

is exactly the same in plants. Plants are living beings subject to all kinds of ills without being actually diseased, i.e., being attacked by a specific organism bringing about a pathological condition. Prof. Marshall Ward of Cambridge, England, has expressed himself very instructively on the subject of predisposition to disease in plants. He refers to two plants of the same kind as much alike as possible in every respect, size, condition, development, etc., and goes on to say, "Picture to yourself one of these plants growing under the most perfect conditions, supplied with the proper amount of food, its roots expanding into a well-ventilated soil, rich in humus and plant food, etc., and the other growing under absolutely reverse conditions." The result will be in one case a strong healthy plant and in the other, a poor weakened plant just strong enough to keep alive. Now the conditions, not to say constitutions of these two plants must be very different. Different modes of nutrition we know produce different chemical changes within a living plant. And, no doubt, this difference in the condition of the host plant is accountable for its power of resistance or state of susceptibility. There may be a number of other factors producing similar differences in constitution or in composition, if this is more correct. A potato tuber sound and fresh, will remain free from fungi if kept in an ordinary room, while one that has been exposed to frost or steam heat for a moment will soon be covered with mould fungi of various kinds. We know of course that we have changed the chemical composition of the potato exposed to frost or heat, but we have also partly destroyed its life. The same may be said of Prof. Ward's "ill-treated" plants. Together with the changes of the chemical composition, we have reduced its vital power; hence, would it not be reasonable to expect an increased resistance to disease if the vital power of any living organism is kept up to the highest mark? That this contention is fundamentally correct is amply proven by the fact that cultivated plants which we grow under conditions to which they are not fully accustomed are, generally speaking, more subject to disease, likewise as Europeans are much more liable to disease in tropical climates and vice versa. Sudden or even gradual changes frequently result in lowering the vitality of a living organism. Cultivated trees are constantly subject to such unnatural changes.

I have endeavoured to explain briefly, in the foregoing remarks, the life and nature of parasitic fungi. We have considered how fungous diseases are spread by means of the spores produced by the causal organism, we know how different may be their modes of fructification and that winter and summer spores must be looked for in many kinds, and we have further