

Floras in the primary regions of the southern hemisphere. Elsewhere reasons are given for treating the Cape and Andine Floras as subregions of more extended areas. Another important difference is the retention of three south temperate regions against one north temperate region, which brings out more prominently the greater differentiation of the vegetation of the southern hemisphere. Practically the plan proposed in this sketch recognizes and deals with these facts, although it does not bring them into direct contrast.

There is yet another way of treating the subject, one that obviates the necessity for defined regions and subregions, and one that may be effectively employed for conveying an idea of the broad features of the distribution of plants: it is by grouping the Floras into northern, tropical, and southern, as was done by Thiselton Dyer in the lecture on the geography of plants, which has been referred to before.

Some further justification of the plan here adopted will now be attempted, but it is not intended to recapitulate well-known facts and traverse familiar ground. The intention is rather to bring together some facts and data additional to those collected in the Appendix, or adduced in the preceding paragraphs of the present sketch.

### *The Northern Region.*

This corresponds very closely to Wallace's Arctic and Palæarctic regions combined, and is adopted for reasons already sufficiently explained; the close relationship of the Floras of Eastern Asia and of North America, especially eastern, than of either of these and the European being the principal reason. A rough subdivision of this region gives eight subregions, namely:—an Arctic, a North and Mid-European and Central Asian, a Mediterranean, a Chino-Japanese, and in America a continuation of the Arctic, a boreal, an Atlantic, a Central, and a Pacific subregion. In the Old World we find that the vegetation of North and Central Europe extends to the extreme east of Asia, associated there with an endemic element, which increases so much in China, south of about the fortieth parallel, and in Japan, as to constitute of these countries a distinct subregion, exceedingly rich in trees and shrubs—richer even than the Atlantic subregion of North America. The transition from the Chinese Flora to that of a more European character is very sudden on entering Mandshuria, where probably in some districts fifty per cent. of the species are European. Maximowicz gives\* some interesting figures illustrating the gradual diminution of the absolute numbers and percentages of species having a wide area—that is circumpolar, or common to both Europe and Asia. Thus in Baikal-Dahuria the figures are 747 species, =53·4 per cent.; in Mongolia 599 species, =46·2 per cent.; in Mandshuria 533 species, =39·6; Peking district, 318 species, =31·9 per cent.; Japan, 442 species, =16·2 per cent. The percentages of endemic species in these five areas are respectively 9·4, 8·3, 8·7, 13·3, and 44·0. Maximowicz comments on the great fall in the percentage of the endemic element passing from

\* Bull. Congr. Intern. Bot. Hort. Pétersb. 1884, p. 164.