

we discovered his friend gradually working a traverse towards us, but evidently very shy : at length we determined to try and circumvent him by ambush, taking advantage, Indian fashion, of every hummock intervening, to steal upon him. Presently I became tired, and as he had caught a glimpse of me, and exhibited a disposition to bolt, I tried my distance with a ball : he whistled in his peculiar way, as much as to say, "This is not pleasant,"—a sort of twinge of the gout, etc. Punch was now loosed, and closed in the most scientific manner, keeping him at bay in admirable style. Bruin was not quite in command of his limbs,—wounded probably by the doctor and touched up by me ; he began to think of intrenching himself, and, finding a convenient hummock, albeit at an angle above 45° , backed up : thus enabling him to keep Punch completely in front, and prevent any annoyance in rear, but occasionally casting a very suspicious look over his shoulder, and, I suspect, detected Lyall or myself getting too near. I was within shot, and waited only for a clear view of him, when he backed to the summit and clearly saw me. He also was evidently up to our tactics : bolting down, and keeping the hummock between us, was far away before I was able to regain sight of him. Punch followed, giving tongue enough to frighten all the bears in this region. We retreated, and right glad was I to get back ; these excursions, after ten hours' travel, take the courage down amazingly. Punch made the circuit of the island, coming in quite as much refreshed as if he had stolen another mass of pemmican. Fine gentlemanly breed, those Cape York dogs !—proud as Lucifer. Our place of encampment exhibited traces of three bears,—male, female,

and cub,—who had very inquisitively searched the premises. It is probable, if we had been less offensive and taken the matter quietly, that they might have revisited us today. Punch got half my supper, to make up for his disappointment.

June 15.—The day turned out gloomy : no sun at noon, with temperature at 28° , by which we lose this as a rating position, now however unimportant. As no signs of Grove could as yet be traced, at six P.M. the sledges were ordered to meet me on the south side of the island, and, taking two men to carry instruments, I travelled over the summit, which commanded a more extensive view. Independent of Mr. Grove, I began to feel some alarm at the non-appearance of the two men despatched, as well as for our provision ; but on one point I felt assured, as by my orders left with Mr. Allard he would be detained, “to await the return of Dr. Lyall.” The temperature rose to 36° , moist, and thawing rapidly, yet the cold was more sensibly felt : the near floe exhibited a rent eighteen inches wide, and the water rose in the fissure within nine inches of the upper surface of the ice ; any move therefore must carry all this ice off-shore.

June 16.—On reaching the island crest I perceived a tent pitched on the opposite shore, and two men, one of whom was in the act of crossing to our sledges. On regaining the boat I received a note from Mr. Allard ; he had misconceived my orders entirely,—taken Mr. Grove to the ship, leaving the two men in charge of spirits, a gun, and ammunition, and who could be surprised ?—one had escaped unhurt by the bursting of the Hudson Bay gun ! Independent of my written orders, *finally* allotting Mr. Grove to this duty, Mr. Loney had verbally ex-

plained it to the leading man, the ship's cook · however, on we pushed for the tents, packed, and departed. It was a great disappointment, as I had intended sending Dr. Lyall and Mr. Grove up the Great Valley, between this and Wall Bluff, where I intended remaining, or possibly moving on to Star Bluff: they would have enjoyed the opportunity of good sport, and probably have met with herds of musk-oxen, which we were now satisfied were not scarce here, as these men noticed three, and probably they would have been taken had any sensible person been present, however, all was now deranged, and it only remained for us to make good the positions lying in our homeward route. Before reaching the depôt (laid out by Mr. Loney in April) we noticed two deer, but they proved too wary for our eager sportsmen.

Shortly after midnight on the 18th we encamped at the Station. Mr. Allard had left a note, by which I learned that he only quitted on the 13th. The weather clearing off and a bright sun aiding, I ascended the high land in rear, expecting to obtain a great range; but the haze resulting from heat destroyed my hopes, and I returned unsuccessful. I waited for the sun at noon, but as it did not seem inclined to show out, I strolled along the land in search of fossils, which were very abundant, especially one or two varieties of madreporite, which were here strewn in patches as if they had formed a submarine garden! Beyond, to seaward, the open spaces of water were pretty well stocked with eider-duck and brent-geese, which occasionally flew close over our heads; but, with the miserable fowling-pieces we had, killing was an achievement rarely awarded to our exertions.

About 6.15 on the 18th of June we continued our journey, which, from the rotten state of the ice, was confined to the coast-line or across the gravel spits or ledges, now denuded of snow and ice, and which appeared at a former period to have barred the mouth of some great estuary within, where, from our higher stations, very considerable lakes had been observed. These spits, in radii from the great embouchure of the valley or river, are rather puzzling, inasmuch as within our own observation no river force has been noticed, and I verily believe has not existed for years, or perhaps ages: indeed reason is opposed to any such fact: if any such force, as such appearances would indicate, had been in action, all the ice must have been speedily washed away. During the last season I know that, in three positions, no river force was in action up to the first week in September; I can only therefore refer these appearances to that distant epoch when perhaps the whales and other objects were deposited on elevations of five hundred feet and upwards, and other extraordinary influences were exercised throughout these regions. Whatever those disturbances were, they were not momentary. The summits of these mountain ranges were probably submerged; the subsidences or parallels bear the impress of distinct periods of particular action, spread possibly over ages, and are most beautifully defined throughout this Arctic region by similarity of action or of the successive retirement of the ocean; and it is only by referring to such stupendous movements of Nature that I can at all recognize adequate forces to denude, to gully out, and cut such vast water-courses. I do not allude to trumpcory valley gushets,

running over and leaving undisturbed or unmarked the angular fragments of soft limestone, but of vast fluvial agency, rolling to the seaboard masses rounded by attrition, and leaving behind the impression that here a mighty river rolled impetuous into the ocean, and now, having ceased, leaves us to wonder how these stones, even chalcedonies, rounded and polished, occur in the frozen river-beds! These are especially observable between Mount Parker and Step Mount; and in the interval of ten miles, where now scarce a rivulet can be found, I cannot but believe that a great river played its part, and left the extensive mud-flats and gravel ridges which now occupy our attention. At present it is to be doubted if the short interval of summer would even furnish a rippling brook. But we cannot stop here: rivers and gullies are not alone concerned; by their courses the water doubtless escaped, but by what cause was every mountain of these northern ranges reduced to certain parallel strata, as regards the lines of upheaving or subsidence?—for the lines of stratification themselves of the rocks (generally magnesian* limestone), although presenting horizontal appearances east and west, are invariably dipping slightly, say at 5° , to the northward. Nor is it alone that these peculiar terraces strike the observer; the level surfaces of mountain summits, as well as gentle slopes, are for miles, indeed wherever visited, found to present an even surface of finely Macadamized fragments, to the senses, ploughed, harrowed, bush-harrowed, or finely swept! and, in some instances, the marks so indelibly impressed as if it had been the act of yesterday!

Another question forces itself on the mind: is it not

strange that these carcasses or bones of whales should prefer elevations of eighty or five hundred feet? Why are they not in the valley bottoms? To comprehend all this, in all its apparent freshness, the mind becomes painfully engaged. There is no acting cause now, and yet we have had two fine seasons; there are no purling streams, and yet the mountain-sides are bared from snow. But as to snow, to our conception that plays but a minor part; for truly, so to speak, the hills are never "snow-clad;" the fall of a few days is dispersed in a few hours, and the last gale preceding actual winter puts an end to further heavy falls of snow, by reason of extraordinary low temperatures; it falls as ice or rime, no longer flocculent; indeed, what we generally misname snow is truly, perhaps, drift ice.

At length we are driven to ask those who would find reasons of their own for many things less intelligible, By what course of events, at what epochs, did these highly interesting appearances occur; not confined simply to the spot before us, but continuous from hence to the mouth of Lancaster Sound, and, except the off-lying islands of Exmouth, North Cornwall, and the Victoria Archipelago, etc., pervading all this northern region?

At this moment another perplexing circumstance must not be lost sight of. As yet we scarcely admit the existence of a gale: we certainly have not experienced the fierce ravages of tempests or hurricanes; we have the other extreme—intense cold and calm; these two must coexist! the breeze and intense cold, or the minimum of -62.5° , have not yet been experienced. Where no rains or torrents can prevail, unless under a temperature

less than congelation, the great disturbing forces are absent; snow falls harmlessly, serving possibly as a mantle to protect the picture; frost seals it. Under such action, and with short glimpses of summer, the face of the hills today may be that to eternity: let him who is competent break the seal and enlighten us.

Under the present aspect of the coast about us, solemn indeed is the feeling as regards our missing countrymen: no hope here, so far as our experience serves, can exist for sustenance beyond the casual capture of bear or fox during six months of the season, and no means of allaying thirst but by thawing ice in the mouth until June, perhaps July, then only perhaps for six weeks.

As regards the surface disturbances throughout these regions, I am far from allowing ice to be the agent. In warmer regions masses of rock are disrupted, because water enters the crevices, is frozen, and rends them: heat drives off the ice entirely, here no such action takes place; masses of rock however are disrupted from their deep beds, and rise in confused heaps upon many rounded hills, where the pick, even in the warmest summer day, would not penetrate many inches without being opposed by a solid mass of ice and stone, defying further progress. The surface heat of some few warm hours (few and far between) would not penetrate one foot; and even admitting such a fact, for argument sake, the result would be merely adding a fresh icy covering until renewed heat entailed a similar repetition. This we experienced repeatedly during the whole summer season, rendering it difficult to dig a hole any depth; but if the simple mode of disintegration by frost be advanced,

let us inquire whether such an explanation will satisfy our scruples as to the mixture of so many ingredients, and of many never found *in situ*: will frost bring them together? I would venture to submit a few interesting questions for solution: in the first place, how did the rubble on the mountains and sides become reduced to Macadamized proportions, not affording, for hundreds of yards, one stone weighing above one pound? At what period were the skeletons of whales deposited? When did trees or vegetation flourish here? If these seas were ever open, where is the drift-wood, or why are the small pieces found of the oldest possible date? These are matters for the discussion of master minds; they afford fair grounds for reasoning, and may prove highly interesting to science.

Except at our extreme eastern position and Arthur's Strait, no trace of Esquimaux has been noticed; still I am inclined to believe that their visits to this northern region have been comparatively recent.

In our progress towards Step Bluff, three deer were noticed. Dr. Lyall, accompanied by two of our best sportsmen, attempted to creep towards them, but they proved too wary, and made off up the valley. We were now pushing for Step Bluff, the north-west angle of Prince Albert land, and the extreme discovery of last season. Several troublesome spits rendered travelling very laborious, the sharp angular stones cutting deeply into the soft iron of the runner bands, as well as tearing out the rivets. As we neared our position, greater difficulties however assailed us; the heat had sufficient influence on the inclined dark detritus from the mountain above us to

melt the remaining portions of snow, and thus produce a belt of water within the skirting ice, which opposed great difficulty to our advance, notwithstanding our light loads and double-manning the sledges.

The travel without wading now became very difficult; and thinking I might avoid the difficulties by crossing the ravine about a hundred yards up the hill-side, I made the attempt.* But I found the soil fluid, and so quick, that in my weak state it was unsafe to risk being entrapped: even the light dogs declined the effort. Ascending however until I gained the old snow, I succeeded in finding a place pretty well bridged, which enabled me to clear the remaining difficulties. If such be the condition of the coast-line in June, what must be expected in July and August? The floe was no longer safe, and a few hours might place us in the awkward dilemma of not being able to advance until it broke up. Not a day had we to spare, and therefore it was necessary to exert every effort to reach the turn of the land before the ice became detached.

June 19.—As we neared Step Bluff (now named Cape Ogle), the road improved, and about two A.M., having reached the shingle beach which fringed the coast-line, we pitched. The day was bright, the horizon clear, and all the objects we were anxious to see were clearly defined; and this being our connecting, or key station, I lost no time in gaining the summit. Indeed I had become so weak, and anxious to relieve myself from further fatigue, that I had preceded the party, hoping to terminate my labours. But I was doomed to meet with disappointment: before the instrument could be le-

velled, a dense curtain of fog capped the mountain. At intervals the bright sun dispelled the vapours in particular directions, and permitted the most important distant points to be taken. But I was not easily discouraged; and, determined to wait the pleasure of Dame Nature, made up my mind to try her humours, at least for twelve hours. Adopting a watch, I directed my meals to be sent up, and a spirit-lamp to warm tea, cocoa, etc.

