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Exploration of the Arctic Regions

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After reaching the seventh stage, one of the men and I left the rest, and arrived at Sybashiri some time before them, pounding through the soft snow at a great pace. The height of the mountain, by the latest calculation, is 13,080 feet, though it is generally reckoned as 14,000 feet. Its height appears more than it is in reality from a comparison with other mountains of the same size, from the fact of its rising from such low ground; whereas other mountains are usually seen standing on high ranges. I should call the actual walking distance from Sybashiri to the top, about $8\frac{1}{2}$ or 9 miles, and we made the ascent in 9, and the descent in $4\frac{1}{2}$ hours.

I heard that only one European before me had ever ascended to the top of the mountain at this time of year, but that I stood alone in having accomplished the ascent and descent in one day.

The following morning we crossed the range between Fuji-Yama and the sea by a pass called Tomé-Tongi, some way to the south of where I had crossed before, and reached the village of "Myanoshta," which is the summer retreat of the Mikado, and a favourite place of resort for the Europeans from Yokohama in the hot summer months. It is about $17\frac{1}{2}$ miles from Sybashiri. It rained during the afternoon, and we were glad to put up at the excellent tea-house—the best in Japan, I believe.

The scenery is exceedingly beautiful, the village being situated on the southern slope of a long valley, with mountains on both sides. It is celebrated for its hot springs, which the Japanese, and even foreigners, enjoy immensely for bathing purposes. A river winds along the valley to the sea at O-dawara, a distance of seven miles, and forms some pretty waterfalls in its course.

The next day was very gloomy, the valley being filled with mist, and the rain coming down like a water-spout; but as I had arranged to be back at Yokohama that evening, we set out with Japanese umbrellas and waterproof coats made of oil-paper, which kept us fairly dry to O-dawara, where we took Jin-Riki-Shas to Yokohama, a distance of 35 miles.

I may remark that a thin tough kind of paper, made from the bark of a tree, is used in Nippon for many things, including pocket-handkerchiefs and waterproof coats.

We reached Yokohama that evening, after an excellent trip of $6\frac{1}{2}$ days; and from my experience of this and several other expeditions, I can recommend anyone who is fond of walking through a charming country, peopled by an exceedingly kind and amiable race, to pay a visit to the Land of the Rising Sun.

6. *Exploration of the Arctic Regions.* A Letter from Dr. PETERMANN to the President of the Royal Geographical Society.*

"SIR,

"Ten years ago, when Arctic Exploration was sought to be revived by the Royal Geographical Society, all, I think, were agreed as to the main points of the subjects, while a diversity of opinion arose regarding one point, which appears to me only of secondary importance now, namely, the route to be chosen. There was a great deal of discussion upon this point, and whether it would be more advisable for a new English Expedition to proceed west of Greenland up Smith Sound, or east of it, anywhere in the wide sea between Greenland and Novaya Zemlya.

"From the results arrived at by actual exploration since 1865, and the light shed by it upon the subject, it appears to me, that a real ground for any such diversity of opinion no more exists, as the most noteworthy fact brought

* Read, in part, at the Meeting of the 10th November, 1874; vide *ante*, p. 35.

out by the various recent Polar Expeditions is a greater navigability in all parts of the Arctic Seas than was formerly supposed to exist.

"For my part, I readily admit that the Smith Sound route has turned out to be a great deal more practicable and navigable than could formerly be surmised from the experience of Kane and Hayes. Certainly both these attempts were made with insufficient means; Kane's *Advance* being only a sailing-brig, heavily laden and blown about by unusually strong gales, and Hayes' schooner, the *United States*, a mere sailing-vessel of 133 tons, not fit for navigation in the Arctic Seas. When therefore Hall, in 1871, tried this route with the *Polaris*, he achieved most astounding results, for he sailed and steamed from Tessiusak without interruption in one stretch through the ill-famed Melville Bay, Smith Sound, Kennedy Channel, and into new seas as far as 82° N. lat., a distance of 700 miles, with the greatest ease, in seven days, and even reached beyond the 82nd parallel. Yet his vessel, the *Polaris*, was only a small, weak-powered steamer, by no means well fitted for the work, and manned by a motley crew hampered by Eskimo families and little children.

