

nivorous forms; and many of the fishes are pre-eminent for formidable armature, and some for extraordinary modifications for obtaining food.

SMITH SOUND, AND ITS EXPLORATION.

A MORE opportune moment could not have been selected by Dr. Bessels for publishing¹ a condensation of the literature relating to Smith Sound. Added to the interest which arctic narrative has always possessed, is the concern felt for Lieut. Greely and his party, and the hopes and fears awakened by the departure of the expedition for his relief. Many persons will therefore be glad to learn something of the region, which, with all its terrors and hardships, has been sufficiently attractive to again and again induce men to risk life and limb in the attempt to penetrate its mysteries. For that class of readers, Dr. Bessels' paper was, possibly, originally designed. But in relating the history of the more recent expeditions, especially those carried on under the auspices of the signal-office, the author has been so severe in his criticisms and reflections, that his production, while possessing the faults, has likewise the interest, of a polemic. Paragraphs like the following will certainly not fail in attracting attention for want of severity. "This plan, termed the Howgate plan, was devoid of all sound originality. The valuable parts of it are based on the work of Hayes and Weyprecht; the rest, emanating from the brain of Lieut. Henry W. Howgate, bears testimony that the originator of the '*Howgate plan*' was not familiar with even the rudiments of arctic exploration" (p. 414). "Lady Franklin Bay should have been the last place chosen as a permanent or temporary station" (p. 416). "That this plan [Howgate or Signal-service plan] would lead to disaster was pointed out by myself and others at an early date; but the judgment of the chief signal-officer in arctic matters was considered supreme, and upon him rests the responsibility of its failure. Several names connected with the signal-office will not easily be forgotten in arctic history" (p. 418). "The *Proteus* is now at the bottom of the sea; and all the arguments I could offer would not be able to raise her, or to relieve the ice-bound party in Lady Franklin Bay. The person responsible for the disaster is the chief signal-officer" (p. 435). "The preceding paragraph embodies the substance of his (Garlington's) instructions, as given and signed by W. B. Hazen, Brig. and Bvt. Maj. Gen'l, chief signal-officer, U. S. A." (p. 431). "It clearly shows that those who wrote Garlington's orders were utterly ignorant of the nature and character of the country to be traversed" (p. 436).

Other quotations might be made, which would show that the signal-service is not alone censured. The explorations of Sir John Ross and Hayes, and the conduct of Buddington, are all criticised more or less severely. Ross and Hayes are dead, and can

make no reply; Buddington, according to Bessels, is not proficient in the art of writing, and we can expect nothing from him. But Gen. Hazen has a pen, which he has at times used with considerable effect; and it is possible that he may see fit to raise the low temperature of the present controversy to a height not at all in accordance with the normal of arctic literature.

But, on the whole, the strictures upon the signal-service expeditions appear to be just and proper. The folly of intrusting the organization and details of an arctic exploring-party to a board composed of persons without special experience, has been forcibly brought to notice by the failure of both relief expeditions; and possibly it will be made more prominent when we know more of Lieut. Greely's situation and experiences. That such a board should advise many unwise things, and propose schemes and plans more or less impracticable, was in the nature of things. But that success should be expected from nautical expeditions to the polar seas, which were commanded by persons not only without arctic experience, but ignorant of the art of navigation and the management of ships, seems incredible. Certainly Greely's party, as well as those undertaking his relief, should have had the benefit of the best arctic and nautical experience, assistance, and advice. That they did not have it is evidently the fault of the originators of the Lady Franklin Bay plan, and the devisers of the details of its execution.

But, while careful to point out the errors in organization and execution of the signal-service expeditions, Dr. Bessels appears to entirely overlook the fact that the *Polaris* expedition, of which he was a member, was so constituted as to invite, if not insure, failure. Hall, its commander, though of great arctic experience, was entirely ignorant of ships, their management, navigation, and capabilities. He was also entirely an uncultivated man, and little fitted to observe or study phenomena in their scientific aspects. His sole qualification for the direction of a polar expedition was his enthusiasm and interest in arctic exploration. To supply his deficiencies, the *Polaris* party was peculiarly organized. The care and management of the ship were in the hands of Buddington. The scientific corps was under the direction of Dr. Bessels. Hall was to supply the steam necessary to run this rather complicated machinery. Naturally, from such an organization, continual controversy was to be expected; and controversy, under the circumstances, would necessarily seriously affect the success of the undertaking. But the instructions issued by the Navy department provided, that, in case of Hall's death, the control of future operations should be shared by Buddington and Bessels; the former being supreme as far as the vessel was concerned, the latter equally supreme in the direction of matters on shore. Such a provision could but tend to a failure in all respects. During Hall's life the possibilities were, that either scientific observations would be sacrificed to the supposed interests of the vessel, or that the real interests and safety of the vessel would be sacrificed to a supposed necessity for

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making additional scientific observations. The most likely course to be pursued would be the subordination of both science and safety to Hall's dominant motive, — the desire to reach a high latitude. In the event of his death, the foregoing possibilities would become probabilities, if not actual certainties. It should never be forgotten, when attempting to determine the relative values of the organizations of the several polar expeditions, that the success of the *Polaris* was entirely due to unprecedented good fortune, and not at all to good management, or extraordinary judgment in encountering and overcoming obstacles. Had serious difficulties occurred at the outset, for instance such as the English expedition had to contend with, it is probable that geographical knowledge would not have been advanced to any important extent.

