

and Bolivia. *Carpinus americanus* was added to the flora of Guatemala by Bernoulli's last collection; it ranges from Canada on the Atlantic side to Florida and Texas, but has not yet appeared in any Mexican collection. All the genera of the Cupuliferæ except *Ostryopsis* and *Castanopsis* are European. Oaks (*Quercus*) constitute such a prominent feature in the mountain vegetation of Mexico and Central America that a separate paragraph is devoted to the discussion of their distribution.

The Oak Vegetation.

DeCandolle's monograph of the genus *Quercus** contains descriptions of 281 species; and subsequent discoveries, chiefly in the Malay Peninsula and Archipelago, have augmented the number to about 300, after deducting a number of badly defined ones. They are generally spread in the temperate regions of the northern hemisphere, except the mountains of tropical Africa and nearly all the West Indies, and they extend southward through the Malay Archipelago to New Guinea, where at least two or three species are known to exist. Three or four species occur in the mountains of Colombia the most southerly station being Popayan in about 2° 30' N. lat. There *Q. humboldtii* grows up to an elevation of 9000 feet. One species, *Q. virens*, grows in Cuba, and is the only one hitherto found in the West Indies. This species is common in the South-eastern States of North America, as well as in Mexico and Guatemala, extending southward to Costa Rica. Our enumeration contains eighty-six proposed species; but there are probably not more than sixty distinct ones, and possibly fewer†. Fourteen are recorded from California, sixteen from the North-eastern States, and twenty from the South-eastern States; several of the eastern species ranging from Canada to Florida; but only three or four of the Mexican species, besides *Q. virens*, extend beyond Mexico, and these only into Texas, New Mexico, Arizona, and California.

Whether we estimate the number of species of Mexican and Central-American oaks at eighty-six or sixty-six the fact remains that they constitute one of the most important elements and one of the most conspicuous features in the vegetation of the subtropical and temperate regions of Mexico and Central America. Every traveller dilates on the magnificence and vast extent of the oak forests; and Liebmann, who made a special study of them, enters somewhat fully into their distribution, and from his memoir‡ we extract the following particulars, not exactly in the author's words, because it was necessary to condense as much as possible. He describes an ascent from the eastern sea-coast.

* A. DeCandolle, 'Prodromus,' xvi. 2, pp. 2-107 (1864).

† Wenzig, in a revision of the American species of *Quercus* (Jahrbuch des königlichen botanischen Gartens . . . zu Berlin, iii. 1884), published since our enumeration, reduces the number of Mexican and Central-American forms to about sixty-five species.

‡ Americas Egevegetation, 1851. Translation in Hooker's 'Kew Journal of Botany,' iv. 1852, p. 321, and v. p. 9.