney. Thermometers were hung up in proper places, and frequently consulted, in order by following their indications to secure an equable temperature, and at the time to ascertain when the use of stoves might be dispensed with, in whole or in part. The latter was an important consideration, for we were under the necessity of husbanding our stock of fuel, by expending it only when absolutely necessary.

We also took advantage of the fine weather to bend all our best sails, and to shift our top-gallant masts.

The 1st January was one of those days, which are termed, both at sea and on shore, a weather-breeder. The sea was smooth and placid, but the sky was in places lowering, and had a wintry cast, to which we had long been strangers; the temperature shortly began to fall, the breeze to increase, and the weather to become misty. In a few hours we were sailing rapidly through the water, with a rising sea, and by midnight it was reported that the tender Flying-Fish was barely visible. I shortened sail, but it was difficult to stop our way; and on the morning of the 2d of January, the fog was dense, and the Peacock and Porpoise only were in sight; we hove-to, and the Peacock and Porpoise were ordered to stand east and west, in order to intercept the tender, but they returned without success; we also fired guns in hopes of being heard. In the afternoon, I deemed it useless to wait any longer for her, and that I must take the chance of falling in with her at Macquarie Island, our first appointed place of rendezvous, —a visit to which I had flattered myself might have been avoided, but which it became necessary now to make. We accordingly proceeded on our course for that island, with all sail set. This separation of the tender took place in the latitude of 48° S., and she was not again seen until our return. The officers and crew were not slow in assigning to the Flying-Fish a similar fate with her unfortunate mate, the Sea-Gull. Men-of-war's men are prone to prognosticate evil, and on this occasion they were not wanting in various surmises. Woful accounts were soon afloat of the distress the schooner was in when last seen,—and this in quite a moderate sea.

The barometer now began to assume a lower range, and the temperature to fall below 50°. On the 3d, the fog continuing very thick,

the Peacock got beyond hearing of our horns, bells, drums, and guns, and was parted with. This, however, I did not now regret so much, as it was of little consequence whether we sought one or two vessels at our rendezvous, although it might cause a longer detention there.

The wind was now (5th January) veering rapidly to the northwest, with some thunder and lightning, and we in consequence expected the wind to haul to the southwest, but to my surprise, it went back to the northeast, with thick rainy weather. This return of the wind to its old quarter followed a fall of the barometer to 29·60 in., and in a few hours afterwards to 29·30 in., while the weather continued moderate; a large number of albatrosses, Port Egmont hens, and petrels, were seen.

For the last few days we were unable to get any observations, but on the 6th we were favoured with a sight of the sun, and found ourselves in the latitude of 53° 30′ S., and longitude 157° 35′ E. Our variation had increased to fifteen and a half degrees easterly. This being a fine day, we completed our calking, and the more effectual securing of the ship. At midnight we were about fifty miles from Macquarie Island.

The morning of the 7th was misty, with squally weather. A heavy sea rising, and a strong gale setting in, we lost sight of the Porpoise for a few hours. Being unable to see beyond an eighth of a mile, it was thought imprudent to run, for fear of passing the island, and we hove-to to await its moderating. It cleared at noon, and we obtained an observation, by which we found ourselves in latitude 54° 20′ S., and longitude 160° 47′ E. I found that we had been carried to the eastward upwards of twenty miles in less than eighteen hours; this, with the wind hauling to the southwest, brought us to leeward of the island, and the sea and wind increasing, I saw it was useless to attempt to reach it without great loss of time. I therefore bore off to the southward for our second rendezvous, Emerald Island, or its supposed locality.

On the morning of the 8th, the wind, which continued from the same quarter, with heavy cumulous clouds, began to moderate, and we were enabled to make more sail. By our observations, we found a current setting to the southeast, of one mile an hour. Our longitude was 162° 13′ E., latitude 55° 38′ S. The barometer stood at 30·00 in.; the temperature had fallen to 38°; and this change, on account of the rawness of the air, was much felt by the crew.

During the 9th we passed the site of Emerald Isle, situate, as has been stated, in latitude 57° 15′ S., and longitude 162° 30′ E., but saw nothing of it, nor any indications of land, which I therefore infer does

not exist in the locality where it is laid down. We again experienced the southeast current of twenty miles a day. Our variation had increased to twenty-two degrees easterly. Making our course with all sail set, the Porpoise in company, we passed to-day some pieces of kelp. The temperature continued at 38°. Numerous flocks of gray petrels around us.

The 10th we encountered the first iceberg, and the temperature of the water fell to 32°. We passed close to it, and found it a mile long, and one hundred and eighty feet in height. We had now reached the latitude of 61° 08′ S., and longitude 162° 32′ E. The current to-day set in the same direction as before, about half a mile per hour. The second iceberg seen was thirty miles, and the third about fifty-five miles south of the first. These ice-islands were apparently much worn by the sea into cavities, exhibiting fissures as though they were ready to be rent asunder, and showed an apparent stratification, much inclined to the horizon. The weather now became misty, and we had occasionally a little snow. I congratulated myself that we had but few on the sick-list, and all were in high spirits at the novelty of the cruise. We continued to meet icebergs of different heights, some of which, though inclined to the horizon, had a plane upper surface.

11th. The fair wind from the northwest, (accompanied with a light mist, rendering objects on the horizon indistinct,) still enabled us to pursue our course southerly. Icebergs became so numerous as to compel us occasionally to change our course. They continued of the same character, with caverns worn in their perpendicular sides, and with flat tops, but the latter were now on a line with the horizon. Towards 6 P. M., we began to perceive smaller pieces of ice, some of which were not more than an eighth of a mile in length, floating as it were in small patches. As the icebergs increased in number, the sea became smoother, and there was no apparent motion. Between 8 and 9 P. M., a low point of ice was perceived ahead, and in a short time we passed within it. There was now a large bay before us. As the vessels moved rapidly, at 10½ P. M. we had reached its extreme limits, and found our further progress entirely stopped by a compact barrier of ice, enclosing large square icebergs. The barrier consisted of masses closely packed, and of every variety of shape and size. We hove-to until full daylight. The night was beautiful, and every thing seemed sunk in sleep, except the sound of the distant and low rustling of the ice, that now and then met the ear. We had now reached the latitude of 64° 11′ S., longitude 164° 30′ E., and found our variation twenty-two degrees easterly. One and all felt disappointed, for we had flattered ourselves that the way was open for further progress to the

southward, and had imbibed the impression (from the extraordinary weather we had had at Sydney, and the reports of icebergs having been seen farther to the northward than usual, by all the vessels arriving) that the season would be an open one. What surprised me most was a change in the colour of the water to an olive-green, and some faint appearances resembling distant land; but as it was twilight, and I did not believe the thing credible, I put no faith in these indications, although some of the officers were confident they were not occasioned by icebergs. The barometer stood at 29·200 in.; the temperature of the air 33°, water 32°. We lay-to until four o'clock. As it grew light, on the 12th, a fog set in so thick that we lost sight of the Porpoise, and could not hear any answer to our signals. I therefore determined to work along the barrier to the westward.

We were all day beating in a thick fog, with the barrier of ice close to us, and occasionally in tacking brought it under our bow; at other times we were almost in contact with icebergs. During the whole day we could not see at any time further than a quarter of a mile, and seldom more than the ship's length. The fog, or rather thick mist, was forming in ice on our rigging. From the novelty of our situation, and the excitement produced by it, we did not think of the danger.

I shall now leave the Vincennes and Porpoise pursuing their course to the westward with a head wind, and bring the Peacock up to the barrier.

Previously to parting company on the 3rd of January, the crew of that ship had also been engaged in building hurricane-houses, calking, and chintzing, to secure them from the wet and cold. After parting company, Captain Hudson immediately steered for the first rendezvous, Macquarie Island, and was more fortunate than we were in reaching it, although the Peacock had experienced the same kind of weather that we had, and currents setting to the eastward.

MACQUARIE ISLAND.

On approaching the island, they discovered large patches of kelp, and saw numerous procellaria and albatrosses about the ship. On the 10th of January they made the island, and observed a reef of rocks extending three quarters of a mile off its south end. Passing within a short distance of it, they did not observe any of the signals of the

squadron flying as they had anticipated. They, notwithstanding, stood in, lowered a boat, and despatched several officers to put up the signal, make experiments, and collect specimens. The boat approached an indentation on the west side, too open to be called a bay, and found that the surf was running high, and beating with great violence against the rocks, which, together with the kelp, rendered it dangerous to attempt landing. They made for several other places which looked favourable at a distance, but on approaching them, they were found even less accessible. The boat then returned to the first place to make another attempt, which was attended with great difficulty. The boat's anchor was dropped, and she was backed in with great caution to the edge of the rollers; the surf was very high, and rolled in with a noise like thunder, breaking furiously upon the rocks, so as to make the boat fairly tremble, and threatening every moment to overwhelm her; once or twice she was prevented from getting broadside-to by hauling out towards her anchor. At length, after a dozen fruitless attempts, and awaiting a favourable opportunity, Mr. Eld and a quarter-master succeeded in getting ashore, but not without being immersed up to their breasts. It was found impossible to land any instruments; and the quarter-master was despatched to erect the necessary signals, while Mr. Eld proceeded to visit the penguin-rookery not far distant. On approaching the island, it had appeared to be covered with white spots: these excited conjecture; but after landing, the exhalations rendered it not long doubtful that it was birdlime.

Mr. Eld, in his journal, gives the following account of his visit: "Although I had heard so often of the great quantity of birds on the uninhabited islands, I was not prepared to see them in such myriads as here. The whole sides of the rugged hills were literally covered with them. Having passed a deep fissure in the rocks, I ascended a crag that led to what I thought was their principal roost, and at every step my astonishment increased. Such a din of squeaking, squalling, and gabbling, I never before heard or dreamed could be made by any of the feathered tribe. It was impossible to hear one's self speak. It appeared as if every one was vying with his neighbour to make the greatest possible noise. I soon found my presence particularly displeased them, for they snapped at me in all directions, catching hold of my trousers, shaking and pinching my flesh so violently as to make me flinch and stand upon the defensive. As we wanted a number of specimens, I commenced kicking them down the precipice, and knocked on the head those which had the temerity to attack me. After having collected a number, and a few eggs, I laid them aside, whilst I ascended higher on the hill. I had not left them more than

eighteen feet, before two albatrosses came down, and commenced picking at the dead birds I had just killed, but not being able to make any impression upon them, deliberately picked up two of the eggs with their beaks, and in spite of my efforts to prevent it, flew away with them. The eggs were about the size of a goose's; the original colour seemed to have been white, but they were so dirty that it was difficult to say with certainty. They were no doubt the eggs of the penguin, as I took them out of their nest, which was only a small place scratched in the earth, just big enough to hold one or two eggs, with little or no grass, sticks, or any thing else to form a nest of. I afterwards picked up a number of these eggs, and another was found, of the size of a hen's egg, white, with a slight tinge of green. On mounting the hill still higher, which was very steep, and composed of volcanic rock, loose stones, and a little soil mixed with birdlime, I found that there were more of these birds than I anticipated. The nests were within two feet of each other, with one or two young ones in each; one of the old ones watching and sitting on the nest, whilst the young were trying ineffectually to nestle themselves under the small wings of the old ones. The appearance of the young was not unlike that of goslings, being covered with a dark thick down.

"These penguins are the Eudyptes chrysocome; they are from sixteen to twenty inches in height, with white breast and nearly black back, the rest being of a dark dove-colour, with the exception of the head, which is adorned on each side with four or five yellow feathers, three or four inches long, looking like graceful plumes. The birds stand erect in rows, which gives them the appearance of Liliputian soldiers. The sight was novel and beautiful, and had it not been for the gabble,—enough to deafen me,—I could have stayed much longer. It was now time to return to the boat, when it occurred to me that live birds would be preferable to the dead; so throwing the latter down, I seized one old and a couple of young ones, and with three or four eggs in my cap, made the best of my way to the boat. It was now found impossible to hand them on board, and not willing to surrender my prize, a lead-line was thrown me from the boat, but did not come near enough, and in my attempts to get it, I was overtaken by a sea, and was thrown violently against the rocks among the kelp, and just made out to crawl on hands and knees beyond the reach of the returning sea, somewhat bruised, wet, and benumbed with the cold."

At this juncture, the quarter-master returned with a large species of penguin over his shoulders, but without the crown of feathers on his head. He described a similar rookery, and also saw some green paroquets with a small red spot on the head, and an oblong slaty or

purple spot at the root of the bill, and with straight beaks. Mr. Eld was too much exhausted to return with him to get specimens, and the hour being late, it was necessary to return to the boat, which had been waiting for some time for them. The quarter-master succeeded in getting his penguins to the boat, but Mr. Eld's began floundering about, and although their legs were tied, managed to get into the water, where they were at home, and were soon out of reach. The tying of the legs did not seem any impediment to their exertions in the water, and thus several interesting specimens of natural history were lost, the trouble that it cost making them doubly valuable. With great difficulty Mr. Eld reached the boat; for, having again missed his foothold, he fell among the kelp, but by the timely aid of those on board he was rescued. After an hour's tug at their oars, they reached the ship in safety. During their absence the ship sounded with a line of three hundred fathoms, two and a half miles from the shore; but no bottom was found. The temperature of the water at the surface was 43°, and at three hundred fathoms deep 39°. The current was tried, but none found.

