

flora from that of the Mesozoic, in the same manner that Ramsay has supposed a similar period of cold to have done north of the equator. This would imply a very great change of climate, since we have evidence of the extension of the Lower Carboniferous flora at least as far north as Spitzbergen. The upper coal-formation we cannot, however, trace nearly so far north; so that a gradual refrigeration may have been going on before the Permian. Thus in both hemispheres there was a general similarity in the later Palæozoic flora, and perhaps similar conditions leading to its extinction and to its replacement by that to be described in the next chapter.

NOTES TO CHAPTER IV.

I. CHARACTERS AND CLASSIFICATION OF PALÆOZOIC PLANTS.

IN the space available in this work it would be impossible to enter fully into the classification of Palæozoic plants; but it may be well to notice some important points for the guidance of those who may desire to collect specimens; more especially as much uncertainty exists as to affinities and very contradictory statements are made. The statements below may be regarded as the results of actual observation and of the study of specimens *in situ* in the rocks, as well as in the cabinet and under the microscope.

GYMNOSPERMEÆ.

Family CONIFERÆ; *Genus* DADOXYLON, Endlicher; ARAUCARITES, Goepfert; ARAUCARIOXYLON, Kraus.

The trunks of this genus occur from the Middle Devonian to the Permian inclusive, as drift-logs calcified, silicified, or pyritised. The only foliage associated with them is of the type of *Walchia* and *Araucarites*—viz., slender branches with numerous small spiral acicular leaves. Two of the coal-formation species, *D. materiarum* and another, had foliage of this type. That of the others is unknown. They are all distinct from the wood of *Cordaites*, for which see under that genus.