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THE LOCUST BORER

BY C. E. SANBORN AND H. R. PAINTER

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THE LOCUST BORER

(*Cyllene robiniae,* Forst.)

C. E. SANBORN
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INTRODUCTION

The growing of first-class locust trees in this State is a difficult problem on account of the damage done by the locust borer. (See frontispiece.) This is one of the most injurious pests of the locust tree. The tree is well adapted to this country and is grown quite extensively, but unless insect damage is controlled to a greater degree in the future than in the past, there will be no profit in the growing of locust trees.

Locust trees may be extensively mined by the borers and yet not readily succumb. The injury, however, renders the trees unfit for posts. In Oklahoma many of these trees are grown for posts as well as for shade.

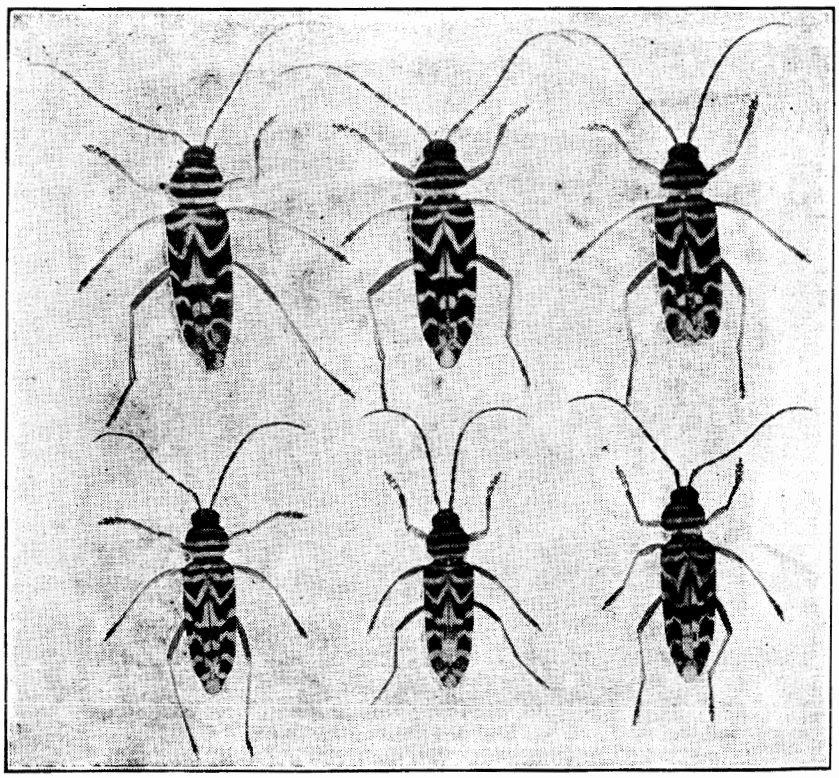

Figure 1—Adult locust borers; females above, males below; slightly enlarged

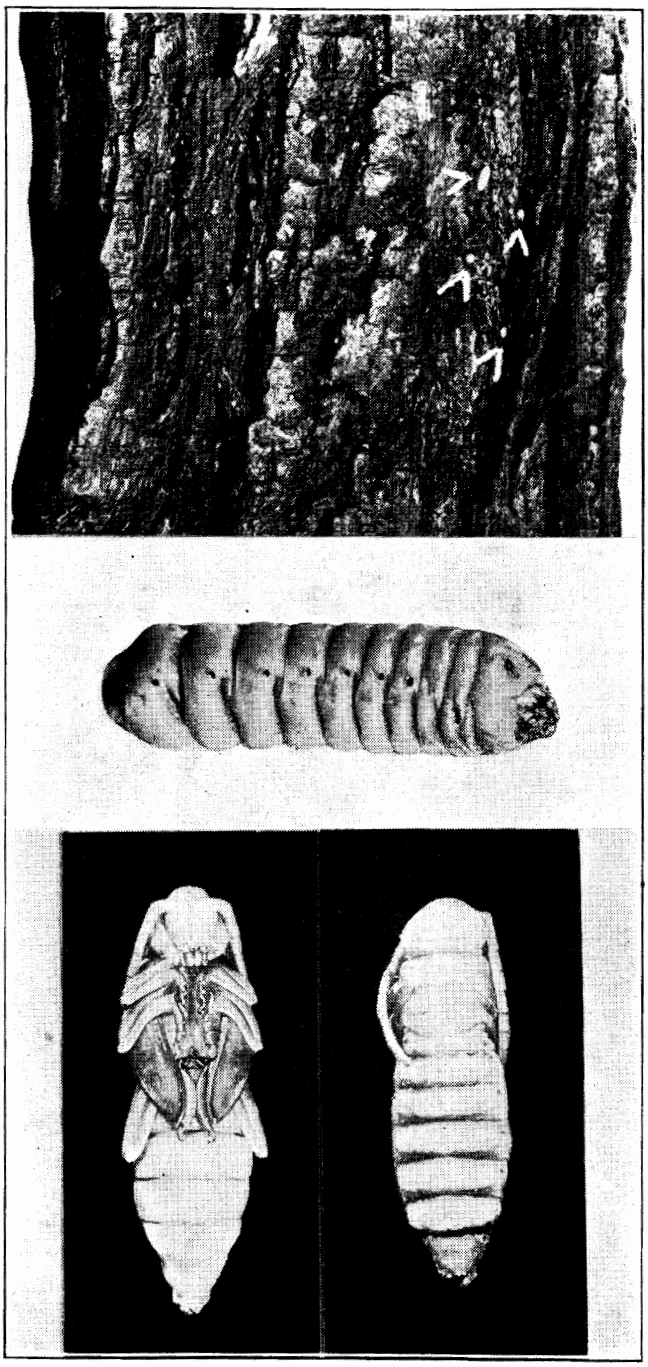

Figure 2—Above, section of bark showing eggs, natural size. At center, larva, slightly enlarged. Below, ventral view of pupa at left, dorsal view at right, twice natural size

DESCRIPTION OF BORER

Adult.—The beetle is about four-fifths of an inch in length and is blackish in color with yellow crossbars on the thorax and wing covers. The male is a little smaller than the female. The third crossbar on the elytra, or wing covers, is W-shaped. The elytra taper gently from the base to the rounded tips. Legs and antennae are reddish-brown.

This insect is quite similar to the hickory borer (Cyllene pictus), but is easily distinguished from it since this borer appears in the fall, while the hickory borer appears in the spring.

Egg.—The egg (shown in Figure 2) is about one-twelfth of an inch in length, somewhat tapering at one end and blunt at the other; color, white; surface, smooth.

