

is the health theory. Maintain the normal conditions necessary for the life of a plant, keep the plant free from abnormal changes, and health is established.

The study of the abnormal conditions should begin with those brought about by Nature. Even plants indigenous to a locality may suffer more or less through climatic changes—frost, heat, drought, etc. The injuries of plants by frost are well known; the succulent tissues freeze and burst their cell membranes, and a more or less severe injury is recognisable. Heat and drought are closely allied, and injuries to crops in years when both are prevalent, may prove very disastrous. These are natural conditions, though at the same time injurious to the vegetation. Other injuries are brought about by impure air, smoke poisoning, unsuitable nature of the soil, errors in manuring, etc. These unnatural conditions prove still more injurious to vegetation. That death is due in many cases to the above-mentioned factors is established, but it is also proved that, short of being killed, plants may merely suffer by such causes, and go on growing, but with a increased tendency to take disease. Being no longer in a state of health, little is necessary to end their period of life. Mechanical injuries, accidental injuries by man or animal, storm and lightning, may impair the health of a plant. Plants are highly sensitive, some showing this property more than others. *Mimosa pudica*, *Abrus precatorius*, *Acacia tophanta*, *Gleditschia*, *Robinia*, *Fritidum*, and scores of other plants exhibit extremely sensitive characters. These so plainly exhibit this character, that it can be seen by the untrained observer. Others again show exactly the same reactions, but only visible to the physiologist. How easily also can such beings be influenced so that they may suffer and become susceptible. Physiologists have proved great changes by frost internally, where externally health was apparently preserved. Here is the field for the careful investigator. The symptoms must be taken into account less than the primary cause of the injury. The necessity of this statement needs to be proved by a few examples.

In mycology it is well known that many fungi attack plants in certain stages of development only. The results of my own researches, and other writers, puts it beyond doubt that young and tender leaves, buds, twigs, and whole plants are more readily attacked than old and hardy ones. In forcing plants for the market they are grown under extremely unsuitable conditions, and large and soft leaves develop, easily falling a prey to many fungi which would not succeed in attacking plants grown under ordinary condi-