The south end of Macquarie Island lies in latitude 54° 44′ S., and longitude 159° 49′ E. The island is high and much broken; it is apparently covered with verdure, although a long tufted rank grass was the only plant seen by those who landed.

The highest peak on the island is from twelve to fifteen hundred feet high, and as far as our observations extended, it had neither tree nor shrub on it. At 6 P. M., the ship filled away, and at eight was abreast of the Bishop and Clerk. Macquarie Island affords no inducement for a visit, and as far as our examination went, has no suitable place for landing with a boat. The only thing I had to regret was not being able to make it a magnetic station.

On the 11th and 12th nothing particular occurred on board the Peacock. All sail was set, and running to the southward on the 13th, in latitude 61° 30′ S., longitude 161° 05′ E., the first ice-islands were seen. The dip was observed with Lloyd's and Dolland's needles, which made it 86° 53′.

There was no occasion on the night of the 13th to light the binnacle-lamps, as newspaper print could be read with ease at midnight. On the 14th, while still making much progress to the south, and passing occasionally icebergs and brash ice, the water appeared somewhat discoloured. Robinson's, Lloyd's, and Dolland's needles, gave, the same day, in the cabin, 86° 37′ for the dip, and in the ward-room, 86° 46′. Albatrosses, Cape pigeons, and other birds about.

On the 15th, they passed many ice-islands. The weather was thick,

and snow fell at intervals; the wind continued from the westward. Many whales were seen; albatrosses, petrels, and Cape pigeons were frequent about the ship. At 4 P. M., the mist raised a little, and to their surprise they saw a perfect barrier of ice, extending to the southwest, with several large icebergs enclosed within it. Shortly after, they discovered a sail, which proved to be the Porpoise.

The Vincennes and Porpoise were left in our narrative near the icy barrier, separated by the fogs and mists that prevailed at times. The Porpoise, on the 13th, in latitude 65° 08′ S., longitude 163° E., discovered several sea-elephants on the ice, and sent a boat to capture them, but without success. The current was tried, and found to set west one-fifth of a mile per hour. Some time afterwards, seeing some sea-elephants near the edge of the ice, a boat was sent, and succeeded in capturing a female. From the numerous sea-elephants, and the discoloration of the water and ice, they were strongly impressed with the idea of land being in the vicinity, but on sounding with one hundred fathoms, no bottom was found; Lieutenant-Commandant Ringgold felt convinced, from the above circumstances, and the report that penguins were heard, that land was near, and thought he could discern to the southeast something like distant mountains. A nearer approach was impossible, as they were then in actual contact with the icy barrier.

On the 14th, at 3 P. M., the water being still discoloured, tried soundings, but found no bottom.

Two sea elephants were seen lying motionless on the ice. On being shot at, the animal would raise its head and look around for an instant, and then resume its former posture. Boats were lowered, when they were captured and brought on board: they proved to be the Phoca proboscidæ. Dr. Holmes examined their stomachs, and found nothing but well-digested food. Their dimensions were as follows:

Total length	10 feet, 9 inches.
Length of posterior flipper	1 " 9 "
Breadth	2 " 4 "
Circumference of largest part of body . . .	6 " 3 "

This was a young female. The other was taken afterwards; he measured—

In length	8 feet, 6 inches.
Greatest circumference behind anterior flipper .	5 " 0 "
Length of flippers	1 " 5 "
Breadth "	1 " 5 "

On the 15th the Peacock and Porpoise were in company: the specimens of sea-elephants were put on board the Peacock; and, after having had communication with each other, the vessels again separated, standing on opposite tacks.

On the 16th the three vessels were in longitude 157° 46′ E., and all within a short distance of each other. The water was much discoloured, and many albatrosses, Cape pigeons, and petrels were seen about the ships. On board the Vincennes, we sounded with two hundred and thirty fathoms, and found no bottom; the water had the appearance of an olive-green colour, as if but forty and fifty fathoms deep. At the surface, its temperature was 32°, at the depth sounded, 31°. I should have tried for a deeper cast, but the line was seen to be stranded, when we were obliged to stop; we fortunately saved our apparatus, with Six's thermometers.

On this day (16th January) appearances believed at the time to be land were visible from all the three vessels, and the comparison of the three observations, when taken in connexion with the more positive proofs of its existence afterwards obtained, has left no doubt that the appearance was not deceptive. From this day, therefore, we date the discovery which is claimed for the squadron.

On board the Peacock, it appears that Passed Midshipmen Eld and Reynolds both saw the land from the masthead, and reported it to Captain Hudson: he was well satisfied on examination that the appearance was totally distinct from that of ice-islands, and a majority of the officers and men were also satisfied that if land could exist, that was it.

I mention particularly the names of these two gentlemen, because they have stated the same fact under oath, before the court-martial, after our return.

On board the Porpoise, Lieutenant-Commandant Ringgold states, that "he went aloft in the afternoon, the weather being clear and fine, the horizon good, and clouds lofty; that he saw over the field-ice an object, large, dark, and rounding, resembling a mountain in the distance; the icebergs were all light and brilliant, and in great contrast." He goes on to say, in his report, "I watched for an hour to see if the sun in his decline would change the colour of the object: it remained the same, with a white cloud above, similar to that hovering over high land. At sunset the appearance remained the same. I took the bearings accurately, intending to examine it closely as soon as we got a breeze. I am thoroughly of opinion it is an island surrounded by immense fields of ice. The Peacock in sight to the southward and eastward over the ice; the sun set at a few minutes before ten; soon after, a light air from the southward, with a fog-bank arising, which quickly shut out the field-ice."

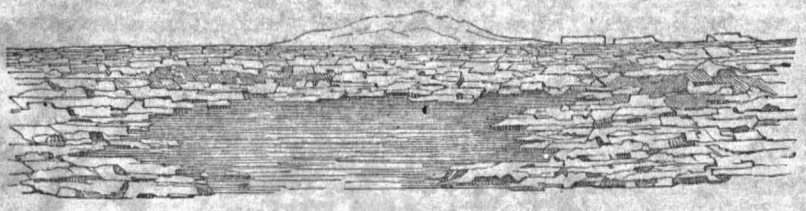
In Passed Midshipman Eld's journal, he asserts that he had been several times to the masthead during the day, to view the barrier; that it was not only a barrier of ice, but one of terra firma. Passed

Midshipman Reynolds and himself exclaimed, with one accord, that it was land. Not trusting to the naked eye, they descended for spy-glasses, which confirmed, beyond a doubt, their first impressions. The mountains could be distinctly seen, over the field-ice and bergs, stretching to the southwest as far as any thing could be discerned. Two peaks, in particular, were very distinct, (which I have named after those two officers,) rising in a conical form; and others, the lower parts of which were quite as distinct, but whose summits were lost in light fleecy clouds. Few clouds were to be seen in any other direction, for the weather was remarkably clear. The sun shone brightly on ridge after ridge, whose sides were partially bare; these connected the eminences I have just spoken of, which must be from one to two thousand feet high. Mr. Eld further states, that on reporting the discovery to Captain Hudson, the latter replied that there was no doubt of it, and that he believed that most of the icebergs then in sight were aground. At this time they were close in with the barrier, and could approach no nearer. On this day, the Peacock got a cast of the deep-sea lead, with Six's thermometer attached, to the depth of eight hundred and fifty fathoms, only a short distance from the barrier: the temperature of the surface was 31°, and at the depth sounded, 31½°; current one-fourth of a mile, north-by-east.

The log-book of the Porpoise has also this notice in it: "From six to eight, calm and pleasant,—took in studding-sails; at seven set main-topgallant-studding-sail; discovered what we took to be an island, bearing south-by-east,—a great deal of field-ice in sight; noticed penguins around the brig. (Signed) J. H. North." Dr. Holmes, on the same evening, noted in his journal, a marked appearance of land.

On board the Vincennes there was on the same day much excitement among the crew. All eagerly watched the flight of birds, together with the whales and penguins, and spoke of the proximity of land, which, from the appearance of never-failing signs, could scarcely be doubted. The following is a sketch which I made of what I myself saw, and have called Ringgold's Knoll on the chart, and which at the same time will show the field-ice* as it appeared.

* The field-ice is composed of a vast number of pieces, varying in size, and separated from one another, the long swell keeping the outer ones always in motion. The smallest pieces were about six feet in diameter, while the largest sometimes exceeded five or six hundred feet. Their depth below the surface varies still more, and some appear to be soft, whilst others were hard and compact. The depth of these does not probably in any case exceed twenty feet. Most of them, and particularly the larger ones, had a covering of about eighteen inches of snow. The whole at a distance appeared like a vast level field, broken up as it were by the plough, and presenting shapeless angular masses of every possible figure, while here and there a table-topped iceberg was enclosed.



SKETCH OF LAND AND FIELD-ICE.

This night we were beating with frequent tacks, in order to gain as much southing as possible. Previous to its becoming broad daylight, the fog rendered every thing obscure, even at a short distance from the ship. I knew that we were in close proximity to icebergs and field-ice, but, from the report of the look-out at sunset, believed that there was an opening or large bay leading to the southward. The ship had rapid way on her, and was much tossed about, when in an instant all was perfectly still and quiet; the transition was so sudden that many were awakened by it from sound sleep, and all well knew, from the short experience we had had, that the cessation of the sound and motion usual at sea, was a proof that we had run within a line of ice, —an occurrence from which the feeling of great danger is inseparable. The watch was called by the officer of the deck, to be in readiness to execute such orders as might be necessary for the safety of the ship. Many of those from below were seen hurrying up the hatches, and those on deck straining their eyes to discover the barrier in time to avoid accident. The ship still moving rapidly along, some faint hope remained that the bay might prove a deep one, and enable me to satisfy my sanguine hopes and belief relative to the land.

The feeling is awful and the uncertainty most trying thus to enter within the icy barrier blindfolded as it were by an impenetrable fog, and the thought constantly recurring that both ship and crew were in imminent danger; yet I was satisfied that nothing could be gained but by pursuing this course. On we kept, until it was reported to me, by attentive listeners, that they heard the low and distant rustling of the ice: suddenly a dozen voices proclaimed the barrier to be in sight, just ahead. The ship, which a moment before seemed as if unpeopled, from the stillness of all on board, was instantly alive with the bustle of performing the evolutions necessary to bring her to the wind, which was unfavourable to a return on the same track by which we had entered. After a quarter of an hour, the ice was again made ahead, and the full danger of our situation was realized. The ship was certainly embayed; and although the extent of sea-room to which we were limited, was rendered invisible by the dark and murky weather,

yet that we were closely circumscribed was evident from having made the ice so soon on either tack, and from the audible rustling around us. It required several hours to extricate the ship from this bay.

Few are able to estimate the feelings that such an occasion causes to a commander, who has the responsibility of the safety of ship and crew operating as a heavy weight upon his heart, and producing a feeling as if on the verge of some overwhelming calamity. All tends to satisfy him that nothing could guide him in safety through, or shield from destruction those who have been entrusted to his charge, but the hand of an all-wise Providence.

17th. In the morning we discovered a ship apparently within a mile of us, to which we made signal and fired a gun, but she was shortly after lost sight of. We also saw the brig to the eastward, close to the barrier of ice. In the afternoon we spoke the Peacock: she had not seen us in the morning; and I should be disposed to believe that the cause of her image appearing so close to us in the morning was produced by refraction above a low fog-bank; but the usual accompaniment of such phenomena, a difference of temperature below and aloft, did not exist.

I now desired Captain Hudson to make the best use of his time in exploring, as to attempt to keep company would only impede our progress, and, without adding to our safety, might prevent the opportunity of examining the barrier for an opening. I was also satisfied that the separation would be a strong incentive to exertion, by exciting rivalry among the officers and crews of the different vessels. This day at noon we were in latitude 66° 20′ S., longitude 156° 02′ E. Many petrels, albatrosses, a few whales, and a seal, were seen from the ship; and the water was quite green.

18th. The weather this day was variable, with light westerly winds; the temperature of air and water 32°. Occasional squalls of snow and mist occurred, but it was at times clear. The water was still olive-green; and the other vessels occasionally in sight, beating to windward.

On the morning of the 19th, we found ourselves in a deep bay, and discovered the Peacock standing to the southwest. Until eight o'clock, A. M., we had a moderate breeze. The water was of a darker olive-green, and had a muddy appearance. Land was now certainly visible from the Vincennes, both to the south-southeast and southwest, in the former direction most distinctly. Both appeared high. It was between eight and nine in the morning when I was fully satisfied that it was certainly land, and my own opinion was confirmed by that of some of

the oldest and most experienced seamen on board. The officer of the morning watch, Lieutenant Alden, sent twice, and called my attention to it. We were at this time in longitude 154° 30′ E., latitude 66° 20′ S.; the day was fine, and at times quite clear, with light winds. After divine service, I still saw the outline of the land, unchanged in form but not so distinct as in the morning. By noon, I found we were sagging on to the barrier; the boats were lowered in consequence, and the ship towed off. The report from aloft, was, "A continued barrier of ice around the bay, and no opening to be seen, having the western point of it bearing to the northward of west of us." I stood to the westward to pass around it, fully assured that the Peacock would explore all the outline of the bay.