"While I thus readily admit my expectations to have been far exceeded by recent experience, similar progress has also been made on all the other routes into the central area of the Arctic Regions, and a great deal has been achieved, even with small means. From the results already arrived at, it is evident that, with appropriate steam-vessels making use of the experience gained, the central area will be penetrated as far as the North Pole or any other point.

"As I cannot but think that an English exploring expedition will soon leave for the Arctic Regions, I take this opportunity to state to you, explicitly, that I withdraw everything I formerly said that might be construed into a diversity of opinion on the main points at issue, and that I now distinctly approve beforehand of any route or direction that may be decided on for a new expedition by British geographers.

"For those expeditions which I myself have been able to set on foot since 1865, the most direct and shortest routes and the nearest goals seemed the most advisable, as only very small means would be raised, and these chiefly by promising to break new ground and opening new lines of research never before attempted. With the same small means at our command, we could not have done as much as we did elsewhere. At my instance, more or less, seven very modest expeditions and summer cruises went forth; the first one—a reconnoitring tour, in 1868, under Captain Koldewey—consisted of a little Norwegian sloop of only about 60 tons, no bigger than an ordinary trawling-smack; she was purchased at Bergen, received the name *Germania*, and went towards East Greenland, then to the east of Bear Island, on the north of Spitzbergen, beyond the 81st parallel, and surveyed portions of East Spitzbergen not before reached by English or Swedish Expeditions. Next year, 1869, started the so-called second German Expedition, consisting of two vessels, a screw steamer of 143 tons, called the *Germania*, and a sailing-brig of 242 tons, called the *Hansa*, as a tender; they went again to East Greenland, explored this coast as far as 77° N. lat., and discovered a magnificent inlet—Franz Joseph Fjord—extending far into the interior of Greenland, navigable, and the shores of it enlivened by herds of reindeer and musk-oxen. It was also shown that the interior of Greenland in this region consists not of a slightly elevated tableland, as formerly supposed, but of splendid mountain masses of alpine character. The account of this expedition, which also wintered on the coast of East Greenland in $74\frac{1}{2}^{\circ}$ N. lat., is before you in an English dress. Besides this, I got my friend Mr. Rosenthal, a shipowner, to allow two scientific men, Dr. Dorst and Dr. Bessels, to accompany two of his whaling steamers, one to explore the seas east of Spitzbergen, the other those east of Greenland; both made highly interesting and valuable scientific observations, which have not yet been published. In 1870, my friends Baron

Heuglin and Count Zeil went from Tromsö in a small schooner of 30 tons to East Spitzbergen, and collected most interesting information on a region never before visited by scientific men; and when Baron Heuglin had been out a second time the next following year (1871), again with one of Rosenthal's Expeditions, he published a valuable work in three volumes. In the same year Payer and Weyprecht went in the *Isbjörn*, a sailing-vessel of 40 tons, from Tromsö, to explore still further northward than Bessels the sea east of Spitzbergen, which was done with great success as high up as $78^{\circ} 43'$ N. lat. (in $42\frac{1}{2}^{\circ}$ E. long. Gr.) and as far east as 59° E. long. The scientific results of this cruise have also not yet been fully worked out.

"Thus from the interior of Greenland in 30° W. long. to 59° E. long. east of Spitzbergen, a width of about 90 degrees of longitude have been explored and highly-interesting results obtained. The cost of these seven expeditions and cruises was about 140,000 thalers, or altogether, 20,000*L.*, of which only 5000 thalers or 750*L.* were contributed by the Government of Germany, all the rest by private individuals, my friend Rosenthal spending upwards of 30,000 thalers. Half of the results of these expeditions have not yet been published, but the work of the second German Expedition in four volumes, and that by Baron Heuglin in three volumes, are finished, and are, I think, a credit to the explorers.

"I have mentioned these details in order to show that such endeavours to extend human knowledge improve the spirit of the navy, foster a taste and progress of science, and are not necessarily expensive. A really effective expedition will cost more, but also accomplish more; in this respect, a writer in the 'Athenæum,' in reviewing our second expedition, says that 'to start on expeditions such as these in vessels ill-adapted, ill-strengthened, ill-found, and ill-provisioned, is but to court failure,' to which I say Amen.