The principal defect to be noticed in Dr. Bessels' paper is a want of appreciation of the laws of literary and historical perspective. Quite unconsciously, perhaps, he exaggerates the importance of events with which he was personally associated. As an instance, the narrative of the *Polaris*' voyage is detailed at extraordinary length, occupying some thirty pages of the paper; while the history of the late English expedition, by far the most important of all, occupies but fourteen pages. In fact, an ice-hummock seen by the *Polaris* appears to be of more consequence than an iceberg seen from any one vessel; and an oath of Buddington's more worthy of chronicle than the most animated descriptions of Kane, Hayes, or Nares. This is a very serious fault in an historical writer, and cannot be too severely reprehended. Generally speaking, it tends to render the style of the publication undignified, and the substance trivial. But it is only fair to remember that Dr. Bessels is writing of circumstances of an exceptional nature; that he is relating much that is new, and which to most persons is rather secret than general history; that he was intimately and prominently connected with the events of which he writes; and that the facts have not, heretofore, been presented from his particular point of view. The faults of the paper are therefore excusable, while the merits would counterbalance them even were they not. The history of two hundred and sixty years of arctic exploration, so far as it relates to Smith Sound, has been condensed into a volume of a hundred and fifteen pages, accessible to any one. The voyages of the various discoverers, beginning with Baffin and Bylot, and ending with Garlington, have been analyzed with a care that indicates the expenditure of considerable labor. The result will be a better appreciation of the work of the older navigators, which Dr. Bessels shows to have been more accurate than was to be expected, and strongly contrasting with that of some of their successors, notably Dr. Hayes. Indeed, considering the light thrown on the geography of this region by the observations of the *Polaris*, Nares, and Proteus expeditions, it is very difficult to understand how Dr. Hayes could have asserted the existence of the open polar sea. But Dr. Bessels has shown how it was possible for the mistake to be made. In his opinion,

and he brings strong evidence to support it, Hayes never reached a latitude above 80°. If this be true, then we can understand why Hayes, looking, as he must have done, across Kane's basin, should have imagined that he saw an open sea. No other plausible explanation can be given; for, had he been north of Cape Collinson with an atmosphere sufficiently clear for observations, he could not have failed to see the opposite coast of Greenland, only thirty miles distant.

In discussing the scientific results, Dr. Bessels might have gone more into detail without fear of incurring displeasure, for the scientific results are the most valuable products of the various arctic expeditions. He is of the opinion that the general set of the currents is to the southward, and that there are no data supporting the theory of an extension of the Gulf Stream to these high latitudes. He calls attention to the fact that the ice met by the *Polaris* was of a different character from that encountered by the English expedition, and points out the causes which would prevent the latter formation from being continuous. He says, "There is no reason to assume that the ice-cover of the sea in close vicinity to the north pole should be more dense and impenetrable than its lower latitudes." He is also of the opinion that land in some shape exists to the northward of Markham's highest position, basing his opinion upon the soundings and character of the ice in that latitude. This latter assumption may or may not be true; but it will not, in all probability, be removed from the domain of hypothesis for some time to come.

Finally, Dr. Bessels does not consider Greely's situation as dangerous, and is of the opinion that the party remained at Lady Franklin Bay during the past winter, and will be found in the vicinity of Littleton Island about the end of June. He adds some advice regarding the conduct of the relief expedition, which appears judicious; and, considering the experience of the author, it should have great weight.

The impression left after reading the paper, while not exactly prejudicial to arctic expeditions, is certainly opposed to them as some have been heretofore constituted. Their value really lies in the opportunity they afford scientific observers to study phenomena out of the usual range. Unfortunately this end has always been subordinated to a desire to reach the north pole, or an effort to rescue those who had gone forth on that rather barren quest. Without doubt, had not most arctic expeditions been animated by those dominant motives, the results would have been of far more consequence. Certainly future expeditions should be guarded against the operation of similar influences.

THE DEEP-SEA FISHES COLLECTED BY THE TALISMAN.¹

In the cruises made by the *Travailleur*, the exploring-instruments left much to desire, and the taking of fish was so rare, that, as Mr. Milne-Edwards said

¹ Translated from an article by H. FILHOL in *La Nature*.