

floating ice, and permitting a temperate flora of great richness to prevail far to the north, and especially along the southern margins and extensions of the circumpolar land. These seem to have been the physical conditions which terminated the existence of the old Mesozoic flora and introduced that of the Middle Cretaceous.

As time advanced the quantity of land gradually increased, and the extension of new plains along the older ridges of land was coincident with the deposition of the great Laramie series, and with the origination of its peculiar flora, which indicates a mild climate and considerable variety of station in mountain, plain, and swamp, as well as in great sheets of shallow and weedy fresh water.

In the Eocene and Miocene periods, the continents gradually assumed their present form, and the vegetation became still more modern in aspect. In that period of the Eocene, however, in which the great nummulitic limestones were deposited, a submergence of land occurred on the eastern continent which must have assimilated its physical conditions to those of the Middle Cretaceous. This great change, affecting materially the flora of Europe, was not equally great in America, which also by the north and south extension of its mountain-chains permitted movements of migration not possible in the Old World. From the Eocene downward, the remains of land-animals and plants are found chiefly in lake-basins occupying the existing depressions of the land, though more extensive than those now remaining. It must also be borne in mind that the great foldings and fractures of the crust of the earth which occurred at the close of the Eocene, and to which the final elevation of such ranges as the Alps and the Rocky Mountains belongs, permanently modified and moulded the forms of the continents.

These statements raise, however, questions as to the precise equivalence in time of similar floras found in dif-