From this commanding elevation (about eight hundred feet) I had a good view of the changes which had occurred. The water had made in great detached pools between us and Exmouth Island; indeed some spaces afforded sufficient area to manœuvre the Arctic Squadron. Immediately beneath the base of our cliff, and continuous to Star Bluff (about six miles), the ice had broken off abruptly from the shore ice, leaving a vertical glacier face of ten or fifteen feet, and within this only was travel practicable. The boat certainly could pass; but the launching, hauling-up, lading and unlading, rendered this mode of travel injudicious, as well as insecure: it would further cause infinite delay, and at this moment could not be risked.

In the water beneath, but preserving a very respectful distance, we noticed numerous brent-geese, eider-duck, gulls, kittiwakes, and mollymoks, which our crews were very anxious to try their luck with in the boat; but too much rotten ice intervened, and, with the heavy load of provision we were now burdened with, it was peculiarly necessary to husband strength and avoid risk.

Inland in the valley gorge between this and Dépôt Station, a vast lake communication appears to penetrate

about five miles to the south-east; and from the steeply inclined sides of the mountains, a very considerable water surface must prevail. If musk-oxen, deer, or other game exist anywhere in this region, I should be greatly inclined to seek for them there, and the attempt may yet be made from the ship.

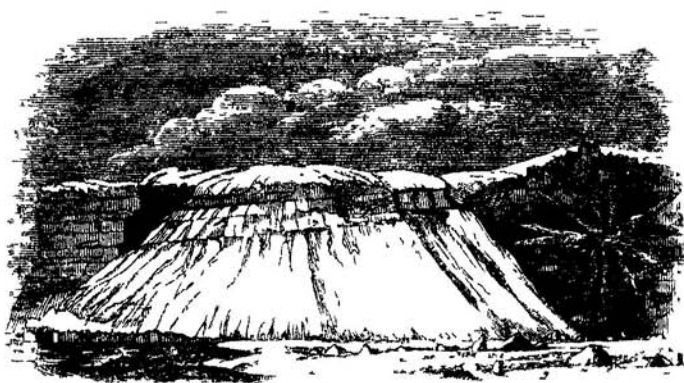
The entire formation of this headland is a fossiliferous grey limestone, with a tendency to oolite, comminuted as usual into four-ounce pieces. Whence the larger lumps were obtained to construct the cairn, I know not, unless they cleared the mountain before our arrival: Commander Richards was unable last season to find more than enough to construct his very small mark.

Making a temporary bed of the smoothest Macadamized spot, I lay down under the lee of the pile, in order to avoid the barber, or condensation and freezing of fog on eyebrows, whiskers, and beard, reducing one literally to Jack Frost, very troublesome and very painful to remove. I happened to drop into a momentary doze, when my watchman pulled me by the coat, and on opening my eyes I noticed before me, in my confused state, a fairy-like vision. About thirty yards in front of me sat, with body and ears erect and fore-paws hanging, a most interesting, inquisitive, snow-white hare. Although in some measure disposed to pity the poor creature, the cruel instinct of our nature prompted me to point my gun, and fire a ball; and this failing, shot followed; but the vision, much to our mortification, vanished. One brent-geese we had, to which this would have been an agreeable addition. But Puss, and many other specimens of Arctic zoology, may thank our bad fowling-pieces for similar escapes

from the National Museums. Events seldom occur singly : I had not moved from my soft gravel bed, having reloaded, when two other furred animals came to inquire the cause of disturbance : one literally ran into my hand, and the other was taken by my attendant. These were two fine specimens of lemming, much resembling moles. Sauntering about, I found, on the very edge of the precipice, a very large vertebra of whale, which I have since discovered to have been carried up the mount last season by some of Commander Richards's party for a mark. Descending to the beach to determine the latitude, which I found to be $77^{\circ} 3' N.$, I continued sauntering about this flat, examining the variety of mineral bodies and fossils here collected and freed from their matrix ; not varying, however, from those of Dépôt Point, excepting that the madreporites here more frequently presented the chalcedony or flinty state. On reaching the pile erected here, I remarked three other vertebræ, much larger and very different to that on the cliff, these having their projecting processes complete, and of a dark, dirty greenish colour ; that noticed at the summit was much bleached. The temperature, under a very oppressive sun, ranged between 28° and 32° in the shade, the water still making, and ice off-shore in motion. About two (having maintained myself independent in the boat since the return of the tent) I endeavoured to recover some of the lost sleep, but without success ; and at four P.M. commenced our lower beacon, removing or constructing a duplicate further out, in connection with the mark seen at the base of Star Bluff.

June 20.—(Six P.M., temp. 28° .) We now pushed for-

ward, and had very intricate travelling; the snow-bank observing the inclination of the *débris*, throwing all the weight on the lower runner, and imbedding it in such a manner that, with all hands and very great labour, it was difficult to make any progress. After mastering two miles of this disheartening work we again reached a flat beach, following up the tracks of our returning sledges, the 'Dauntless,' etc. The bay contained between this and Star Bluff was evidently the great outlet of some extensive lakes, possibly those before alluded to; but its course here was bounded inland for two miles at least by vertical bluffs, extending from Star Bluff, and on the north by high level terraces, swept away at their base by the force of the waters. Three distinct embouchures, with beds of rounded stones and occasional boulders, presented; but not one drop of water! About eleven



we reached the depôt on Star Bluff, not named from any propitious star, because I here took my involuntary C.B. (cold bath), and here was deposited our damaged bread,

as well as additional supplies, which we now wished at the ship. Star Bluff (now named, in compliment to my old captain, Cape Ekins) takes its name from a curious arrangement in the fracture of the cliff face, which ^{we} observed a radiated form; the snow, lodging on the ledges, presented against the dark ground, elsewhere prevailing, a very perfect stellar form,* used by us for a long time, and at great distances, as a mark.

Here we found that the greater part of the provision remained, and we had therefore to overload our sledges and carry it forward. It was unpleasant, and not quite fair to our crew; but delay would make matters worse: it was therefore to be executed, even with our harassed crews; every one was disconcerted, and very dark were our faces. During this process I ascended the hill, where I had ordered a cairn to be built; possibly it was deemed too steep for younger blood: we built three, one a house, the two others were constructed by myself,—the last being on the *inaccessible* summit of True Star Bluff,—and unattended. I must say I would not have ordered it to be done by any but a volunteer.

It is needless to repeat another Step Bluff version: we pushed on, making very slow work, and pitched at a low rubbly point, about five miles in advance. We have now been fifty days engaged at this work, with fair sportsmen and three good private guns, besides two indifferent Government fowling-pieces; and two hares, five ptarmigan, one brent-geese, and several plover, not one day's provision, is our list of game taken. The race past Cape Ekins was rapid, with overfalls; the water abounded with wild-

* The woodcut is more decidedly stellar than the reality.

fowl, but that was all we benefited by this "teeming of animal life." I think it possible, had we launched the boat, that four or five ducks might have been killed; they were all very wary and strong on the wing. How ten men, dependent on their guns, could subsist, I cannot imagine; if travelling, it would be next to impossible. Walrus or bear, if the party was stationary, would afford fuel and food; and, during the season, the skins of both, aided by snow huts, might furnish a miserable shelter: the frozen skin of the walrus would be impenetrable, and the fat could be peeled off as required. How many would survive such a life I venture not to surmise.

At midnight on the 22nd we reached *Depôt Bay*. I was on the heights, obtaining angles, when I observed both sledges, having entered well on the floe, simultaneously turn back: there certainly was open water not far from them, but as both our return sledges could not be much in advance, and we were on their track, I hastened down, and, on reaching them, found that merely surface water had alarmed them. Having extricated the sledges, we double-manned them alternately, and soon surmounted the difficulty, occasionally sinking into the holes, where surface pools had frozen, about knee-deep, but this I knew must be expected just at this season, the true base of the floe having a thickness of at least three feet ice: no accident or truly "break in" occurred.

We now pushed forward for a low spit island, in the depth of *Napier Bay*, in which direction I noticed a sledge advancing under canvas: this was hauled up at the spit, and her crew advanced to aid our party. It proved to be *Lieutenant Cheyne*, despatched by Lieu-

tenant May, who had returned to the ship on the 13th of June, and was the bearer of intelligence from Commander Richards, who had fallen in with Lieutenant Hamilton, of the 'Resolute,' by chance, about one hundred miles west of the appointed rendezvous, to which he was then proceeding. Fortunately, Commander Richards was thus enabled to direct Lieutenant Hamilton where to overtake Lieutenant Osborn, who was also instructed to conduct him to the rendezvous. Lieutenant Osborn was further directed to forward the documents brought by Lieutenant Hamilton, by Lieutenant May, who had thus, on reaching the ship, again despatched them by fresh hands to meet me. the contents of these despatches will be treated on in the following chapter.

Leaving Mr. Cheyne to assist the other parties, after a short rest at this spit island, I pushed on for the ship, with two days' provision: on our outward journey it took three days to get thus far, but now, using the 'Hamilton' as a sledge under canvas, we reached Village Point in four hours, viz. about 9.30 P.M.

Having delayed a short time to obtain some angles, I was in the act of setting up the theodolite: an ominous jarring behind me caused me to start and leap aside with the instrument; providentially I escaped. This pile, constructed of very large stones, fell with a heavy crash on the spot I had occupied; it was twelve feet at base by ten feet high, and flat-topped, to support an instrument.

The work finished, onward we pushed, and at five P.M. on the 23rd of June, ten hours only from the time of starting, I was divesting myself, before a warm fire in my cabin, of my travelling dress.

CHAPTER XIII.

Open Water.—Despatch from Richards.—Notice left by M'Clure.—Stores covered with Snow.—Brewing.—Mustard and Cress.—Return of Richards.—Movements of Western Division.—Game killed.—Canal completed.—Cairn on Barrow Island.—Osborn rejoins.—Mount Acland.—Assistance Spit.—Visit of Pullen.—Port Refuge.

THE great surfaces of open water which I had observed to the northward, added to rumours of the appearance of a similar inclination in the vicinity of the ship, rendered me very anxious to be present, in order to superintend in person any measures which might be expedient for the relief of the southern parties, which might be expected about the 13th of July; but I was much relieved, on arriving at Village Point, to find, by the open water there, that these matters had been very much overrated, and that nearly the same area of water remained as noticed on the 2nd of May; at which date also the ice had manifested similar symptoms off the southern end of the sound, towards Spit Island.

The passage of the Queen's Channel has doubtless been in a similar condition for some time, and attended with danger; but before the period arrives for the final crossing of our party, they will be aided by open water

and their two boats. On examining the inner channel ice, it was found, in the tideway, where many holes existed, to average two feet in thickness.

The Lady Fanny Disco* was despatched (in lieu of a carrier-pigeon) to the ship, adorned with a yellow flannel necklace, within the folds of which a note to my steward was secured, directing him to make the necessary preparations for my return: this trust she faithfully executed. But her poor companion, Mr. Neptune, having been drummed out and declared by all the sledge crews as a notorious pemmican thief, had committed suicide by attempting to steal the bait of a spring-gun set for the wolf which had followed our dogs up to the ship: no one had yet succeeded in capturing one of these animals.

I now proceed to explain the nature of the despatch received from Commander Richards, and the circumstances attending his meeting with Lieutenant Hamilton. Alluding to Lieutenant Osborn he observes:—

“We parted on the evening of the 17th of May, and on the morning of the 18th, steering at the time to the north-westward, I discovered sledge tracks, apparently very recent. Halting the sledge, I proceeded with two of my crew to follow them up, and in the course of an hour came upon the encampment, which proved to be a party under Lieutenant Hamilton, twenty-one days absent from the ‘Resolute;’ we must have passed each other within one mile, but the thick weather, had it not been for the sledge tracks, would have prevented our meeting.

“From Lieutenant Hamilton I learned that H.M.S. Resolute and Intrepid had reached Winter Harbour,

* One of the dogs, so named by the men.

Melville Island, but finding it hampered by ice, had wintered at Dealy Island, Bridport Inlet. That Lieutenant Meham, on his return last season from the duty of laying out the depôts, had fortunately discovered a record left by Commander M'Clure at the Sandstone Rock, in Parry's Winter Harbour, stating that H.M.S. Investigator had been blocked for three winters in the ice, at the "Harbour of Mercy," Banks Land. Captain Kellett consequently had despatched a travelling party to the 'Investigator' in the early spring, and Commander M'Clure succeeded in reaching the 'Resolute' on the 19th of April. The 'Investigator' had lost one man since entering the ice."

The following is a copy of the document left by Commander M'Clure:—

Abstract of the Proceedings of Her Britannic Majesty's Discovery Ship 'Investigator,' since parting company with the 'Herald,' upon the 31st July, 1850, off Cape Lisbourne.

August 2, 1850.—5 20 A.M., lat. $72^{\circ} 1' N.$, long. $166^{\circ} 12' W.$ Made the ice, which did not appear heavy; but upon entering it a short distance was undeceived, and ran out.

