tropical forms blend so remarkably with those of colder parts of the earth, presents, according to Darwin's beautiful and animated descriptions,* the most instructive materials for the study of the present and the past geography of plants. The history of the primordial ages is, in the strict sense of the word, a part of the history of plants.

Cycadeæ, which, from the number of their fossil species, must have occupied a far more important part in the extinct than in the present vegetable world, are associated with the nearly allied Coniferæ from the coal formations upward. They are almost wholly absent in the epoch of the variegated sandstone which contains Coniferæ of rare and luxuriant structure (*Voltizia*, *Haidingera*, *Albertia*); the Cycadeæ, however, occur most frequently in the keuper and lias strata, in which more than twenty different forms appear. In the chalk, marine plants and naiades predominate. The forests of Cycadeæ of the Jura formations had, therefore, long disappeared, and even in the more ancient tertiary formations they are quite subordinate to the Coniferæ and palms.†

The lignites, or beds of brown coal‡ which are present in all divisions of the tertiary period, present, among the most ancient cryptogamic land plants, some few palms, many Coniferæ having distinct annual rings, and foliaceous shrubs of a more or less tropical character. In the middle tertiary period we again find palms and Cycadeæ fully established, and finally a great similarity with our existing flora, manifested in the sudden and abundant occurrence of our pines and firs, Cupuliferæ, maples, and poplars. The dicotyledonous stems found in lignite are occasionally distinguished by colossal size and great age. In the trunk of a tree found at Bonn, Nöggerath counted 792 annual rings.§ In the north of France, at Yseux, near Abbeville, oaks have been discovered in the turf moors of the Somme which measured fourteen feet in diameter, a thickness which is very remarkable in the Old Continent and without the tropics. According to Göppert's excellent investigations, which, it is hoped, may soon be illustrated by plates, it would appear that "all the amber of the Baltic comes from

* Charles Darwin, *Journal of the Voyages of the Adventure and Beagle*, 1839, p. 271.

† Göppert describes three other Cycadeæ (species of Cycadites and Pterophyllum), found in the brown carboniferous schistose clay of Altsattel and Commotau, in Bohemia. They very probably belong to the Eocene Period. Göppert, *Fossile Cycadeen*, s. 61.

‡ [*Medals of Creation*, vol. i., ch. v., &c. *Wonders of Geology*, vol. i., p. 278, 392.]—*Tr.*

§ Buckland, *Geology*, p. 509.