

more than they constitute in the known flora from North Mexico to Panama. But here, as in the ferns, the xerophilous genera largely predominate, *Bouteloua*, *Sporobolus*, *Stipa*, and *Aristida* being numerous, and such monotypic genera as *Buchloe* and *Scleropogon* are characteristic. We have already fully detailed (page 272) the distribution of the genera *Beschorneria*, *Agave*, *Furcræa*, *Yucca*, *Nolina*, and *Dasyllirion*, which have their centre here, and, if we may judge from present evidence, originated here. The Bromeliaceæ, which have a similar type of foliage, and are partly xerophilous, like the gigantic Puyas of Chili, are mostly epiphytes, inhabiting more humid regions, and only three are recorded from North Mexico.

Another comparison shows that in South Mexico the monocotyledons constitute about 22 per cent. of the flowering plants, and in our three provinces collectively 21.5 per cent., whereas in North Mexico they only amount to a little over 11 per cent.; and taking the petaloid monocotyledons alone the contrast is still more striking. Even assuming that our total for North Mexico is proportionately 150 too low (and there is no reason to suppose the discrepancy is so great), the numbers would be as 1 in North Mexico to 8 in South Mexico.

With regard to extensions into North America, there are a few additional facts. It has been shown (page 223) that the number of Mexican species extending northward west of the Mississippi is almost double that extending northward east of that river. It might be urged that this is just what anybody would have expected and taken for granted, considering the position of the country east of the Mississippi. But this is by no means the matter of course it appears to be, for climatal conditions play the chief part. The number of Mexican and Central-American genera represented respectively in eastern and western North America is as 5 to 6, rather more than less; but many of these genera do not exist in North Mexico. The extensions of North-Mexican genera and species have not been separately tabulated; but from comparisons of certain natural orders it is evident that the extensions into eastern North America are largely, perhaps mainly, South Mexican and not North Mexican. Dr. Asa Gray\*, comparing the constituents of the Atlantic and Pacific forests of North America, enumerates the following arboreous genera as absent from the Pacific forests:—*Magnolia*, *Asimina*, *Tilia*, *Robinia*, *Liquidambar*, *Ilex*, *Diospyros*, *Bumelia*, *Ulmus*, *Celtis*, *Morus*, *Ostrya*, *Carpinus*, and *Carya*. Now, all these genera are represented in Mexico, yet, so far as we know, only four out of the fourteen in North Mexico. Furthermore, the species in eastern North America and in the mountains of South Mexico are often identical; thus *Liquidambar styraciflua*, *Ostrya virginica*, and *Carpinus americana* are instances. Whether these elements ever inhabited the intermediate country is beyond the scope of this inquiry, and, one way or the other, would not invalidate data concerning the present condition of things.

Many other facts having the same bearing might be adduced, but ample evidence

\* "Forest Geography and Archæology," American Journal of Science and Art, xvi. 1878, p. 183.