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The Norwegian polar expedition, 1893-96

J. Geikie

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THE NORWEGIAN POLAR EXPEDITION, 1893-96.¹

HERE, in two well-printed and abundantly illustrated volumes, we have the story of the recent Polar Expedition fully and adequately set forth.² The work is admirably written, and without apparent effort conveys a convincing impression of the conditions that obtain in circumpolar regions. Dr. Nansen is not only a fearless and successful explorer, but he has the gracious gift of an excellent literary style. Nowhere in the literature of Arctic travel do we meet with more graphic description—more cunningly-worded delineations of all that is weird, awful, and beautiful in the realms of the great frost-king. The writer is saturated with the spirit of those regions, and the reader will be dull indeed who does not rise from the perusal of this work with a clear conception of the strange world through which the *Fram* drifted so successfully. And this conception is heightened by the numerous illustrations which exactly serve their purpose, and add greatly to the interest of the narrative. Successful in every respect, the Norwegian Expedition redounds to the credit of its originator and leader. As is well known, the plan of operations which Dr. Nansen propounded to the Christiania Geographical Society in 1890 has been exactly carried out. The conditions which he had foreseen and provided for were precisely those encountered by the Expedition, and the *Fram* pursued the very course which was expected of her—she traversed the Polar basin between Franz Josef Land and the Pole, and finally escaped from the ice to the west of Spitzbergen. Although Dr. Nansen had not undertaken to reach the Pole, but simply to traverse the Polar basin, yet when he found himself in lat. $86^{\circ} 13' 6''$ he so far succumbed to the fascination which the “mathematical point” seems to have for all Arctic travellers, that, with his comrade Johansen, he made a great effort to reach it. If he did not succeed in doing so, he at least attained the highest latitude yet touched by man. Moreover, he has left us in no doubt that the Pole is situated not upon land but in the midst of an ice-laden sea, and that sooner or later some one following Nansen’s lead will drift over it. It is extremely improbable, at all events, that any one will again attempt to reach the “mathematical point” by another route.

The route of advance most favoured by later expeditions has been that by Smith Sound. No doubt the difficulties to be encountered by that route were very great, but explorers were induced to follow it in the belief that it was necessary to keep close to a coast-line, and thus to ensure a reasonably safe line of retreat. Perhaps also they were tempted by the hope of being able to reach the “open Polar Sea,” seen by Morton in 1856 (Kane’s Expedition), and again by Captain Hall in 1871. The latter in the *Polaris* had reached the high latitude of $82^{\circ} 16' N.$ with so little difficulty, that many geographers were confident that a properly equipped expedition, following the same route, would have every chance of success. But the subsequent experience of the Nares’ Expedition

¹ We are indebted to Messrs. A. Constable and Co. for the loan of the blocks to illustrate this review.

² *Farthest North*, by Dr. Fridtjof Nansen. Westminster: A. Constable and Co. 2 vols. 1897.

(1875-76) satisfied most authorities that the Pole was never likely to be conquered by the Smith Sound route. Their sledges had reached the highest latitude till then attained ($83^{\circ} 20'$), and this record was slightly bettered by Lockwood, who, during the unfortunate Greeley Expedition (1881-84), reached $83^{\circ} 24'$. Since then no further attempt has been made in that direction.

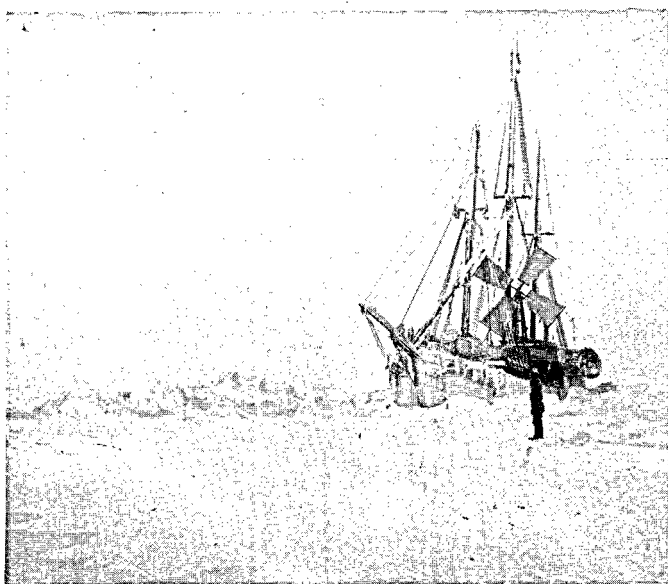
Several explorers have tried to penetrate the secrets of the frozen north by way of the sea between Greenland and Spitzbergen. So far back as 1607, Hudson, in hopes of finding an open waterway to the Pacific, sailed along the east coast of Greenland, but was stopped by the ice in lat. 73° N. In later times the Koldewey Expedition (1869-70) followed the same route; and reached by sledges as far north as 77° N. It is not likely, however, that this route will ever be attempted again, for the Polar current which sweeps southward along the Greenland coast brings with it enormous ice-floes, against which progress is impossible.