August 5.—In running along the pack edge, endeavouring to find an opening, exchanged numbers with the 'Plover,' and at 11 A.M. made a low shingle beach to the eastward of Wainwright Inlet, and at midnight rounded Point Barrow in 73 fathoms, but from the foggy state of the weather did not see it.

August 8.—1.45 A.M., being off Point Drew, sent Mr. Court, Second Master, and Mr. Miertsching, interpreter, to deposit a notice of our having passed, who met some Esquimaux that had arrived three days previous. These trade with the Russians, and were very friendly; therefore sent a letter, with the chance of its reaching the Admiralty. We also heard from them that last year three boats had passed to the eastward, with white men and Indians, which was most probably Lieutenant Pullen. In the evening erected a cairn, and buried another notice at Point Pitt.

August 9.—Passed the Colville, about forty miles from its entrance, in three fathoms and a half.

August 11.—Deposited a notice upon Jones's Island, which was thickly strewed with drift wood; in the forenoon two baidars, containing twenty-four natives, came alongside. The chief possessed a gun, with "Barnet, 1840," on the lock, obtained from the Russians. Bartered tobacco for salmon and ducks. In the afternoon communicated with another party, who were exceedingly intelligent and clean. Sent despatches for the Admiralty, *via* Colville, and from what the interpreter states, believe that they will arrive.

August 12.—Several baidars came alongside, received fish and ducks for presents of beads and tobacco; these are adroit pilferers. Ran upon a shoal eight miles north of Yarborough Inlet, having, during the last two days, narrowly escaped several of these dangerous banks, which are very little above the water, and hidden from view by the ice. Hove off with stream anchor, but unfortunately upset a whale-boat, and lost eleven casks of beef, having to carry sail to prevent being again set on shore.

August 15.—Found it impracticable to get two miles in any direction, the ice having closed from the northward, resting on the shoals in that direction, and to the southward on the low banks which we grounded upon yesterday. Anchored to await some favourable change.

August 16.—Ice to northward of shoals having slightly eased, leaving about a hundred and fifty yards of open water; weighed, and warped through two cables' length of ice to get into it, which occupied six hours of hard labour, so heavy was the pack. a

August 17.—Noon. The weather, which had been foggy, cleared, with a breeze from the north-east, made sail through heavy sailing ice, occasionally striking violently. Navigation along this coast very dangerous, the sand-banks being low and numerous Lat. $70^{\circ} 30' N.$, long. $148^{\circ} 4' W$

August 21.—Made the Pelly Islands, off the Mackenzie, since the 17th have encountered very heavy ice; ran ninety miles into a bight, which brought us to the solid pack: fortunately we were enabled to run out of it before it closed.

August 24.—Observed some huts a little to the westward of Point Warren; sent despatches for the Admiralty, with the hopes of their being forwarded by the Hudson's Bay Company. This tribe however have no traffic with them, but barter with others further west that trade with the Colville, giving as their reasons, that the Hudson's Bay

Company had given the Indians water which had killed many of them, and that they did not wish to have any; they appear savage and war-like, and are at enmity with their neighbours. Brought the despatches back.

August 30.—Observing a post erected on the beach, near Point Maitland in Liverpool Bay, sent to examine it, and deposit a notice of our passing; found it was an Esquimaux' mark, who apparently had recently quitted it, there being several *caches* containing birds and fish. In the afternoon, whilst approaching Cape Bathurst, observed Esquimaux on the shore; upon communicating with them found that they belonged to a tribe now at Cape Bathurst, who were catching whales, and the same who had seen Sir John Richardson last year. In the evening, being thick, and getting into three and a half fathoms, anchored between Baillie's Island and the main.

August 31.—Proceeding to Cape Bathurst; tribe consisted of three hundred, very friendly, would go south in three weeks; gave them despatches for the Admiralty, a gun and ammunition to the chief, and many presents among them, and, judging from their cleanly appearance, have great expectation of their reaching.

September 1.—Off Cape Bathurst; many natives came on board, and being nearly calm, remained until evening, when a breeze springing up, we took our final leave of the Esquimaux on the American coast, fully convinced that neither the ships nor any of the crews of Sir John Franklin's Expedition have ever reached these shores. They appear a quiet, inoffensive people (with the exception of those at Point Warren, which the Cape Bathurst tribe have no dealings with), and would assist any white people thrown amongst them. The whole of this coast is shallow, but with the lead may be safely navigated, the soundings being very regular: the shoals terminate about thirty miles to the eastward of Yarrowborough Inlet, and water varying from one mile to forty in breadth may be calculated upon along shore, between the beginning of August and 10th of September, according to the winds, more or less ice encumbered; but the natives state that every year the ice opens from the shore. We found the prevailing winds from east-south-east to north-east.

September 6.—11 30 A.M., being to the northward of Cape Parry, remarked high land from north and east to east-north-east.

September 7.—9.30 A.M., landed, and took possession of the discovery, and named it Baring Island. The land is bold upon the southern side, being upwards of one thousand feet in height, its northern being

Banks Land. Erected a signal pole with black ball, and left a notice, in lat. $71^{\circ} 8' N.$, long. $122^{\circ} 45' W.$

September 9.—Observed land north-north-east; named it Prince Albert's Land, which is continuous with Wollaston and Victoria Land, and extends north to lat. $73^{\circ} 24' N.$, long. $112^{\circ} 48' W.$

September 11.—Ship beset, lat. $72^{\circ} 52' N.$, long. $117^{\circ} 3' W.$, but ice in motion.

October 8.—Since the 11th of last month have been drifting in the pack, narrowly escaped destruction several times, until, with a heavy nip, at three A.M., which listed the ship $3\frac{1}{2}^{\circ}$, we were firmly fixed for the space of nine months in lat. $72^{\circ} 47' N.$, long. $117^{\circ} 34' W.$

October 10.—Took possession of Prince Albert's Land, distant four miles.

October 18.—And, today, of the Princess Royal Isles, lying in the centre of Prince of Wales Strait, distant four miles from the ship (lat. $72^{\circ} 46' N.$, long. $117^{\circ} 44' W.$). There is erected a large cairn, pole, and ball upon its summit, and have deposited three months' provisions for sixty-six men, besides leaving a boat and some ammunition.

October 21.—The Captain, Mr Court, and party, started to trace this Strait towards north-east.

October 26.—Discovered the entrance into Barrow Strait, in lat. $73^{\circ} 30' N.$, long. $114^{\circ} 14' W.$, which establishes the existence of a north-west passage

October 30.—Five musk-oxen shot upon Prince Albert's Land which terminates our operations for 1850

April 18, 1851.—This day despatched three travelling parties to search the coast line Lieutenant Haswell to south-east, towards Wollaston Land; Lieutenant Cresswell in direction of Banks Land; and Mr. Wynniatt, Mate, to north-east; who respectively reached the positions as noted in the margin, and traced the coast as per accompanying chart.

Captain and Mr. Miertsching, the interpreter, communicated with the Esquimaux upon Prince Albert's Land, about sixty miles south of our position, who had previously been met by Lieutenant Haswell. They traced the coast-line as marked in the chart, and state that there are many of their tribes inhabiting the land towards the south, but that they know of none to the northward; they are a kind, simple people, and have never before seen the white man, at whom they were evidently alarmed.

July 14.—Ice opened without any pressure, and the vessel was

again fairly afloat,—but so surrounded with it that we only drifted with the pack, having been able to use our sails but twice, and then only for a few hours, up to the 14th of August, when we attained our furthest northern position in Prince of Wales Strait, lat. $73^{\circ} 14' N.$, long. $115^{\circ} 32' 30'' W.$

August 16.—Finding our passage into Barrow Strait obstructed by north-east winds, setting large masses of ice to the southward, which had drifted the ship fifteen miles in that direction during the last twelve hours, bore up to run to the southward of Baring Island.

August 20.—Lat. $74^{\circ} 27' N.$, long. $122^{\circ} 32' W.$; have had clear water to reach thus far, running within a mile of the coast the whole distance, when our progress was impeded by the ice resting upon the shore. Secured to a large grounded floe piece in twelve fathoms; ice appears to have been but recently detached from the coast.

August 29.—Ship in great danger of being crushed or driven on shore, by the ice coming in with heavy pressure from the Polar Sea, driving her along within one hundred yards of the land for half a mile, heeling her 15° , and raising her bodily one foot eight inches, when we again became stationary, and the ice quiet.

September 10.—Ice again in motion, and ship driven from the land into the main pack, with heavy gale from south-west. Succeeded in getting clear from main pack, and secured to a large grounded floe, lat. $74^{\circ} 29' N.$, long. $122^{\circ} 20' W.$

September 19.—Clear water along shore to eastward. cast off, and worked in that direction, with occasional obstructions and several narrow escapes from the stupendous Polar ice, until the evening of the 23rd, when we ran upon a mud-bank, having six feet under the bow and five fathoms astern; hove off without sustaining any damage.

September 24.—Daylight, observed Barrow Strait full of ice, and large masses setting into the bay; determined on making this our winter-quarters, and finding a well-sheltered spot upon the south end of the shoal upon which we last night grounded, ran in and anchored in four fathoms, lat. $74^{\circ} 6' N.$, long. $117^{\circ} 54' W.$ This night were frozen in, and have not since moved. The position is most excellent, being well protected from the heavy ice by the projection of the reef, which throws it clear of the ship six hundred yards.

The currents along the coast of the Polar Sea appear to be influenced in their direction, more or less, by the winds; but certainly on the west side of Baring Island there is a permanent set to the eastward; at one time we found it as much as two knots during a perfect calm, and

that the flood-tide sets from the westward we have ascertained beyond a doubt, as the opportunities afforded during our detention along the western shore of this island gave ample proof.

The prevailing winds along the American shore and the Prince of Wales Strait we found to be north-east, but upon this coast south-south-west to north-west. A ship stands no chance of getting to the westward by entering the Polar Sea; the water along shore being very narrow and wind contrary, and the pack impenetrable but through Prince of Wales Strait, and by keeping along the American coast I consider it practicable.

Drift-wood is in great abundance upon the east coast of Prince of Wales Strait, and on the American shore also. Much game abounds. In this vicinity the hills abound in reindeer and hare, which remain the entire winter. We have been very fortunate in procuring upwards of four thousand pounds.

The health of the crew has been and still continues excellent, without any diminution of numbers: nor have we felt the slightest trace of scurvy.

It is my intention, if possible, to return to England this season, touching at Melville Island and Port Leopold; but should we not be again heard of, in all probability we shall have been carried into the Polar pack, or to the westward of Melville Island: in either of which any attempt to send succour would only be to increase the evil, as any ship that enters the Polar pack must be inevitably crushed; therefore a depôt of provisions, or a ship at Winter Harbour, is the best and only certainty for the safety of the surviving crews.

No traces whatever have been met with, nor any information obtained from the natives, which could by any possibility lead to the supposition that Sir John Franklin's Expedition, or any of his crew, have ever reached the shores we have visited or searched; nor have we been more fortunate with respect to the 'Enterprise,' not having seen her since parting company at the Strait of Magellan on the 20th of April, 1850.

This notice was deposited by a travelling party in April, 1852, consisting of

CAPTAIN M'CLURE,
MR. COURT, *Second Master*.
JOHN CALDER, *Captain Forecastle*.
SERGEANT WOON, *R.M.*
GEORGE GIBBS, *Ab.*

GEORGE BOUNSELL, *Ab.*

JOHN DAVIS, *Ab.*

PETER THOMPSON, *Captain Foretop.*

Whoever finds this, it is requested it may be forwarded to the Secretary of the Admiralty.

*Dated on board Her Britannic Majesty's Ship
'Investigator,' frozen in in the Bay of
Mercy, lat. 74° 6' N., long. 117° 54' W.—
April 12, 1852.*

(Signed) ROBERT M'CLURE, *Commander.*

Unless there is a vessel now at Melville Island, it is not my intention to revisit it, but make the best of my way down the Strait.

(Signed) ROBERT M'CLURE, *Commander.*

'Resolute,' Dealy Island, April 27, 1853.

Found 'Investigator' at Bay of Mercy (having lost *one* man since entering the ice), by a travelling party from 'Resolute,' that left the ship on March 10, 1853. Captain M'Clure arrived on board this ship on April 19. Detailed accounts will be sent to Beechey Island. She has not met with any traces of missing Expedition.

H. KELLETT.

Commander Richards continues:—"I also learned from Lieutenant Hamilton that Commander M'Clintock had left the Hecla and Griper Gulf early in April, to carry out the search to the westward.

