BULLETIN LXXIII.

FUNGICIDES AND INSECTICIDES.

Of the numerous experiments that are being carried on at Experiment Stations in Canada and the United States none have afforded more definite results than those conducted for the purpose of ascertaining what compounds may be used successfully against such parasitic plants as blights, mildews, rusts and smuts, and against the insects injurious to vegetation.

Although results of these investigations are printed in agricultural and horticultural journals from time to time, yet many Canadian farmers are not fully informed in regard to them. During a late trip in connection with Farmers' Institutes I was surprised that so few had as yet learned anything from this field of investigation.

With a view to reach at least the members of Institutes in Ontario I have put into this Bulletin some practical knowledge upon the results of researches in reference to the use of fungicides and insecticides, and hope it will prove handy for reference when information regarding these is required.

I. FUNGICIDES.

Fungicides may be defined as chemical compounds or mixtures used for the purpose of destroying such injurious forms of plant life as live upon other plants by absorbing their juices to such an extent as to affect their vitality. Examples are seen in the *rusts, smuts, mildews and blights.*

It is but a comparatively short time since the life history of these obscure forms of plant life has been made out; but during late years wonderful strides have been made in this department of biology, and we are now in possession of knowledge that enables us to hold in check their destructive effects by the application of so-called fungicides; among which some of the most important are:

Bordeaux Mixture. This consists of copper sulphate, lime and water in the following proportions: 6 lb. copper sulphate, 4 lb. lime, 22 gals. water. This may be prepared by dissolving the copper compound in 16 gals. water; slake the lime in 6 gals. water, and when the latter is cooled pour it slowly into the copper solution and mix thoroughly. Some use less water for dissolving the first. This solution sprayed has been successful against downy mildew of the grape and potato blight.

A modified form 4 lb. copper sulphate, 4 lb. lime and 50 gals. water has been beneficial upon raspberries affected with Anthracnose.