

holding this opinion and leave the facts, to be presently mentioned, to speak for themselves,—suffice it to say here, that men of the greatest eminence as botanists and physiologists entertain no doubt on the subject.

We have, however, another and a larger class of observers, who, while they admit the presence of the fungus, disclaim for it any title to be considered as an originator of disease, but regard it rather, as a foreign and accidental visitor, engendered and fostered by the products of a pre-existing malady. Upon this more important dogma, which has, in this country, been the subject of much argument, I propose to speak at greater length, inasmuch as it is a question of considerable interest, in a medical and hygienic point of view.

Before doing so, however, let me point out some of the various forms of fungi which have been noted, as occurring upon animal organisms, in order that I may put before you the salient points which are worthy of interest and attention. The whole of these lower fungi are ascribed by botanists to a subdivision of the family, which has received the name of *Hypomycelous*. They are minute microscopic plants, consisting in their perfect state of a mycelium, that is, a network of fine capillary tubes or filaments, from which springs an upright, hair-like stalk bearing at its extremity a collection of spores or sporules—the seeds of the plant. These have a diameter of about the  $\frac{1}{30000}$  of an inch and from their extreme lightness are capable of floating about in the atmosphere and are wafted by the air to every quarter in incalculable myriads.

Whenever they alight upon objects favourable to their growth, as upon decomposing organic matter of every description, they readily germinate, provided there be sufficiency of warmth and moisture, both of which are essential to their well-doing.

Let us follow one of these spores, thus located and watch its development; we shall then have the key to the behaviour of the rest. When first given off from the fruitstalk it is a spherical cell, consisting of a cell-wall filled with a homogeneous molecular plasma, but without a nucleus; on the application of warmth and moisture the cell assumes, in the first instance, an oval form; the cell-contents become granular, the granules ultimately coalescing to form one or more nuclei. In its next stage, it becomes elongated, until its length exceeds its breadth by two or three times; and now we observe small eminences arise from its extremities; these are buds, which in their turn, become elongated cells and then give off other buds or shoots, each in succession acquiring additional length, until finally, we find them as filaments or thread-like cells, crossing each other in all directions and forming a network which is termed the mycelium.

At a more advanced stage, these filaments are seen to contain numerous nuclei and granules, and now, several slender threads are pushed perpendicularly upwards; these are the fruit-stalks, the terminal cell of which undergoes budding or segmentation, until a large number of spores is formed into a capitulum or head. These like the original cells we started with are spherical, and their arrangement varies in different genera, for example being collected into a round head or glomerulus as in *mucor*; or into a brush-like one as in *aspergillus*, so named from a fancied resemblance to the brush used for sprinkling holy-water in Roman Catholic Churches.