

Bearing in mind the failures of the German, Swedish, and Austrian expeditions to penetrate with their vessels the ice barrier between East Greenland and Nova Zembla, as well as the experiences by Parry, in 1827, north of Spitzbergen, and the fact that the American vessel *Polaris* sailed from Baffin's Bay through Smith Strait to 82° 16' N. without obstruction of any kind (see Memorandum 4), and moreover that it was then discovered a constant current set down the strait, and that drift wood was found on the shore, is a proof of, combined with other evidence adduced at p. 15, Memorandum 3, "that the opening called Smith Sound is a channel with a constant " current flowing southward from the unknown area."

The modern application of steam power to whaling ships, and the success attending it, removes much of the objection that formerly existed against the Smith Sound route, an objection based on the time consumed in reaching Smith Sound from European ports from ice obstruction in parts of Baffin's Bay. In Memorandum 4, as bearing on this point, it is stated, "The voyage of Captain Markham (made in 1870 in the Dundee " whaling ship *Arctic*) shows the great change that powerful screw steamers have " made in ice navigation. His vessel was only detained 60 hours by the ice of " Melville Bay, when former expeditions composed of sailing vessels had usually been " stopped for several weeks." After a careful examination of all the conditions of this question of route, I fully concur in their recommendation of Smith Sound.

4. On the means to be employed for a successful issue, and the attendant risks :

In Memorandum 2 the Arctic Committee forcibly state on this head, "It is quite " clear that the dangers of the Arctic regions are, in most instances, the direct con- " sequences of despatching ill-equipped and inadequately supplied vessels with " undisciplined crews. The really unavoidable dangers are thoroughly understood, " and most of them can be obviated by modern appliances and experience. Two " vessels stationed at suitable distances could keep up communications with each " other and with the whalers which annually frequent the 'North Water' of Baffin's " Bay, while under the most unforeseen and improbable contingency a safe retreat " would always be kept open." A very important feature in the late voyage of the American ship *Polaris* is also brought to notice; namely, that this ship safely drifted out into Baffin's Bay from a high northern position in Smith Sound or Strait, the inference to be drawn from which incident is thus stated (Memorandum 2), "This " proves that the ascertained current keeps the ice in motion, and carries it South, " thus preventing any long interruption of the navigation. The safety of a Government " expedition is thus assured."

Further considerations as to the health and risk attendant on Arctic exploration are given in the closing paragraphs of Memorandum 2, which appear to me, based as they are on experience, to be just and reasonable. The last paragraph but one of Memorandum 3 indicates in general terms the manner of carrying out such an expedition, relying for details on the past experience of the Admiralty. "It should consist of " two moderate-sized screw steamers, one to be stationed at some distance within the " entrance of Smith Sound, the other to advance as far as possible to the Northward " (preserving communication with the depôt vessel), from which point sledge parties " would start in the early spring and explore the unknown region in various directions."

* * * "The advanced parties would be in such a position as to be able to fall " back upon the consort, at her station near the entrance of Smith Sound. Thence in " the improbable event of accidents, the whole expedition could retreat to the Danish " Settlements in Greenland, as has been done before." The general views here expressed as to the basis of the means for carrying out an expedition appear to be sound.

In accordance with verbal instructions from the First Lord, I have drawn up the following estimates:—

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For purchase of two suitable steam vessels from one of the Northern Whaling ports - - - - -	24,000
For fitting and equipping these vessels for sea - - - - -	15,000
Stores, &c. for whole time of expedition; in this is included the cost of a transport for conveying stores to fill up in Baffin's Bay -	5,000
Victualling of 130 men for 2½ years - - - - -	10,000
Scientific stores and appliances - - - - -	1,000
Coal supply for duration of expedition - - - - -	1,000
Expenditure (probable) to start vessels from England - - - - -	56,000