

The southern floral province, comprising Nicaragua, Costa Rica, and Panama, exhibits much closer relationships with the South-American tropical flora, and may be of more recent derivation; but the large number of South-American types (see p. 227) which reach Mexico or Guatemala, and not the West Indies, indicate a more remote connection, though of course it may not have been continuous. The vegetation of no part of this province, except perhaps the Panama railway route, has been very thoroughly investigated, yet there are fairly good samples of the flora in herbaria from various parts, including the principal peaks, from the Volcan de Chiriqui to Volcan el Viejo in North-western Nicaragua. Ærsted's Costa-Rica collections, as already mentioned, have only been elaborated in part; but among those published are the Leguminosæ with 90 species; Melastomaceæ, 23; Rubiaceæ, 60; Compositæ, 101; Gesneraceæ, 62; Orchideæ, 198; and Palmæ, 37. Nominally they contain a large percentage of endemic species, which a critical examination of the whole of the materials of the same orders from South America would probably considerably reduce. The low percentage of the endemic generic element in the vegetation of the whole of Mexico and Central America has been commented on (p. 211); and it may be repeated that the southern floral province is by far the poorest of the three provinces; only thirteen, so far as is known, being restricted to it. What the total number of genera of vascular plants recorded for the whole province is we have not ascertained; but there are 497 in Nicaragua, 451 in Costa Rica, and 697 in Panama; and the species are respectively 984, 1140, and 1556. No fewer than 1108 species count as endemic in this province, giving a much higher ratio than in either of the other provinces; yet, as just remarked, we strongly doubt these being the true proportions. Quite a small number of the Panama plants collected by Seemann, the whole of which we have had an opportunity of examining, proved endemic; and the additions thereto by Hayes yielded no greater percentage. The plants from Costa Rica and Nicaragua have only in part been submitted to the same test; but even taking into account the difference in position and the greater development of the mountain chain in Costa Rica, such an enormous accession to the specific endemic element is to be discredited. Indeed in some orders, the Acanthaceæ for example, many of Ærsted's species are clearly spurious.

Of a flora concerning which our knowledge is so imperfect little can be profitably said about the apparent absence of certain types, yet it may be mentioned that *Cheirostemon* is not known to extend into this province, or it would most certainly have been mentioned by travellers; but, what is more inexplicable, there is no record of the existence of any *Fuchsia*\*. The relationships of the flora, however,

\* Since this was written we have seen a specimen of the Guatemalan *Fuchsia bacillaris*, from Costa Rica, collected by Dr. O. Kuntze, and we find that Seemann records *F. microphylla* from Chiriqui (Bot. Voy. 'Herald,' p. 120); but there is no specimen either in the first set of his collection at Kew or in the second set at the British Museum. Assuming this record to be correct, the fact remains that this genus, so numerously represented in South America and Colombia, is rare in the intermediate region. Only one species of *Fuchsia* has been found in the West Indies, and that in St. Domingo; it is *F. triphylla* (see Botanical Magazine, cxi. t. 6795).