The Peacock, at 3^h 30^m, according to Captain Hudson's journal, having got into the drift-ice, with a barrier still ahead to the west, tacked to the southeast to work up for an immense mass, which had every appearance of land, and which was believed to be such by all on board. It was seen far beyond and towering above an ice-island that was from one hundred and fifty to two hundred feet in height. It bore from them about southwest,* and had the appearance of being three thousand feet in height, forming a sort of amphitheatre, looking gray and dark, and divided into two distinct ridges or elevations throughout its entire extent, the whole being covered with snow. As there was no probability of getting nearer to it in this quarter, they stood out of the bay, which was about twenty miles deep, to proceed to the westward, hoping to get an opportunity to approach the object more closely on the other side.

We had a beautiful and unusual sight presented to us this night: the sun and moon both appeared above the horizon at the same time, and each throwing its light abroad. The latter was nearly full. The former illuminated the icebergs and distant continent with his deep golden rays; while the latter, in the opposite horizon, tinged with silvery light the clouds in its immediate neighbourhood. There now being no doubt in any mind of the discovery of land, it gave an exciting interest to the cruise, that appeared to set aside all thought of fatigue, and to make every one willing to encounter any difficulty to effect a landing.

20th. This day, on board the Peacock they witnessed a sea-fight between a whale and one of its many enemies. The sea was quite smooth, and offered the best possible view of the whole combat. First, at a distance from the ship, a whale was seen floundering in a most

* Sketches of this land will be seen in the Atlas on the Chart of Antarctic Continent.

extraordinary way, lashing the smooth sea into a perfect foam, and endeavouring apparently to extricate himself from some annoyance. As he approached the ship, the struggle continuing and becoming more violent, it was perceived that a fish, apparently about twenty feet long, held him by the jaw, his contortions, spouting, and throes all betokening the agony of the huge monster. The whale now threw himself at full length from the water with open mouth, his pursuer still hanging to the jaw, the blood issuing from the wound and dyeing the sea to a distance around; but all his flounderings were of no avail; his pertinacious enemy still maintained his hold, and was evidently getting the advantage of him. Much alarm seemed to be felt by the many other whales around. These "killers," as they are called, are of a brownish colour on the back, and white on the belly, with a long dorsal fin. Such was the turbulence with which they passed, that a good view could not be had of them to make out more nearly the description. These fish attack a whale in the same way as dogs bait a bull, and worry him to death. They are armed with strong sharp teeth, and generally seize the whale by the lower jaw. It is said that the only part of them they eat is the tongue. The whalers give some marvellous accounts of these killers and of their immense strength; among them, that they have been known to drag a whale away from several boats which were towing it to the ship.

There was a great quantity of animalculæ in the water, and some large squids (Medusæ) and quantities of shrimp were frequently seen about the icebergs; these are no doubt the attractions which bring whales to frequent these seas.

The last two days we had very many beautiful snow-white petrels about. The character of the ice had now become entirely changed. The tabular-formed icebergs prevailed, and there was comparatively little field-ice. Some of the bergs were of magnificent dimensions, one-third of a mile in length, and from one hundred and fifty to two hundred feet in height, with sides perfectly smooth, as though they had been chiselled. Others, again, exhibited lofty arches of many-coloured tints, leading into deep caverns, open to the swell of the sea, which rushing in, produced loud and distant thunderings. The flight of birds passing in and out of these caverns, recalled the recollection of ruined abbeys, castles, and caves, while here and there a bold projecting bluff, crowned with pinnacles and turrets, resembled some Gothic keep. A little farther onwards would be seen a vast fissure, as if some powerful force had rent in twain these mighty masses. Every noise on board, even our own voices, reverberated from the massive and pure white walls. These tabular bergs are like masses of beautiful

alabaster: a verbal description of them can do little to convey the reality to the imagination of one who has not been among them. If an immense city of ruined alabaster palaces can be imagined, of every variety of shape and tint, and composed of huge piles of buildings grouped together, with long lanes or streets winding irregularly through them, some faint idea may be formed of the grandeur and beauty of the spectacle. The time and circumstances under which we were viewing them, threading our way through these vast bergs, we knew not to what end, left an impression upon me of these icy and desolate regions that can never be forgotten.

22d. It was now, during fine weather, one continued day; but we had occasional snow-squalls that produced an obscurity that was tantalizing. The bergs were so vast and inaccessible, that there was no possibility of landing upon them.

The Peacock and Porpoise were in sight of each other this day. A large number of whales, albatrosses, petrels, penguins, &c., were seen around, and a flock of ducks was also reported as having been seen from the Vincennes, as well as several seals. The effect of sunrise, at a little after 2 A. M., on the 23d, was glorious.

As the events which occurred on board the Peacock during the next few days are particularly interesting, I shall proceed to narrate them in detail, leaving the Vincennes and Porpoise to pursue their route along their dangerous and novel pathway, and would particularly refer the reader to the actual condition of the Peacock, a statement of which has been heretofore given, that it may be borne in mind that our vessels had no planking, extra fastening, or other preparations for these icy regions, beyond those of the vessels of war in our service.

The Peacock stood into the bay which the Vincennes had found closed the day before, and saw the same appearance of high land in the distance. The water was much discoloured, and of a dark dirty green. They hove-to, for the double purpose of getting a cast of the lead, and of lowering the boats to carry the instruments to a small iceberg, on which it was possible to land, for the purpose of making magnetic observations. A line of one thousand four hundred fathoms was prepared to sound, and to the lead was attached the cylinder with Six's thermometer. The wind being fresh, several leads at different distances were attached to the line. They were not aware that the lead-line had touched bottom, until they began to haul in, when it was found that the lead bent on at five hundred fathoms was filled with blue and slate-coloured mud. Attached to the lead also was a piece of stone, and a fresh bruise on it, as though the lead had struck heavily on rock.

The remainder of the line had evidently lain on the bottom, as the

copper cylinder was covered with mud, and the water inside of it was quite muddy. They then beat up a short distance to windward, and again sounded, when, with the line hanging vertically, bottom was reached at three hundred and twenty fathoms; the matter brought up was slate-coloured mud. The temperature of the water at the surface was 32°, and at the above depth 27½°, being a decrease of 4½°.

The boats now returned, and on approaching the ship the persons in them were much startled by hearing the crew cheer ship in consequence of finding soundings. This was a natural burst of joy, on obtaining this unquestionable proof that what they saw was indeed the land; a circumstance that, while it left no doubt, if any had existed, in the mind of any one on board the Peacock, that what they had previously seen was truly terra firma, furnished a proof that cannot be gainsaid, even by those disposed to dispute the evidence of sight, unsupported by so decisive a fact. Mr. Eld and Mr. Stuart, in the boats, succeeded in getting observations, and the mean dip by the needles was 86° 16′.

Mr. Eld's boat succeeded in taking a king-penguin of enormous size, viz.: from tip of tail to the bill, forty-five inches; across the flippers, thirty-seven inches; and the circumference of the body, thirty-three inches. He was taken after a truly sailor-like fashion, by knocking him down. The bird remained quite unmoved on their approach, or rather showed a disposition to come forward to greet them. A blow with the boat-hook, however, stunned him, and before his recovery he was well secured. He showed, on coming to himself, much resentment at the treatment he had received, not only by fighting, but by an inordinate noise. He was in due time preserved as a specimen, and now graces the collection at Washington. In his craw were found thirty-two pebbles, from the size of a pea to that of a hazel-nut.

24th. Bergs and field-ice were in various directions around. They had light baffling winds, clear and pleasant weather, with a smooth sea. The water was of a dark green colour. Standing into the bay for the purpose of approaching the land, they at 5 A. M. passed through drift-ice into an open space, and when they had again approached the field, hove-to for the purpose of sounding. Here bottom was found at the depth of eight hundred fathoms; and the matter brought up was similar to that obtained the day before. The distance between the points where these two soundings were obtained, was but short.

At 8h 30m A. M., while attempting to box off the ship from some ice under the bow, she made a stern-board, which brought the stern so forcibly in contact with another mass of ice, that it seemed from the shock, as if it were entirely stove in; the rudder was so much canted

from its position, as to carry away the starboard wheel-rope, and to wrench the neck of the rudder itself in such a manner as to render it unserviceable, or even worse than useless. In hopes of lessening the difficulty, relieving-tackles were applied to the tiller, but without effect, for it was discovered that the rudder had been so far twisted as to make a considerable angle with the keel, and every exertion to move it proved ineffectual.

All hands were now called, and every officer and man was speedily at his station. The ship was found to be rapidly entering the ice, and every effort to direct her course by the management of the sails proved fruitless. In this helpless condition scarcely a moment passed without a new shock in some quarter or other from the ice, and every blow threatened instant destruction. The hope was not yet abandoned, that some temporary expedient might be found to bring the rudder again into use, until they should be extricated from this perilous situation. A stage was, therefore, rigged over the stern, for the purpose of examining into its state, but it was found to be so much injured that it was impossible to remedy its defects while in its place, and preparations were forthwith made for unshipping it. In the mean time the position of the vessel was every instant growing worse, surrounded as she was by masses of floe-ice, and driving further and further into it, towards an immense wall-sided iceberg. All attempts to get the vessel on the other tack failed, in consequence of her being so closely encompassed, and it was therefore thought expedient to attempt to bring her head round, by hanging her to an iceberg by the ice-anchors, and thus complete what had been partially effected by the sails. The anchor was attached, but just at the moment the hawser was passed on board, the ship took a start so suddenly astern, that the rope was literally dragged out of the men's hands before they could get a turn around the bits.

The ship now drove stern foremost into the midst of the huge masses of ice, striking the rudder a second time. This blow gave it the finishing stroke, by nearly wringing off the head, breaking two of the pintles, and the upper and lower brace.

The wind now began to freshen, and the floe-ice to set upon the ship. The sails were furled, and spars rigged up and down the ship's sides as fenders. Attempts were again made to plant the ice-anchors, for which purpose the boats were lowered; but the confined space, and the force with which the pieces of ice ground against each other was so great, that the boats proved nearly as unmanageable as the ship. After much exertion, however, the ice-anchors were planted, and the hawser hauled taut. Here they for a time enjoyed comparative

security, as the vessel hung by the anchors, which were planted in a large floe. The ice continued to close in rapidly upon them, grinding, crushing, and carrying away the fenders; and the wind, that had changed to seaward, rose with appearances that foreboded bad weather.

At $10^h\ 30^m$ this security was at an end; for the anchors, in spite of the exertions of the officers and men who were near them, broke loose, and the ship was again at the mercy of huge floating masses. A rapid stern-board was the consequence; and a contact with an ice-island, vast, perpendicular, and as high as the mastheads, appeared inevitable.

Every possible preparation was made to meet the expected shock. There was no noise or confusion, and the self-possession and admirable conduct of the commander inspired courage and confidence in all. Preparations were made to cockbill the yards, and spars were got out.

While these preparations were going forward, the imminence of the danger lessened for a while: the anchors again held, and there was a hope that they might bring the vessel up before she struck. This hope, however, endured but for a moment; for the anchors, with the whole body of ice to which they were attached, came in, and the ship going astern, struck quartering upon a piece of ice which lay between her and the great ice-island. This afforded the last hope of preventing her from coming in contact with it; and this hope failed also; for, grinding along the ice, she went nearly stern foremost, and struck with her larboard quarter upon the ice-island with a tremendous crash.

The first effect of this blow was to carry away the spanker-boom, the larboard stern-davit, and to crush the stern-boat. The starboard stern-davit was the next to receive the shock, and as this is connected with the spar-deck bulwarks, the whole of them were started; the knee, a rotten one, which bound the davit to the taffrail, was broken off, and with it all the stanchions to the plank-sheer, as far as the gangway.

Severe as was this shock, it happened fortunately that it was followed by as great a rebound. This gave the vessel a cant to starboard, and by the timely aid of the jib and other sails, carried her clear of the ice-island, and forced her into a small opening. While doing this, and before the vessel had moved half her length, an impending mass of ice and snow fell in her wake. Had this fallen only a few seconds earlier, it must have crushed the vessel to atoms.

It was also fortunate that the place where she struck the ice-island was near its southern end, so that there was but a short distance to be

passed before she was entirely clear of it. This gave more room for the drifting ice, and permitted the vessel to be worked by her sails.

The relief from this pressing danger, however gratifying, gave no assurance of ultimate safety. The weather had an unusually stormy appearance; and the destruction of the vessel seemed almost inevitable, with the loss of every life on board. They had the melancholy alternative in prospect of being frozen to death one after the other, or perishing in a body by the dissolving of the iceberg on which they should take refuge, should the vessel sink.

When the dinner hour arrived the vessel was again fast in the ice, and nothing could for a time be done: it was therefore piped as usual. This served to divert the minds of the men from the dangers around them.

When the meal was over, the former manœuvring was resorted to, the yards being kept swinging to and fro, in order to keep the ship's head in the required direction. She was labouring in the swell, with ice grinding and thumping against her on all sides; every moment something either fore or aft was carried away—chains, bolts, bobstays, bowsprit, shrouds; even the anchors were lifted, coming down with a surge that carried away the eyebolts and lashings, and left them to hang by the stoppers. The cut-water also was injured, and every timber seemed to groan.

