

or near the equator. If, as has with much probability been surmised, the existing types of vegetation originated in northern latitudes and by migration southwards, and by differentiation and dispersion, peopled the southern hemisphere, there is no obvious obstacle to the prolongation of these two particular types (and many others) into South America, New Guinea, and Australia. But there is this difference between the oaks of the tropics of the Old World and those of the New, that the Asiatic in their prolongation southward to Malacca and thence eastward to Borneo in descending to the sea-level assume different types of structure from their northern allies, forming distinctly tropical sections of the genus, as *Cyclobalanus*, *Chlamidobalanus*, *Lepidobalanus*, and *Castanopsis*. On the other hand, the tropical-American oaks where they descend to the sea-level do not assume a character sectionally differing from temperate-American species. It is startling to have to regard the genus *Quercus* as tropical rather than temperate; but so it is, and especially in India, where about 70 species are purely tropical and only 12 purely temperate.

Turning now to the concluding pages of Mr. Hemsley's Introduction (pp. xxxix-lxi), which are devoted to an exposition of the primary botanical regions of the globe, I find that these regions are based upon far more complete and reliable data than had previously been available. In the last paragraph but one Mr. Hemsley remarks that I do not share some of the opinions which he has expressed in his previous pages. This remark must not be taken as conveying the impression that I dispute either his facts or methods. I shall now, in preference to discussing either, give in outline my own idea of the principal botanical regions of the globe, from which it will be seen how far I differ from him in the limitation of the primary Floras of the globe.

I limit the primary botanical regions of the globe to two, the Tropical and the Temperate; these are distinguished by both climatic and botanical features—tropical-country plants will not, as a rule, bear a temperate climate, nor temperate-country plants a tropical climate. Botanically the two regions are distinguished by the restriction of certain natural orders to one or the other, and the prevalence of others in one or the other. The geographical limit between these Floras in either hemisphere varies with every few degrees of longitude, being affected by elevation of surface and local climatal conditions. I do not distinguish the northern and southern Frigid Floras as primary regions separate from the Temperate, for these regions contain no genera and very few species different from the Temperate, and the geographical limits of any group of species that may be selected as inhabiting the coldest region of the globe are undefinable by latitude or by isothermal or isothermal lines.

If a distinctive name is desirable for the two primary regions, I would suggest that of Botanical Empires.

The regions next in importance to the two primary are in my view seven,—two north temperate, of the Eastern or Old and Western or New World respectively; two tropical, corresponding to the above; and three south temperate (America, Africa, and