a bathybial fish-fauna, assigning to it certain fishes and stating the depths at which they habitually live.[1] R. T. Lowe paid special attention to the wonderful variety of the fishes of the sea surrounding Madeira. His History of the Fishes of Madeira appeared in five parts at irregular intervals between the years 1843 and 1860, and he gives precise depths at which many fishes occur. The discovery that some fishes live at an early period of their existence at or near the surface, and at a later stage descend into the depths of the ocean, is due to Lowe. J. Y. Johnson, between the years 1862 and 1866, made some most interesting additions to ichthyology; he discovered important bathybial types, but treated them like any other rare surface fishes, without taking note of their pertinence to a distinct fauna.[2] Between 1860 and 1870 Günther published several papers on deep-sea fish, and formed the idea of a special adaptation of the ichthyic type to bathybial life.

Observations on Deep Sea Fishes.

Early in the present century naturalists turned their attention to the study of the geographical distribution of marine animals, and some detailed researches appeared on the subject. Edward Gray studied the Molluscs in fresh, brackish, and salt waters, and pointed out the species having representatives in all the three areas. Valenciennes showed that not one fish was common to both the Red Sea and the Mediterranean. But it is only since the observations made in 1840 by Edward Forbes in the Ægean Sea that these studies have acquired a real importance, on account of the methodical manner in which they were conducted and followed up.

The great importance of dredging as a means of zoological research was recognised in 1839 by the British Association, which appointed a committee "for researches with the dredge, with a view to the investigation of the marine zoology of Great Britain, the illustration of the geographical distribution of marine animals, and the more accurate determination of the fossils of the Pliocene period, under the superintendence of Mr. Gray, Mr. Forbes, Mr. Goodsir, Mr. Patterson, Mr. Thompson of Belfast, Mr. Ball of Dublin, Dr. George Johnston, Mr. Smith of Jordan Hill, and Mr. A. Strickland."[3] From the number of eminent men on this committee valuable reports were looked for, and not in vain. One alone, Professor Edward Forbes, did more than any of his contemporaries to advance marine zoology. "Edward Forbes," says Thomson, "was the ruling spirit of this committee, and under the genial influence of his contagious enthusiasm great progress was made during the next decade in the knowledge of the fauna of the British seas."[4]

British Association Dredging Committee.

Forbes conducted long and patient investigations into the bathymetrical distribution of life in various seas, and by the fascination of his literary style he invested his reports

Edward Forbes' Investigations in Deep Water.

[1] Histoire naturelle des principales productions de l'Europe méridionale, tom. iii., Paris, 1826. Risso states that *Alepocephalus* lives at 350 fathoms, *Trachyrhynchus* and *Macrurus* at 250 or 300 fathoms, *Uraleptus* at 170 fathoms, and *Gadus* at 150 fathoms.

[2] See Günther, Zool. Chall. Exp., part lvii. p. xx., 1887.

[3] *Brit. Ass. Reports* for 1839, p. xxvi.; Memoir of Edward Forbes, by Wilson and Geikie, p. 246, 1861.

[4] Thomson, The Depths of the Sea, p. 265, London, 1874.