

We may for the present, for the purpose of showing the extent of the bathymetrical range, subdivide the preceding table into three groups, which I will call the Littoral, the Continental, and the Oceanic or Abyssal.

The divisions into littoral, continental and abyssal or oceanic are not arbitrary; they represent in the present state of our knowledge of the depths of the oceans, bathymetrical lines of great physical importance. The littoral fauna extends over that shallow area of the shores which is merely the extension under water of the shores themselves (to 100 or 150 fathoms); the continental line represents the extent to which we may fairly assume that the lines of continents have been modified, the limits within which probably subsidence and elevation as affecting continental masses, or rather their shores, have taken place, to 450 or 500 fathoms, while the third region beyond this, that which has been called abyssal or oceanic, undoubtedly represents those large areas of the ocean floor which have remained unaffected through long geological periods. This view is gradually gaining ground among geologists, and was one of the very first results arrived at by the late Professor Agassiz in his discussions of the results of the dredgings of Mr Pourtalès in 1866 and 1867. He had previously followed Guyot¹ and Dana² and come to the conclusions that the present continental areas, or at least their skeletons, are of very ancient origin, and that the great oceanic basin had remained practically undisturbed from the earliest geological periods.³ It may not be out of place to repeat here a part of Professor Agassiz's argument:—"From what I have seen of the deep-sea bottom I am already led to infer that among the rocks forming the bulk of the stratified crust of our globe, from the oldest to the youngest formation, there are probably none which have been formed in very deep waters. If this be so, we shall have to admit that the areas now respectively occupied by our continents as circumscribed by the two hundred fathom curve or thereabout, and the oceans at greater depth, have from the beginning retained their relative outline and position; the continents having at all times been areas of gradual upheaval with comparatively slight oscillations of rise and subsidence, and the oceans at all times areas of gradual depression with equally slight oscillations." The same view has been adopted by Geikie.⁴

This was practically the same view developed by Thomson in the *Depths of the Sea*, and previously in a lecture delivered before the Royal Institution in April 1869, and the subject was greatly advanced by the analysis made by Mr Murray⁵ of the nature of the deposits on the ocean bottoms as contrasted to those which constitute the crust of the globe. Dr Carpenter⁶ has also further developed this view of the great antiquity of the oceanic basins.

¹ *Earth and Man*; 1856.

² J. D. Dana, *Manual of Geology*, 1863, p. 732; *Proc. Am. Ass. Adv. Science* for 1873; *Am. Journ. of Science*, 1873.

³ L. Agassiz, Nov. 1869, *Bull. Mus. Comp. Zool.*, vol. i., No. 13.

⁴ *Geographical Evolution*, 1879.

⁵ John Murray, 1876, *On Oceanic Deposits*, *Proc. Roy. Soc.*, No. 170.

⁶ W. B. Carpenter, 1880, *Lecture before the Royal Institution*, January 23, 1880.