

*Arsenic*, a deadly poison, is used in some of the dipping solutions and kills quickly when taken into the alimentary canal or penetrating the tissues of the insect. It is, however, too dangerous a poison to be used except with the greatest care, and the possibility of the animal treated licking itself, or eating food upon which the solution has dripped to such an extent as to get a poisonous dose, is too great to give it strong indorsement. It has its greatest value in this connection in treatment of sheep scab, which often resists more simple remedies.

*Carbolic Acid* one of the most effective of agents against parasites, and especially in certain combinations, is to be highly recommended. In many cases the crude article can be used to as great advantage as the refined, and at great saving in cost. Used externally, without other combination than with water, it should have a dilution of about 100 times its bulk of water. If used too concentrated or upon very susceptible animals, such as dogs, it may be absorbed and cause poisoning. Dr. Francis recommends it very highly in combination for cattle ticks, and the "Poultry World" gives it the highest praise as a combination with slaked lime, to be used in buildings for chicken lice.

*Calomel* is used in some cases, but is for the most part superseded by more satisfactory remedies.

*Benzine* may be used in the form of a spray or wash against bed-bugs and fleas, and in chicken-houses against ticks, though for this purpose it has no advantage over kerosene emulsion.

*Gasoline* may be used in the same way and for the same purpose as benzine. Both must, of course, be used with due regard to their inflammable properties.

*Cotton-seed oil* is strongly recommended by Dr. Francis for treatment of ticks in the Southern States, especially in connection with dipping solutions. Its action is similar to that of other oils, and while it kills some of the ticks, there are others on the same animal which apparently are not injured by it. In the States, where cotton is produced and the oil can be secured at low cost, it has special advantages, either alone or combined with other remedies, as an application for various external parasites.

*Kerosene* has a wide range of usefulness in the treatment of parasites, notwithstanding the fact that it does not seem to have fulfilled the requirements for a good dipping solution. It may be used free for the spraying of the interior of chicken-houses, for the destruction of bed-bugs, and for filling the surface of small ponds, water tanks, etc., in order to destroy mosquitoes or their larvae, and abate the mosquito nuisance. In emulsion it is very effective against lice on cattle, killing both adults and eggs, for use as a spray to kill horn-flies, and as a wash to kill eggs of bot-flies or lice.

Emulsions may be made with either soap or milk, and according to the following well-known formulæ:—

*Milk emulsion*.—To one part milk add two parts of kerosene and churn by a force-pump or other agitator. The creamy emulsion which results is to be diluted with water, using eight or ten times the bulk of water.

*Soap emulsion*.—Dissolve one-half pound hard soap in one gallon of hot water, and while still at near boiling point add two gallons kerosene, and emulsify by use of force-pump or agitator of some kind. Dilute with water, one part emulsion to eight or ten parts water, and use as spray, wash or dip.