

assimilate. They inhale oxygen and give out carbonic acid like animals. They also never form leaf-green, or chlorophyll, which is so characteristic of most other plants. In like manner they never produce starch. Hence many eminent botanists have repeatedly proposed to remove the Fungi completely out of the vegetable kingdom, and to regard them as a special and third kingdom, between that of animals and plants. By this means our kingdom of Protista would be considerably increased. The Fungi in this case would, in the first place, be allied to the so-called "slime moulds," or Myxomycetes (which, however, never form any hyphæ). But as many Fungi propagate in a sexual manner, and as most botanists, according to the prevalent opinion, look upon Fungi as genuine plants, we shall here leave them in the vegetable kingdom, and connect them with lichens, to which they are at all events most nearly related.

The phyletic origin of Fungi will probably long remain obscure. The close relationship already hinted at between the Phycomycetes and Siphonæ (especially between the Saprolegniæ and Vaucheriæ) suggests to us that they are derived from the latter. Fungi would then have to be considered as Algæ, which by adaptation to a parasitical life have become very peculiarly transformed. Many facts, however, support the supposition that the lowest fungi have originated independently from archigonic Monera.

The second class of Inophyta, the *Lichens* (Lichenes), are very remarkable in relation to phylogeny; for the surprising discoveries of late years have taught us that every Lichen is really composed of two distinct plants—of a low form of Alga (Nostochaceæ, Chroococcaceæ), and of a parasitic form of Fungus (Ascomycetes), which lives as a parasite upon