"It would therefore have been worse than useless for me, under these circumstances, to follow out my original intentions. And considering that it would be for the benefit of the service that I communicated with Captain Kellett, inasmuch as it would enable me to bring you his despatches, the latest intelligence of what had been effected by his parties, as well as the determination which had been come to as to the abandonment of the 'Investigator,' I resolved at once on this step, and to return by

the southern coast of Melville Island, and up the Byam Martin Channel. Directing Lieutenant Hamilton to the rendezvous for your despatches, and desiring him to endeavour to overtake Lieutenant Osborn, and deliver to him Commander M'Clure's journal, we parted without loss of time."

But let us now revert to the 'Assistance.' Many changes had occurred; but one idea prevailed,—that she had exchanged her snow-white bath for the semblance of a filthy farm-yard: I could barely credit my senses.

The decided action of the tides now furnished undoubted proof of the release from outward floe pressure by the increased gaping of the cracks, as well as gradual motion of the ice off shore. The thaw also materially assisted this latter action, and rendered me anxious to recover our stores, still buried beneath the snow, affording at the same time an important warning, not to be lost sight of at a future season. Had any sudden break-up of the ice occurred and carried the ship out, most assuredly a very considerable portion of the standing fittings of the ship would have been left behind, buried beneath the snow, and, as it so happened, without any soothsayer to divine in what spot. Every effort was therefore directed to the embarkation of the Observatory, boats, spars, etc. with the utmost despatch; and so tedious did this duty prove, that up to the latest moment it was barely completed.

The next object was the release of the vessels from the ice, still adhering to the bows and bottom, to about seven or eight feet beneath the probable line of flotation. In order to effect this without injury to the ship,

the space between the 'Assistance' and 'Pioneer' was commenced on by saws and blasting; but this proving tedious, owing to very heavy ice, ranging between seven and fourteen feet, about the 1st of July we tested the thickness of the outer ice to the nearest water, which we found to range from seven feet at our bows to two feet at six hundred yards seaward, where the water was fast increasing.

Brewing from essence of malt and hops had been practised as early as the 6th of August last season, but the general adoption of our "home-brewed" did not fairly commence until the end of October; with what success I shall leave my readers to judge from the following report of the officer who superintended. It was much esteemed, and at times mixed to dilute the excellent beer supplied by Messrs. Allsopp.

*Her Majesty's Ship 'Assistance,' Wellington Channel,
October 31, 1853*

SIR,

1. In compliance with your directions, I have the honour to report upon the beer brewed from the essence of malt and of hops on board this ship during the winter 1852-1853, as follows, viz. —

2. An experiment was made on the 6th of August, 1852, to brew with the proportions prescribed by the makers (Hudson and Co.). Eighty pounds of malt and three pounds of hops were mixed with boiling water, and then started into a fifty-six gallon cask (filling it), placed by the side of the galley-fire: when the temperature had fallen to 90° there was added half a pound of yeast, in a state of fermentation, made by mixing dried yeast, sugar, and flour, in hot water; but although signs of fermentation were occasionally apparent at the bung-hole during the day, yet, from the low temperature that prevailed at night (consequent upon the absence of the galley-fire), it could not be got to work satisfactorily. The beer produced, although palatable and drunk by the ship's company, was so weak, from the inadequacy of the

quantity of ingredients used, and so flat, in consequence of the inability to raise sufficient fermentation, that it was scarcely equal to the smallest table beer.

3. On the 23rd of October, 1852, the ship being fixed in winter quarters,*and the Sylvester warming apparatus at work, maintaining a constant equal temperature, brewing operations were commenced, with the view of keeping up a periodical supply for the ship's company.

4. The proportions used were,—essence of malt, 120 lbs., and of hops 4 lbs., to fifty-four gallons of water: these were boiled together for two hours in the ship's coppers, and then put into a fifty-six gallon cask, which was placed (for the purpose of obtaining the highest temperature in the ship, steady at about 70°) by the side of the funnel of the Sylvester warming apparatus. In about eighteen hours after, the temperature of the mixture had fallen to 20° , when yeast was added, and generally in a few minutes produced vigorous fermentation, which was maintained for seven or eight days, the froth being thrown off at the bung-hole and received from a leather spout, nailed on the side of the cask, into a tub placed on the deck, from which the cask was kept filled as it became necessary, for the first two days almost every hour, and afterwards at longer intervals, as fermentation slackened. As soon as it had ceased to work, the cask was bunged up and removed, to settle and fine for a fortnight; it was then broached for issue.

5. The beer thus produced was highly prized, and I think I may venture to state that, both for strength and flavour, it was all that could be desired.

6. From this time (October 23rd) until the end of the following April, a constant supply of this beer was maintained, at the rate of one pint for each person twice, and sometimes three times, a week, besides other occasional extra issues; for which purpose it was necessary to appropriate three fifty-six gallon casks,—one to issue from, the next to settle and fine, and the third in a state of fermentation.

7. The total quantities of the essences consumed during this time were—of malt, 1620 lbs.; hops, 44 lbs.; and the beer produced was 702 gallons.

8. Although the beer thus necessarily issued a fortnight after being brewed was of good quality, yet I would beg leave to remark, that had it been practicable to have allowed it to stand for a longer period (as in the case of beer brewed in England), there is good reason to suppose that it would have become scarcely inferior to English porter of the first quality.

9. There now remain for brewing (to be commenced, in pursuance of your directions, as soon as the hold is cleared), essence of malt, 780 lbs.; hops, 40 lbs.

I have the honour to be, Sir,

Your most obedient, humble servant,

JAMES LEWIS,

Clerk in charge.

CAPTAIN SIR EDWARD BELCHER, Kt., C.B.,

*Her Majesty's Ship 'Assistance,' and Commanding
Arctic Searching Squadron.*

Mustard and cress were also raised, under the superintendence of the same officer, whose Report also follows. The supply was deemed, for our condition, adequate; but I am not prepared to state that it would have proved more than sufficient for the invalids, if we had been visited by any cases of actual scorbutus; but even as a salad, of which the French sliced potatoes and dried cabbage also furnished excellent substitutes, it was a most grateful change to the eye, jaundiced a little by want of the sun's rays. It is a curious fact however, that in my cabin, daily exposed to the light of candles, a decided green tint prevailed; this was grown either on white cotton, wool, or blue flannel, the latter covered from light. The wild sorrel might be found as a rare plant about us, but, excepting to botanical collectors, we did not derive any benefit from its presence, nor indeed from anything belonging to the vegetable kingdom.

*Her Majesty's Ship 'Assistance,' Wellington Channel,
October 31, 1853.*

SIR,

1. In compliance with your directions, to report upon the growth of mustard and cress on board this ship during the last winter, I have

the honour to state, that on the 19th of January, nine boxes having been prepared, of about two feet in length, one in breadth, and four inches in depth, two inches of soil were laid in them, which was obtained from the roots of mosses found upon the land of Northumberland Sound; mustard and cress seed sown over the surfaces, and covered with a light sprinkling of fine mould. The boxes were placed in the main hold, in the vicinity of the Sylvester warming apparatus, where the temperature ranged from 60° to 70°, and the soil kept moist by water warmed to a temperature of 80°, and delivered through a rose fixed with a spout upon the side of a preserved meat tin it required watering about four times a day.

2. On the 31st of January (thirteen days after sowing) the first crop was obtained and issued generally to the crew affording about one ounce to each person, the soil was then cleaned and invigorated by the addition of a little fresh mould, and more seed sown.

3. The crops generally became fit for cutting in about a fortnight, depending upon the temperature that could be preserved, and on an average yielded between four and five pounds, and, although yellow from the absence of light, and less crisp and palatable than when grown under favourable circumstances, was generally greatly esteemed; and, in the absence of fresh vegetables, much sought after by the ship's company. Crops were thus obtained up to the end of April, the seed consumed being—mustard, 3 lbs., cress, 3 lbs., and the quantity produced, about 30 lbs.

4. On the 20th of June, a box having been prepared of about six feet in length, two in breadth, and one in depth, soil was made by mixing together a sandy mould, brought from Greenhithe, with that obtained on the land at the winter quarters, and placed over a layer of straw and coal ash in the box to the depth of four inches, when some early York cabbage-seed was sown over one-half and spinach-seed over the other, and lightly covered with mould: large panes of glass were put over the top, and the box placed on the side of the hill of Mount Beaufort, about thirty feet above high-water mark. An embankment was raised around the box to protect it from cold winds, and every attention paid to obtain a satisfactory result, the soil being kept moist by water raised to about 60°.

5. On the 27th of June (eight days after sowing) the plants began to show themselves, and from this time to the ship's leaving Northumberland Sound, on the 15th of July, made rapid progress, their tops reaching up to the under surface of the glass; they were then pulled

up, and filled a large dish : had it been practicable to have kept them, under such favourable circumstances, for three weeks longer, I think they would have repaid the attention bestowed upon them.

6. Turnip radishes were also tried in a small box, covered with glass, but, from the length of time they took to come up, the result could not be considered satisfactory : the short duration of suitable weather would, under the most favourable circumstances, render it impracticable for the root to acquire a size fit for use ; but occasionally, in warm seasons, the tops might be raised to a sufficient size to be valuable as a vegetable.

7. The boxes used in the winter for the growth of mustard and cress were now employed more successfully ; the same description of soil was used, mustard and cress seed sown, and the boxes placed, some under the glass covering of the main hatchway, the skylight of the gun-room, the glass binnacle covers, and others under panes of glass ; and by being carefully tended, and watered with water slightly warm, plentiful crops of mustard and cress, in its natural colour and equal to any raised in England, were procured and issued to the travelling parties after their return from the spring search. The total quantity thus grown was about 25 lbs.

8. The seed supplied to the ship was—mustard, 20 lbs.; cress, 28 lbs.; and 13 lbs. of each still remain.

I have the honour to be,

Sir,

Your most obedient, humble servant,

JAMES LEWIS,

Clerk in charge.

CAPTAIN SIR EDWARD BELCHER, Kt., C.B.,

*Her Majesty's Ship 'Assistance,' and Commanding •
Arctic Searching Squadron.*

On the 6th of July I began to feel uneasy at the state of the outer ice; and, fearful that our return parties might be too weak to handle their boats in the rough ice, I despatched Mr. Loney with a cutter and eight men, with instructions to touch at Cape Sir John Franklin, Barrow Island, and Cape Lady Franklin, on the southern shore,

at which latter place he was to await the arrival of Commander Richards.

Our cutting operations proved heavy and very tedious. The snow bank between the 'Assistance' and the 'Pioneer' having formed into solid tough ice, compelled us to remove it piecemeal. This afforded practice to the men in the most effectual modes of removing ice: however, it soon became apparent that the off-shore pressure closed the cuts as they were made, and that our efforts must commence *de novo* from the outer verge at the water, where we had now sufficient space to float off our cuttings.

We had yet a difficult game to play; as we were threatened with infinite labour, should the ice move after our canal was complete. My mind had been made up to start on the 14th of July, and every effort was put forth to effect this object. On the 11th we had completed the first six hundred feet by sixty wide in twelve hours, meals included: the ice had been removed to sea, and dock-gates placed to secure it from closing.

On the 12th, before noon, the cutter was discovered under sail, and the ice-boat of the 'Pioneer,' with the banner of Commander Richards flying, in tow. We advanced to the mouth of the canal, and, opening the gates, admitted them. At three I had the pleasure of taking Commander Richards by the hand, and congratulating him on his safe return, after an absence of ninety-five days. As we had much to talk of, I sent him to his hot bath, reserving further communication until dinner.

At eight this evening the 'Assistance' was once more afloat, her course unimpeded, but we had yet to extri-

cate the 'Pioneer.' Commander Richards was the bearer of complete reports, as far as time would permit, from the western division; the originals were to be forwarded to Beechey Island, and included just the contents of Commander Richards's letter up to arrival there

June 8.—This letter of Captain Kellett informs me "that Mr. De Bray, auxiliary to Commander M'Clintock, arrived on the 18th, having left him, with seventy days' provision, on the 2nd of May, in $76^{\circ} 8' N.$, longitude $116^{\circ} 45' W.$ To the northward, all the way to Cape Fisher, he could see land, apparently islands, forty miles off: these he will search on his journey home. Unfortunately, Mr. De Bray lost a man (John Coombs, stoker); he died from disease of the heart. Commander M'Clintock speaks in high terms of Mr. De Bray; he says he could not have had a better second.

"Mr. Nares, auxiliary to Lieutenant Meham, arrived on the 1st of June; he had a disabled Marine with him: he left Lieutenant Meham on the 3rd of May; latitude $75^{\circ} 35' N.$, longitude $118^{\circ} W.$; having crossed from Melville Island to Prince Patrick's group or land, whatever it may be. This name I have given to it, as it was landed on and taken possession of on his Royal Highness's birthday. All these parties will be back by the 7th of July.

