

marine. The upper part of the Molasse, mostly marine, is Miocene. The beds of Oeningen, on Lake Constance, affording Insects in fine preservation, along with leaves and some Mammals, Birds, and other species, are of the Upper Miocene. Among the noted Oeningen fossils is the *Homo diluvii testis* of Scheuchzer (1700), shown by Cuvier to be an aquatic Salamander.

The Miocene has a thickness of 10,000 feet in northern Italy and the Ligurian Alps, and extends southward. It occurs also in Sicily and Malta.

The Marine Pliocene of Europe is mostly found along the sea border. This is its position in eastern England, where it is called the Crag, in Belgium, and on the French Mediterranean coasts; but in Italy the beds spread more widely along both sides of the Apennines, and in Sicily they have an elevation in some places of 3000 feet.

LIFE.

PLANTS. — The higher plants were mainly Angiosperms, Conifers, and Palms.

The Isle of Sheppey is famous for its fossil fruits; and among them are those of several species of Palm, related to the *Nipæ* of the Moluccus and Philippine Islands, England in the Eocene having been a land of Palms. In the Middle Eocene, in England, there were species of Fig, Cinnamon, various *Proteaceæ*, etc., indicating a climate and flora much like that of India and Australia. In the Tyrol, Eocene beds contain Palms; nearly a third of the plants were Australian in character, and a fifth were allied to plants of tropical America. The Oligocene contains, in its lignitic beds, species of *Taxites*, *Cupressinoxylon*, *Sequoia*, and affords elsewhere leaves of *Laurus*, *Cinnamomum*, *Magnolia*, *Sassafras*, *Quercus*, with Palms of the genera *Sabal*, *Flabellaria*, *Phœnicites*. In the Miocene, Palms were absent from England, and the forests of Europe had lost their tropical character. It is remarkable that a much larger proportion of species than now were of North American type, showing that, while the Eocene vegetation of Europe was largely Australian, the second or Miocene phase (including in part at least the Upper Eocene of Lyell) was more like that of North America than now. In the Pliocene, the Flora embraced the modern genera of Rose, Plum, Almond, Myrtle, Acacia, Whortleberry. There were also species of the genera (now unknown in Europe) of *Taxodium*, *Comptonia*, *Liquidambar*, *Nyssa*, *Robinia*, *Gleditschia*, *Cassia*, *Rhus*, *Juglans*, *Ceanothus*, *Celastrus*, *Liriodendron*, indicating that there was still a strong American character. Moreover, certain genera, as that of the Oak (*Quercus*), which have numerous species in America, had many in Pliocene Europe, but have few now.

In Greenland, according to Heer, Eocene beds, named by him the *Unartok series*, occur on the shores of Disco Island, containing species of *Magnolia*, *Laurus*, *Juglans*, *Quercus*, *Sequoia* (*S. Langsdorffi*); and Miocene beds of the *Atanekerdruk series*, that have afforded 187 species of plants, including the same *Sequoia*, *Glyptostrobus Europæus*, *Taxodium distichum*, *Taxites*