A better route is that by the west of Spitzbergen, where, owing to the warm current from the south, the sea is kept open, and a ship can most readily make its way to a high latitude. It was here that Hudson succeeded in reaching $80^{\circ} 23'$ N., while it was north of Spitzbergen that Parry made his famous attempt in 1827. He reached $82^{\circ} 45'$ N., and thus broke the record for the time, but was forced to retreat when he discovered that the drift-ice over which he travelled was carrying him south more rapidly than he could advance.

The Austrian Expedition in the *Tegethoff*, under Weyprecht and Payer (1872-74), the object of which was to seek for a North-east Passage, was set fast in the ice off the north point of Novaya Zemlya, and, drifting northward, discovered Franz Josef Land—the highest latitude reached being $82^{\circ} 5'$ N.

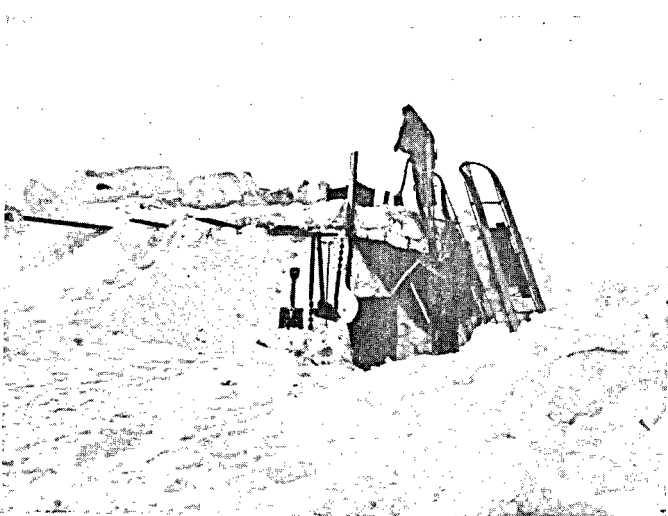
Few have attempted to penetrate to the high north by Bering Strait—the most notable expedition following that route being De Long's in the *Jeannette*. De Long fixed on this route in the belief that a warm current ran north through Bering Strait and past the east coast of Wrangel Land. He thought that this current would open a way along that coast, possibly up to the Pole. His ship, however, was beset in the ice in $71^{\circ} 35'$ N., and drifted in a WNW. direction for nearly two years, when it foundered off the north of the New Siberia Islands, in lat. $77^{\circ} 15'$ and $154^{\circ} 59'$ E. long. Three years later a number of articles which had belonged to the *Jeannette* were found frozen in the drift-ice on the south-west coast of Greenland.

Possibly it was this evidence of a transpolar drift of floe-ice which first suggested to Nansen the possibility of traversing the Polar basin in that direction. All other routes to the high north were obviously blocked. Only in the cases of the *Tegethoff* and the *Jeannette* had any ice-bound ship drifted towards the north; all the others had been carried southwards by ice-laden currents. Nansen felt convinced that it was hopeless to fight against the forces of nature. But, if a transpolar drift really existed, then that might be utilised: instead of working against currents it was obviously the better plan to work with them. The drift of the *Jeannette* and her relics seemed to indicate the existence of a transpolar



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AT THE COMING OF SPRING, MARCH 1894



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ICE-SMITHY, MAY 1895



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THE DRIFT-ICE IN SUMMER, 12TH JULY 1894

current, and if so, then this was the route that promised the readiest access to the unknown north. There were a number of other facts, moreover, all of which pointed to the same conclusion. An Alaskan "throwing-stick" had been picked up on the coast at Godthaab; drift-wood of Siberian origin was met with on the same coast, and had been found floating in the sea off the east coast of Greenland. Nansen showed that this drift-wood could not have passed south of Franz Josef Land and Spitzbergen. He pointed especially to the fact that the *Jeannette* Expedition had frequently found Siberian drift-timber between the floes in the strong northerly current to the north of the New Siberian Islands, while similar drift-wood had been seen north of Spitzbergen in the powerful current against which Parry fought in vain. Nansen also recalled the fact that the flora of Greenland includes a number of Siberia species which could hardly have been introduced in any other way than by a current carrying seeds. He further cited his discovery of quantities of mud on the drift-ice between Iceland and Greenland. This mud, he thought, was most probably of Siberian origin, and Dr. Törnebohm showed that the inference was correct, for the mineralogical composition of the mud proved that it had come from Siberian rivers. Nor was this all, for Professor Cleve obtained from the ice-borne mud a number of diatoms of precisely the same species as Nordenskiöld had collected on an ice-floe off Cape Wankarem, near Bering Strait. Of the sixteen kinds common to the muds obtained from the ice-floes of Denmark Strait and off Cape Wankarem, twelve are peculiar to the Siberian coast, having been found nowhere else. So complete a resemblance between the diatomaceous floras on the ice-floes of North Siberia and Greenland led Cleve to conclude that an open communication must obtain between the seas east of Greenland and north of Asia.

