

dispersal of plants than are those of animals, the divergences in distribution are no greater than might be expected.

Beyond this, many natural orders most widely separated from each other in floral structure repeat the same modifications of their vegetative organs under similar circumstances, and possess equal capabilities for adaptation to external conditions.

The present distribution of orders, genera, and species, and all that is known of the past, seems to point to one original centre of creation and development, and to such physical conditions at different periods as permitted, or even favoured, the general spread of all the principal types of plants and the wide migrations of many of the same forms or species. Assuming this to have been so, any system of regional division is arbitrary, and only useful in proportion to its agreement with the present distribution of plants, inasmuch as it is merely a foundation on which to build a knowledge of botanical geography, not a representation or classification of the facts. An examination of the extensions and isolated remains of extensions of the types characteristic of each region throws more light on the subject than can otherwise be obtained.

Professor Huxley seems to have been so convinced of this in the Animal Kingdom that he even goes so far as to say that he thinks it would not be difficult to show that the whole surface of the globe should be primarily divided into a northern and a southern region in order to display best the geographical distribution of Birds and Mammals*. And he further remarks, in connection with his proposed four primary zoological regions† (1, Arctogæa; 2, Austro-Columbia; 3, Australasia; 4, New Zealand), that the three latter are in some respects less unlike one another than they are unlike the first. The same might be said of the plant-regions, taking tropical and South Africa and the Indian region out of Huxley's Arctogæa.

Even the most highly specialized Floras exhibit merely a local development of species, of genera, or groups of genera, belonging to orders of universal dispersion, often differing more strikingly in their vegetative organs (roots, stems, and leaves) than in their reproductive organs (flowers and fruits) from the usual character of the order. The nature of the medium in which plants grow, combined with the climatal conditions, determine the character the development assumes, and similar phenomena in development are repeated in widely-sundered areas, where the prevailing physical conditions are the same or similar. Familiar examples of this kind of parallelism are offered by the Cactaceæ of Mexico and certain African species of the genus *Euphorbia*, some of which so strongly resemble the branching *Cerei*, some the spheroidal *Melocacti*, as to deceive any but the most experienced eye. Such American genera as *Yucca*, *Agave*, and *Dasyllirion* are replaced in Africa by *Aloe*, and in Australia by *Xanthorrhæa*. Some of the species of a genus develop tuberous roots, like many of the Australian Sundews, and some thick fleshy stems, as South-African species of *Pelargonium* and *Vitis*, thus adapting themselves to

* Proc. Zool. Soc. Lond. 1868, p. 313.

† See *antè*, p. xxxiv.