Larva.—The larva (also shown in Figure 2), is a white, footless grub about one and one-fifth of an inch long when mature. Nine spiracles are present along the sides of the body. The one nearest the head is a little lower than the others. The head is small and dark colored.

Pupa.—Is seen in Figure 2, and is similar in color to the larva. The average length is nearly one inch. The appendages, except the wings and elytra (wing covers), are well formed but folded against the body. The wings are very feebly developed, while the wing covers are small, oblong pads about one-third of an inch long.

LIFE HISTORY

Adult.—The adult beetles appear about the middle of September. By means of screen wrapped around the trunks of a number of trees, and which were examined daily, it was possible to obtain accurate data regarding the date of appearance of the adults. Their food consists of pollen of flowers, chiefly that of the common goldenrod. The insects soon mate. The females then run about over the trunk and larger branches of the trees searching for places in which to deposit eggs. Mating may take place a number of times during the oviposition period. In one particular instance a pair was seen to copulate twice within three minutes. They remain in copula only a few seconds. The beetles are active during the warmer part of the day. Late in the afternoon they seek shelter in rubbish on the ground and remain there during the night.

Egg.—The eggs are generally placed singly in V-shaped crevices in the bark. (See Figure 2.) In some cases, however, a number of eggs may be placed in a group in an old wound. It requires only a few seconds for the deposition of an egg. The average number deposited by a single female has not been determined, but it is about one hundred. Eggs hatch about six or seven days after deposition.

