

The Canadian Horticulturist

MAY, 1905

VOLUME XXVIII



NUMBER 5

NEW FORMS OF KEROSENE EMULSION

FRANK T. SHUTT AND W. T. MACOUN, C. E. F., OTTAWA.*

THE value of kerosene or coal oil for the destruction of scale insects as well as for all soft bodied and sucking forms has long been recognized. It cannot, however, be used without admixture or dilution, for its high price precludes its general application on dormant wood, and its injurious action on foliage forbids its employment during the summer season.

Kerosene will not mix with water, but special pumps have been devised for throwing an atomized spray of kerosene and water, provision being made for regulating the proportion of each constituent. These pumps, however, have not proved entirely satisfactory, the difficulty, apparently, being in obtaining a spray of uniform strength.

It is as an emulsion that kerosene has been found most valuable and most widely applicable. The satisfying agent almost universally used is a soap solution, though milk and certain other fluids with more or less viscosity have occasionally been employed. It may be held that whale oil soap and soft soap so used adds to the efficiency of the resulting emulsion as an insecticide, but it seems clear that for the most part the soap simply serves as the vehicle for distributing the kerosene (the real killing agent) in a very finely divided state.

This being the case, it seems desirable to learn if other emulsifying materials cannot

be used which would not only lessen the expense of the spray, but at the same time obviate the necessity of the application of heat, without which the various soap emulsions cannot be satisfactorily made. A notable advance in this direction was made last year by Professor Close, of the Delaware Experiment Station, who has published the results of certain experiments which show that lime has the power of holding kerosene in suspension and forming a perfect emulsion. Prepared according to directions, it makes a fairly stable mixture, homogeneous, *i. e.*, of uniform strength throughout, one easy to spray, and which does not clog the nozzle. Briefly described, Prof. Close's directions are as follows: mix into a "thin sloppy mass" one pound of "Limoid" (an American preparation sold for the purpose) or slaked lime with one quart of kerosene. For a 10 per cent. emulsion, two gallons (imperial measure) are added and the whole emulsified by churning for, say, five minutes, best effected by means of a pump and a Bordeaux nozzle. No free kerosene, he states, will appear for several weeks, and though there may be a separation on standing into limy layers these will readily, if stirred, again produce the emulsion without deterioration. This emulsion, known as K-L mixture, may be used with ordinary Bordeaux (K-L-B),

*I beg to state that while I was associated with Mr. Shutt in the experiments described, to him is due full credit for the discovery of the value of flour in making a kerosene emulsion.—W. T. MACOUN.