

far as the right bank of the Savio above Cesena, and on the other as far as the hills which flank the valley of the Miſa above Sinigaglia. It also occurs at the extremity of the peninsula in the province of Catanzaro.

The microscopic examination of the Diatoms contained in these deposits warrants the conclusion that they belong to the same formation and constitute so many tracts of the same bank, which, though as yet imperfectly known in all its parts, probably extends over the whole of Italy from Sicily to the vicinity of the most ancient Jurassic formation of the Alps.

It may perhaps prove to be an interesting problem for the geologist who possesses a knowledge of the palæontology and stratigraphy of the lands which surround the basins of the Mediterranean and Adriatic Seas, to compare this marine tripoli with the diatomaceous deposits of the Antarctic, and to endeavour to determine the directions of tertiary oceanic movements, and compare them with those now prevailing in the Southern hemisphere.

In opposition to the hypothesis that has just been advanced, it is to be noted that Mr Murray is of opinion that the great Antarctic diatomaceous bank is but a portion of a much more extensive formation which girds the Antarctic Pole.<sup>1</sup> I believe, however, that sufficient proof of the existence of this belt has not yet been obtained, and that should it exist the circumstances that bring about such a formation would remain to be determined. It is true, indeed, that Sir Joseph D. Hooker, during the expedition of the "Erebus" and "Terror," discovered, between the parallels of 76° and 78° S. lat., a bank of Diatoms 400 miles in length and 120 miles in breadth, but such a discovery cannot be regarded as sufficient to prove the uninterrupted extension of the deposit around the Antarctic Pole. The bank found by the Challenger naturalists did not extend beyond 60° 26' S. lat., and was succeeded by a deposit of blue mud, which, however, contained many Diatoms, and may be continuous with that observed by Sir J. D. Hooker. Finally, it may be noted that should such a singular diatomaceous annulus gird the South Pole its counterpart might be expected in the Arctic Sea. Yet, although this area has been much more explored than the Antarctic, and although it is much less deep, so that dead frustules might much more readily reach its bottom, no such ring-like deposit has been discovered. Mr Murray points out that this is probably to be accounted for by the Diatoms being much less numerous in the surface waters, and by the fact that their presence would be almost completely masked by the great abundance of terrestrial débris in all the deposits of the Arctic Ocean.

<sup>1</sup> *Loc. cit.*, p 541.