"One well-appointed English expedition of one or two strong steamers may well be able to penetrate to the furthest points of our globe. Even the whaling ships, now furnished as they are with steam, penetrate, as a rule, to where it was formerly thought impossible for such a fleet to pursue their valuable fisheries; the ill-famed middle ice of Baffin Bay is to them no longer impenetrable, and extreme points reached by former discovery expeditions, in the course of a long series of years, are now visited and passed by one whaling vessel in the course of a few summer months.

"Up to 1869 the general opinion was that from Bear Island in $74\frac{1}{2}^{\circ}$ N. lat. there extended the line of heavy impenetrable pack-ice eastward as far as Novaya Zemlya, that, working along this coast, the furthest limit of navigation was at Cape Nassau, and that the Kara Sea was entirely and always filled with masses of ice, totally impracticable for any navigation. But the Norwegians, with their frail fishing-smacks of only 30 tons at an average, have, for five consecutive years, every year navigated all those seas hitherto considered as totally impenetrable; they have repeatedly circumnavigated the whole of Novaya Zemlya, crossed the Kara Sea in every direction, penetrated to the Obi and Yenisei, and shown, beyond the shadow of a doubt, that navigation can generally be pursued there during five months of the year, from June to October, and moreover that the whole of the Kara Sea and the Siberian Sea far to the north are every year more or less cleared of their ice, both by its melting and drifting away to the north. I have had the journals of many of these cruises sent to me from Norway, containing a mass of good observations made at the instance of the Government Meteorological Office under the superintendence of Professor Mohn at Christiania. If another proof of confirmation were wanting, it has been furnished by Mr. Wiggins of Sunderland, who this summer also navigated through the Kara Sea as far as the mouth of Obi.

"As to the sea between Novaya Zemlya and Spitzbergen, the very first time

in our days its navigation was attempted, namely, by Weyprecht and Payer in 1871, it was found navigable, even to a small sailing-vessel of 40 tons, up to 79° n. lat., and in the eastern half of it no ice whatever was met with. The experience of their last expedition in 1872 certainly has been the reverse, as they encountered much and dense ice at least in the direction of Cape Nassau, but it would lead to erroneous conclusions, if it were not taken into account that the Norwegians at the same time found the western half of that sea quite free of ice.

"I am not going to make any remark upon the late Austrian Expedition, as its results and observations are not yet sufficiently before us, but I am authorised by a letter of Lieutenant Weyprecht, the nautical commander, dated the 1st November, to state that, before he has published his extensive observations, he warns against all premature conclusions, and concludes the letter—which I shall publish in the next part of the 'Mittheilungen,' and in which he expresses his own views on the Arctic question for the first time—with the sentence: 'That he considers the route through the Siberian Sea as far as Behring Strait as practicable as before, and would readily take the command of another expedition in the same direction.'

"I believe myself that the navigability of the seas to the north of Novaya Zemlya can as little be called in question by this one drift of the Austrian Expedition as the navigability of Baffin Bay by the drifts of De Haven, M'Clintock, and the crew of the *Polaris*. These drifts by no means prevent others penetrating the same seas.

