

This flora, then, consists of great trees, and also of many smaller plants, which would form a close, thick turf, or sod, when partially buried in marshes of almost unlimited extent. M. Brongniart indicates, as characterising the period, 500 species of plants belonging to families which we have already seen making their first appearance in the Devonian period, but which now attain a prodigious development. The ordinary dicotyledons and monocotyledons—that is, plants having seeds with two lobes in germinating, and plants having one seed-lobe—are almost entirely absent; the cryptogamic, or flowerless plants, predominate; especially Ferns, Lycopodiaceæ and Equisetaceæ—but of forms insulated and actually extinct in these same families. A few dicotyledonous gymnosperms, or naked-seed plants forming genera of Conifers, have completely disappeared, not only from the present flora, but since the close of the period under consideration, there being no trace of them in the succeeding Permian flora. Such is a general view of the features most characteristic of the Coal period, and of the Primary epoch in general. It differs, altogether and absolutely, from that of the present day; the climatic condition of these remote ages of the globe, however, enables us to comprehend the characteristics which distinguish its vegetation. A damp atmosphere, of an equable rather than an intense heat like that of the tropics, a soft light veiled by permanent fogs, were favourable to the growth of this peculiar vegetation, of which we search in vain for anything strictly analogous in our own days. The nearest approach to the climate and vegetation proper to the geological period which now occupies our attention, would probably be found in certain islands, or on the littoral of the Pacific Ocean—the island of Chloë, for example, where it rains during 300 days in the year, and where the light of the sun is shut out by perpetual fogs; where arborescent Ferns form forests, beneath whose shade grow herbaceous Ferns, which rise three feet and upwards above a marshy soil; which gives shelter also to a mass of cryptogamic plants, greatly resembling, in its main features, the flora of the Coal-measures. This flora was, as we have said, uniform and poor in its botanic genera, compared to the abundance and variety of the flora of the present time; but the few families of plants, which existed then, included many more species than are now produced in the same countries. The fossil Ferns of the coal-series in Europe, for instance, comprehend about 300 species, while all Europe now only produces fifty. The gymnosperms, which now muster only twenty-five species in Europe, then numbered more than 120.

It will simplify the classification of the flora of the Carboniferous epoch if we give a tabular arrangement adopted by the best authorities:—