



JOHN MORLEY

The Stimulation of Plant Growth By Means of Weak Poisons

By COLONEL JOHN MORLEY

BECAUSE of need of air, most roots are unable to thrive in wet soil and their best work is done in soil in which the water is held in a thin film around the soil particles.

The water absorbed by the roots contains mineral substances. It has been found that certain substances are indispensable to the plant while others are not. The indispensable substances comprise four bases and four acids. The bases are nitric, phosphoric, sulfuric and carbonic.

Too great cold and too great heat have much the same effect on the plant as lack of water. The former prevents absorption by the roots. The latter causes water to evaporate from the leaves faster than it can be supplied.

When the surface of the soil is loose and sufficiently dry, a circulation of air is kept up within the soil by constant changes in barometric pressure. When this is prevented the soil becomes sour and unfit for plants and the chemical processes that make food available to the plant are checked.

CERTAIN POISONS STIMULATE PLANT GROWTH

WE ARE informed that plant growth can be stimulated by the actions of certain poisons and it has been known for some time. In the practice of medicine it is well known that when small doses of poison

(strychnine, alcohol, arsenic), are administered, a stimulation of some part of the body results.

In a general way the same principle has been noticed in the growth of plants. The application of fungicides as Bordeaux mixture has often been found beneficial. First the mixture kills parasitic fungi, and secondly it stimulates the plants to a more vigorous growth, but its continual use creates too much copper in the soil which produces too many poisonous substances.

In 1897, Richards discovered the stimulating effects of zinc salts on the growth of the mold fungi. Ono, working in Japan, found that compounds of zinc, copper and iron when present in very small quantities exerted a stimulating effect on the growth of algae.

The action of the same poisonous compounds is not always the same on different grasses. Make up your mind that you have not reached the top of the ladder.

A "ruler" is a growth outcropping from a condition and environment which has been prepared to produce just such a result and no other. Just as fully as in the case with vegetative plant life, and so long too as the underlying conditions persist and in just such proportionate strength. Precisely that is the period when this type of lonely rulers will hold sway. Germination seeds of unrest, injustice and low mental stage produce an urgent forcing out process, which brings into the light a directorate.

Golf Tournaments

September 12-17—United States Golf Association Amateur Championship at the Baltimore Country Club.

September 22-23—League of the Lower Lakes Team Matches for the Depew Cup at Toledo.

September 25-October 1—United States Golf Association Women's Championship at the Salem Country Club (Salem, Mass.)

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