

search for wood and bark beetles of all kinds in different sections of the State, I have only one record of this species or its work in the wood of an indigenous tree, and that was in a hemlock drift log, near an old orchard in which the insect was abundant. Fitch, Leconte and Packard referred to the abundance of *X. xylographus* and *Tomicus xylographus* under the bark of pine, but they were evidently referring, as Say did, to the habits of *Tomicus caelatus*, which, while a true bark-boring beetle, is also a wood engraver.

*Breeding and Feeding Habits.*

The habits of *X. xylographus* are quite fully and accurately described by Eichhoff<sup>1</sup>, and recently Mr. Hubbard, in his excellent paper on the ambrosia beetles of North America, has contributed additional information, especially with reference to the ambrosia fungus upon which it feeds, from all of which, together with what I can add from personal observations, we are enabled to present the following :

The fertilized females pass the winter in their brood chambers and emerge in the spring (April and May, near Morgantown, W. Va.). They are then attracted to sickly, dying or felled trees, in the living or moist dead wood of which they prefer to excavate their brood galleries. A crevice or opening in the bark, such as may be made by other insects, or, as I have observed, those made by the yellow-bellied woodpecker, but more commonly the edge of a wound, or a dead place on a living tree, is selected as a favourite point of attack. Here a female will commence the excavation of a mine, and after she has penetrated the wood a short distance, another female (as I have observed) will come to her assistance, one working at the excavation, while the other guards the entrance and assists in expelling the borings. The primary or main gallery is usually extended into the heartwood before eggs are deposited. When the primary gallery is completed (according to Hubbard) a bed is provided on the sides of the gallery for the propagation of the special species or variety of ambrosia fungus which is to furnish food for the future broods. The first set of eggs are few in number (five to ten) and are placed without any protection on the sides near the end of the main gallery, or in cavities or short branching galleries (Plate 3, fig. 7, 8), one-half to one inch from the end, where, upon hatching, the young larvæ find a supply of ambrosial food. After the first set of larvæ have attained considerable size, another set of eggs are deposited, and so on at intervals until a

1. W. Eichhoff, European Barkenkafer, Berlin, 1881, pp. 280-281,