

no one has yet given more than a very general account of the causes of the present distribution of plants and animals even in a small area like Britain; yet one step of progress is at least secure—it has been recognized that the result is due to the co-operation of many factors, and that any solution which does not recognize all the factors that are known is bound to be fallacious. The chief factors, which have been alluded to in the previous paragraphs, are: (1) the constitution of the organism; (2) the physical conditions of the region; (3) the position of the original headquarters of the stock; (4) the means of dispersal both active and passive; (5) the historical changes of the earth's crust and climate; and (6) the bionomic conditions which involve a struggle for existence.

Although life is almost cosmopolitan, most of its forms have become adapted to particular conditions, and are more or less restricted to these. It is thus possible to make a much wider and more fundamental grouping than that into geographical realms; we may inquire into the distinctive population of the littoral, pelagial, abyssal, fluvial, and terrestrial areas (Lebensbezirke), and discuss their possible historical relations to one another. To this line of inquiry much attention has been directed of recent years, and although the problem is a fine instance of "reach exceeding grasp", many valuable results have already been gained.

By littoral we mean the area from high-tide mark to a depth of about 100 fathoms, where the plateau surrounding the continents ends. It is the smallest of the five chief areas in actual surface, but probably the richest in life. It includes a few flowering plants, *e.g.* *Zostera*, that can endure submergence, the great majority of the sea-weeds, and representatives of all the chief classes of animals except amphibians. From the time of Edward Forbes onwards much ingenuity has been expended in dividing the littoral area into zones in reference to the Algæ, the animals, or the nature of the substratum. It is an area of great physical variety, subject to continual vicissitudes, and much influenced

The Great  
Faunas and  
Floras.

Littoral.