

consideration of the fossils, for these two distinct views of the natural history of such groups led to co-ordinate results. Then followed the collective view of the whole series, and the establishment of a nomenclature. Not only the whole series (considered as a distinct system), but every subordinate group was defined by a geographical name, referring us to a local type within the limits of Siluria; in this respect adopting the principle of grouping and nomenclature applied by W. Smith to our secondary rocks. At the same time, the older slate rocks of Wales (inferior to the system of Siluria), were called *Cambrian*, and soon afterwards the next great collective group of rocks (superior to the system of Siluria) was called *Devonian*. In this way was established a perfect congruity of language. It was geographical in principle, and it represented the actual development of all our older rocks, which gave to it its true value and meaning." The period, then, for the purposes of scientific description, may be divided into three sub-periods—the Upper and Lower Silurian, and the Cambrian.

The characteristics of the Silurian period, of which we give an ideal view opposite (PLATE VIII.), are supposed to have been shallow seas of great extent, with barren submarine reefs and isolated rocks rising here and there out

of the water, covered with Algæ, and frequented by various Mollusca and articulated animals. The earliest traces of vegetation belong to the *Thallogens*, flowerless plants of the class Algæ (Fig. 28), without leaves or stems, which are found among the Lower Silurian rocks.

To these succeed other plants, according to Dr. Hooker, belonging to the Lycopodiaceæ (Fig. 28), the seeds of which are found sparingly in the Upper Ludlow beds. Among animals,

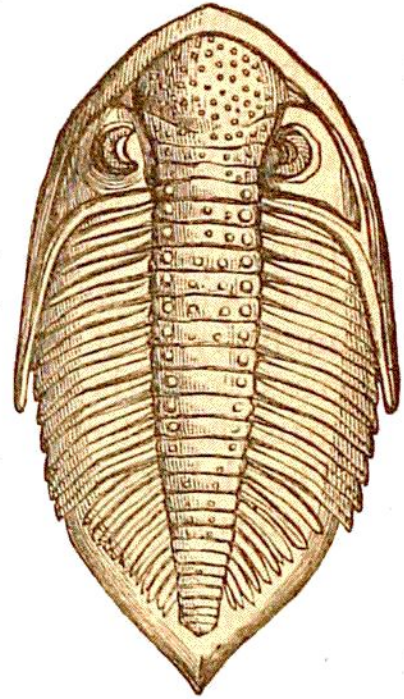


Fig. 18.—Back of *Asaphus caudatus* (Dudley, Mus. Stokes), with the eyes well preserved. (Buckland.)

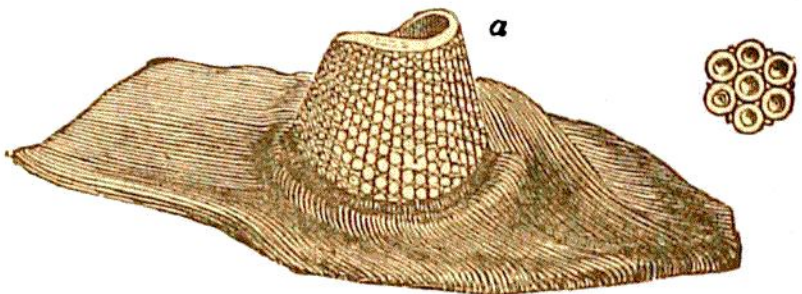


Fig. 19.—*a*, Side view of the left eye of the above, magnified, (Buckland.) *b*, Magnified view of a portion of the eye of *Calymene macrophthalma*. (Hœninghaus.)