Similar dangers attended those in the boats. Passed Midshipman Eld was sent to plant the ice-anchors: there was no room for the use of oars; the grinding and grating of the ice, as it rose and fell with the swell, rendered great precaution necessary to prevent the boat from being swamped or crushed; and when it is stated that two hours of hard exertion were required to plant the ice-anchors, some idea of the difficulty attending this service will be had. But this was not all; the difficulty of returning was equally great, and no possible way of effecting it seemed to suggest itself. The sides of the icebergs could not be ascended, and to approach the berg on the side next the ship was certain destruction to the boat and crew, for the ice and water were foaming like a cauldron; and to abandon the former was equally out of the question. At last a chance offered, although almost a hopeless one, by passing between two of these bergs, that appeared on the other side of a small clear space. The boat was upon a small piece of ice, from which, by great exertions, she was launched; a few pulls at the oars brought them to the passage; the bergs were closing fast, and agitated by the swell; no time, therefore, was to be lost: the danger was already great, and in a few seconds it would be impossible to pass. They entered; their oars caught, and they got but half-way

through when the icebergs closed in upon them, and pressed the gunwales together, so as almost to crush the boat; the water entered her, and she was near sinking, when the berg stopped, retreated, and by another hard shove they went through, and were soon alongside the ship.

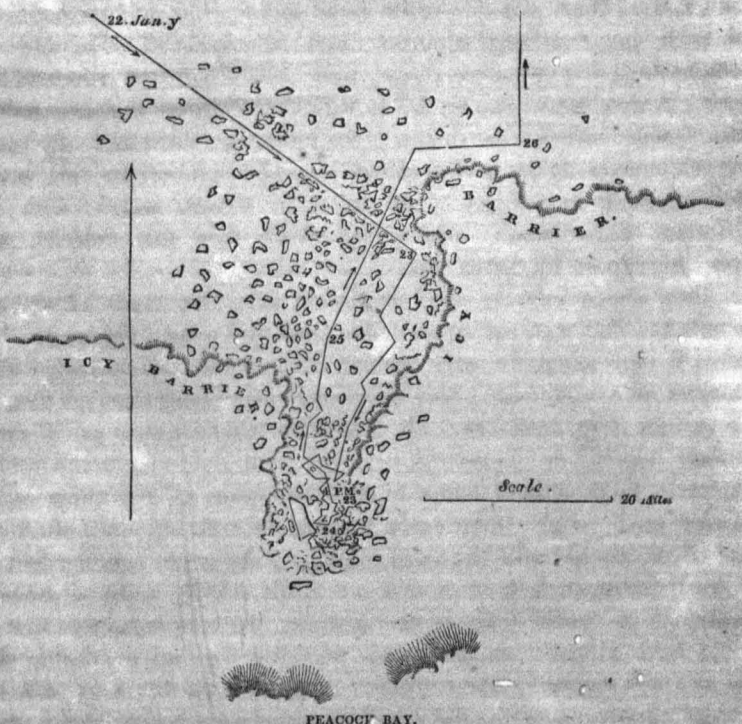
Every exertion was now made to work the ship and avoid heavy thumps from the ice. The mode resorted to, to get the ship about, was a novel one, namely, by urging her lee bow against a piece of ice, which had the same effect as giving her a lee helm; but this was found rather too expensive a mode of effecting the object, and on the pumps showing an increase of water, it was discontinued. The ice had been rapidly accumulating around the ship, contracting still more narrowly the space or area in which they were, and rendering their situation more hazardous.

At 4 P. M., they clewed up the topsails, the ship being fast in the ice, with the wind directly in from the seaward. The ice-anchors were now again run out, in hopes of relieving her from some of the strain. A short time afterwards the ice clearing from the stern enabled them to unship the rudder, which was taken on board in two pieces: it was immediately placed on the quarter-deck, and all the carpenters employed on it.

It soon began to snow violently, and no clear sea could be seen from the ship in any direction. It becoming obscure, the chance was that they would have to take up their last abode there. About six o'clock, the weather cleared a little, and the wind freshened; they parted the hawser attached to the ice-anchor, and made sail again for the clear sea, which could now be seen from the masthead. Towards 8 P. M., as if to blast the little hope that the continuance of clear weather inspired, the ship took a wrong cant, and was forced into a small opening leading farther into the ice to leeward, and towards the massive walls of the berg. Great exertions were made, and fortunately, by the aid of the ice-anchors and sails, they succeeded in getting her round, and her head again pointed towards the clear sea; but they were shortly afterwards wedged in between two large masses of ice. At midnight the sea was observed to rise, although the wind had not increased, causing much motion among the ice; and the stormy appearance of the sky continued, and gave promise of a gale. The only hope left was to force the ship through, and every means were employed to effect this object. The ice they had now to contend with was of larger dimensions, and the increased sea rendered it doubly dangerous. Some of the shocks against it were so heavy as to excite fears that the ship's bow would be driven in, and on one

occasion three of the chronometers were thrown out of their beds of sawdust upon their sides. They continued to make but little headway, and the grinding and thumping on the ship was most painful. The hope of extricating her lessened every moment; for the quantity of ice between them and the sea was increasing, and the ship evidently moved with it to leeward. Few situations could be more trying, but the emergency was met by Captain Hudson with a coolness, perseverance, and presence of mind, which secured the admiration of all who were present, and inspired full confidence and a firm reliance in his ability to overcome every difficulty that lay within the power of human means.

The annexed sketch of the bay will exhibit the situation of the ship more accurately; it is situated in latitude 65° 55′ 20″ S., longitude 151° 18′ 45″ E.



PEACOCK BAY.

In the afternoon of the 25th, the sea continued to increase, and the ship frequently struck against the masses of ice, while every foot they forged ahead carried them seemingly into a more precarious situation. At about 3 P. M., they found that the gripe had been beaten off, and they were now bruising up the stem and grinding away the bows.

There appeared no other course but to drive her out, which was deemed the only chance of saving the ship and crew. All the canvass that would draw was therefore set to force her through; and the wind favouring them, they had by four o'clock succeeded in passing the thick and solid ice, and shortly afterwards found themselves in clear water, without a rudder, the gripe gone, and, as was afterwards found, the stem ground down to within an inch and a half of the wood-ends.

The carpenters were still employed on the rudder, and had succeeded in removing the broken pieces of the pintles from the second and third braces on the stern-post; the upper and lower pintles were broken, leaving only two to hang the rudder by. The weather seemed now to favour them, and about ten o'clock they had finished the rudder, which had been repaired in the best possible manner. Great credit is due to Mr. Dibble, the carpenter, (who left his sick bed on the occasion,) for his exertions, attention, and perseverance. He and the carpenter's crew worked twenty-four hours without intermission. The ship was now hove-to, for it was apprehended that her rolling would render the task of shipping the rudder troublesome. By meridian they were again in a situation to make sail to extricate themselves from a bay some thirty miles in extent, which, with the exception of the small opening by which they had entered, was apparently closed by the barrier.

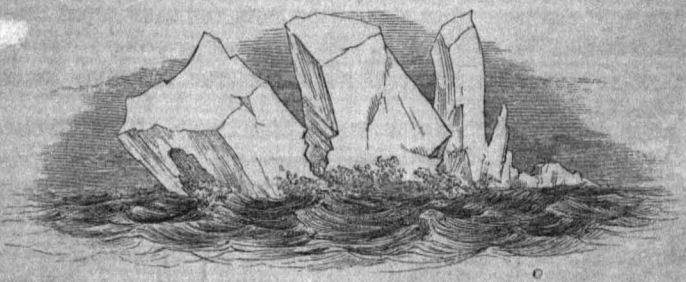
Shortly afterwards, the wind becoming fair, they made all sail for the outlet. The weather proved fine, and the winds moderate. At midnight they found the only opening left, which was not more than a quarter of a mile wide; they succeeded in passing through this, by 2 A. M., in a snow-storm, and felt grateful to God for their providential escape.

Captain Hudson now came to the conclusion of returning north. "After," as he says, "thoroughly turning over in my own mind the state of the ship,—with the head of the rudder gone, hanging by two braces, and in such a state that we could hardly hope to make it answer its purposes again, in encountering the boisterous weather we should have to pass through before reaching the first port,—the ship considerably strained;—her starboard spar-deck bulwarks gone as far forward as the gangway; the gripe off, and the stern mutilated;—fully satisfied from this state of things that she was perfectly useless for cruising among icebergs, and the accompanying dangers, in thick foggy weather, to which, in these latitudes, we should be more or less subject, and where rapid evolutions were often necessary, in which the rudder must perform its part; and that the ship would require exten-

sive repairs before being employed in surveying operations; and feeling that the season was rapidly coming round when our services would be required in that duty, I held a council of the ward-room officers, and required their opinions as to making any further attempts to cruise in these latitudes.

"There was but one opinion as to the necessity of the ship's returning north, with the exception of Mr. Emmons and Mr. Baldwin, who thought the rudder might stand, provided we did not get near the ice or fall in with icebergs. This of course would be to effect little or nothing, and result only in a loss of time. I accordingly put the ship's head north, determined to proceed at once to Sydney, to effect the necessary repairs, so as to be ready at the earliest possible day to join the squadron."

Such were the dangers and difficulties from which the Peacock, by the admirable conduct of her officers and crew, directed by the consummate seamanship of her commander, was enabled at this time to escape. There still, however, remained thousands of miles of a stormy ocean to be encountered, with a ship so crippled as to be hardly capable of working, and injured to such an extent in her hull as to be kept afloat with difficulty. The narrative of the events of this perilous navigation must, however, be postponed, until I shall have given the proceedings of the other vessels of the squadron, while tracing out the position of the icy barrier, and following along the newly-discovered continent.



ICEBERG.

CHAPTER X.

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CHAPTER X.

ANTARCTIC CRUISE—CONTINUED.

1840.

In taking up the narrative of the disaster sustained by the Peacock, with which the preceding chapter closes, the Vincennes and Porpoise were left on the 22d of January.

On that day the Vincennes passed the place through which the Peacock entered, as has been related, on the 23d, and found no opening. To judge from the manner in which the ice moved during the time the Peacock was enclosed in it, I am inclined to ascribe the alternate opening and closing of the passage into the bay, to a tide setting along this coast. In support of this opinion it is sufficient to state, that the strength of the winds experienced on board that vessel was at no time sufficient to account for the manner in which the ice was found to move.

About thirty miles to the westward of this point, the Vincennes passed a remarkable collection of tabular icebergs, for whose existence I can account in no other manner than by supposing them to be attached to a rocky islet, which formed a nucleus to which they adhered. It was quite obvious that they had not been formed in the place where they were seen, and must, therefore, have grounded, after being adrift.

On the 23d January, after passing around this group of icebergs, the sea was found comparatively clear, and a large open space showed itself to the southward. Into this space the course of the Vincennes was immediately directed. While thus steering to the south, the appearance of land was observed on either hand, both to the eastward and westward.

Pursuing this course, we by midnight reached the solid barrier, and

all approach to the land on the east and west was entirely cut off by the close packing of the icebergs. I was, therefore, reluctantly compelled to return, not a little vexed that we were again foiled in our endeavour to reach the Antarctic Continent. This was a deep indentation in the coast, about twenty-five miles wide: we explored it to the depth of about fifteen miles, and did not reach its termination. This bay I have called Disappointment Bay: it is in latitude 67° 04′ 30″ S., longitude 147° 30′ E. The weather was remarkably fine, with a bracing air: the thermometer in the air 22°, in the water 31°.

The next day, 24th, we stood out of the bay, and continued our course to the westward. About noon, to my surprise, I learnt that one of the officers, Lieutenant Underwood, had marked on the log-slate that there was an opening of clear water, subtending three points of the compass, at the bottom of Disappointment Bay. Though confident that this was not the fact, in order to put this matter at rest, I at once determined to return, although forty miles distant, and ordered the ship about, to refute the assertion by the officer's own testimony. This was most effectually done the next morning, 25th, when the ship reached the identical spot, and all were fully convinced that no opening existed. The whole bay was enclosed by a firm barrier of ice, from north-north-west to east-northeast.

The weather proved delightful, with light airs from the southward, and I determined to take this opportunity to fill up the water-tanks with ice. The ship was hove-to, a hawser got in readiness, the boats lowered, and brought alongside of an iceberg well adapted to our purpose.

The same opportunity was also taken to make the magnetic observations on the ice, and to try the local attraction of the ship.

Many birds were seen about the ship, of which we were fortunate in obtaining specimens. The day was remarkably clear, and the same appearance of land was seen that had been witnessed on the 24th. We filled nineteen of our tanks with ice, after having allowed it to remain for some time on deck for the salt water to drain off in part, and it proved very potable.

At about 5 P. M., we had completed our required store of ice, and cast off, making sail to the northward.

In order that no further mistakes should take place as to the openings being passed, I issued an order, directing the officer of the deck on being relieved to go to the masthead, and report to me the exact situation of the ice; and this was continued during the remainder of our cruise among it.