Such were some of the chief data on which Nansen based his belief that an ice-laden current traverses the Polar area from east to west. The existence of an ocean-connection across the Polar area was not doubted by some experienced Arctic navigators, but they were of opinion that the drift was not at all likely to be in the direction Nansen supposed. On the other hand, some maintained that the chief danger to contend with would be land in every direction near the Pole. They thought that the *Jeannette* relics may have been drifted through narrow channels, but that a ship carried in the same direction might impinge upon the land, and be imprisoned for years. There were many also who were more than doubtful whether any ship, no matter how strongly constructed, could withstand the pressure of the ice-floes.

It is a great triumph for the Norwegian Expedition that Nansen's views, so clearly stated in his address to the Christiania Geographical Society, should have been so remarkably verified. The drift of the *Fram* was precisely in the direction which the leader of the expedition had anticipated. Moreover, the ship itself behaved just as had been expected by its designer, and made its perilous traverse in perfect safety. No body of Arctic explorers, indeed, ever passed so long a time in those high latitudes in such comfortable circumstances as fell to the lot of this carefully planned expedition.

The story of the *Fram's* adventurous journey must be read in Nansen's own pages. It would be superfluous to attempt a dry outline of it here. We cannot refrain, however, from a brief reference to the marvellous sledge journey performed by the leader and his trusty comrade, Johansen. When the news of the leader's arrival home reached this country, and it was known that he had left the *Fram* behind in the ice-pack, those who knew Dr. Nansen were quite sure that a satisfactory explanation would be forthcoming. His long experience of the *Fram's* solidity, and his confidence that it would reach the sea west of Spitzbergen in comfort and safety were, as we now see, fully justified. No one can read the account of life on board the *Fram* without feeling assured that the expedition in the absence of its leader was quite capable of looking after itself. Knowing all this, and being unwilling to miss an unique opportunity of increasing our knowledge of Polar regions, Nansen resolved on an adventurous sledge journey. As the risks involved were great he boldly resolved to share them. His story of that venture is one of the most interesting and thrilling narratives ever penned, and will long be cited as a perfect presentment of manly courage and decision, of indomitable resolution and endurance. A mere increase of our geographical knowledge is not all that we are indebted for to those gallant Norsemen.

The scientific results of the expedition have still to be worked out, and Dr. Nansen naturally makes only passing reference to them. No doubt we shall hear much ere long as to the magnetic, the hydrographical, and the meteorological observations carried on by the various members of the expedition, and the problems suggested will assuredly give rise to much interesting discussion. Meanwhile, the present beautiful volumes picture forth the conditions that obtain in the high north in a manner hitherto unsurpassed. The writer has not only an eye for the strange icy scenery through which he drifted—for the majestic aspect of sky and frozen ocean—but we seem to know the natives of those high latitudes—the birds, the walruses, and the bears—more intimately than before, for Nansen is above all a true naturalist. And some of the outstanding discoveries of the expedition must even now be exercising the minds of scientific men. The great depth attained by the Polar Sea has astonished not a few geographers, amongst whom there would seem to have been a somewhat general impression that only shallow seas need be looked for in the highest latitudes.¹ No great depths had been met with anywhere between the northern coasts of the continental area and Spitzbergen and Franz Josef Land. All these islands, however, are really portions of the continental plateau, as the character of their rocks sufficiently shows, and there was no reason for supposing that the deep depression lying between Spitzbergen and Greenland did not continue north through the Polar area. Certainly there are no geological nor palæontological data which demand for their explanation the existence of shallow water or dry land surrounding the Pole. That land-connection of some kind formerly

¹ Among those who held that a deep ocean existed towards the Pole was Dr. John Murray. This opinion he expressed in 1889, when Captain Hovgaard lectured before the Society. (See vol. vi. p. 39.)

obtained between North America and north-west Europe can hardly be doubted, but, as geologists have often indicated, the line of connection was most probably between south-east Greenland and the British area by way of Iceland and the Faeroes.

