

the western peninsula of Ontario, but I have never met with it north of the lake or east of Toronto. The beetle can be at once recognized by the two creamy-white stripes running the whole length of its brown body, while the grub (Fig. 31a), may be distinguished from the other species by its round, chestnut-brown and shiny head and thick body. For a full description of the insect and its habits, the reader is referred to Saunders' "Insects Injurious to Fruits." The

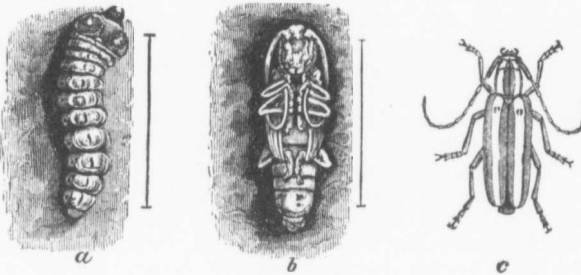


Fig. 31.

remedies to be employed in warding off the attacks, or destroying this insect, are the same as those given above for the flat-headed borer; it should be noticed, however, that the work of this creature is almost entirely confined to the base of the tree, near the ground, and therefore it can be more easily detected and dealt with. A sure indication of its presence is afforded by the castings which, when first discharged, "look as if they had been forced through barrels of a minute double-barreled gun, being arranged closely together in two parallel strings." When observed, a sure remedy may be found in cutting out with a knife, or probing the burrow with a wire.

APPLE-ROOT PLANT-LOUSE.

This insect (*Schizoneura lanigera*, Hausm.) has two forms, in one of which it attacks the branches of the apple tree; in the other it works under ground upon the roots.

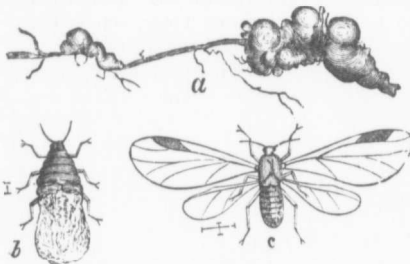


Fig. 32.

the tender roots, sucking their juices, and weakening, oftentimes seriously, the life of the tree. When an apple tree is found to be sickly without any evident cause, the presence of this insect may be suspected. The tree should then be dug about, and the earth removed from the roots in order to see whether they are knotted as in the figure, which would indicate the work of the louse.

The simplest remedy, when the roots are uncovered and the lice are brought to view, is to scald them with hot water, nearly boiling, or to drench them with strong soap-suds.

For the use of coal oil against this and other underground pests, such as the grape Phylloxera, etc., a plan has been devised by Dr. Barnard, of Washington, D. C., that seems to be effective. The great difficulty hitherto in the use of coal oil for root insects has been its application on, or just beneath, the surface of the ground, and close to or above the roots; when applied in this way its contact with the roots themselves and their consequent destruction can hardly be avoided. Dr. Barnard employs what he calls a "nether inserter," which is thus described (*Psyche*, vol. iv, p. 134): "It consists of a tube which is made to fit closely around a central solid shaft somewhat longer than the tube and pointed at its lower end. The tube may have an internal diameter of 15 mm. (about half an inch) and the shaft a diameter of 12 mm. The upper end of the tube expands like a bowl. The upper portion of the shaft is weighted with a heavy ball so disposed

In the former character it seldom does much damage, but, if troublesome, it can be got rid of by the vigorous use of a stiff brush wet with one of the solutions referred to for use against borers. It may be at once recognized by its habit of living in clusters covered with woolly down.

The underground form is represented in the accompanying wood-cut, fig. 4; *a* represents a root covered with knots caused by this insect; *b* a wingless louse, shewing the blueish-white cottony substance with which it is covered, and *c* a winged specimen. It attacks

that the shaft can the tube and then ground, both tube shaft is then wholly it is placed beneath withdrawn and the whatever may be u In a later communi the effective use of treatment applies i among others the i Aphis, as it is some evidently the distri danger of contact v passage upwards to

Almost any ca country is locally c belongs from its hab fresh pastures and



Fig. 33.

with a lantern dur



Fig. 35A.

Th species the adj oyster- orum, which i of the two or first, du examin scales c they c the sca branch at, the at the