I propose to give plain, brief statements of what is known of some of our worst insect foes, with few scientific terms or details, compiling freely from all accessible sources. These extracts, with points obtained from correspondence and original observation, without any particular care in the arrangement of subjects, or claim to originality in treating them, must serve as this preliminary study of the pests of the farm, grove and garden.

INSECTICIDES.

There are remedies applied either to the affected plant as a preventive, to the food-plant, or breeding ground of the insect, or to the insect itself. Kerosene, petroleum, whale oil soap, resin or arsenical soaps, the oils of tansy, mint, pennyroyal, cedar, tar or cade, thymol, cresylic acid, carbolic acid, alcohol, etc., are generally used in watery, milky or soapy emulsions. They are applied with a spray-pump, and really no farm is complete without one of these invaluable tools.

Sulphur in powder, kerosened lime, sulphureted lime, Pyrethrum powder, hellebore, quassia and tobacco are all valuable; but for most insects, arsenic in some form is most efficacious, especially when added to emulsions of soap or kerosene. In this form it makes certainty of death to any insect it may touch.

Powders are best applied in the early morning, while the dew is on and insects are chilled and sluggish. Solutions and emulsions do better after a slight rain.

THE ROOT-KNOT WORM (*Heterodera radicicola*).

Nothing has been a greater mystery to the average planter in Florida than the effects of this microscopic thread-worm. As long as the land was new, but little trouble was felt from this cause, but with the influx of fruit growers and gardeners, the use of old land stimulated by nitrogenous fertilizers or composts, producing a rapid and weak growth of roots, this tiny worm has arisen to the dignity of a pest that threatens to destroy our gardens and orchards in time.

I am convinced that in many cases of failure in growing the peach, fig, grape and early market gardens in old land, the *Heterodera* is to blame, rather than the fertilizer, the soil or any influence of weather. These worms average one hundredth of an inch in length, are tapering at each end, whitish, and quite active; but the female, when gravid, changes form rapidly, becoming much larger, often one-twentieth of an inch long, and at maturity is little else than a sack of eggs, that soon become free worms and seek new fields of operations. About a month completes a generation. Entering the softer structures of a root, they, in some way, cause an enlargement called a "knot" that, having low vitality, soon decays, and the plant, deprived of sustenance, speedily dies. The worms especially do great injury to young nursery trees, early peas, beans, cow peas, pindars, cucumbers, melons, squash, beets, radishes, turnips, cabbages, collards, celery, parsley, cotton and okra, and really, nearly the whole catalogue of ornamental and useful plants are more or less injured.