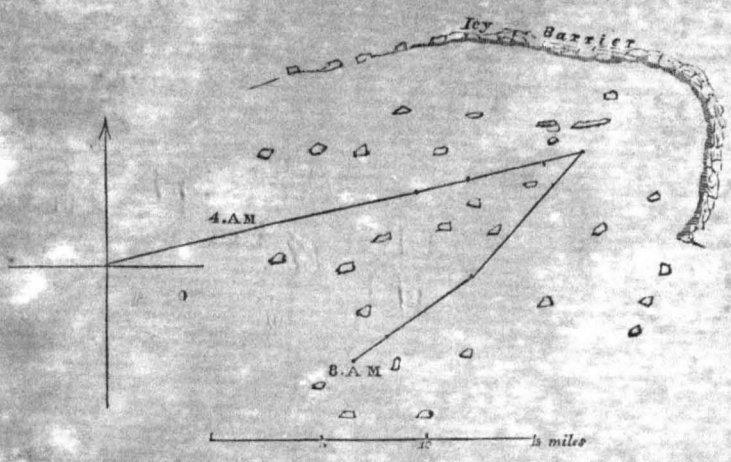
From a Sketch by C Wilkes U S N

C A Jewett Sc

VINCENNES IN DISAPPOINTMENT BAY.

In threading our way through the many icebergs, it occurred to me that they might be considered as islands, and a rough survey made of them, by taking their bearings at certain periods, and making diagrams of their positions. This was accordingly done, and every few hours they were inserted on the chart which I was constructing in my progress.

The following is one of the diagrams.



This I found to be very useful, and it gave me confidence in proceeding, for I had a tolerable chart to retreat by in case of need, at least for a few hours, during which time I had reason to believe that there was not much probability of the icebergs changing their relative positions.

The dip observed on the ice was 87° 30′, and the variation 12° 46′ easterly. The compasses were found to be very sluggish, having but little horizontal directive force.

About half an hour after we cast off from the iceberg, a thick snow-storm came up, with the wind from the southeast. Although there were very many ice-islands around us, on our way out, I felt that I understood the ground well, having passed over it twice, and knowing I had a space of a few miles, only thinly sprinkled with icebergs, I hove-to with shortened sail. This was the first southeast wind we had had since being on this coast. I had been disappointed in not finding it from that quarter before; for I had been informed, by those who had navigated in high southern latitudes, that southeast would be the prevailing wind, and would be attended with fine weather. Now, however, with a fair wind, I was unable to run, for the weather was unfavourable.

At 6 A. M. on the 26th, we again made sail, and at 8 A. M. we discovered the Porpoise, to whom we made signals to come within hail. We found them all well, and compared chronometers.

As it still blew fresh from the southeast, and the weather became a little more clear, we both bore away, running through much drift-ice, at the rate of nine knots an hour. We had the barrier in sight; it was, however, too thick to see much beyond it. Sailing in this way I felt to be extremely hazardous; but our time was so short for the examination of this icy coast, that while the barrier was to be seen, I deemed it my duty to proceed. We fortunately, by good look-outs, and carefully conning the ship, were enabled to avoid any heavy thumps.

On the 27th, we again had the wind from south-southwest. The floe-ice had become so thick, that we found it impossible to get through it in the direction I wished to go, and we were compelled to pass round it. The Porpoise was in sight until noon. The weather proved beautifully clear. A long range of tabular icebergs was in sight to the southward, indicating, as I have before observed, that the coast was near. I passed through these, losing sight of the Porpoise to the northwest about noon, when we were in longitude 142° 40′ E., latitude 65° 54′ 21″ S., variation 5° 08′ easterly.

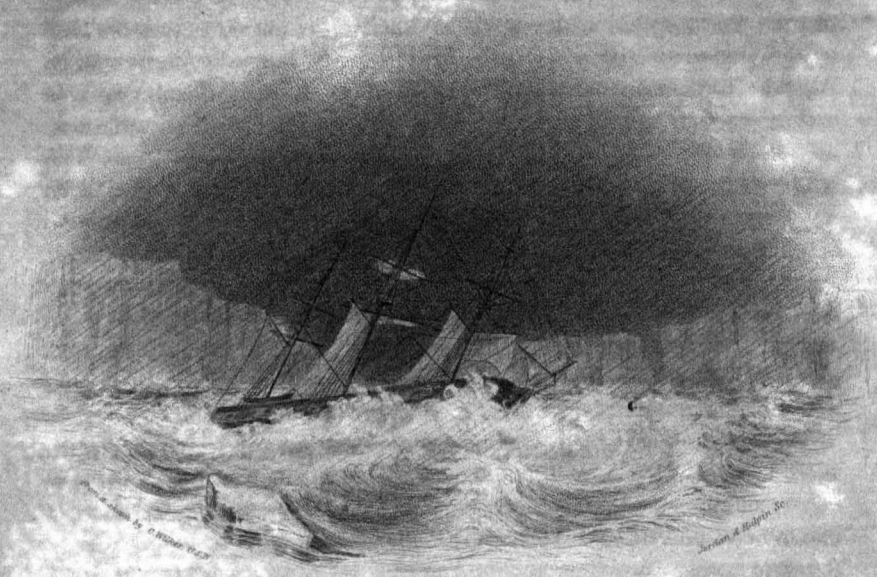
On the 28th, I found myself completely surrounded by the tabular icebergs, through which we continued to pass. Towards midnight the wind shifted to the southeast, and enabled me to haul more to the southward. At 9½ A. M. we had another sight of the land ahead, and every prospect of nearing it, with a fine breeze. The sight of the icebergs around us, all of large dimensions, was beautiful. The greatest number in sight at one time was noted, and found to be more than a hundred, varying from a quarter of a mile to three miles in length. We took the most open route, and by eleven o'clock had run upwards of forty miles through them. We had the land now in plain view, but the weather soon began to thicken and the breeze to freshen. At noon it was so thick that every thing was hidden, and no observation was obtained. The ship was hove-to, but shortly after again put under way, making several tacks to keep my position, which I felt was becoming a critical one, in case a gale should ensue. I therefore looked carefully over my chart, and was surprised at the vast number of icebergs that appeared on it. At 2 P. M. the barometer began to fall, and the weather to change for the worse. At 5 P. M. a gale was evidently coming on, so we took three reefs in the topsails. It appeared now that certain wreck would ensue, should we remain where we were; and after much consideration, I made up my mind to retrace my way, and seek the open space forty miles distant, taking for a landmark a

remarkable berg that had been the last entered on the chart, and which would be a guide to my course out. I therefore stood for its position. The weather was so thick, that it was necessary to run close to it, to be quite sure of recognising it, for on this seemed to depend our safety. About the estimated time we would take to pass over the distance, an iceberg was made (we were within one thousand feet of it) which, at first view, I felt confident was the one sought, but was not altogether satisfied afterwards. I therefore again consulted my chart, and became more doubtful of it. Just at that moment I was called on deck by an officer, who informed me that there were icebergs a short distance ahead! Such proved to be the case; our path was beset with them, and it was evident we could not regain our route. To return was worse, so having but little choice left, I determined to keep on. To encounter these icebergs so soon after seeing the other, was in some respects satisfactory, for it removed all doubts, and showed me that we were not near the track by which we entered. Nothing, therefore, was to be done but to keep a good look-out, and the ship under sufficient way to steer well. My safest plan was to keep as near our former track as possible, believing it to be most free of these masses.

At 8 P. M. it began to blow very hard, with a violent snow-storm, circumscribing our view, and rendering it impossible to see more than two ship's-lengths ahead. The cold was severe, and every spray that touched the ship was immediately converted into ice. At 9 P. M., the barometer still falling and the gale increasing, we reduced sail to close-reefed fore and main-topsails, reefed foresail and trysails, under which we passed numerous icebergs, some to windward, and some to leeward of us. At 10^h 30^m, we found ourselves thickly beset with them, and had many narrow escapes; the excitement became intense; it required a constant change of helm to avoid those close aboard; and we were compelled to press the ship with canvass in order to escape them, by keeping her to windward. We thus passed close along their weather sides, and distinctly heard the roar of the surf dashing against them. We had, from time to time, glimpses of their obscure outline, appearing as though immediately above us. After many escapes, I found the ship so covered with ice, and the watch so powerless in managing her, that a little after midnight, on the 29th, I had all hands called. Scarcely had they been reported on deck, when it was made known to me that the gunner, Mr. Williamson, had fallen, broken his ribs, and otherwise injured himself, on the icy deck.

The gale at this moment was awful. We found we were passing large masses of drift-ice, and ice-islands became more numerous. At a little after one o'clock it was terrific, and the sea was now so heavy,

that I was obliged to reduce sail still further: the fore and main-top-sails were clewed up; the former was furled, but the latter being a new sail, much difficulty was found in securing it.



VINCENNES AMONGST ICE-BERGS

A seaman, by the name of Brooks, in endeavouring to execute the order to furl, got on the lee yardarm, and the sail having blown over the yard, prevented his return. Not being aware of his position until it was reported to me from the forecastle, he remained there some time. On my seeing him he appeared stiff, and clinging to the yard and lift. Spilling-lines were at once rove, and an officer with several men sent aloft to rescue him, which they succeeded in doing by passing a bowline around his body and dragging him into the top, He was almost frozen to death. Several of the best men were completely exhausted with cold, fatigue, and excitement, and were sent below. This added to our anxieties, and but little hope remained to me of escaping: I felt that neither prudence nor foresight could avail in protecting the ship and crew. All that could be done, was to be prepared for any emergency, by keeping every one at his station.

We were swiftly dashing on, for I felt it necessary to keep the ship under rapid way through the water, to enable her to steer and work quickly. Suddenly many voices cried out, "Ice ahead!" then, "On the weather bow!" and again, "On the lee bow and abeam!" All hope of escape seemed in a moment to vanish; return we could not, as

large ice-islands had just been passed to leeward: so we dashed on, expecting every moment the crash. The ship, in an instant, from having her lee guns under water, rose upright; and so close were we passing to leeward of one of these huge islands, that our trysails were almost thrown aback by the eddy wind. The helm was put up to pay the ship off, but the proximity of those under our lee bade me keep my course. All was now still except the distant roar of the wild storm, that was raging behind, before, and above us; the sea was in great agitation, and both officers and men were in the highest degree excited. The ship continued her way, and as we proceeded, a glimmering of hope arose, for we accidentally had hit upon a clear passage between two large ice-islands, which in fine weather we should not dare to have ventured through. The suspense endured while making our way between them was intense, but of short duration; and my spirits rose as I heard the whistling of the gale grow louder and louder before us, as we emerged from the passage. We had escaped an awful death, and were again tempest-tost.

We encountered many similar dangers that night. At half-past 4, A. M., I found we had reached the small open space laid down on my chart, and at five o'clock I hove-to the ship. I had been under intense excitement, and had not been off the deck for nine hours, and was now thankful to the Providence that had guided, watched over, and preserved us. Until 7 A. M., all hands were on deck, when there was some appearance of the weather moderating, and they were piped down.

The barometer was marked at intervals, for which the reader is referred to Appendix XXVI.

This gale was from the southeast, from which quarter it blew during the whole of its strength; and when it began to moderate, the wind veered to the southward. By noon we felt satisfied that the gale was over, and that we had escaped, although it was difficult to realize a sense of security when the perils we had just passed through were so fresh in our minds, and others still impending. Towards four o'clock, it cleared off, and we saw but few icebergs near us. Our longitude was found to be 140° E., latitude 63° 30′ S., and I again made sail for the ice to the south, to pass over the very route we had just traversed through so many perils.

The wind had now hauled to the southwest. At 6 P. M., we again began to enter among ice-islands. The weather appeared settled; but I had so often been deceived by its fickleness, that I felt no reliance ought to be put in its continuance. A powerful inducement was held out to us, in the prospect of getting close enough to effect a landing; and this rendered us insensible to the dangers.

On the morning of the 30th the sun rose in great brilliancy, and the scene could hardly be realized as the same as that we had passed through only twenty-four hours before. All was now quiet; a brisk breeze blew from the eastward, all sail was set, and there was every prospect that we might accomplish our object; for the land was in sight, and the icebergs seemed floating in quiet. We wound our way through them in a sea so smooth that a yawl might have passed over it in safety. No straight line could have been drawn from us in any direction, that would not have cut a dozen icebergs in the same number of miles, and the wondering exclamations of the officers and crew were oft repeated,—"How could we have passed through them unharmed?" and, "What a lucky ship!" At eight o'clock, we had reached the icy barrier, and hove-to close to it. It was tantalizing, with the land in sight, to be again and again blocked out. Open water was seen near the land to the southwest of us, and a tortuous channel through the broken ice to leeward, apparently leading to it. All sail was immediately crowded; we passed rapidly through, and found ourselves again in clear water, which reached to the shores: the barrier extending in a line with our course, about two miles to windward, and a clear channel to the northwest, about two miles wide, as far as the eye could reach. Seeing this, I remarked to one of the officers that it would have been a good place to drift in during the last gale,—little thinking that in a few short hours it would serve us for that purpose, in still greater need. A brisk gale ensued, and the ship ran at the rate of nine or ten miles an hour; one reef was taken in the topsails, and we stood directly in for the most southerly part of the bay.

This bay was formed partly by rocks and partly by ice-islands. The latter were aground, and on the western side of the bay extended about five miles to the northward of our position.

