

APHIS, OR PLANT-LOUSE.

It may almost be said of this familiar pest that there are as many varieties of plant lice as there are species of plants in the world; nearly every form of vegetable life

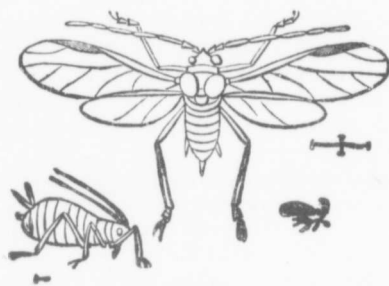


Fig. 29A.

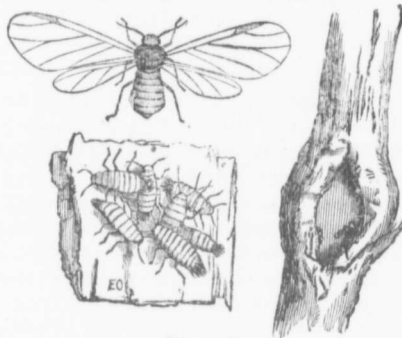


Fig. 29B.

has its own Aphis to suck its juices and to impair its vitality. It would, therefore, be an endless task to attempt to enumerate all the different kinds of Aphis that are to be met with and fought against; the same remedies, however, will apply with almost equal efficacy in all cases, allowance being made for the difference of application requisite in treating, for instance, an apple tree and a wheat plant, a hop vine and a window flower. The illustration (Fig. 29A) given herewith represents a highly magnified winged male and wingless female of the plant-louse attacking the apple (*Aphis mali*, Fabr.); the species infesting other plants are very similar, varying chiefly in colour from pale green to deep black. Fig. 29B represents the winged form of the woolly Plant-Louse of the apple, a group of the larvæ, and a twig perforated by the insect.

The ordinary remedies for this pest are (1) watering the infested plants with strong soap-suds, or a decoction of coarse tobacco; (2) dusting with lime or sulphur; (3) exposing them to the fumes of strong tobacco. The first remedy is applicable to most cases, and the third only to plants in pots, or those sufficiently small to be covered over while undergoing fumigation.

Many experiments have recently been made both in England and the United States, for the purpose of finding out a cheap and thoroughly effective remedy against this and other insect pests. Coal oil (or kerosene) is so cheap, so universally an article of domestic consumption, and so deadly to all insect life, that experiments have been especially directed towards its employment as an insecticide. The great difficulties to be overcome are its destructiveness to vegetation, when applied undiluted, and the almost impossibility of diluting it, beyond a mere mixing of a momentary character with water or other liquid. These difficulties have, however, been at last solved by means of "emulsions." One of these, recommended by the United States Department of Agriculture, is made as follows:—

"Take of refined kerosene (coal oil) two parts, and of sour milk one part. Mix in a pail, or tub, by continuous pumping with a force-pump back into the same vessel through the flexible hose and spray nozzle. After passing once or twice through the pump the liquids unite and form a creamy emulsion, in which finely divided particles of oil can be plainly detected. Continue the pumping until the liquid curdles into a white and glistening butter, perfectly homogeneous in texture, and stable. The time required for producing this butter varies with the temperature. At 60° it will be from one-half to three-quarters of an hour; at 75°, fifteen minutes; and the process may be still more facilitated by treating the milk up to, but not beyond, the boiling point.

"Upon standing for a day or two the milk (if sweet has been used) will curdle, but it only requires to be stirred, not churned again, to bring it back to its former smoothness. But if sour milk is used no fermentation ensues, and if not exposed to the air the butter can be kept unchanged for any length of time.

"When needed first thinned with water, and then used times with water a is found to injure usually suffice for the cost of this article,

Another emulsion quantity is required soap, or whale-oil add it boiling hot and spray nozzle, f thickens on cooling before using, one p emulsion thus made cent per gallon.

These emulsions lice, but also for m on a large scale, an have been applied power.

There are two are familiar know grubs. The forme North America.



FIG. 30.

consistency of a in water. Any (and twigs as far borer does not c wash should be i prevent the depos (Riley), who has h taken as many s having trees sub every two weeks the bark, which is destroyed by clear labour, but it is w by this creature.

past season has co The round-he ommon as the spe