"And here I may be allowed to refer in a few words to the other end of this route, the seas north of Behring Strait. Captain Cook in 1778, and his second in command, Captain Clerke, in 1779, believed to have reached the extreme limit of navigation by attaining Icy Cape (in 70½° n. lat.) on the American, and North Cape (in 69° n. lat.) on the Asiatic side, and they considered further attempts there as madness as well as to any practical purpose useless. Captain Beechey, however, with his lieutenant, the present Admiral Sir Edward Belcher, penetrated already in 1826 as far as Point Barrow, and expressed the result of his experience in the weighty sentence, 'I have always been of opinion that a navigation may be performed along any coast of the Polar Sea that is continuous.* And, true enough, many a follower has sailed along the whole of the northernmost coast of America, though exposed to the pressure of the immense pack-ice masses from the north impinging upon these coasts. Captain Kellett, with the *Herald*, a vessel not intended for ice navigation, penetrated in 1849 with ease to 72° 51' n. lat. into the Polar Sea, so much dreaded by Cook and Clerke; discovered Herald Island and—what is now called by some—Wrangel Land, and found the ice not at all so formidable as supposed previously. Going over the similar experience of Collinson, M'Clure, Rodgers, and others, we come to the time when the Americans established a highly profitable whale fishery in seas considered entirely useless by Cook and Clerke, gaining as much as eight millions of dollars in two years. It was in one of these years that a shipmaster went as far as 74° n. lat. nearly due north of Herald Island, and saw peaks and mountain ranges far to the northwest of his position.† Another, Captain Long, went a considerable distance along the Siberian coast to the west, and did more in a few days with a sailing-vessel than Admiral Wrangel had been able to accomplish with sledges in winter, in the course of four years, in the same region. In a letter dated Honolulu, 15th January, 1868, he says:—'That the passage from the Pacific to the Atlantic Ocean will be accomplished by one of the routes I have indicated, I have as much faith in, as I have in any uncertain event of the

* Beechey, 'Voyage,' vol. ii., p. 297.

† 'Proceedings of the Royal Geographical Society,' xii., p. 99.

future, and much more than I had fifteen years ago in the success of the Atlantic Telegraph. Although this route will be of no great importance to commerce, as a transit from one ocean to the other, yet, could the passage along the coast as far as the mouth of the Lena be successfully made every year (which I think probable), it would be of good benefit in developing the resources of Northern Siberia.*

"To the north-east of Spitzbergen, also, an interesting cruise was recently made by Mr. Leigh Smith, who in 1871, with only a sailing schooner of 85 tons, reached as far as $27^{\circ} 25'$ E. of Gr. in $80^{\circ} 27'$ N. lat., 4 degrees of longitude further than any authenticated and observing navigator before him. At this point he had before him, to the east, consequently in the direction of the newly-discovered Franz Joseph Land, nothing but open water on the 6th of September, 1871, as far as the eye could reach.

"That land would be found in the locality where the Austrian Expedition actually found it, I have long predicted. Gillis Land, after Keulen's map, generally considered to be situated in 80° N. lat. 30° E. long.—by the Swedish explorers erroneously put down in 79° N. lat.—I have, from the original text, concluded to be in $81\frac{1}{2}^{\circ}$ N. lat. and 37° E. long. Gr. This approaches to within 80 nautical miles of Franz Joseph Land, which was sighted westward as far as 46° E. long, but in this longitude there was not as yet any limit of the land. The flight of immense numbers of brent geese and other birds in the same direction has long been observed by various voyagers, and it has also been noticed that not only migrations of birds, but also of mammals, take the same direction; the Norwegian fishermen on the north of Spitzbergen have repeatedly caught immense numbers of walrus and ice-bears at the Seven Islands, and especially on their north-eastern side, whereas at Spitzbergen the walrus is now very scarce and the ice-bear almost extinct.

"I consider it also highly probable that that great Arctic pioneer and navigator, William Baffin, may have seen the western shores of Franz Joseph Land as long ago as 1614: for in that year he proceeded to 81° N. lat., and thought he saw land as far as 82° to the north-east of Spitzbergen, which is accordingly marked in one of Purchas's maps.† It is true the account of this voyage is very meagre, but so is the account of his voyage and still greater discovery of Baffin's Bay two years after, which Sir John Barrow calls 'the most vague, indefinite, and unsatisfactory,' and on his map leaves out Baffin's Bay altogether; and this, be it observed, in the year 1818.‡ Barrington and Beaufoy, though inserting Baffin's discoveries in their map, dated 1st March, 1818, describe them in the following words:—'Baffin's Bay, according to the relation of W. Baffin in 1616, *but not now believed*!' With Barents' important voyages and discoveries it is exactly the same. The Russians, who only navigated as far as Cape Nassau, also tried to erase Barents' discoveries from the map, and cut off the north-eastern part of Novaya Zemlya altogether.§ But old Barents has been found more trustworthy and correct than all the Russian maps and pilots put together. Even the identical winter-hut of that great Dutch navigator, nearly 300 years old, has been found by the Norwegian Captain Carlsen on the 9th September, 1871, and many interesting relics brought home by him, so that the truth and correctness of those famous old Dutch voyages has been

* 'Nautical Magazine,' 1868, p. 242.