Again, certain writers, commenting upon the discovery of a deep Polar Sea, have remarked that this destroys all belief in the former existence of a Polar ice-cap. But that belief was never held at any time by more than one or two geologists, and has been exploded now for upwards of quarter of a century. It is matter of common knowledge that the glacial phenomena of Europe and North America have been produced by ice formed within those regions, and not by any ice-cap coming from the Pole.

But if the discovery of a deep Polar Sea does not call for any modification of geological opinion as to a former connection of north-west Europe and south-east Greenland, and if it leaves the accepted results of glacial investigation just where they were, nevertheless it furnishes much food for thought both to geologists and biologists. That the deep Polar basin should be occupied below depths of 100 to 500 fathoms with relatively warm water is a most suggestive fact. There is good reason to believe that in geologically recent times the Gulf-stream or Atlantic current flowed north in much larger volume than is now the case. And if, under existing conditions, the presence in high latitudes of so great a body of water above the freezing-point perceptibly influences the meteorological conditions, it is easy to see that with a more abundant influx of yet warmer water the climate of the high north must have been profoundly affected. The presence of a deep basin of warm water extending across the Polar area helps us to account for the remarkably genial climates which formerly reigned in Arctic lands. But these and other matters will doubtless be fully discussed when all the material brought home by the Norwegian Expedition has been digested and arranged.

Meanwhile, we recognise that the map of Franz Josef Land has been improved to some extent by Dr. Nansen. He found that the tracts actually passed over by Payer had been very correctly delineated. Indeed, Payer's observations, as recently worked out by Professor Copeland, are quite accurate as far as his actual route was concerned, some errors in his map being due to the draughtsman. But, as so often happens in those regions, his eye was deceived as to the appearance of land at a distance. We gather, also, from Nansen's narrative, that the coast of Siberia, as set down upon the maps, is far from being correct. He experienced great difficulty in locating the various points he approached or landed upon. We get glimpses, also, of geological conditions which may lead to very considerable revision of the notions now prevalent as to the state of northern Siberia during the Ice Age. Clays crowded with and dotted over by large erratics, probably derived from the Siberian uplands, seem to indicate that the low grounds bordering on the Arctic Ocean were largely submerged, while glaciers, or a continuous ice-sheet coming from the south, calved their icebergs, and dropped their stony burdens over the drowned areas.

Those who are interested in Arctic research need no inducement to

read Nansen's work, but we can cordially recommend its perusal to others. They will be charmed and thrilled by this narrative of one of the most successful expeditions that ever left the shores of a civilised country.

J. GEIKIE.

WALTER SCOTT DALGLEISH, M.A., LL.D.

THE SCOTTISH GEOGRAPHICAL SOCIETY has lost a valuable friend in the unexpected death of Dr. Scott Dalgleish, which took place on Monday, February 13th, after a very short illness. He had not been in good health for some time, but attended a meeting at the Society's Rooms on the previous Wednesday, and was active in assisting in the arrangements for the reception of Dr. Nansen. That same evening an attack of influenza prostrated him, and, followed by congestion of the lungs, ended fatally in four days.

Dr. Dalgleish was educated at Edinburgh University, of which he was an M.A.; and the University of St. Andrews, a few years ago, conferred on him the degree of LL.D. In early life he conducted a private school, but for many years he had been principal editor in the publishing house of Messrs. T. Nelson and Sons. In the many educational works with which he was connected, he greatly contributed towards raising our school-books to their present state of efficiency. In addition to his special work, Dr. Dalgleish had many literary interests. He frequently contributed to the leading Reviews, and for many years was principal *Times* correspondent in Scotland. He was an active worker in all educational matters, and, as a member of the General Council of the University of Edinburgh, took a leading part in the deliberations of that body, and in the representations it made to the University Council—notably in connection with the Ordinances of the University Commissioners. He was also prominent in organising the University Local Examinations in Scotland, which, before the leaving certificate was instituted, provided a stimulus to effort among the Scottish schools, and was a test of their efficiency.

When the Scottish Geographical Society was formed in 1884, Dr. Dalgleish was among its early promoters, and worked zealously on its behalf. He served on the Council from the beginning, and as Chairman of the Education Committee spared no effort in promoting its special objects. Ten days before his death he presided at a meeting for the formation of a Scottish Branch of the Geographical Association for the promotion of geographical teaching in schools. His untimely loss will be much felt by the Society, for, whether in acting on its committees, in contributing to its magazine, in presiding at its meetings, or in any other way, he was always cordial and ready to further its interests.

J. G. B.
