green contains the equivalent of about 56 per cent. of the arsenious oxide. The value of these two insecticides will thus be in proportion to these figures. However, one other point must be considered in valuing this substance, that is, its effect on foliage. According to Haywood, a very much larger amount of the arsenic of London purple is soluble in water than with Paris green. It seems probable that a part of this is made up of calcium arsenite and arsenate, which have gone into solution, but at the same time, it is safe to say that Paris green is the safer insecticide. *The addition of lime to the water mixture of the London purple is even more essential than with Paris green.*

Commercial Substitutes for Paris Green.

The fact that the use of lime along with Paris green and London purple has been so generally recommended has given the manufacturer of arsenical insecticides an excuse for making and offering for sale many mixtures containing widely different forms and quantities of arsenic compounds. Many of these substances are poor substitutes for good Paris green. Some of them contain very little arsenic or any other form of poison, while in others there is a large amount of arsenic; but unfortunately, it is not always in such a state of combination as to be safe for use as an insecticide.

Among the mixtures poor in arsenic, the following have been analyzed in our own laboratory:

Black Death: One of the newer insecticides recently offered for sale in this Province is "Black Death." It is sold at 2 cents per pound, or 15 pounds for 25 cents. The composition of this substance, according to our own analysis, is as follows:

Moisture	10.42
Sand, etc.	6.37
Carbon	17.39
Sulphur trioxide	23.72
Calcium oxide	23.30
Magnesium oxide	2.16
Carbon dioxide	7.90
*Paris green	0.43
Undetermined (volatile matter, water of crystallization)	8.31
	100.00

This insecticide is composed almost entirely of charcoal, sand, and gypsum. The only substance present which will poison insects is the Paris green. If mixtures with so small an amount of poison will kill insects, it will be cheaper to buy a pound of Paris green and mix it with

*Copper Oxide, .13 per cent.; Arsenic trioxide, .12 per cent.