"Commander Richards's coming here has been most fortunate; he will take direct to you all information relative to this part of the Expedition, and will also finish the Byam Martin Channel, the search of which I have been unable to undertake, for want of means. My intended movements are as follows:—1st. Should 'Inves-

tigator's' crew be found unfit to contend with another winter, I shall proceed with both ships to Beechey Island. Should I find no contrary orders from you there, I shall despatch 'North Star' and 'Intrepid' to England, taking 'North Star's' place myself. 2nd. Should they be found able to contend with another winter on the increased allowance of provisions, I shall despatch 'Intrepid,' the moment water makes, with that portion of 'Investigator's' crew now here, and reduce my own to thirty men and eight officers, with directions to proceed to England, depositing all the coal and provisions she can spare at Beechey Island, if it can be done without risking another winter within the Arctic circle, remaining here myself for the result of Commander M'Clure's attempt to cross the strait in his ship, and finally to remain next winter in this neighbourhood, if he fails in getting across."

The remaining parts of his letter, alluding to operations after becoming extricated, must wait for that consummation. Dr. Domville, whom he had despatched to survey the remaining crew on board the 'Investigator,' had not returned when Commander Richards left; but he seemed to think that she would be abandoned, which it is to be hoped has long ere this been done. These mousetraps are not easy of escape! In his private letter he adds, "Should I be obliged to stay, I shall send a party next year to the south point of Baring Island to look for Collinson, and one to Point Cockburn to meet yours or 'North Star's.'" Commander Richards gives a cheering description of their luxurious feeding, having been regaled with every known Arctic delicacy but sal-

mon, and that they promised, if he waited until it was caught. The following list of game killed exhibits at once the difference of our positions.

'RESOLUTE's' LIST OF GAME KILLED BETWEEN 3RD OF SEPTEMBER, 1852, AND 6TH OF JUNE, 1853.

Animals.	Killed.	Average weight.	Estimated no. seen.	Remarks.
Musk-oxen.	39	300lbs.	500	In all probability the same animals were seen by different parties. Musk-oxen were seen near this position on the 6th of December, 1825. Two ptarmigan were shot on Dealy Island the first week in January, 1853. May 18th, caught a calf, size of a small lamb; died four days after capture.
Deer . .	10	160	250	
Hares . .	48	11	100	
Foxes . .	46			
Wolves . .	2			
Bears . .	1			
Ptarmigan .	81	2		
Lemmings .	5			
Geese (lately)	3			

We owe a deep debt of gratitude for all the mercies vouchsafed unto us., In all these travels, dangers, and difficulties, not one casualty has occurred, and health has prevailed. The cutter sent for relief arrived at the very moment required, and, as if every preparation had been anticipated, the passage nearly to the ship's bow was open. As Kellett and Richards both observe, "If you had made your suggestions, orders, to be executed, and drawn them out yourself on a fair sheet of paper, they could not have been more completely realized." The rendezvous, the discovered lands, south-west and north-east, have, it is true, all terminated like dreams realized or matters in course; they have caused no ex-

citement, no surprise,—they were almost outlined in August and September last, even before quitting England ! The last speech at the gun-room table, on the evening before separation from our consorts at Beechey Island, was the injunction to the ‘Resolute’s,’ “to observe the Rendezvous.” Most gratefully and joyfully did I find my old shipmate beside me at dinner, relating his adventures, but his appetite was gone : after his musk-ox and venison feeding, he could not relish even a fair (pickled) Hogarth steak ! So much for depraved taste : I know he does not admire walrus. But the main topic was the wonderful and peculiar discovery of the ‘Investigator’s’ position on the return of Lieutenant Meham. Will the cavillers at the expense of this Expedition now deem it absurd ? May not Collinson yet be fortunate enough to overtake his second, and reach England quite as soon ? But many a weary mile is yet to be travelled ere we all reassemble at Beechey Island, and there only perhaps to form fresh plans for the extrication of some unfortunate members of our own Expedition !

Richards was truly surprised to find our exit from this position no longer doubtful ; for hardly had the cloth been removed, when it was reported that “the canal was open and ship afloat,” a service executed in twenty-six working hours by sixty-four men.

On the summit, and within the cairn on Mount Beaufort, four hundred rations were deposited, duly secured in iron-bound casks. The staff surmounting is well marked with a tinned light flour-barrel at its summit ; and several bands of lead nailed on spirally, bearing the requisite instructions cut with metal type-punches, put all

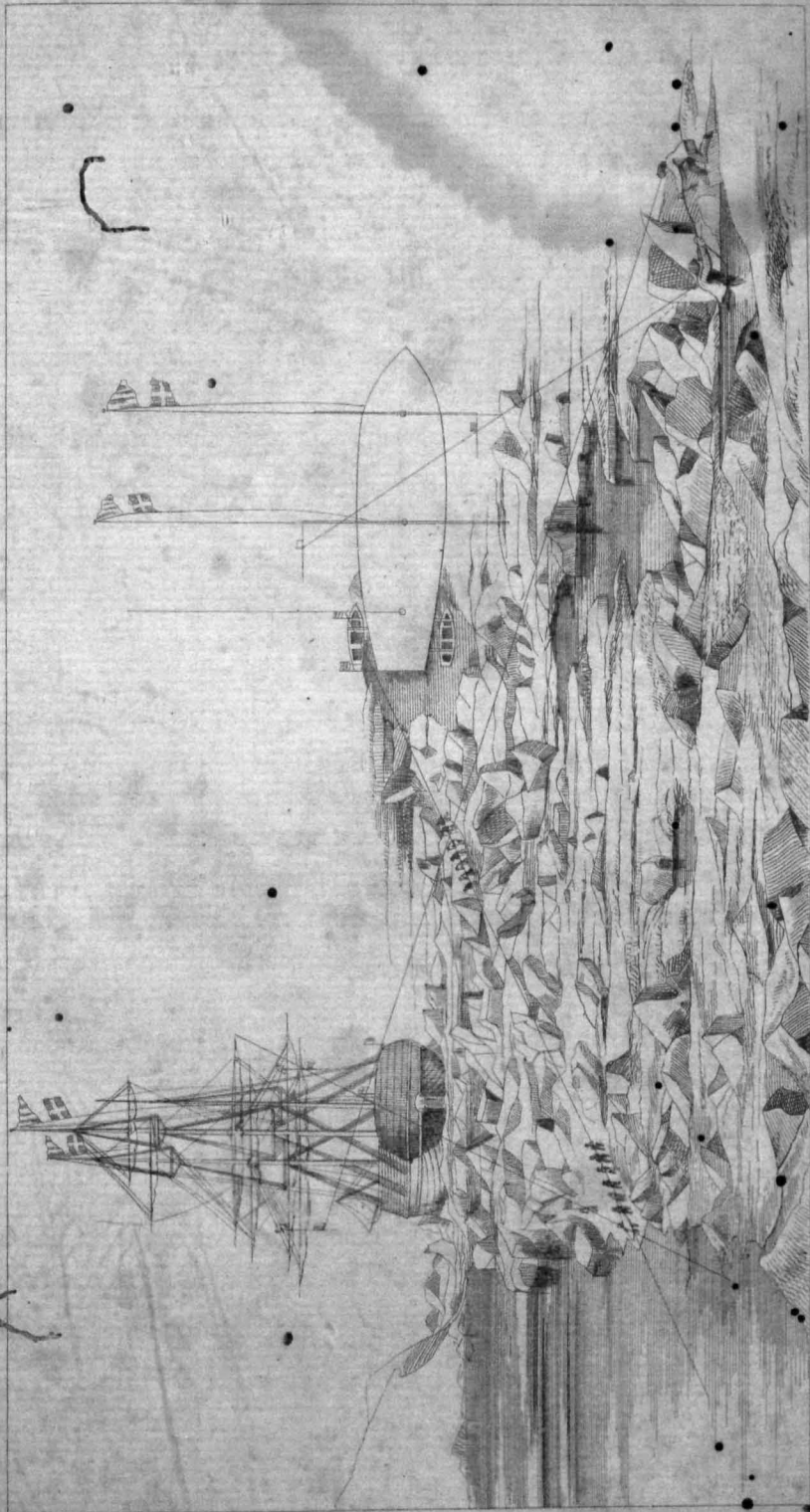
uncertainty at an end. Those would inform the visitor "that in the butt-end of the spar, closed by a well-prepared plug, full information would be found." The roll on which they were inscribed was protected by tinfoil and glue, again by bladder, and finally by tinfoil: it may last for ages. The casks and other pieces of wood strewn about them would afford substantial fuel for heat, as well as cooking: they were not reduced.

Richards found at the rendezvous, that Lieutenant Osborn had taken the boat and gone to the south-east, to examine the coast between Cape Lady Franklin and Cape Marshall, and Goodsir's furthest: as his date and provision would expire on the 15th, we should not be long in doubt. My orders for his guidance, sent by Mr. Loney, were left at the rendezvous. Richards and Loney then proceeded to examine Barrow Island, but without discovering the remotest trace of our missing countrymen. A cairn was constructed, and notice left; they then repaired to the ship. The sooner therefore we show ourselves on the dark-blue wave, the sooner our stray sheep will rejoin. A depôt was prepared for Loney's station, at the southern point of the bay. I visited my main station on Pioneer Island, and obtained a clear view around; took leave, and on the morning of the 14th, eleven months from the date of our quitting Beechey Island, started in the 'Hamilton' to place the depôt on Loney's Point, the southern and well-known station of this sound, surmounting it by a large blue and yellow flag, horizontally divided. I was yet doubtful as to the moment of starting, and had prepared provision for "sleeping out," etc. Having already ordered 'Pioncer' to have her steam up,

the signal to start was made, and once more I had the satisfaction of seeing the vessels in motion on their proper element. They were brought to a temporary block between me and Spit Island. This was eventually overcome, and I rejoined at eleven p.m., just before she entered another lane leading towards Cape Sir John Franklin, where Commander Richards and myself landed about one a.m., and visited the station on Mount Percy. All the southern land was well defined, but, aided by a powerful telescope, I was unable to discover the beacon on Cape Lady Franklin, or any trace of our boat. I remarked that the latter might possibly have taken the western side of Spit Island, and thus be hidden. The sea was still open up to the point, shutting out Cape Becher. We therefore rejoined and moved on: Lieutenant Osborn, having my instructions, would seek the vessels in that direction: further instructions and provisions awaited him at Loney's station.

July 15.—At midnight Lieutenant Osborn was seen at our floe-edge, and a party sent to aid him in the 'Hamilton.' The mode of direction to both parties was by placing two ship's flags on the proposed line of junction; each party keeping these in line,—although not in sight from each other, by reason of high packed ice,—must naturally meet.

Shortly before midnight Lieutenant Osborn rejoined. As I anticipated, he landed at Spit Island, and was asleep when I was seeking him by telescope from Mount Percy: finding the bay vacant, he moved forward without calling at the depôt on Loney's Point, and fortunately overtook the ship. His search of the southern coast of



Breton Signals where obstacles intervene

Queen's Channel had been unsuccessful, and as all his news had been anticipated by Commander Richards, and both were weary (I had not slept for I will not say how many hours, and the ship was fast to the floe), we parted to rest.

Here we are all, thank God, safe, and in good health ! Our advance too, even thus far, is matter to be thankful for, and in these regions almost another achievement.

The tedium of detention I shall pass over, we gained by it a longer sight of Barrow Bay and Johnny Barrow Mount than was interesting, and on the 17th we fortunately got inside the movable pack, and made fast to the solid land floe, with one anchor down, at eight P.M. The ice here was very heavy, and aground in seven fathoms, consisting of massive piled hummocks up to the shore. To be caught here undocked would be dangerous: still, there was barely depth to do this with safety, and a heavy stony gravel lay beneath. Ascending the high shoulder of this mountain,—which I named Acland, after that esteemed baronet, Sir Thomas Dyke Acland,—I found that it coincided exactly with an object which I had taken from Mount Percy, with the idea of making it a station, and from which it could be seen through a gap in the island intervening. It commands the north entrance to Sir Robert Inglis Bay, Capes Becher and Majendie, Dundas Island, and all round to Barrow Island and Long Island extreme. A very conspicuous cairn was here erected out of large masses of magnesian limestone, not likely to be affected by weather or time. Our dock was cut into four fathoms. From this height I discovered, about five miles off shore, what I suspected was an island,

in August last, almost a spit in the fairway, and not far from it an isolated mass of ice, evidently aground; two dangers which we have now time to determine, and as the ice at present does not appear to offer any chance of escape, the examination may afford amusement.

