

the scale-trees, but differ from them and from ferns in general in many ways. They were possibly closely related to the extinct Devonian *Lycoperideæ*, combining characteristic peculiarities of the club-mosses and the frondose ferns, which Strasburger considers as the hypothetical primary form of flowering plants.

In leaving the dense forests of the primary period, which were principally composed of frond ferns (*Lepidodendreæ* and *Sigillariæ*), we pass onwards to the no less characteristic pine forests of the secondary period. Thus we leave the domain of the Cryptogamia, the plants forming neither flowers nor seeds, and enter the second main division of the vegetable kingdom, namely, the sub-kingdom of the *Phanerogamia*, *flowering plants* forming seeds. This division, so rich in forms, containing the principal portion of the present vegetable world, and especially the majority of plants living on land, is certainly of a much more recent date than the division of Cryptogamia. For it can have developed out of the latter only in the course of the palæolithic period. We can with full assurance maintain that, during the whole archilithic period, hence during the first and longer half of the organic history of the earth, no flowering plants as yet existed, and that they first developed during the primary period out of Cryptogamia of the fern kind. The anatomical and embryological relation of Phanerogamia to the latter is so close, that from it we can with certainty infer their genealogical connection, that is, their true blood relationship. Flowering plants cannot have directly arisen out of thallus plants, nor out of mosses; but only out of ferns, or Filicines. Most probably the scaled ferns, or *Lepidophyta*, and more especially amongst these the *Lycopodiaceæ*, forms