While we stood on in this direction the gale increased, and our room became so circumscribed that we had not time on any one tack to reduce our canvass, before it became necessary to go about. In this way we approached within half a mile of the dark, volcanic rocks, which appeared on both sides of us, and saw the land gradually rising beyond the ice to the height of three thousand feet, and entirely covered with snow. It could be distinctly seen extending to the east and west of our position fully sixty miles. I make this bay in longitude 140° 02′ 30″ E., latitude 66° 45′ S.; and, now that all were convinced of its existence, I gave the land the name of the Antarctic Continent. Some of the officers pointed out the appearance of smoke, as if from a volcano, but I was of opinion that this was nothing but the snow-drift, caused by the heavy squalls. There was too much

wind at this time to tack; I therefore had recourse to luffing the vessel up in the wind, and wore her short round on her heel. At the same time we sounded, and found a hard bottom at the depth of no more than thirty fathoms. I made a rough sketch of this bay, which I have called Piner's Bay, after the signal quarter-master of that name. It was impossible to lower a boat, or to remain longer; indeed, I felt it imperative on me to clear its confined space before the floating ice might close it up.

At $10^h\ 30^m$ we had gone round, and in an hour more we cleared the bay. At noon the wind had increased to a gale, and by one o'clock, P. M., we were reduced to storm-sails, with our top-gallant yards on deck. The barometer had again declined rapidly, proving a true indicator, but giving little or no warning. To run the gauntlet again among the icebergs was out of the question, for a large quantity of field-ice would have to be passed through, which must have done us considerable damage, if it did not entirely disable us. The clear space we occupied was retained until five or six o'clock, when I found the floe-ice was coming down upon us; I then determined to lay the ship for a fair drift through the channel I had observed in the morning, and which I had every reason to believe, from the wind (southeast) blowing directly through it, would not be obstructed until the floe-ice came down. It was a consolation to know that if we were compelled to drift, we should do so faster than the ice; I therefore thought it as well to avoid it as long as possible. Another reason determined me to delay the drifting to the latest moment: I did not believe that the extent of the channel we had seen in the morning was more than ten miles in extent, and at the rate we drifted, the end of it would be reached long before the gale was over. This, like the former gale, was an old-fashioned snow-storm. All the canvass we could show to it at one time was a close-reefed main-topsail and fore-storm-staysail. It blew tremendously, and the sea we experienced was a short disagreeable one, but nothing to be compared to that which accompanied the first gale. From the shortness of the sea, I inferred that we had some current. This state of things continued for several hours, during which we every moment expected to reach the end of our channel. Since the last gale, the whole crew, officers and men, had been put in watch and watch, ready for an instantaneous call, and prepared for rapid movements. The snow was of the same sleety or cutting character as that of the previous day, and seemed as if armed with sharp icicles or needles.

The 31st brought no moderation of the weather. At 1 A. M., a group of ice-islands was reported, and shortly afterwards field-ice close

under our lee. We wore ship instantly, and just avoided coming in contact with the latter. Sail was immediately made on the ship, and the scene of the former gale again gone through (which it is needless here to repeat), with this exception, that we were now passing to and fro among icebergs immediately to windward of the barrier, and each tack brought us nearer to it. Between 4 and 5 A. M., our space was becoming confined, and there was no abatement of the gale; I therefore, as it had cleared sufficiently to enable us to see a quarter of a mile, determined to bear up and run off north-northwest for a clear sea. In doing this we passed icebergs of all dimensions and heavy floe-ice. By $8^h\ 30^m$ we had run thirty miles, when, finding a more open sea, I judged we had partially cleared the ice. At noon the gale still continued. The lowest reading of the barometer during this gale was 28·59 in.

After lasting thirty hours, the gale, at 6 P. M., began to moderate a little, when we again made sail to the southward. I now felt inclined to seek Piner's Bay again, in order to effect a landing. This would have been a great personal gratification; but the bay was sixty miles distant, so that to revisit it would occupy time that was now precious; and feeling satisfied that a great extent of land wholly unknown lay to the westward, I deemed it my duty to proceed to its discovery, not doubting that if my opinions of its existence were correct, a place equally feasible for landing would be found. Another subject also presented itself, which, for a time, caused me some anxiety, and which I confess was not only unexpected by me, but directly at variance with my own observations on the condition of my crew. As I feel compelled to give a complete detail of our proceedings, I must now revert to this subject.

The following report of the medical officers of the ship was made to me on the day of its date.

U. S. Ship Vincennes,
At Sea, January 31st, 1840.

Sir,—

It becomes our duty, as medical officers of this ship, to report to you in writing the condition of the crew at the present time.

The number upon the list this morning is fifteen: most of these cases are consequent upon the extreme hardships and exposure they have undergone during the last gales of wind, when the ship has been surrounded with ice.

This number is not large, but it is necessary to state, that the general health of the crew, in our opinion, is decidedly affected, and

that under ordinary circumstances the list would be very much increased, as the men under the present exigencies, actuated by a laudable desire to do their duty to the last, refrain from presenting themselves as applicants for the list.

Under these circumstances, we feel ourselves obliged to report that, in our opinion, a few days more of such exposure as they have already undergone, would reduce the number of the crew by sickness to such an extent as to hazard the safety of the ship and the lives of all on board.

Very respectfully, your obedient servants,

(Signed) J. L. Fox,
J. S. Whittle,
Assistant-Surgeons.

To Charles Wilkes, Esq.,
Commanding Exploring Expedition.

Although my own opinion, as I have stated, differed from that expressed in the report, I deemed it my duty to ask the opinion of the ward-room officers, and also, in order to procure additional medical advice, restored to duty Acting-Surgeon Gilchrist, who was under suspension. The opinion of the ward-room officers was asked in a written circular, of which the following is a copy.

U. S. Ship Vincennes,
At Sea, January 31st, 1840.

Gentlemen,—

The receipt of the enclosed report of Drs. Fox and Whittle, relative to the health and condition of the crew of this ship, at this time, renders it necessary for me to decide whether it is expedient to push farther south in exploration under the present circumstances.

As you are acquainted with all the circumstances, it is unnecessary to repeat them, except to remark, that your opinion is requested before I decide upon the course to be pursued, in consequence of the strong bias self-interest might give me in the prosecution of our arduous duties. I wish the report returned to me, and for you to communicate your opinion in writing.

I am, respectfully, &c.,
Charles Wilkes,
Commanding Exploring Expedition.

To the Ward-Room Officers,
U. S. Ship Vincennes.

The answers to this letter will be seen in Appendix XXVII.; and it is sufficient here to say, that a majority concurred in opinion with the

report of the medical officers. Notwithstanding these opinions, I was not satisfied that there was sufficient cause to change my original determination of passing along to the appointed rendezvous; and after full consideration of the matter, I came to the conclusion, at whatever hazard to ship and crew, that it was my duty to proceed, and not give up the cruise until the ship should be totally disabled, or it should be evident to all that it was impossible to persist any longer. In bringing myself to this decision, I believe that I viewed the case on all sides with fairness, and allowed my duty to my country, my care for those whom it had committed to my charge, and my responsibility to the world, each to have its due weight.

The weather now moderated, and I ordered sail to be made. The 2d of February found us about sixty miles to the westward of Piner's Bay, steering to the southward, and as usual among ice-islands, with the land in sight. The land had the same lofty appearance as before. We stood in until 3 P. M., when we were within two and a half miles of the icy cliffs by which the land was bounded on all sides. These were from one hundred and fifty to two hundred feet in height, quite perpendicular, and there was no appearance whatever of rocks; all was covered with ice and snow. A short distance from us to the westward was a long range of icebergs aground, which, contrary to the usual appearance, looked much weather-beaten. We tried for soundings, but did not get any with one hundred and fifty fathoms, although the water was much discoloured. The badness of the deep-sea line was a great annoyance to us, for deeper soundings would probably have obtained bottom. No break in the icy barrier, where a foot could be set on the rocks, was observable from aloft. The land still trended to the westward as far as the eye could reach, and continued to exhibit the same character as before. Our longitude now was 137° 02′ E., latitude 66° 12′ S.: we found the magnetic declination westerly.

This proved a fine day, so that we had an opportunity of airing the men's bedding, of ventilating the ship, and of getting rid of the ice, with which we were much encumbered. The thermometer varied from 33° to 36°. Our sick-list had increased the last few days to twenty; many of the men were affected with boils, which rendered them comparatively useless; and ulcers, which were caused by the least scratch, were exceedingly prevalent; but their food was good, they had plenty of it, and their spirits were excellent. The high land was seen this afternoon, but the barrier along which we were passing prevented any nearer approach. This evening it was perceptible that the days were becoming shorter, which was a new source of anxiety,

for we were often surrounded by numerous ice-islands, which the darkness rendered more dangerous.

Towards evening the weather became unsettled, and the 3d of February was ushered in by another gale, accompanied with snow. The barometer fell lower than heretofore, namely, to 28·460 in.; the thermometer stood at 33°. Before the thick snow came on, we had taken the bearings of the ice-islands, and finding we had a few miles comparatively free from them, I determined to await the result of the storm, and made every thing snug to encounter it. The gale continued throughout the day, and although it moderated after 5 P. M., we had some strong squalls, but nothing so violent as those we had already experienced. The ship, in consequence of the snow, became more damp and uncomfortable, and our sick-list was increased to thirty, who were rather overcome by want of rest and fatigue than affected by any disease. To remedy the dampness, a stove was placed on the gun-deck, and fires kept burning in the galleys on the berth-deck, more for the purpose of drying the men's clothes than for warmth. We had no observations this day, but the dead-reckoning gave the longitude 134° E., latitude 63° 49′ S.

The 4th and 5th the weather continued the same. As the winds became lighter thick snow fell, and we were able to see only a short distance from the ship. We contrived by manœuvring to retain our position. On this last day we got a tolerable observation, which gave our longitude as 133° 42′ E., and latitude 64° 06′ S.

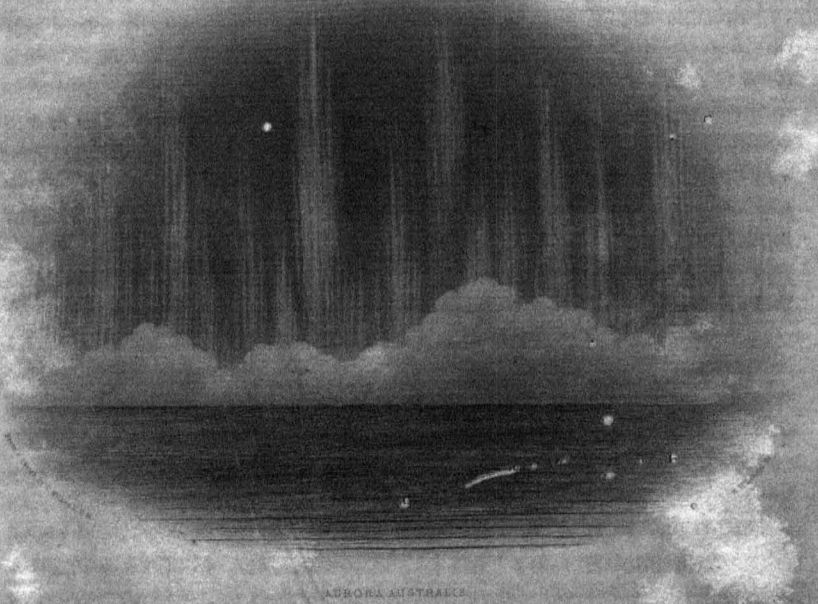
The first part of the 6th the same thick weather continued, but towards 4 P. M., it began to clear, when we again made sail, until we saw and took the bearings of the barrier. We found ourselves situated opposite the part of it we had seen three days before. It still had the appearance of being attached to the land, and in one uninterrupted line. Wishing to examine it closely, I hove-to for broad daylight. Many whales, penguins, flocks of birds, and some seals, were reported.

On the 7th we had much better weather, and continued all day running along the perpendicular icy barrier, about one hundred and fifty feet in height. Beyond it the outline of the high land could be well distinguished. At 6 P. M., we suddenly found the barrier trending to the southward, and the sea studded with icebergs. I now hauled off until daylight, in order to ascertain the trending of the land more exactly. I place this point, which I have named Cape Carr, after the first-lieutenant of the Vincennes, in longitude 131° 40′ E., and latitude 64° 49′ S.

On the 8th, at daylight, we again made sail to the southward, and found at 4 A. M. the field of ice had stopped our progress, and the

weather was thick. Land was no longer seen to the south, a deep bay apparently making in. We continued our course to the westward along the barrier, until 8 P. M., when we were again brought to. At 7 P. M. we had strong indications of land; the barrier was of the former perpendicular form, and later the outline of the Continent appeared distinct though distant. The night was dark and unpleasant. At noon our longitude was 127° 07′ E., and latitude 65° 03′ S.; variation 14° 30′ westerly.

On the 9th we had the finest day we had yet experienced on this coast; the wind had veered from the east to southwest, and given us a clear, bracing, and wholesome atmosphere. The barrier exhibited the same appearance as yesterday. Our longitude was 125° 19′ E., latitude 65° 08′ S., variation 32° 45′ westerly. The current was tried, but none found; the pot was only visible at five fathoms; the colour of the water a dirty green; the dip sector gave 3′ 15″. I never saw a clearer horizon, or one better defined than we had to the northward. The icy barrier was really beautiful. At midnight we had a splendid display of the aurora australis, extending all around the northern



AURORA AUSTRALIS.

horizon, from west-by-north to east-northeast. Before its appearance, a few clouds only were seen in the southeast, on which the setting

sun cast a red tint, that barely rendered them visible. The horizon, with this exception, appeared clear and well defined. The spurs or brushes of light frequently reached the zenith, converging to a point near it.