From the view which this mount afforded, I could trace open water from Cape Becher to a neck south-east from us, about seven miles, affording a broad triangular space of open water, within three miles east of our position. On the west it was met by another wedge of water about two miles beyond our island, from which, in a curve easterly, it formed up to our position at the floe-edge. All this ice appeared firm, and did not indicate any symptom of having moved this season near the small island. It was grounded, and appeared to have formed on it, not pressed up by violence: this little island, for the present, was termed Assistance Spit.

All the possible projections within and without the Queen's Channel have now been so minutely visited and searched, that I feel fully satisfied that Sir John Franklin's ships left no traces of their visit, if they ever passed up Wellington Channel, which we consider very problematical. I speak not of small cairns, because he never, with Fitzjames as his aid, would do anything by halves. But we have but too often been disappointed even by a moderate-sized stone, to pass over anything constructed of that material. It is true, cairns or piles will tumble; but they still leave enough to excite attention, although some of Penny's travellers have not so placed them that they are easily found: and the erection of two so near as Cape Majendie and Cape Becher, and placing them on

the chart so far asunder, nearly deranged my communications, Cape Majendie having been mistaken for Cape Becher, and there our depôt was placed. At all positions visited by this division the cairns have been rebuilt; should they tumble, they still will exhibit remarkable piles. Other observations on this channel will follow hereafter, relating to its uncertain navigation, which will probably dispose of the second question,—that of vessels being drifted up, subject to pressure.

Mount Acland is composed of rubbly magnesian limestone, without one trace of vegetation from summit to base! If I may use the expression, it is awful to behold these mountains of minute stones, difficult, from their loose rubbly nature, to walk upon, and piled up to the highest limits of these ranges. It is really a great relief to find rocks; and as in the present instance it happened to occur upon an inclined ledge, which furnished sufficient material for our beacon, a very conspicuous one was erected. I cannot furnish the honourable baronet with any particulars which may induce him or any other friend to pay it a visit.

Commander Richards was sent to examine Assistance Spit, as well the ice aground near it, and to try a few heavy charges of 20 lbs. on the main floe, having frequently experienced, in Melville Bay, that even our small blasts at times did great mischief amongst the whaling fleet, causing even distant docks to split unexpectedly; the use of our powder was not unfrequently condemned. Having erected a beacon on the small island, and completed his other work, he examined the grounded ice, where he found only three fathoms, with seventeen be-

tween it and the island; possibly it has less beneath the ice.

On the 25th the ice opened between us and the spit island; steam was called in aid, and about five P.M. we were again advancing to the eastward, but the tide evidently strong against us. At 11.30 we arrived at the end of the lead; made fast until eight next morning, when we again got free, and, by shaving *Cape Becher* in eleven fathoms, passed that important point. Mr. Herbert (Mate) had been despatched to the point to seek for letters, and to bring away those left by Mr. Cheyne in May last, if they should still be found. Our attention was, of course, intently fixed on the pile; and nearly at the moment that we discovered, by the aid of our glasses, that the kegs containing the letters had not been taken, "two boats were reported coming from *Dundas Island*." One was certain, and Commander Pullen shortly after stood on our quarterdeck, little less astonished than ourselves at such a meeting; he had come for these letters! I was right glad to see him, for I had much to inquire about and much to learn. Definitive instructions for himself, for '*Intrepid*,' and the whole Squadron, had to be made out, and but short time in which it could be completed. I thought of detaining, and carrying him back in the ship. Fortunately for all concerned, he had left his men and depôt at *Cape Phillips*, and must return, thus securing the opportunity of forwarding our hurried and unopened former despatches. We were detained just beyond *Cape Majendie*: there we hung on by the floe until morning, when I took leave of him, instructing him to place a cylinder containing a record of

our meeting, etc., on Cape Majendie, with which he was supplied.

Being now in full possession of all our intelligence, and knowing the interest which must be felt at home, about the great object of this Expedition, as well as of our present proceedings, I directed him "to be prepared to leave Beechey Island on the 1st of September, and proceed to England, taking on board the crew of the 'Investigator,' should they arrive by the 'Intrepid,' and to leave the latter vessel as depôt at Beechey Island." I fully expected, at this moment, to reach Beechey Island, in this ship, before him, and long before that period direct in person all the necessary arrangements.

From this date until the 17th of August we continued to move from spot to spot, seeking casting: opinions very conflicting and unpleasant in their obtrusiveness were hazarded,—“too many cooks” never were more apparent. The south shore was the favourite; however, thank God, I took the north, and moved in that direction with all speed; not from the littleness of having my own way, but because no opening, after reducing opinions to *record*, was truly seen to the south-east; that the three Ice Quarter-masters, closely questioned daily, saw no prospect by that direction; that Penny's remarks, which Sir Francis Beaufort had obtained from him at my request, distinctly opposed any navigation on that side, and he had travelled there; and finally, that at this date last year we had navigated the north side, and found it clear, when I, from the heights above Cape Hogarth, was well satisfied that the ice blocked the space between Hamilton and Dundas Islands, and appeared moreover to press

southerly. All the northern channel was then free; but to silence future cavil, the ship was pushed to the southern navigable extreme. We had experience against presumption. As the spring-tides would probably bring danger, I deemed it imprudent to risk further ships or lives, and therefore determined to take the north lead. We shifted, and were scarcely well secured, when the ice took a westerly set; our floe was firm, therefore we went bodily, sheltered by a natural cove or dock, and flanked by very thick ice.

The spring-tides occurred on the 18th, and I relied much on this event for some decided move; unfortunately, it was in a wrong direction, or, if my own suspicions are correct, I lost my chance by quitting this shore at all! Our boat landed once in open water, well to the *eastward* of where we now were; a gale ensued! We continued to drive, apparently for the strait between Cape Becher and Dundas Island. The barometer fell lower than before noticed, suddenly from 29.64° to 29.34° . We were now drifting rapidly to the westward, our depth of water decreasing from thirty-seven to eleven fathoms; and, as the snow-storm intermitted, discovering to us the near neighbourhood of Cape Majendie under our lee! "When things are at their worst they mend."

The great floe continuing to turn in azimuth, like a wheel, to the westward, fortunately tended to throw us into the channel, between Cape Majendie and Dundas Island; not certainly pleasant, but nevertheless affording hope of safety. At this crisis, providentially, the ice to leeward became blocked, or possibly was in part resisted by an opposing current. We ceased to drift, but had

shoaled our water suddenly to eight fathoms, not far from a low point spitting westerly from a very tempting bay, in which I had for some time fancied that shelter could be obtained, provided the depth afforded safe riding. Our greatest danger however still threatened: unless the ice to windward was arrested in its motion, it would inevitably crush us in a few moments! and this was feared. One of the Ice Quarter-masters observed: "If the weather floe parts, Sir, it will walk over her!" Not a very pleasant prospect! The customary preparations for deserting the ship were already cared for, and we waited, in great anxiety, the result of the next half-hour. If both vessels were annihilated, life, I think, might possibly have been safe; but we had two sick men, cripples, and for these my interest was principally engaged. The weather ice was arrested, as afterwards ascertained (under frightful pressure, higher than our lower mastheads), on Point Preservation; the gale lulled, and I was able to send a boat to sound up to the land-floe inside the point before alluded to. The report of "eleven fathoms within, and nine close to the point," soon put a new face on affairs; warps were run out to windward, and, under trysails and jib, the ship soon reached one of the most secure little ports in these regions. On landing at the spit I found the depth "close to" sufficient, if compelled to winter, to admit of the vessels securing to the land, having six fathoms at sixty feet from the beach, and space for twenty vessels in the then open creek, which carried to its bend, at a later date, ten fathoms: to this I gave the name of Port Refuge.

The view from the hill now forcibly impressed on my

mind the advantage of *decision* : if the Captain is not fit to command, he should not be selected ; the lives of all are in his keeping,—one false step, and no one survives to tell the tale ! The great evil entailed on this service, at a period when no great experience entitled the Commander to be decisive, and he had Ice-masters to help him, was the referring to Council, or, as I now view the case, to relieve himself from the responsibility of any unfortunate event which was liable to be contested by those under him. At that period the Expedition was composed of officers of nearly the same rank ; the case is now far different, nor do I require any such protection.

The position we had lately occupied was now closed in with heavy, hummocky, pressed-up ice,—and no trace of floe, such as we left. Probably the ice to which we were then fast, and having a very wide crack, leading possibly miles easterly, now formed part of the piled-up masses on Dundas or Margaret Islands, or, if it escaped these, passed up the Queen's Channel ! I felt grateful that the pressure had not been tested by the vessels under my command ; for there I do not believe that life would have been saved. Easterly, the coast was lined with larger masses of ice than we had before noticed, grounding in three fathoms and a half, and pressed so heavily in upon the shoal line that it interfered much with my purpose of making my escape between them and the land. Viewing the coast westerly up to Cape Majendie, we had to be thankful that we were not cast upon that unpromising iron-bound coast. Such then being our own escape, my thoughts naturally reverted to the case of the missing ships ; any similar casualty

might sweep them from the face of the deep, and leave not a trace behind! The presence of a consort could not avail; they are generally, as it were, linked together, particularly when beset in ice, and the same fate to both, in our case, would certainly have resulted.

Here then our present prospects were at least painfully delayed, and by many were considered to be entirely frustrated for this season. But although opinions were perhaps too openly expressed, I deemed it prudent to be prepared for taking the pack again, asserting distinctly, "that the vessels should not winter there." In order to keep up the excitement, I first made the survey of the port, and then started in my gig to determine how far I could safely take the ship within the grounded hummocks. Day by day led on to fresh advances, until I gained the heights about nine miles easterly, close under which Mr. Grove had landed in open water on the 15th of August! We can only imagine that an overruling Providence directs us! One of two events might have occurred; the first was our possible escape into the eastern open water, at this moment clear up to Point Hogarth; the next our unmistakable demolition, had we been pressed on Cape Preservation! The height of the ice piled there, within which our boat entered freely at high water, was not under eighty feet on the inner side, where a sloping *débris*, composed of finely comminuted particles of the purest white ice, fell inwards. To seaward it was piled with enormous blocks of ice, one over the other, in perfect confusion: not ordinary ice, but of the same quality as that grounded in three and a half fathoms along the coast, varying from twenty to twenty-

four feet in thickness ! A very narrow neck of thin floe, easily to be mastered if we could reach it, cut off our communication with the lanes, constantly opening and closing, but near to Port Refuge closely sealed. The in-shore "lead" was not deep enough for the ship, being barred at Cape Simpinkson by a rocky ledge, on which two fathoms only could be attained.

At this Cape we shot eight hares : five the first day, and three the second. This therefore afforded some little excitement, and the ship's company had permission to share in the amusement, killing some hundred of kittiwakes and tern, with one hare and eight ptarmigan. These cliffs are frequented by gulls, lummies, dovekies, and other birds, which build their nests in rocky ledges of the beetling cliff, in order to secure their young from the depredations of foxes and other predatory animals, and are generally, when sufficiently stocked, termed "rookeries ." one at Cape Shackleton, in Melville Bay, and another near Upernavick, are well known to the whalers, as well as Arctic explorers.

By some unaccountable peculiarity I make up my mind to effect an object, at a moment when no chance of its accomplishment is apparent ! Not that I would attempt it against reason. The reverse : I rather spare labour, when I can do so conscientiously. I took my last survey of Port Refuge, killed several ducks and a ptarmigan, and overlooked the principal features of Sir Robert Inglis Bay from Mount Croker, situated at what we had at first deemed the almost out-of-range depth of Port Refuge, but to which access was now open by water within the ice. From this height I discovered,

what indeed I had before suspected from other glimpses nearer to it, that a lake and stream connection existed between this and the eastern *sac* of Sir Robert Inglis Bay, and that not more than one mile divided the two waters. Westerly, I noticed the ice to be easing off at Cape Majendie, and lanes forming along the coast towards it. A vacancy is always of importance, and to us of infinite value,—as it would facilitate the opening of similar lanes to the eastward. I felt suddenly confident of release, but all the reports from the hill were unfavourable: indeed the Ice Quarter-master, who had most to say, pronounced the floe *sealed* for the winter. Further, the bay ice had formed so thick, that it was not possible for a boat to pass to the shore without considerable labour in breaking a channel. However, a night would intervene, but the cold was more intense, and the ice firmer. I asked the Ice Quarter-master, at four A.M., what he thought of it? “No opening, Sir,” was the reply. I may be obstinate, but I told the “old man” (Unthank) I intended to cut out; he quietly and very drily whispered to me, “Well, Sir, if you are *determined*, lose no time.” Those words were electric,—took a load off my mind; I was up, out, and moving. Leaving orders “to prepare for sea, and clear the lead to the outside barrier,” I mounted the hill, and there noticed that outside of our opposing barrier rather an unwieldy and awkward floe was freely washed externally, and that if this could only be mastered, by cutting and blasting, my intention to take the pack, following up the outsides of the grounded ice, might enable me to squeeze by Point Preservation. The distance from hence to Beechey Island, one hundred

and twenty miles as the crow flies, was too far to transport crew, invalids, and effects, if compelled to abandon next season. Effort must be made, and I had resolved on it. Lieutenant Osborn was directed to take a party to blast the outward barrier. Boats were employed in beating and hauling through the bay ice, so as to disconnect it as much as possible, and the ship having been warped up to the barrier floe before noon, the 'Pioneer' followed under steam. Repeated reports were brought to me, "that the ice closed as fast as blasted:" this I heeded not. All our available force was now sent on the ice, and I took the command in person; the vessels moreover were now well wedged in, and no chance of retreat. Several heavy blasts were applied with great effect, followed up by the expeditious removal of the outer disrupted ice; and by the aid of steam, both vessels began to move cheerily ahead. "Sauve qui peut" soon became the general motto; and each man springing to his proper vessel, shortly after noon they were once more under canvas, and moving to the eastward. Let any man read the log of that day, and judge simply from its wording if it was intended to illustrate any such feat.

