

These substances act by corroding the body or by stopping the breathing pores.

(a.) *Lime-sulphur Wash*.—This wash came into use in the control of the San Jose Scale on dormant wood. Its beneficial effects were evident also against other insects and against certain fungous diseases.

It is prepared in two forms: Home-made Lime-sulphur Wash and Commercial Lime-sulphur Wash, diluted to use on dormant wood and on summer foliage.

I Home-made Preparation, Boiled:—Lime (best), 20 lbs.; Sulphur (flowers), 15 lbs.; Water, 40 gallons.

II. Concentrated Formula, Stock Wash:—Lime, 50 lbs.; Sulphur, 100 lbs.; Water, 40 gallons.

(Directions for preparing these washes are given in special bulletins.)

A hydrometer is used to ascertain the proper dilution. "For use before buds burst" dilute to sp.gr. 1.03; "before blossom burst," 1.009; and "just after blossoms fall," 1.008. To get the amount of dilution divide the reading after the decimal point of the stock solution by the reading after the decimal point of the solution desired. For example, if the hydrometer reading of the stock solution is 1.3 and that of solution to use "before buds burst" is 1.03, the amount of dilution is $30 \div 3 = 10$. That is 1 gallon of stock solution makes 10 gallons of spray.

Commercial Wash.—Commercial Washes are now sold which are quite reliable. Directions are given as to dilution.

It is to be noted that Lead Arsenate, not Paris Green, is to be used with the Lime-sulphur Wash.

(b.) *Whale-oil Soap*.—Potash whale-oil soap of a good grade, when dissolved in warm water at the rate of two pounds to a gallon of water, makes an excellent spray for early spring treatment of orchards—just before the buds swell. It is also valuable as a summer treatment against aphids as pear psylla, but it should be diluted as follows: 1 lb. of soap dissolved in 3 to 4 gallons of warm water. The soap has an invigorating effect on the tree, but its cost prohibits its use in orchards on a large scale.

(c.) *Kerosene Emulsion*.—A soap emulsion of kerosene has for many years been used against aphids and other sucking insects. It is prepared by dissolving $\frac{1}{2}$ lb. soap in one gallon of warm water, and adding two gallons of kerosene to the hot soap solution. The whole is then agitated until a creamy emulsion is formed. This stock

Can be used in stables.