

FIG. 1755. FLAT-HEADED BORER—*a*, larva or grub; *b*, adult beetle.

mixture which will prevent the deposition of the eggs. A carbolic soap mixture, made by adding a pint of crude carbolic acid to a quart of soft soap dissolved in two gallons of boiling water, applied with an old scrubbing brush, has been found very effective. A white-wash applied on the trunk and well up into the branches is also to be recommended.

The *Flat-Headed Borer* (*Chrysobothris femorata*) is almost as destructive as the *Round-Headed Borer*, and has a very similar life-history. In appearance however, it is quite different. The beetle is about half an inch long, flattened, and of a dark green, bronzy color. (Fig. 1755.) The grub or larva is light yellow in color, about an inch in length, and with a very conspicuous head, which is flat, and very broad compared with the body.

Usually it does not take so long for this insect to pass through the various stages of its life-history as is the case with the *Round-Headed Borer*. The period varies from one to three years, generally one year. As in the case of the *Round-Headed*, the beetle deposits her eggs about the end of June. The young grubs bore into the sap-wood where they tunnel out flat channels, sometimes girdling the tree. These tunnels are not so regular, and do not penetrate so far into the hardwood as do the tunnels of the *Round-Headed Borer*.

As a rule the eggs are deposited on the trunk a few feet from the ground.

The same remedies may be used against these pests as have been found effective with the *Round-Headed Borer*. Prof. Comstock advises the placing of one or two cakes of

soap in the forks of the trees, so that the rains will dissolve the soap and wash it down over the trunks.

It may be said here that these two borers are not only destructive to shade trees, but also to apple, quince, and pear trees.

There are other borers which also do much harm. The *Locust Borer* (*Cyrtene robiniae*) is destructive to locusts in some localities. The beetles of these may be collected quite readily on Golden Rod in the fall. They are black with many yellow bands crossing the

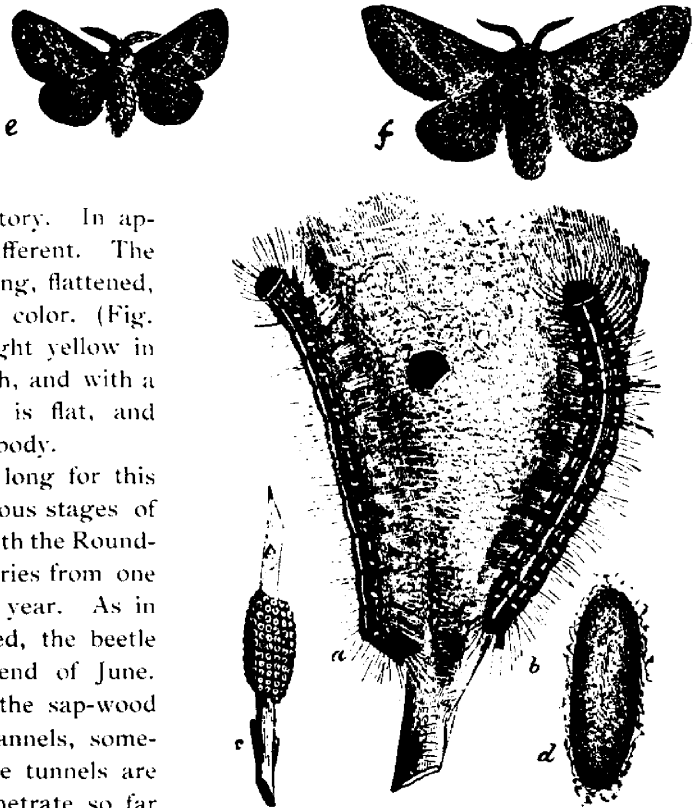


FIG. 1756. AMERICAN TENT CATERPILLAR—*a* and *b*, caterpillars on nest; *c*, egg cluster; *d*, cocoon; *e*, male moth; *f*, female moth.

wing-covers. Many locust trees can be found whose trunks are perforated by holes made by the grubs of these beetles. The holes extend through the bark into the hardwood, injuring the trees so badly that death