Although no clouds could be seen in the direction of the aurora, before or after its appearance, yet when it was first seen, there appeared clouds, of the form of massive cumuli, tinged with pale yellow, and behind them arose brilliant red, purple, orange, and yellow tints, streaming upwards in innumerable radiations, with all the shades that a combination of these colours could effect. In its most brilliant state it lasted about twenty minutes. The gold-leaf electrometer was tried, but without being affected: the instrument, however, was not very sensitive. Being somewhat surprised at the vast mass of cumuli which appeared during the continuance of the aurora, I watched after its disappearance till daylight, but could see only a few clouds: I am therefore inclined to impute the phenomenon to some deception caused by the light of the aurora. The apparent altitude of these clouds was 8°.

On the 10th we were again favoured by the weather; it gave us a fine sunshine, and an opportunity of airing the ship and drying the clothes. All the sick were improving in health.

Running close along the barrier, which continued of the same character, although more broken than yesterday, we saw an appearance of land, although indistinctly, to the southward. The water was of the same colour here as before, and the wind being from the south-southeast, we made some progress, and found ourselves in longitude 122° 35′ E., latitude 65° 27′ S.: the variation had now increased to 44° 30′ westerly. No aurora was seen this night, although it was looked for anxiously.

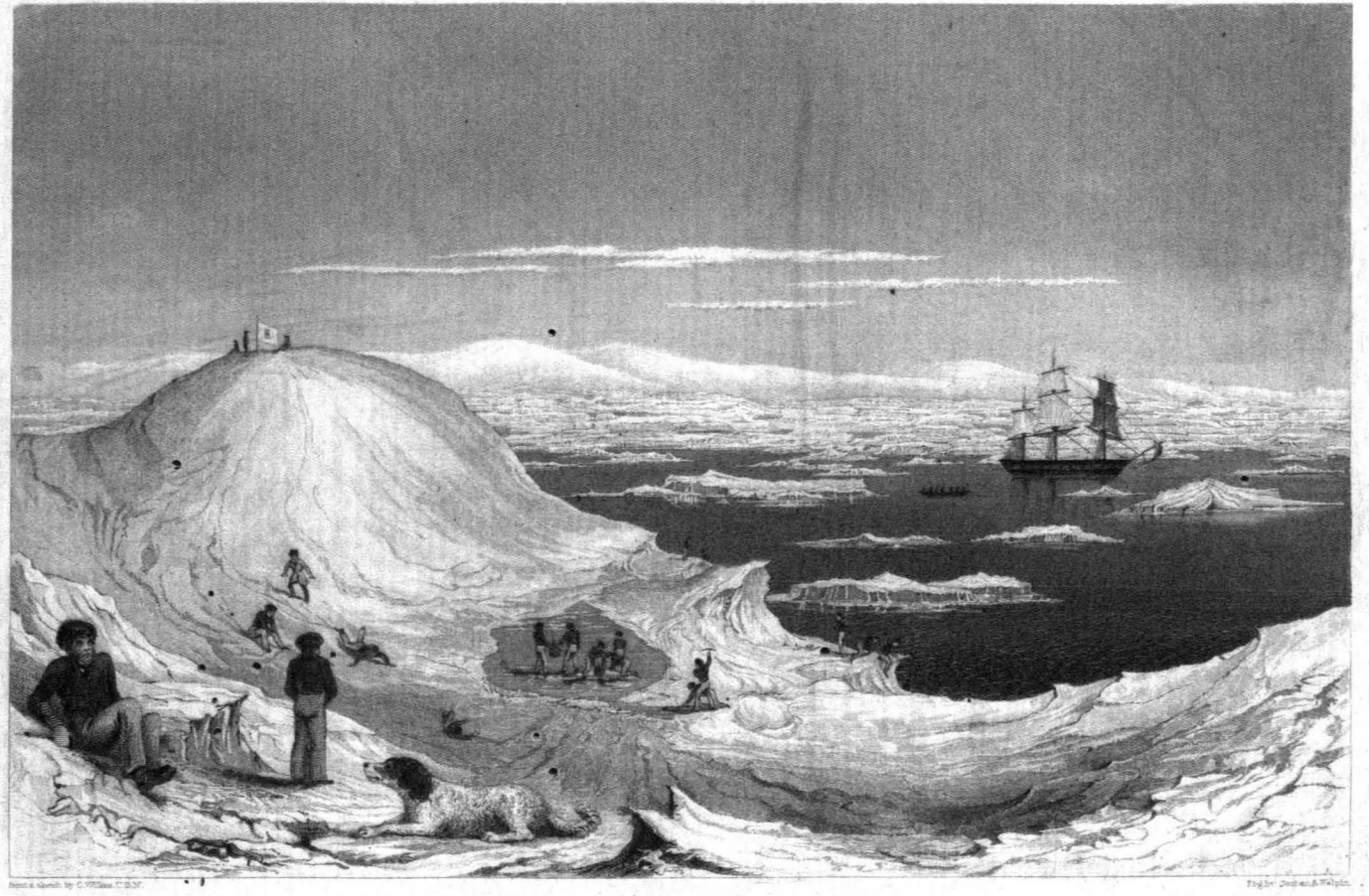
11th. The barometer had been stationary at 29·080 in. for the last three days: it now began to fall; the temperature of the air was 31°, of the water 32°. The fall of the barometer was soon followed by snow and thick weather. The trending of the barrier had been south-west-by-west, and a good deal of floe-ice had been met with, which we ran through. The sea was quite smooth, and many icebergs were enclosed in the barrier, which was very compact and composed of flat fields. At 10 P. M., I found it too dark to run, and hove-to.

During the 12th we had pleasant weather, and at 2 A. M. filled away. At 8 A. M., land was reported to the southwest. Keeping along the barrier and increasing our latitude, I again had hopes of getting near the land. We passed through great quantities of large floe-ice until 1

P. M., when the solid barrier prevented our farther progress. Land was now distinctly seen, from eighteen to twenty miles distant, bearing from south-southeast to southwest,—a lofty mountain range, covered with snow, though showing many ridges and indentations. I laid the ship to for three hours, in hopes of discovering some opening or movement in the ice, but none was experienced. I tried the current, and found none. The water was of a dirty dark green. We sounded with the wire-line in two hundred and fifty fathoms, and found no bottom. The temperature at that depth was 30½°, of the air 31°. The barrier had in places the appearance of being broken up, and we had decreased our longitude to 112° 16′ 12″ E., while our latitude was 64° 57′ S. This puts the land in about 65° 20′ S., and its trending nearly east and west. The line of the icy barrier was generally uniform, although it was occasionally pierced with deep bays. We saw some icebergs with decided spots of earth on them, which gave me hopes of yet obtaining the object of my wishes. The water was remarkably smooth during this day, and the weather clear, enabling us to see a great distance. Two hours after we bore away, we left the floe-ice, and entered a clear sea to the westward, where we lost sight of the barrier for a time; but in hauling up to the southwest, it was, by 8 P. M., within three miles of us, when we again kept off parallel to its trending. The appearance of land still continued. Shortly after, I hove-to, for the purpose of awaiting the daylight to continue our observations of the land, with little prospect or probability of reaching it, from the immense quantity of ice which continued to form an impenetrable barrier.

13th. At 2 A. M. we made sail to the southwest, in order to close with the barrier, which we found retreated in that direction, and gave us every prospect of getting nearer to it. Our course, for the most part, was through icebergs of tabular form. In the afternoon we had the land ahead, and stood in for it with a light breeze until 6½ P. M., when I judged it to be ten or twelve miles distant. It was very distinct, and extended from west-southwest to south-southeast. We were now in longitude 106° 40′ E., and latitude 65° 57′ S.; the variation was 54° 30′ westerly. The water was very green. We sounded in three hundred fathoms, and found no bottom. The weather having an unsettled appearance, we stood off to seek a clearer space for the night. The land left was high, rounded, and covered with snow, resembling that first discovered, and had the appearance of being bound by perpendicular icy cliffs.

14th. At daylight we again made sail for the land, beating in for it



until 11 A. M., when we found any further progress quite impossible. I then judged that it was seven or eight miles distant. The day was remarkably clear, and the land very distinct. By measurement, we made the extent of coast of the Antarctic Continent, which was then in sight, seventy-five miles, and by approximate measurement, three thousand feet high. It was entirely covered with snow. Longitude at noon, 106° 18′ 42″ E., latitude 65° 59′ 40″ S., variation 57° 05′ westerly. On running in, we had passed several icebergs greatly discoloured with earth, and finding we could not approach the shore any nearer, I determined to land on the largest ice-island that seemed accessible, to make dip, intensity, and variation observations. On coming up with it, about one and a half miles from where the barrier had stopped us, I hove the ship to, lowered the boats, and fortunately effected a landing. We found embedded in it, in places, boulders, stones, gravel, sand, and mud or clay. The larger specimens were of red sandstone and basalt. No signs of stratification were to be seen in it, but it was in places formed of icy conglomerate (if I may use the expression), composed of large pieces of rocks, as it were frozen together, and the ice was extremely hard and flint-like. The largest boulder embedded in it was about five or six feet in diameter, but being situated under the shelf of the iceberg, we were not able to get at it. Many specimens were obtained, and it was amusing to see the eagerness and desire of all hands to possess themselves of a piece of the Antarctic Continent. These pieces were in great demand during the remainder of the cruise. In the centre of this iceberg was found a pond of most delicious water, over which was a scum of ice about ten inches thick. We obtained from it about five hundred gallons. We remained upon this iceberg several hours, and the men amused themselves to their hearts' content in sliding. The pond was three feet deep, extending over an area of an acre, and contained sufficient water for half-a-dozen ships. The temperature of the water was 31°. This island had been undoubtedly turned partly over, and had precisely the same appearance that the icy barrier would have exhibited if it had been turned bottom up and subsequently much worn by storms. There was no doubt that it had been detached from the land, which was about eight miles distant. The view of the land, ice, &c., taken from this ice-island, is exhibited in the opposite plate, and gives a correct representation of these desolate regions.

Around the iceberg we found many species of zoophytes, viz.: salpee, a beautiful specimen of clio helicina, some large pelagie, and many small crustacea. I made several drawings of them. This day, notwithstanding our disappointment in being still repelled from treading

on the new continent, was spent with much gratification, and gave us many new specimens from it.

Finding that we had reached the longitude of 105° E., before the time anticipated, and being desirous to pursue the discoveries further west, I left a signal flying on this berg, with a bottle containing instructions for the other vessels, directing them to proceed to the westward as far as they could, in the time which should remain prior to the 1st of March. At 8 P. M. we joined the ship, and bore away again to the westward, intending to pursue the route pointed out to them.

On the 15th, we passed many icebergs much discoloured with earth, stones, &c., none of which appeared of recent formation. The weather this day became lowering, and the breeze fresh; we double-reefed the topsails, and made every thing snug: the wind was from the southward. At noon this day, we were in longitude 104° E., latitude 64° 06′ S. The sea had been remarkably smooth the last few days, with no swell; and I began to entertain the idea that we might have a large body of ice to the northward of us, for the position where Cook found the barrier in 1773 was two hundred miles further to the north. I determined, however, to pass on in our explorations, hoping they might enable me to join that of Enderby's Land. I deemed it a great object actually to prove the continuity with it if possible; and if disappointed in this, I should at any rate ascertain whether there had been any change in the ice in this quarter, since the time of Cook, which had been done already near his Ne Plus Ultra.

We had a vast number of whales about us this day, as well as penguins, Cape pigeons, white and gray, and small and large petrels. Some seals also were seen.

I was now happy to find the health of my crew had become re-established, and that only a few remained on the sick-list. This, I think, was effected by constant attention to their being warmly clothed.

The icebergs were covered with penguins. Several officers landed on the icebergs to get a few as specimens. On their return, some penguins followed them closely, particularly one, who at last leaped into the boat. It was supposed that its mate had been among those taken, and that it had followed on that account. If this were the fact, it would show a remarkable instinctive affection in this bird.

On the 16th, the barrier of ice trended to the northward, and we were obliged to haul to the northeast, passing through a large number of ice-islands, many of which were stained with earth. In the after-

noon a large sea-elephant was discovered on the ice; two boats were sent to effect his capture, and many balls were fired into him, but he showed the utmost indifference to their effect, doing no more than to raise his head at each shot. He contrived to escape by floundering over the ice until he reached the water, in which he was quite a different being. At about 7 P. M., Dr. Fox was despatched in a boat to visit an ice-island that was very much discoloured with clay in patches. He reported that there was upon it a large pond of muddy water, not frozen, although the temperature on board was much below the freezing point. We observed around the icebergs numerous right whales, puffing in all directions. A large quantity of small crustacea, including shrimps, were here seen around the icebergs. These are believed to be the cause that attracts whales to these parts; they also supply the numerous penguins with their food. For several days I observed a great difference in the wind, by day and by night. It had been fresh from the hour of seven in the morning until 8 P. M., when it generally becomes light or dies away altogether. To-day we found ourselves in longitude 99° E., and latitude 64° 21′ S. We to-day made observations throughout the twenty-four hours with Leslie's photometer. These results will be found embraced in the volume of Meteorology.

