

If such a primeval flora as that above indicated ever existed, it must have perished utterly before the incoming of the next great age of the world—that known as the Palæozoic, whose rocks are surpassingly rich in the remains of animals, especially those of the lower or invertebrate classes and those that inhabit the waters.

In the oldest Palæozoic rocks we find no plants certainly terrestrial, but abundance of Algæ or seaweeds, and some gigantic members of the vegetable kingdom which seem to have been trees, with structures more akin to those of aquatic than to those of land plants.¹ At a somewhat early stage, however, in the rocks of this period, we discover a few undoubted land plants.² These seem to be allied to the modern Club-mosses and to their humble relations, the pillworts³ and other small plants of similar structure found in ponds and swamps. Some of them, indeed, appear to be intermediate between these groups. All these plants are Cryptogams, or destitute of true flowers, but do not belong to the lowest forms of that type. Thus, so far as we know, plant life on the land began possibly with certain large trees of algoid structures, and more certainly with the club mosses and pillworts and their allies, and these last in the form of species not tree-like in dimensions, but of very moderate size. The structures of these plants are already sufficiently well known to inform us that the plan and functions of the root, stem and leaf, and of spores and spore case were set up; and that the structures and functions of vegetable cells, fibres and some kinds of vessels were perfected, and all the apparatus introduced necessary for the fertilization and reproduction of plants of some degree of complexity. At the same time, the peculiar structures of the higher Algæ were brought to a pitch of perfection not surpassed

¹ Nematophyton, etc. See "Geological History of Plants."

² Psilophyton, Protannularia, etc.

³ Rhizocarpeæ.