† 'Barrington and Beaufoy,' pp. 40 and 41.

‡ 'Barrow's Chronological History,' p. 216 and map.

§ This was actually attempted by a pilot of the Russian Imperial Marine, and found its way also into vol. viii. of the 'Journal of the Royal Geographical Society,' p. 411, where the map is spoken of as "showing the *actual* outline of its coasts, as traced by the pilot Ziwolka, from the latest examinations, by which it will be seen that more than the eastern half represented on our maps has no existence in reality."

proved beyond all doubt. In like manner, Baffin's voyage to within sight of the western shores of Franz Joseph Land may be considered trustworthy until some substantial proof of the contrary is brought forward. Nay, it even appears to me that the report given of another remarkable voyage of a Dutch navigator, Cornelis Roule, merits attention, and is to be considered in the same way as Baffin's and Barents', so that if it be as true as the voyages of these navigators, it may yet be found that Franz Joseph Land was already discovered, and sailed through up to $74\frac{1}{2}^{\circ}$ or 75° N. lat., nearly 300 years ago. This report runs thus:—'I am informed with certainty that Captain Cornelis Roule has been in $84\frac{1}{2}^{\circ}$ or 85° N. lat. in the longitude of Novaya Zemlya, and has sailed about 40 miles between broken land, seeing large open water behind it. He went on shore with his boat, and from a hill it appeared to him that he could go three days more to the north. He found lots of birds there, and very tame.'* Now, the mean longitude of Novaya Zemlya is 60° E. Gr., and passes right through Austria Sound and Franz Joseph Land: the latter is a 'broken land' also, behind which Lieutenant Payer saw 'large open water' and found 'lots of birds'!

"Be this as it may, we now come to Sir Edward Parry's voyage north of Spitzbergen, regarding which it is an undoubted fact that he reached $82^{\circ}45'$ N. lat., the furthest well-authenticated point yet reached by any navigator, and a feat unsurpassed to this day.

"There is, however, no doubt that the northern coast of Spitzbergen lies just in the teeth of one of the most formidable ice-currents, and one that, summer and winter, is sweeping its ice-masses just towards these coasts. If, therefore, an English expedition should take Spitzbergen as a basis to start from, it would require two vessels, one of which ought to go up the west coast, the other up the east coast: for, when northerly and westerly winds prevail, the first vessel would probably be hampered by ice, and the second vessel find it navigable up the east coast; and, if easterly and southerly winds prevailed, the reverse would be the case.

"It is by way of Smith Sound, however, that navigation has hitherto been pushed furthest; and here an English expedition, so long projected, may well operate. At the same time, the east coast of Greenland seems still worthy of attention. The second German Expedition did not proceed far to the north, it is true, but it was easy enough to reach the coast; and Lieutenant Payer told me this was merely something like a 'cab's drive.' Captain Gray of Peterhead, a most experienced Arctic navigator, wrote already in 1868 thus:—'Having for many years pursued the whale fishery on the east coast of Greenland, and observed the tides, the set of currents, and the state of the ice in that locality at various seasons of the year, I think that little, if any, difficulty would be experienced in carrying a vessel in a single season to a very high latitude, if not to the Pole itself, by taking the ice at about the latitude of 75° , where generally exists a deep bight, sometimes running in a north-west direction upwards of 100 miles towards Shannon Island, from thence following the continent of Greenland as long as it was found to trend in the desired direction, and afterwards pushing northwards through the loose fields of ice, which I shall show may be expected to be found in that locality. The following are the reasons on which that opinion is founded:—In prosecuting the whale fishery in the vicinity of Shannon Island, there are generally found loose fields of ice, with a considerable amount of open water, and a dark water-sky along the land to the northward; the land-water sometimes extending for at least 50 miles to the eastward; and, in seasons when south-west winds prevail, the ice opens up very fast from the land in that latitude.

* Wilsen, 'N. & O. Tartarye,' folio, 1707, 2. deel, p. 920. See also 'Proceedings of the Royal Geographical Society,' vol. ix. p. 178.