Before entirely taking leave of Port Refuge, I will merely remark, as to its geology, that the same dreary, dirty, grey magnesian limestone, with but few fossils, prevailed; and vegetation, excepting in the inner valley under Mount Croker, where deer or musk-oxen had rooted up great spots of deep moss, was very rare.

On the summit of Mount Croker, whilst engaged with the theodolite, I noticed a very beautiful white ermine (*Mustela erminea*) in its summer dress. My aide, Mr.

Pym, was despatched to shoot it; but he failed, although the animal was daring enough to sit up and spit at him within twenty yards. The bifurcation of his fine bushy black tail was beautifully displayed, and probably somewhat disconcerted Mr. Pym, spoiling his aim. I believe however that it was wounded, and effected its escape by the crevices of the rock. Nearly at the same moment a ptarmigan (mistaken for a goose or deer) was noticed: on my return it was butchered, by getting suddenly on it before I perceived it; however, in these times we kill for the cook, not for preservation.

Our collection from the sea has been more abundant than I could have imagined, an account of which will appear with the Natural History. The *Euryale* or *Asterias Medusa* was found in great numbers in deep water, and on one occasion so bematted a swab, that extrication, without destroying the arms, was not possible: one complete specimen only, to establish the species, was preserved.

After a detention of a most harassing nature for thirteen days, we were again free, and pressing forward. But before quitting this region let us examine the relative temperatures experienced by Parry and ourselves. During the entire month of August, 1820, I notice that he experienced a minimum temperature of 22° ,—colder than we have experienced at all,—the lowest, at four A.M. on the 31st of August, corrected, being 24.5° . As he had quitted the entrance of Lancaster Sound before the 1st of September, we cannot follow him; but at Port Bowen, a much more suspicious position, it did not fall below 16° , and that not until the 18th. I consider that as far as the 16th of October of that year I would not have

deemed myself sealed. His escape again on the 1st of September into warm water precludes further comparison with the probable temperature in the mouth of Wellington Channel.

September 1.—Our first effort carried us abreast of Cape Simpkinson, where, finding the pack drifting westerly, we made fast to the grounded ice, in eight fathoms, to await the return of tide. But I find that the tides in this northern bight are not to be reckoned on, and in the present case, fortunately perhaps, they overran their mark to fifteen hours. Foreseeing the reaction, I gave orders, before I retired to rest, “to select a convenient tug floe, and make fast to the moving pack when the tide changed easterly,” which would infallibly advance us. This occurred at 3.30 A.M., when the pressure gradually eased; and shortly before eight A.M. we were again taken in tow by the ‘Pioneer,’ keeping close along the line of grounded hummocks, and on arriving abreast of the immense mass before alluded to off Cape Preservation, had fifteen fathoms close alongside, the sea washing its base. These huge masses of ice furnish most valuable guards for pilotage, seldom grounding in less than three and a half fathoms, with deep water outside. I had suspected, from noticing the vast collection of pressed-up ice at this point, that they were obstructed and retained by an outlying ledge of rocks; but the heavy masses then noticed merely adhered until the pressure was relieved, and then by their weight had been swept away. The customary law of the immersion of six-sevenths we found not to hold here, nor are the under surfaces level: masses more than six feet out of

water were grounded in two fathoms at high water ! but these must have had a great admixture of snow. I had almost fancied that my vision of open water up to Point Hogarth was not to be realized, and that my efforts after all might be attended with some drawbacks. But about noon I caught a glimpse between the masses of ice, and felt that all was secure. This was indeed a triumph : talk not of horse-races, or any games of chance ! Here was a consummation to repay all my harassing labours. Giving the men time for their dinner, the cheering sound of "Hands make sail !" brought up many an inquiring face. But there was no mistake this time : the open dark blue sea was before us ! How different were the feelings of forty-eight hours !

What the sensations were of those around, I was unable to discover ; but I had the deep satisfaction of feeling that I had, by the blessing of God, effected my object, and impressed all the well-disposed men under my command with the determination which will, I trust, under the blessing of God, enable me to do my duty, and that where I *decide*, no puny obstacle or difference of opinion shall deter me from the accomplishment of any service I may deem it necessary to execute. If I had failed, no disgrace or reflection could lie. Still the story would run, that I made the *attempt*,—and thus close the mouth of the busy chatterer.

The questions now discussed were not of *failure*, but of the *hour* of arrival at Beechey Island, and if we should save post by the 'North Star' ! Shortly after two the tow-rope was let go, and under every possible stitch of canvas, the ship was making nearly seven knots. But

alas! our calculations were premature. About four P.M. indications of ice ahead were reported, and we were reduced to the necessity of selecting the most comfortable berth which offered amongst the patches of open water, about ten miles to the north-east of Cape Osborn. Unfortunately, the 'Pioneer' shortened sail some miles astern, and before she reached the gap by which we had entered, it had closed, and separated her so far as not to be of further assistance until the communication was opened.

During our detention here we determined our position to be in lat. $75^{\circ} 37' N.$, long. $92^{\circ} 22' W.$, Cape Osborn bearing S. $18^{\circ} 18' W.$, the variation $144^{\circ} 58' W.$ Our distance from the nearest land was about one and a half mile. A party consisting of Dr. Lyall, Mr. Pym, Mate, and Mr. Lewis, Clerk in charge, started with a light boat to endeavour to reach the land, and walk on to Cape Osborn, on the summit of which we thought we could discover a large cairn or tent. They were unsuccessful, owing to the roughness of the ice, and the inefficiency of their party to drag the boat over the distance which intervened between us and the shore. It was in the sequel most fortunate.

CHAPTER XIV.

First symptom of Winter.—Alarming Discovery.—Suspensions awakened.
 —Escape from a Nip.—Recent fragment of a Ship.—Drift-wood.—
 Party for Beechey Island.—Despatch of Lieutenant Osborn.—Want
 of Steam-power.—Unsafe position.—Aid sent to Lieutenant Osborn.
 —Inland Lakes.—Fishing.—A Spar found.—Trunk of a Tree.—
 Disturbance of the Ice.—Fragments of a Ship.

September 3.—AT midnight there was not sufficient light to read the deck thermometer without a candle, and quite dark in my cabin. We are now to the northward of Eden Point in Baring Bay, and in eighteen fathoms water. A bear was noticed between Cape Osborn and the ship, but he most cautiously avoided any nearer approach, or within any distance to warrant pursuit. As the 'Pioneer' was completely cut off, our efforts were now incessant, taking advantage of every motion of the ice which enabled us to get into the in-shore water, hoping to secure to the grounded ice, and thus prevent being swept back.

On the morning of the 4th I sent Lieutenant Cheyne, with a gig and one watch, to aid the 'Pioneer,' whose services we very much needed, the open lanes rendering constant warping tedious, and I had the satisfaction of

seeing that at least she was moving. Our progress, being free from obstruction, was more rapid, aided I imagine by a current along the shore; and by six P.M. we succeeded in warping alongside some stupendous masses of ice or fragments of bergs, grounded in eleven fathoms, and raised above water about forty feet. Whilst engaged in warping along these, the look-out in the crow's-nest reported "something like a coal-bag and a uniform cap, lying on one of the detached in-shore floe-pieces." Our glasses soon detected the black object to be one of Halkett's India-rubber boats! Mr. Grove, Mate, was immediately despatched with the light boat, which the party hauled over a low neck, and reached the objects. On his return he brought the India-rubber boat (the bellows having been mistaken for the cap), a tin case containing the Admiralty Arctic Chart, the true-bearing book of 1853, two tin pannikins, a hank of log-line, bits of lint, a pill-box containing ointment, and a piece of adhesive plaster—with other proofs of its having been the temporary resting-place of man!

That all the articles in question belonged to our Expedition was clear by the date of the chart, as well as the true-bearing book for *this year*, within which was further found a printed prayer belonging to the 'North Star,' as well as one in manuscript, evidently in the handwriting of Commander Pullen: the chart was also his, having on it his remarks on his late journeys hitherward. But the Halkett's boat created a doubt, as the 'North Star' was not supplied with one, and yet it bore the broad arrow; it might therefore have come from the 'Resolute' or 'Intrepid.' As soon as the ship was se-

cured for the night, I returned with Mr. Grove to examine afresh the spot where these things were found. The boat had evidently at first occupied a place on the floe, where the sun or the heat of the man's body had impressed all its leading marks very perceptibly on the ice. It was painted black, and therefore by the ordinary laws of nature should have been more deeply imbedded, as the lighter-coloured articles had sunk in deeply, and become well frozen, but the breeze had blown the boat over the ledge, and it there hung, attached by its frozen lines, as a signal of distress. Nature's own act! No further clue could be gained. The bay ice was forming so rapidly that Mr. Cheyne's party were hauling the gig over the ice; but where we were, the boat easily cut through by the velocity afforded by the oars. On Mr. Cheyne's joining, by signal, he was instructed to search the inner masses of ice, whilst I continued to follow up the line of gale of the 18th of August, to which date I immediately assigned this alarming catastrophe. It is almost needless to add, that suspicion of misfortune to Commander Pullen predominated, as I could not for a moment imagine that he would trust any other person with such documents: I also felt assured that it resulted after his return to his ship. No further traces were at present discovered.

Here was matter for most serious consideration, and involved advance or delay! But it was clear to my mind that if any misfortune occurred to a party in this immediate neighbourhood, that traces must be sought for on their return to the 'North Star,' and that the nearest land would soon furnish evidence of their resting-places.

For this purpose I despatched Lieutenant Cheyne and Dr. Lyall to examine the coast for traces, cairns, etc., and to visit, if practicable, the shelf-summit of Cape Osborn, on which I had imagined that I saw a very large cairn,* now transformed in importance to a tent.

September 5.—The 'Pioneer' rejoining at 4.30 A.M., again took us in tow, but not making sufficient progress to overtake the land party. The boat's crew, on their return, reported having seen the remains of a bivouac of last season, where tea-leaves and preserved-meat tins were distinctly observable. About two P.M. the party returned without finding traces of any late visitors. A loose, disturbed *cache*, formed from the stones of an old Esquimaux encampment, was reported by Dr. Lyall.

The ship having gained the bay to the southward of Cape Eden, the 'Pioneer' fouled her fan with our tow-rope, and was placed *hors de combat* so long, that we warped, on and had gained a very critical point, when she came up, but too late to carry us through and rather in our way astern, as a very serious nip was on us, and we barely escaped between two such huge masses of ice, one aground in six fathoms, that our fate would very soon have been determined. The angular tongue of a huge floe-piece—how many feet thick I cannot say—had taken its hold just under our fore-channels. Our opposite broadside took against the grounded hummock, half-way up our rigging. Fortunately a twenty-pound blast broke the nip at the critical moment, and

* This supposed cairn turned out to be a very remarkable pyramid on a jutting buttress of the cliff, showing out on particular points of view, but beyond the actual Cape.

she eased astern. Let no one sneer at blasting ice; this alone saved the 'Assistance.' We were very glad now to take refuge under the lee of our big enemy, where most beautiful docks were already prepared, but too insidious for any dependence. The power which placed them there could as easily move them, and the collision would destroy us in a moment, even in calm, and without one instant's warning! We had therefore to select our ground, and cut in so as to be frozen steadily, until we could make another move. It was very tantalizing, as well as distressing. More power, more activity, would probably have placed us beyond the barrier which now closed us in as if for ever!

