

## PLANT LICE OR APHIDS.

these insects are found in the sub family Diaspinæ,—“the armoured scales,”—familiar species being the oyster shell bark louse (*Mytilaspis pomorum*); the “scurfy” bark louse (*Chionaspis furfur*), and the dreaded San José scale “*Aspidiotus perniciosus*”). These, like the plant lice, are inconspicuous, and extraordinarily prolific. The life histories vary somewhat, but the feeding habits are much the same, and the principles which govern the methods of fighting the one, hold good also against the other.

The family Aphidæ contains so many species of plant lice that it is out of the question to give even the briefest description of many of them. Probably the two best known to fruit growers are the black cherry aphid (*Myzus cerasi*), and the green aphid. Less familiar species are the hop-louse, melon-louse, cabbage-louse, etc. Some of these species feed on an immense variety of plants. A large number of species concern themselves mainly with the roots of plants, and are extremely difficult to eradicate; the corn-root louse and the peach louse (*aphis persica-niger*) are examples. Then there are the gall producing types, such as the “cock’s comb” gall, and finally the “woolly plant lice,” which are highly injurious, and are typified in the “woolly apple louse.”

The life history of most of the plant lice is as follows: They winter in the egg stage. Directly warm weather arrives and growth commences, the eggs hatch, and in a very short time the wingless aphid gives birth to living young. In five or six days the young aphids are ready to reproduce, so that by the end of a few weeks the progeny of the original “stem-mother” mounts well into the millions. All this time no males have been produced; plant lice

in the early part of the season always breeding agamically, that is, without the intervention of a male. If reproduction is very rapid a scant food supply is guarded against by the birth of winged forms, which hie off to “fresh fields and pastures new.” As the cold weather approaches, and growth of vegetation ceases, the plant lice develop both sexes, the female being wingless. A few eggs are laid, sometimes very few, usually at the ends of the twigs, or near buds where vegetation is likely to start first in the spring. The eggs are tough, and resist successfully ordinary insecticides and severe climatic conditions. The lice, of course, live on the juices of the plant or tree, the effect on the tender growing shoots being woful. When sap is abundant, and the lice are present in great numbers, the “honey dew” which they excrete to ease themselves, glazes all the adjacent foliage, and a fungus disease develops which rapidly kills the vegetable tissue. It has been thought till quite recently that this “honey dew” was ejected from two little tubes frequently found on the upper part of the sixth abdominal segment. Professor Comstock states that this has been found to be a mistake. The flow of this sticky liquid is from the hind opening of the alimentary canal.

The relationship of ants to the plant lice is now so well known that it is hardly necessary to refer to it. Readers of Sir John Lubbock’s works, of Darwin’s “Origin of Species,” etc., will readily recall the interesting chapters dealing with the relation of these insects to each other. The principal food of the ants seems to be this same “honey dew,” and though ants are not directly injurious to vegetation, they are, undoubtedly, indirectly injurious, inasmuch as they protect and colonise the various species of aphids. I look upon