

that it remains liquid when cold, at much greater strengths, and that fish-oil itself seems to be more fatal to insect life than other animal fats. A good soap can be made as follows:—

Concentrated potash lye	3½ lbs.
Water	7½ gallons.
Fish-oil	1 gallon.

Dissolve the lye in boiling water, and to the boiling solution add the fish-oil; continue to boil for two hours, and then allow to cool. Any grade of fish-oil will answer."

Whale-oil soap may be applied in the strength of one pound in four gallons of water for brown or black plant-lice, and one pound in six gallons for green plant-lice; warm water should always be used when dissolving it.

Soaps of all kinds are very useful in adding adhesiveness to liquid mixtures when it is necessary to apply these to such vegetation as cabbages, turnips, peas, etc., which have their leaves covered with a waxy secretion which prevents water from lying upon them. Any kind of soap will answer for this purpose, and it may be remembered that one quart of soft soap is about equal to one pound of hard soap.

Carbolic Acid.—This fluid is very valuable as a preventative remedy, owing to its permanent and characteristic odour, which is found to be distasteful to many insects. A convenient form of using it is the Cook wash, which is so effective against root maggots. This consists of boiling up one quart of soft soap, or one pound of hard soap, in a gallon of water. When boiling, add half a pint of crude carbolic acid. Boil for a few minutes and stir thoroughly. The mixture is then ready to be stored away for future use. When required, take one part of this mixture by measure to fifty of water, and sprinkle or spray directly upon the growing plants once a week from the time they appear above ground.

Carbolised Plaster, Sand, Ashes or Sawdust.—This is simply one pint of crude carbolic acid, well mixed with fifty pounds of land plaster or some other diluent. It is used dry by sprinkling it among plants to be protected, and is said to be very efficient against flea-beetles, striped cucumber beetle, etc.

Poisoned Bordeaux Mixture.—The discovery of the great value of Bordeaux mixture as a destroyer of fungous diseases was soon followed by the equally important one that various poisons could be mixed with it and form a joint mixture destructive at the same time of fungous diseases and insect pests. All of the arsenical poisons can be mixed with the lime Bordeaux mixture, and this practice is now a general one, when it is necessary to protect crops against fungous diseases, and at the same time to destroy insect enemies. A useful formula for making the Poisoned Bordeaux Mixture for fungi and leaf-eating insects is given farther on.