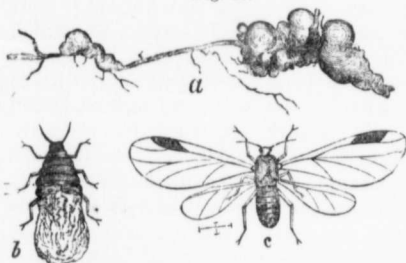


"At the end of summer these watery, swollen growths dry up and die, and thus form deep cracks. With the return of spring (as in other cases of injury) a new growth forms round the dead part, and this soft tissue is ready for the young Aphides. Thus, from the swollen diseased growth partly caused by the Aphides, partly by the natural attempts of the tree to repair damage, a constantly increasing diseased mass arises, which shelters the insects in its crevices and finds food for them in its young hypertrophied formations."

In America, on the other hand, this minute insect works under ground, and produces upon the roots swellings and excrescences of all sorts of shapes and sizes. These materially

Fig. 43.



a, The swellings on the root; b, the larva, with the woolly matter attached to its back; c, the perfect winged insect.

interfere with the tree's supply of nourishment, and when very numerous occasion its death, especially if the tree be very young. In Canada we are not aware that this insect has been ever observed, though a similar cotton-covered insect is very common on the branches of the alder, nor does it prevail in the more northerly parts of the Northern States, but further south, especially in Southern Illinois and in Pennsylvania, it has been regarded as one of the worst enemies against which the apple trees have to contend. In 1848 it was found to be so abundant on the roots of nursery trees in Chester County, in the latter State, that thousands of young trees had to be thrown away. In the Eastern States it has frequently been found upon the branches of trees above ground, while working at the same time beneath the soil, and on the continent of Europe it has occasionally been found under ground, producing the same swellings upon the root as in America. It is evident, then, that the habits of the insect are governed by the nature of the climate and the character of the soil.

This insect, to quote Miss Ormerod's Manual, "may be known at a glance from the common Apple Aphis (*Aphis mali*), which is injurious to the leaves, by the white wool with which it is more or less covered, and from which it takes its name of 'Woolly Aphis,' and an examination of the wings through a magnifying-glass will show that they are differently veined. A strong vein runs down the fore wing near the front edge, and from this three veins turn off towards the hinder edge. The third of these veins from the body has only one fork in the American Blight or Woolly Aphis. By this the *Schizoneurinae*, to which division it belongs, are distinguished from the *Aphidinae*, which have two forks to this vein (as in the Hop Aphis); from the *Pemphiginae*, which have this third vein without a fork (as in Lettuce Aphis); and from *Chermisinae*, in which this third vein is absent (as in Larch Aphis and Spruce Aphis). This difference in the veins of the fore wings is one clear distinction between the above-mentioned four tribes, of which the great family of *Aphididae* (which includes all the various kinds commonly known as *Aphides*) are composed.

"The Woolly Aphides are without honey-tubes, and underneath the wool are mostly of a yellowish, reddish, or reddish plum-colour. The winged specimens are described as pitchy between the wings, and green, or with the abdomen of a chocolate-brown. The wingless females may be found packed closely together in the cottony masses, with the pale reddish young moving about amongst them. Winged specimens may be found in July and August."

When attacking the roots, the easiest mode of getting rid of this insect is to drench the infested locality with very hot water, which, though hot enough to destroy the life of the insect, is not injurious to the vegetable organization. In the case of young trees that are being transplanted the pest may be got rid of by dipping the roots in strong soap-suds or tobacco water.

When, however, as in England, the insect affects the branches, "its great harbouring points and the nooks from which the broods come forth in spring and infest the trees, are crevices, especially such as are formed of young bark sheltered under old dead masses. It is, therefore, very important to keep up a clean, healthy, well-trimmed state of the branches, such as will not allow of lurking places, or, if they do exist, will allow of these