Being now fast and fixed until it pleased Nature to release us, I despatched Mr. Grove to take the shortest course to Cape Osborn, and examine the cairn; but I had been much deceived by the distance, as well as by the nature, of the intervening ground, as well as its accessibility. He returned, after an absence of ten hours, unsuccessful, but he determined that the object was a natural heap, not a cairn, no traces of travellers were noticed along his route. The party reached the ship about five A.M. on the 6th, much fatigued, and the fog which prevailed tended much to increase their difficulties. Mr. Grove found three pieces of wood, two very old and weather-worn, but one recent, of teak, painted black on one side and having a new nail through its end. It had recently been cut by a fine saw, apparently for firewood; the nail had not the Government mark.*

* This proved to be part of the 'Breadalbane,' wrecked fifty-five miles to the southward.

It is a curious question, but, trivial as it may appear, no less my duty to record. How does it happen, throughout this northern line of connection, and out towards Jones's Sound, that nearly all the truly drift-wood found by our parties might have belonged to the same tree?—never recent, and impressed with Nature's own seal of one particular epoch. Let the fragments preserved answer for themselves. When are we to expect a new and different supply? This piece of teak will doubtless be traced, in a few days, to some definite cause of action; it simply assures me that the Wellington Channel is, or has been, open: at present I suspect it to belong to the 'Mary' yacht.

September 7.—The morning, ushered in by thick fog, has terminated in a gloomy, wintry day; the barometer is slowly falling, and with it all our high hopes; the breeze also is freshening from south, and the ice betraying symptoms of uneasiness. We have no bed of roses here: independent of the safety of the vessels and crews to dwell upon, much matter for severe thought remains. The present wind may be our security; but should it haul westerly, even these barriers to which we are fast would afford no protection,—perhaps destroy us; our trust only is from above; our motto, "Trust in God, and do your duty," renders every disaster comparatively light.

Fully impressed with the belief that a party in search of us has attempted this eastern side of the channel, and may possibly have simply lost the articles discovered, I directed a depôt of eighty rations to be formed on the near terrace of this bay, surmounted by a yellow flag,

that colour being best seen either on a dark or white ground; indeed experience has taught me, that as a general beacon flag, the yellow-blue horizontal can be distinguished beyond all others. At noon the temperature was 30° , but with every indication of approaching winter; and as I remained uneasy about our position, the Master was sent to mark out the shoal-line at which we should take the ground, if driven in, so as to enable us to make suitable preparation. This was effected by boring holes and sounding, leaving staves at three fathoms. It appears that we had about a hundred yards to drive before taking the ground.

On the 7th preparations were made for sending a party in the 'Hamilton' to Beechey Island, in order to ascertain the state of things there. As to saving the chance of letters by the 'North Star,' my orders, if open water existed, had taken effect on the 2nd, or some other channel had offered. I could only forward my report of movements up to the latest date, for safe deposit, until some chance offered; for this service Commander Richards volunteered as a matter of right, but I could not spare his valuable aid at such a critical moment, and Lieutenant Osborn was therefore allotted to this duty. My own well-trying crew were selected, substituting the ice-quartermaster of the 'Pioneer' for my coxswain, whom I could not spare; and my light dog-sledge, constructed to carry me and forty pounds' weight of instruments, was added, to carry light loads at difficult or tender passes; five days only of provision were allotted, and every useless weight left behind.

On the 9th. dirty, snowy weather; barometer, 29.45° ;

temperatures ranging between 7.5° and 15° , and the ice nipping. Made an attempt to cut towards the nearest pool of water, but failed, the ice was found to be fifteen to twenty feet in thickness, bay ice six inches, the water clearly making round Cape Osborn and to the northward. Tantalizing indeed to be mewed up; but patience! we were nearly as bad in Port Refuge, and yet escaped. In this position we are sheltered; but overhead the gale is evidently blowing hard from north-east, scud flying rapidly, and the outer ice, in active motion, pressing to the other shore. Every effort was now made to complete my documents, tracings of charts, etc., in order to forward them to Beechey Island; and very harassing it proved, independent of constant calls for other duties. At noon, barometer 29.34° , temperature 12° , falling to 2° ; at midnight the wind abated, terminating in calm.

September 11.—At four this morning I was informed that the open water extended from Cape Osborn to the opposite coast. At five, Lieutenant Osborn, assisted by a party from the 'Pioneer,' started, having received despatches, etc., the preceding evening. Commander Richards took the hands to the outer floe-edge, in the hope of blasting off the outer ice, which might also shake the entire floc, and cause it to drift off with the tide. The day was beautifully fine, but this was found, under the present temperature, 18.5° , with bay ice forming and negating every movement, quite beyond our powers: the mean depth of this immense floe-piece being about seventeen feet, proved rather too much for our ice-saws, over so great an extent. Mr. Allard, Master of the 'Pioneer,' accompanied Lieutenant Osborn to the floe-edge,

launched him, and then visited Cape Osborn, from the summit of which he would have the opportunity of judging how far the open water prevailed below that position. Unfortunately, the present calm favours the formation of bay ice, which may compel the party to seek the in-shore floe. The following, I perceive, are my remarks on this day:—"11th. Beautifully clear, with a temperature of 18°: and tantalizing indeed is it to witness the opposite floe in rapid motion to the southward, when our position is such that little short of Nature's aid, in the form of a heavy gale, or of an off-shore set, can release us." Had such obstacles as these opposed us but a few weeks since, or even now, with open water into which to float our fragments, we should not have despaired. But now stern Winter holds up his threatening finger, and tells us in plain terms, "You have no business here with such puny steam power." Query: what will he say to 'Resolute,' if he should triumphantly have 'Investigator' ready at Melville Island before the eastern barrier gives way, and but *one steamer* to tow *both*? I cannot forget the astonishment, in 1851, when I proposed the screw steam power in these regions. Increased power was denied me in 1852. Yet I have been made to feel its loss. Eventually the country may experience it by our detention this season. Moreover, no junior should in these matters tow his superior. The result in money remains to be totalled.

As to our eventual release this season I have my own impressions; they may be erroneous, but I still cling to every plausible reason on which hope can be based, preparatory to taking that most decisive step, "housing

over for winter. When that event takes place, our men will exclaim, "Well, here we are for certain."

As to any prospect of such a dilemma, I at present dissent. It is not my intention to remove anything out of the ship, but simply to secure as much internal comfort as circumstances will permit; more, probably, if I err not in my reasoning, than last season; but to be prepared to be moved at any moment that it may suit the caprice of Dame Nature. The grounds upon which I base my opinion are as follow. First. Notwithstanding opinion is against me, I consider this position unsafe, and that we are liable, even throughout the months of October, November, and December, to be driven from hence. The American vessels were entrapped in the pack, and comparatively safe: they had no prospect of open water, it is true, but that is a *danger*, unless you are prepared with a port where shelter can be obtained. They were compelled to perform certain gyratory movements during these months, reaching the neighbourhood of Beechey Island about the 22nd of December!

Now all these same causes are visibly in operation, and it is only necessary for "the turn of the wheel" to take a liking or involve in its chances our frail barks, and off we travel on the tangent (if not crushed) into mid-channel. The sealing of the main pack to that connecting us is the act of a few hours. Who will venture then to dissolve the connection? I trust that it is scarcely necessary for me to illustrate this by diagram; for the ice motion is so capricious, that direct, lateral, oblique, or rotary force will perform all we have to fear in a few hours, leaving us to solve the problem in winter,

by sounding through our fire-hole, over depths varying from six to six hundred fathoms, and making accurate charts of our motions by aid of the stars and chronometers. These are no idle whims or caprices. When that moment arrives, all I pray for is, that every man may be as well prepared to do his duty.

To sum up, I intend to be prepared *to take, or be taken by, the ice*, if it should so suit the will of Providence. Keeping in view that if such should happen before the end of October, to endeavour to keep on this side, and if drifted as far as Beechey Island, attempt to reach Union Bay and there cut in, or possibly be saved the trouble by a nip.

Of my mode of housing, when winter seals our position, I shall deal hereafter,—preparing at present the important outlines, so far as our resources will admit.

September 12.—Late last evening, about five, Mr. Al-
lard returned, having fallen in with Lieutenant Osborn,
not far advanced. He had abandoned his boat, had
placed the weights on my dog-sledge, destroyed it, and,
by a note, suggested that a sledge and more provisions
should be sent to him.

Dr. Lyall having volunteered,—and considering him,
for many good reasons, the most effective aid as well as
companion,—I again sent my own sledge, which carried
the ‘Hamilton’ last season; and if so laden, would they
have sixteen persons to take her through her difficulties,
with instructions “to accompany Lieutenant Osborn, if
necessary, the entire distance;” and keeping in view the
peril incurred last season, and the misfortune, but too ap-
parent, of recent date, instructed him to inform Lieute-

nant Osborn that no uncertainty should exist, or that the boat must accompany him. About eight P.M. Dr. Lyall started. This diminished our crew by twelve working hands.

I walked out to the floe-edge, nearly a mile, with Commander Richards; but it was very clear to me, that with the bay ice formed, it was useless to attempt any further operations for cutting out. On my return I ascended the hill immediately above the ship, where I obtained the latitude as $75^{\circ} 32' N.$, and a very clear view of the late space of open water, now skinned over with bay ice. The heavy hummocks, where we had picked up the Halkett's boat, were still fast, water-washed, and free from floe! Had we fortunately held on there, we should possibly be now at Beechey Island. However, to the decrees of fate we must submit cheerfully. Moving along the land-ridges I visited the deep ravine, where probably, at some remote period, a river rolled impetuous into the sea. It had cut its channels deeply, and in some instances was bounded by abutting cliffs on either side, narrowing it to forty yards, and again expanding into five hundred; heavy rounded stones and radiated channels affording the impression of a vast flow of water. It was active even at this late season, and where we frequently broke in, the stream was running beneath with a rivulet power; on the west also there was evidently a waterfall of some twelve feet. But there were very extensive inland lakes to warrant this constant escape of water, and their corrugated margins clearly indicated, although sheathed with six-inch ice, that their level was daily decreasing. In one of these, attempts were made

to take fish by a small net of twenty feet span, and the bottom was scraped by the dredge, but without success: unfortunately, the seine ordered to be embarked in the 'Pioneer' was left behind, and thus all hopes of salmon, or large fish, frustrated. On my return I observed two of the officers bearing between them a hare they had killed, and immediately where we then stood the tracks of several, or of the same animal, were noticed. One evidently had been pursued by a wolf, and a very smart chase it must have proved; but which might have proved victorious I was too far fatigued to follow up; the traces proved that the fore-paws of the wolf at each bound were never two inches behind those of the hare, and the measured leaps of several averaged six feet: evidently in earnest!

A party which I sent to erect marks on the neighbouring hills easterly also succeeded in killing a hare; so that we have some hopes of not being quite so badly off for game as at our last (but very secure) winter-quarters. This set all the sportsmen agog, and eager for sport; and of this feeling I did not fail to take advantage, despatching one party, as far as they pleased to go, northerly, in hopes of gaining some further information as to traces of the late boat party in that direction.

The issue of one of these excursions, by our leading huntsman, the Boatswain, was the discovery of a spar, about a mile and a half inland, which, from the report, disturbing me about midnight, was "evidently the top-gallantmast of a ship;" the carpenter's mate, who was one of the party, being of opinion "that it was a worked spar, of about eight inches' diameter." Such a report from

such authorities startled me not a little. one point however was not so clear to my imagination, was too far inland, and moreover in a hollow. Still however, for the remainder of the night, was destroyed.

On the 13th, after breakfast, I proceeded, taking with me the Boatswain and my boat's crew, with picks, crows, etc., to search for and bring in the discovery. It was not without considerable difficulty that it was re-discovered, but I at once perceived that it was no spar, and not placed there by human agency: it was the trunk and root of a tree, which had apparently grown there and flourished, but at what date who will venture to say? It is indeed one of the questions involved in the change of this climate. As the men proceeded with the removal of the frozen clay surrounding the roots, which were completely cemented, as it were, into the frozen mass, breaking off short like earthenware, they gradually developed the roots, as well as what appeared to be portions of leaves and other parts of the tree, which had become imbedded where they fell, and now were barely distinguishable—at least not so much as some impressions on coal—to the casual observer. At the period that whales were thrown up and deposited on these mountains, the land generally convulsed, and also when a warmer climate prevailed here, this tree possibly put forth its leaves and afforded shade from the sun: most fervently did I just now wish for its return. The stump was extracted, and, with some of the surrounding soil, preserved for future examination. Two neighbouring mounds were also dug into, but they proved to be peat;—doubtless other stumps and vegetable matter, the only