

Fig. 150.



radiate from a centre. Such were the very curious relations that united into one great sept the prevailing members of the Oolitic flora; and similar bonds of connection seem to have existed in the floras of the still earlier ages.

In the Oolite of Scotland I have, however, at length found trace of a vegetable organism that *seems* to have lain, if I may so express myself, outside the pentagon, and was not a member of any of the great families which it comprised. (See fig. 151. I succeeded about four years ago in disinterring from the limestone of Helmsdale what *appears* to be a true dicotyledonous leaf, with the fragment of another leaf, which I at first supposed might have belonged to a plant of the same great class, but which I now find might have been a portion of a fern. When *Phlebopteris Philippsii* was first detected in the Oolite of Yorkshire, Lindley and Hutton, regarding it as dicotyledonous, originated their term *Dictyophillum* as a general one for all such leaves. But it has since been

(*Helmsdale.*) assigned to a greatly lower order,—the ferns; and Sir Charles Lyell has kindly shown me that an exotic fern of the present day exhibits exactly such a reticulated style of venation as my Helmsdale fragment. (See fig. 152, p. 450.) The other leaf, however, though also fragmentary, and but indifferently preserved, seems to be decidedly marked by the dicotyledonous character; and so I continue to regard it, provisionally at least, as one of the first precursors in Scotland of our great forest-trees, and of so many of our flowering and fruit-bearing plants, and as apparently occupying the same relative place in advance of its contemporaries as that occupied by the conifer of the Old Red Sandstone in advance