The ice on the east coast of Greenland is what is termed field or floe ice, the extent of which varies with the nature of the season; but it is always in motion, even in winter, as is proved by the fact that ships beset as far north as 78° have driven down during the autumn and winter as far south as Cape Farewell. Thus there is always the means of pushing to the northward, by keeping to the land-ice and watching favourable openings,"* &c.

"And quite recently, in communicating the result of his experience the present year, he writes:—'During the past season I had too many opportunities of observing the drift of the ice. In May, June, July, and August, its average drift was fully 14 miles a day; in March and April it must have been driving double that rate. I calculate that nearly the whole of the ice was driven out of the Arctic Basin last summer. I went north to $79^{\circ} 45'$ in August, and found the ice all broken up; whereas down in 77° the floes were lying whole in the sea, clearly showing that the ice in 80° must have been broken up by a swell from the north; beyond the pack to the north, which I could see over, there was a dark water-sky reaching north until lost in the distance, without a particle of ice to be seen in it. I was convinced at the time, and so was my brother, that we could have gone up to the Pole, or at any rate far beyond where anyone had ever been before. I bitterly repent that I did not sacrifice my chance of finding whale, and make the attempt, although my coals and provisions were wearing down. Although I have never advocated an attempt being made to reach the Pole by Spitzbergen, knowing well the difficulties that would have to be surmounted, my ideas are now changed, from what I saw last voyage. I am now convinced that a great advance towards the Pole could occasionally be made without much trouble or risk by Spitzbergen, and some of our amateur navigators will be sure to do it, and pluck the honour from the Royal Navy. I do not know if the *Eclipse* will be sent to the Greenland whale fishery next year; if I go, I shall be able to satisfy myself more thoroughly as to the clearing out of the ice this year, because it will necessarily be of a much lighter character than usual.'

"If this important information should be considered worthy the attention of the British geographers and the Admiralty, there would, perhaps, be two steamers sent out to make success doubly certain: one to proceed up the west coast of Greenland, by way of Smith Sound, the other up the east coast of Greenland.

"But whatever may be decided on, I trust that the British Government will no longer hold back to grant what all geographers and all scientific corporations of England have been begging for these ten long years, and afford the means for a new effective expedition to crown these our modest endeavours, of which I have given an outline. We in Germany and Austria have done our duty, and I am happy to have lived to see that our humble endeavours, the work of our Arctic explorers, have gained your approbation, that of the Royal Geographical Society of Great Britain. We have done all we could in the private manner we had to do it; for, as a nation, we Germans are only now beginning to turn our attention to nautical matters. We have had no vessels, no means, and our Government has had to fight three great wars these ten years. But nevertheless we have had in this interval German, Austrian, American, Swedish, Norwegian, Russian Polar Expeditions, in which even an Italian officer took part, at the instance of the Italian Government. And England, formerly always taking the lead in these matters, is almost the only maritime power that has kept aloof. When, nearly thirty years ago, one man of science proposed that magnetical observations should be extended, it

* 'Proceedings of the Royal Geographical Society,' vol. xii. p. 197.

† Letter of Captain David Gray to Mr. Leigh Smith, dated "Peterhead, 21st September, 1874."

was at once answered by the Government then by sending out to the Antarctic Regions an expedition of two vessels, the *Erebus* and *Terror*, under that great navigator Sir James Clarke Ross, which has never yet been eclipsed as to the importance of its results and the lustre it shed on the British Navy. I do not know the views held in England now, but I know that to us outsiders the achievements and work of a man like Sir James Clarke Ross or Livingstone have done more for the prestige of Great Britain than a march to Cumassi, that cost millions of pounds sterling. That great explorer, Livingstone, is no more; his work is going to be continued and finished by German and American explorers. We shall also certainly not let the Arctic work rest till it is fully accomplished; but it surely behoves Great Britain now to step in and once more to take the lead.

“I have the honour to be, Sir,

“Your very obedient humble servant,

“AUGUSTUS PETERMANN,

“Honorary Corresponding Member and Gold Medallist
“of the Royal Geographical Society.

“*Gotha, 7th November, 1874.*”