

The lowest divisions of vegetable life may still be recognized as ALGÆ, LICHENES, and FUNGI; and conveniently associated together under the designation of THALLOPHYTES;—a thallus, that is to say a form or forms of vegetation in which there is no real distinction of stem and leaf being, in these plants, with whatever exception, taken for characteristical. And there is no doubt, notwithstanding the numerous and now startling discrepancies of these vast groups, that they stand in close natural relations to each other.

Lichenes are reckoned as intermediate between the other two Classes of Thallophytes; but all the limits are uncertain.

A lichen is (to speak only loosely) an aerial (*) Thallophyte, vegetating only under the influence of moisture, and thus of interrupted and slow (*) growth, but of indefinite duration (*) characterized by certain green cells (*gonidia*; *gonimia*); and the organ of vegetation of which (*thallus*) is distinct (*) from the organ of fructification (*apothecium*).

The thallus of lichens is composed, to speak generally, of 1, slender, more or less branched, loosely intertangled or closely compacted cell-threads (*filaments*; *hyphæ*; passing now into a parenchymatous modification) which constitute the bulk of the plant; being distinguishable into a central, or medullary layer, and an external, or cortical layer: and 2, of the just-named, rounded or elliptical, green, or bluish-green, cells, which form, for the most part, an irregular zone between the medullary and cortical layers, and make what is known as the gonimous layer. These green cells (*gonidia*, which take on now, in certain conditions of growth, a yellowish and even tawny coloration) owe their colour to a chlorophyll-like matter called thallochlor; as

(*) Exceptions, at least apparent, but now also real occur; the rule being however as stated.