sea; the Natural History Societies of Northumberland, Durham, and Dublin vied with each other in their ardour to promote fresh discoveries, and the knowledge of the marine fauna soon made great progress.

Lovén's Researches in Scandinavia.

The researches made in 1844 by Professor Lovén are directly connected with those of Forbes. In his Report to the British Association on the bathymetrical distribution of submarine life on the northern shores of Scandinavia, he says: "The region of the deep-sea coral is with us characterized in the south by *Oculina ramea* and Terebratula, and in the north by Astrophyton, Cidaris, *Spatangus purpureus* of an immense size, all living, besides Gorgoniæ and the gigantic *Alcyonium arboreum*, which continues as far down as any fisherman's line can be sunk. As to the point where animal life ceases, it must be somewhere, but with us it is unknown."[1] Lovén established the constancy of the laminarian zone, but in the regions he explored he found that the deep zones could no longer be compared with those in other areas, as they varied according to latitude, nature of the bottom, &c. He mentions a very interesting fact, viz., that the species found between Göttenburg and Norway at a depth of 80 fathoms live on the coast of Finmark at a depth of 20 fathoms only, thus showing the direct influence of temperature on the bathymetrical distribution of marine organisms.

Franklin's Expedition, Goodsir.

When Sir John Franklin's ill-fated Polar expedition set out in 1845, Mr. Harry Goodsir, a young zoologist of great promise, sailed on board the "Erebus" as assistant surgeon and naturalist. The expedition never returned, and only fragmentary records are preserved of the valuable work which Goodsir had already accomplished. "On the 28th June a dredge was sunk to the enormous depth of 300 fathoms, and produced many highly interesting species of Mollusca, Crustacea, Asteriadæ, Spatangi, and Corallines; such as *Fusus*, *Turritella*, *Venus*, *Dentalium*, &c., and also some large forms of Isopoda. As bearing upon the geographical distribution of species, Mr. Goodsir considers the occurrence of *Brissus lyrifer* (Forbes) and *Alauna rostrata* (Goodsir) as of the greatest interest, both of them being natives of the Scottish seas. The remarkable depth also appears to us to give peculiar interest to these researches, as we believe that the deepest dredgings ever previously obtained were those of Professor E. Forbes in the Levant, the deepest of which was 230 fathoms, itself far beyond any made by other naturalists."[2]

Observations in the Mediterranean. Williamson.

In 1845 Professor W. C. Williamson described some Foraminifera, Diatoms, and Sponge spicules from some Mediterranean muds, and, in discussing the origin of limestone strata in shallow and deep waters, he suggests that the whole of the calcareous organisms may be removed by carbonated waters.

Spratt.

In 1846 Captain Spratt, R.N., dredged in 310 fathoms, 40 miles to the east of Malta,

[1] *Brit. Ass. Report* for 1854, Trans. of Sections, p. 50.

[2] *Ann. and Mag. Nat. Hist.*, ser. i., vol. xvi. p. 164, 1845. Sir John Ross in the Arctic in 1818, and Sir J. C. Ross in the Antarctic, had, however, dredged in depths greater than 400 fathoms (see *ante*, pp. 76 and 78).