On the 17th, about 10 A. M., we discovered the barrier extending in a line ahead, and running north and south as far as the eye could reach. Appearances of land were also seen to the southwest, and its trending seemed to be to the northward. We were thus cut off from any further progress to the westward, and obliged to retrace our steps. This position of the ice disappointed me, although it concurred with what was reasonably to be expected. We were now in longitude 97° 37′ E., and latitude 64° 01′ S.; our variation was 56° 21′ westerly, being again on the decrease. To-day we had several snow-squalls, which, instead of being in flakes, was in small grains, as round as shot, and of various sizes, from that of mustard-seed to buckshot. It was remarkably dry, pure white, and not at all like hail. We found the bay we had entered was fifty or sixty miles in depth, and having run in on its southern side, I determined to return along its northern shore, which we set about with much anxiety, as the weather began to change for the worse. Our situation was by no means such as I should have chosen to encounter bad weather in, the bay being sprinkled with a great many large icebergs. Here we met with a large number of whales, whose curiosity seemed awakened by our presence. Their proximity, however, was any thing but pleasant to us, and their blowings resembled that of a number of locomotives.

Their close approach was a convincing proof that they had never been exposed to the pursuit of their skilful hunters. They were of the fin-back species, and of extraordinary size.

Between ten and eleven o'clock at night it was entirely clear over head, and we were gratified with a splendid exhibition of the aurora australis. It exceeded any thing of the kind I had heretofore witnessed; its activity was inconceivable, darting from the zenith to the horizon in all directions in the most brilliant coruscations; rays proceeding as if from a point in the zenith, flashed in brilliant pencillings of light, like sparks of electric fluid in vacuo, and reappeared again to vanish; forming themselves into one body, like an umbrella, or fan, shut up; again emerging to flit across the sky with the rapidity of light, they showed all the prismatic colours at once or in quick succession. So remarkable were the phenomena that even our sailors were constantly exclaiming in admiration of its brilliancy. The best position in which to view it was by lying flat upon the deck, and looking up. The electrometer was tried, but no effect perceived. The star Canopus was in the zenith at the time, and though visible through the aurora, was much diminished in brightness. On this night also the moon was partially eclipsed.

Large icebergs had now become very numerous, and strengthened the belief that the land existing in this vicinity had taken a very decided trend to the northward. I accordingly followed up the northern barrier closely, and passed through the thickest of these bergs, well knowing from our experience that we should have little or no opportunity of seeing the land, unless on the inner side of them. It appeared as though they had collected here from other places, and it is impossible to form an idea of the small space to which we were at times confined. Upwards of one hundred ice-islands could be counted at a time without the aid of a glass, some of which were several miles long. We enjoyed this beautiful sight with the more pleasure, for we had become used to them, and knew from experience that it was possible to navigate through them without accident.

On the 18th, we continued beating to the eastward, and found no end to the apparently interminable barrier. We had a smooth sea, and better weather than I anticipated. At noon, we had retraced our way about forty miles. To-day we again had snow, which fell in the form of regular six-pointed stars. The needles of which these stars were formed were quite distinct, and of regular crystals. The temperature at the time was 28°. The barometer stood at 28·76 in., about three-tenths lower than we had had it for the last twelve days. The wind was easterly.

19th. During this day the barrier trended more to the northeast, and we not unfrequently entered bays so deep as to find ourselves, on reaching the extremity, cut off by the barrier, and compelled to return to within a few miles of the place where we had entered. I thought at first that this might have been caused by the tide or current, but repeated trials showed none. Neither did I detect any motion in the floating ice except what was caused by the wind. Our longitude to-day was 101° E., latitude 63° 02′ S. Some anxiety seemed to exist among the officers and crew lest we should find ourselves embayed or cut off from the clear sea, by a line of barrier. There appeared strong reason for this apprehension, as the smooth sea we had had for several days still continued; we had been sailing as if upon a river, and the water had not assumed its blue colour.

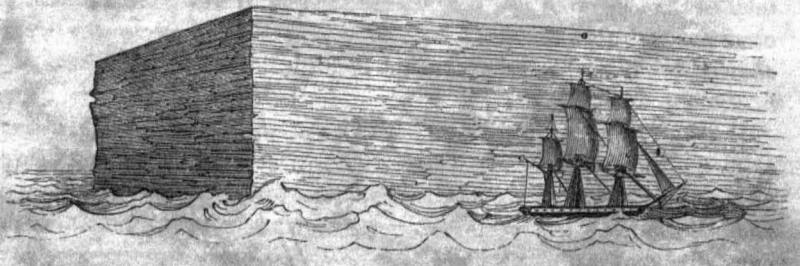
It was, therefore, with great pleasure that, on the 20th, a slight swell was perceived, and the barrier began to trend more to the northward, and afterwards again to the westward. In the morning we found ourselves still surrounded by great numbers of ice-islands. After obtaining a tolerably clear space, the day being rather favourable, we sounded with the deep-sea line eight hundred and fifty fathoms. Six's thermometer gave at the surface 31°, and at the depth of eight hundred and fifty fathoms 35°, an increase of four degrees. The current was again tried, but none was found. A white object was visible at eleven fathoms. The water had now assumed a bluish cast.

We endeavoured to-day to land on an iceberg, but there was too much sea. Shrimps were in great quantities about it, but swam too deep to be taken. The wind again hauled to the westward, which disappointed me, as I was in hopes of getting to the position where Cook saw the ice in 1773, being now nearly in the same latitude. It was less than one hundred miles to the westward of us; and little doubt can exist that its situation has not materially changed in sixty-seven years.

The observations of the squadron during this season's Antarctic cruise, together with those of the preceding year, would seem to confirm the opinion that very little change takes place in the line of ice. It may be inferred that the line of perpetual congelation exists in a lower latitude in some parts of the southern hemisphere than in others. The icy barrier retreats several degrees to the south of the Antarctic Circle to the west of Cape Horn, while to the eastward it in places advances to the northward of that line, which is no doubt owing to the situation of the land. From the great quantities of ice to be found drifting in all parts of the ocean in high southern latitudes, I am induced to believe that the formation of the ice-islands is much more

rapid than is generally supposed. The manner of their formation claimed much of my attention while among them, and I think it may be explained satisfactorily and without difficulty. In the first place, I conceive that ice requires a nucleus, whereon the fogs, snow, and rain, may congeal and accumulate; this the land affords. Accident then separates part of this mass of ice from the land, when it drifts off, and is broken into many pieces, and part of this may again join that which is in process of formation. The sketch in Chapter IX. has already given the reader some idea of its appearance in this state.

From the accumulation of snow, such a mass speedily assumes a flat or table-topped shape, and continues to increase. As these layers accumulate, the field-ice begins to sink, each storm (there of frequent occurrence) tending to give it more weight. The part which is now attached to the land remains aground, whilst that which is more remote being in deep water is free to sink. The accumulated weight on its outer edge produces fissures or fractures at the point where it takes the ground, which the frosts increase; thus separated, the surface again becomes horizontal, and continues to receive new layers from snow, rain, and even fogs, being still retained to the parent mass by the force of attraction. The fogs have no small influence in contributing to the accumulation: some idea may be formed of the increase from this cause, from the fact that during a few hours the ice accumulated to the thickness of a quarter of an inch on our rigging and spars, though neither rain nor snow fell. It may, therefore, I think, be safely asserted that these icebergs are at all times on the increase; for there are few days, according to our experience in this climate, in which some mode of precipitation does not prevail in these high latitudes, where, according to our observations, ice seldom melts. The temperature of even the summer months being rarely above the freezing point, masses of a thousand feet in thickness might require



TABULAR ICEBERG.

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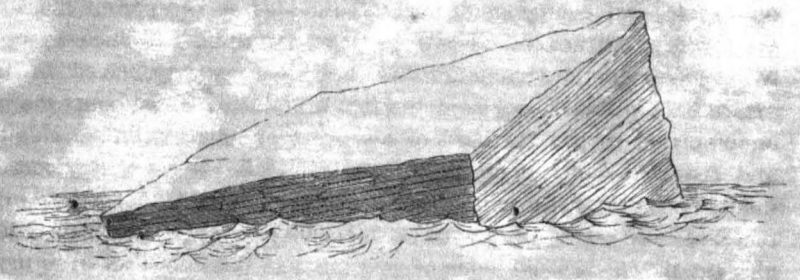
stratification in horizontal layers from six inches to four feet in thickness. When the icebergs are fully formed, they have a tabular and stratified appearance, and are perfectly wall-sided, varying from one hundred and eighty to two hundred and ten feet in height. These were frequently found by us in their original situation, attached to the land, and having the horizontal stratification distinctly visible.

In some places we sailed for more than fifty miles together, along a straight and perpendicular wall, from one hundred and fifty to two hundred feet in height, with the land behind it. The icebergs found along the coast afloat were from a quarter of a mile to five miles in length; their separation from the land may be effected by severe frost rending them asunder, after which the violent and frequent storms may be considered a sufficient cause to overcome the attraction which holds them to the parent mass. In their next stage they exhibit the process of decay, being found fifty or sixty miles from the land, and for the most part with their surfaces inclined at a considerable angle to the horizon. This is caused by a change in the position of the centre of gravity, arising from the abrading action of the waves.



INCLINED ICEBERG.

By our observations on the temperature of the sea, it is evident that these ice-islands can be little changed by the melting process before they reach the latitude of 60°. The temperature of the sea (as observed by the vessels going to and returning from the south), showed but little change above this latitude, and no doubt it was at its maximum, as it was then the height of the summer season.

During their drift to the northward, on reaching lower latitudes, and as their distance from the land increases, they are found in all stages of decay; some forming obelisks; others towers and Gothic arches; and all more or less perforated: some exhibit lofty columns, with a natural bridge resting on them of a lightness and beauty inconceivable in any other material. The following wood-cut and the tail-pieces of the chapters are sketches of some of them.

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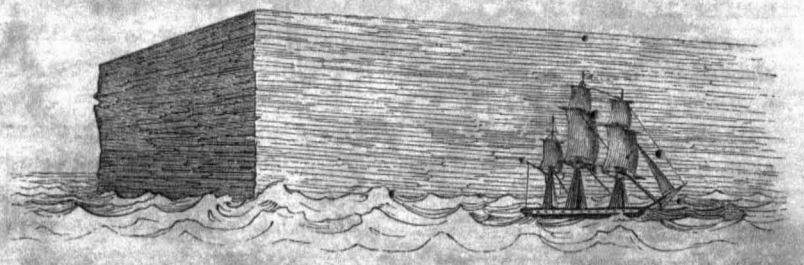

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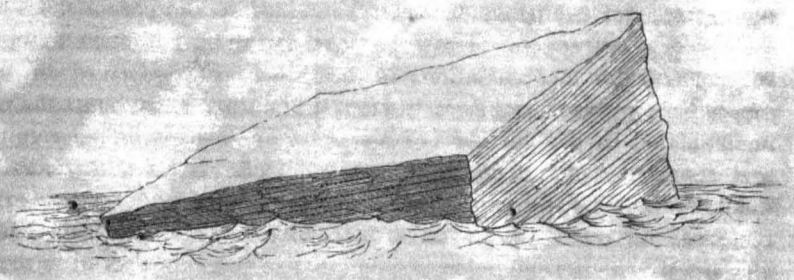

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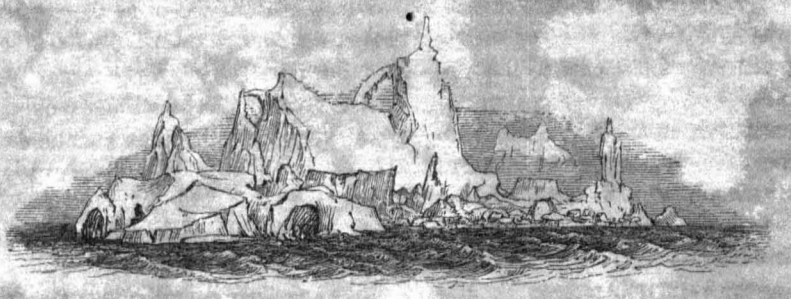
and some appear to be formed of a soft and porous ice; others are quite blue; others again show a green tint, and are of hard flinty ice.



ICEBERG.

Large ice-islands are seen that retain their tabular tops nearly entire until they reach a low latitude, when their dissolution rapidly ensues; whilst some have lost all resemblance to their original formation, and had evidently been overturned. The process of actually rending asunder was not witnessed by any of the vessels, although in the Flying-Fish, when during fogs they were in close proximity to large ice-islands, they inferred from the loud crashing, and the sudden splashing of the sea on her, that such occurrences had taken place. As the bergs gradually become worn by the abrasion of the sea, they in many cases form large overhanging shelves, about two or three feet above the water, extending out ten or twelve feet; the under part of this projecting mass exhibits the appearance of a collection of icicles hanging from it. The temperature of the water when among the icebergs, was found below or about the freezing point.

I have before spoken of the boulders embedded in the icebergs. All those that I had an opportunity of observing, apparently formed a part of the nucleus, and were surrounded by extremely compact ice, so that they appear to be connected with that portion of the ice that would be the last to dissolve, and these boulders would therefore in all probability, be carried to the farthest extent of their range before they were let loose or deposited.

The ice-islands, on being detached from their original place of formation by some violent storm, are conveyed to the westward by the southeast winds which are prevalent here, and are found, the first season after their separation, about seventy miles north of the barrier. This was inferred from the observations of both the Vincennes and Porpoise, the greatest number having been found about that distance from the barrier. That these were recently detached is proven by their stratified appearance; while those at a greater distance had lost