

In two genera, *Platypus* and *Xyleborus*, the eggs are deposited free in the tunnels. The larvæ of *Platypus* live free in the tunnels until nearly ready to pupate, when pupal cells (cradles) are cut from the sides of the tunnels deep within the wood.

The larvæ of *Xyleborus* live and pupate within the parent tunnels without cutting pupal cradles. In *Corthylus*, *Trypodendron*, *Pterocyclon* and *Gnathotrichus* the eggs are laid in shallow niches cut by the female along the sides of the tunnel, and usually well within the wood; the larvæ extend these niches away from the tunnel, forming larval cradles, in which they remain until mature. The length of the completed cradles is slightly greater than that of the adult beetle.

The adults of the Ambrosia-beetles bestow great care upon the young larvæ, supplying them with the food-fungus, referred to below, and removing the excrement from the cradles. In some species even older larvæ assist in caring for the eggs and younger larvæ. The habits of many species are almost as remarkable in this respect as are those of the social Hymenoptera.

The chief and probably the entire food of these beetles is a fungus known as Ambrosia, which they propagate within their tunnels. From this habit comes the name "Ambrosia-beetles." The tunnels are kept entirely free from chips and refuse, and the walls are covered by the fungus growth. So far as known, except in the cases of a few closely-allied forms, each species of beetle uses a characteristic species of fungus. The mycelium of the fungus pervades the tissue about the tunnels for one or two millimetres, colouring the wood dark brown or black, so that the tunnels have the appearance "of having been bored with a red-hot wire." By this means the tunnels of Ambrosia-beetles are easily distinguished from those of all other wood borers. When new tunnels are cut, the fungus is carried there by the beetles, and started upon the tunnel walls, in some cases upon specially-prepared beds of chips and excrement.

When working in large trees some species enlarge the same set of tunnels through several generations; but usually each generation excavates a new abode.

An excellent discussion of the habits of the Ambrosia-beetles, by Mr. H. G. Hubbard, is published in Bulletin No. 7 of the U. S. Division of Entomology.

THE TWIG-BEETLES.—The Twig-beetles include a few species belonging mainly to the genera *Hypothenemus*, *Pityophthorus* and *Micracis*. They bore into the bark and wood of terminal twigs of trees and shrubs both for food and for breeding purposes. They feed upon the