

of the Cretaceous flora. No composite flowers have before been found in the fossil state, and, as these are among the most complex and specialised forms of florescence, it has been supposed that they belonged only to the recent epoch, where they were the result of a long series of formative changes."

The above presents some interesting new types not heretofore found in the Middle Cretaceous. More especially the occurrence of large flowers of the composite type presents a startling illustration of the early appearance of a very elevated and complex form. Great interest also attaches to these Amboy beds, as serving, with those of Aix and Greenland, to show that the margins of the Atlantic were occupied with a flora similar to that occurring at the same time in the interior plateau of North America and on the Pacific slope.

The beds at Aix-la-Chapelle are, however, probably somewhat newer than the Dakota or Amboy beds, and correspond more nearly in age with those of the Cretaceous coal-field of Vancouver Island, where there is a very rich Upper Cretaceous flora, which I have noticed in detail in the "Transactions of the Royal Society of Canada."* In these Upper Cretaceous beds there are fan-palms as far north at least as the latitude of 49°, indicating a very mild climate at this period. This inference is corroborated by the Upper Cretaceous flora of Atané and Patoot in Greenland, as described by Heer.

The dicotyledonous plants above referred to are trees and shrubs. Of the herbaceous exogens of the period we know less. Obviously their leaves are less likely to find their way into aqueous deposits than the leaves of trees. They are, besides, more perishable, and in densely wooded countries there are comparatively few herbaceous plants. I have examined the beds of mud deposited at the mouth

* Vol. ii., 1884.