

Infra-Coal-measure Flora.—(Millstone grit, l'étage infra-houiller), characterized essentially by lepidodendroids and stigmarias.—*Lepidodendron aculeatum*, *obovatum*, *crenatum*, *brevifolium*, *caudatum*, *carinatum*, *rimosum*, *volkmannianum*; *Ulodendron punctatum*, *ellipticum*, *majus*; *Halonium tuberculosa*; *Lepidophloios intermedius*, *laricinus*. *Sigillaria* is not very common, but *S. oculata*, *alveolata* (Stern.), *Knorrii*, *trigona*, *minima*, and other species occur. The ferns are more varied than in older parts of the system, sphenopterids being the dominant types (*Sphenopteris distans*, *elegans*, *tridactylites*, *furcata*, *dissecta*, *rigida*, *divaricata*, *linearis*, *acutiloba*, etc.). The genus *Pecopteris* is represented by a few species. *Neuropteris* is comparatively rare (*N. Loshii*, *tenuifolia*). *Alethopteris* appears in the widespread species *A. lonchitica*, and a few others. *Calamites* are not relatively abundant (*Calamites undulatus*, *Steinhaueri*, *communis*, *cannæformis*, *Cistii*; *Asterophylites foliosus*, etc.).

Flora of the Upper Graywacke.—*Lepidodendroids* are the prevalent forms (*Lepidodendron carinatum*, *polyphyllum*, *volkmannianum*, *rugosum*, *caudatum*, *aculeatum*, *obovatum*; *Halonium tetrasticha*, *regularis*; *Ulodendron ovale*, *commutatum*). *Stigmaria* in several species occurs, sometimes abundantly; but *Sigillaria* is rare (*S. undulata*, *Voltzii*, *costata*, *subelegans*, *venosa*, *Guerangeri*, *verneuiliana*). *Calamites* are not infrequent (*C. Roemerii*, *Voltzii*, *cannæformis*, etc.). The ferns are chiefly sphenopterids (*Sphenopteris dissecta*, *elegans*, *Gersdorfi*, *distans*, *tridactylites*, *schistorum*; *Cyclopteris tenuifolia*, *Haidingeri*, *flabelata*; *Prepecopteris aspera*, *subdentata*; *Neuropteris heterophylla*, *Loshii*).

Flora of the Culm, characterized by the abundance of lepidodendroids of the type of *L. veltheimianum* (with *Knorria imbricata*), by the number of *Bornia transitionis*, associated with *Calamites Roemerii*, *Stigmaria ficoides* (and other species), and by the abundance of the palæopterid ferns (*Palæopteris Machaneti*, *antiqua*, *dissecta* (*Sphenopteris*), *affinis* (Fig. 364); *Cardiopteris frondosa*; *Rhodea divaricata*, *elegans*, *moravica*; *Sphenopteris Göpperti*, *Schimperii*, etc.).

Carboniferous Limestone Flora.—The palæopterid ferns reach a maximum (*Palæopteris inæquilatera*, *lindseæformis*, *polymorpha*, *frondosa*). Sphenopterid forms are found in *Sphenopteris bifida*, *lanceolata*, *confertifolia*. The old genus *Cyclostigma* here disappears (*C. minuta*, *Nathors-*