Larva.—The young larva bores through the bark and remains active until cold weather. Then it ceases tunneling and lies in a dormant state throughout the winter.

During the fall the location of larvae can often be discovered by the presence of small, moist spots on the bark, as well as small masses of sawdust pushed out by the young borers through the openings of their tunnel. In the spring the larvae become active and burrow deeper into the tree, often penetrating the heartwood. From here the tunnels run upward from four to six inches. The larvae remain active throughout the summer, maturing about the middle of August.

Pupa.—Pupation takes place in the tunnel. This stage lasts from ten days to two weeks. About a day before the pupa transforms to the adult stage the yellow crossbars begin to appear on the thorax and wing covers. From specimens studied, it was learned that the insects do not always emerge from the trees immediately after transforming from pupae to adults, but remain for some time in the tunnels.

CONTROL

Disease.—Oftentimes dead larvae in various stages of development have been found in tunnels. It seems that this may have been due to disease, but thus far investigations do not warrant a definite conclusion.

Insect Parasites.—The wheelbug (Prionidus cristatus) is known to feed on the adults. It is not instrumental, however, in controlling an infestation of these beeltes. The enemy grasps the beetle and inserts its proboscis into the body of its host and feeds on the vital fluids.

Clean Cultivation.—Since the beetles feed mainly on the pollen of the goldenrod it would be well to destroy all such plants. By re-

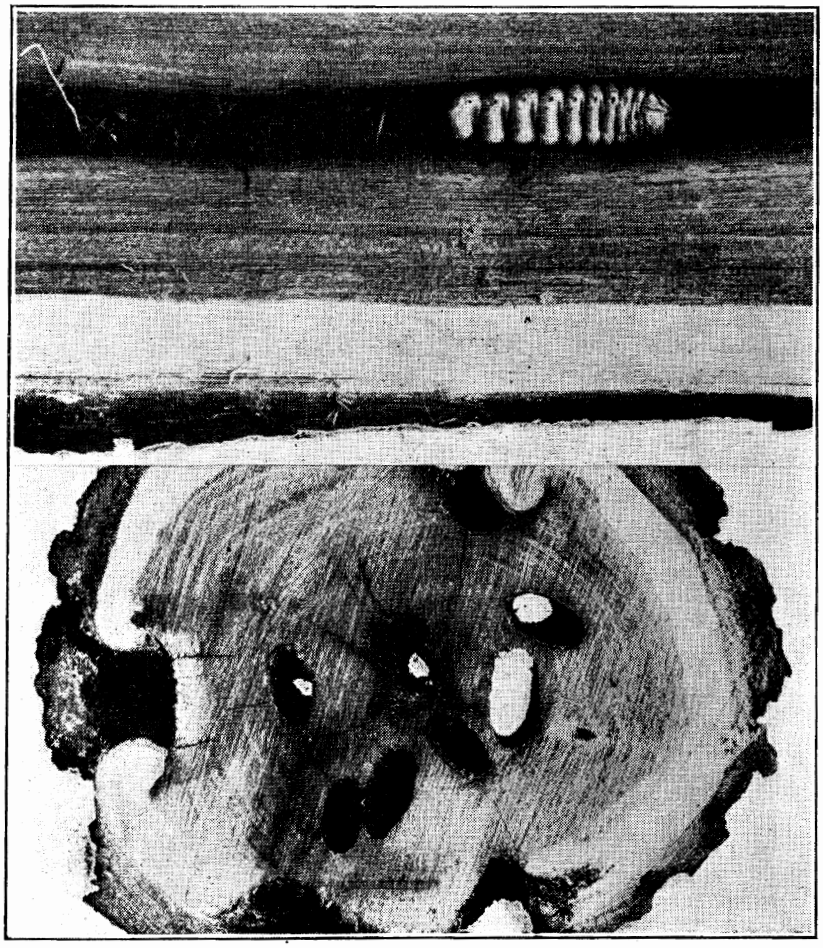

Figure 3—Above, Larva in tunnel; below, cross-section of tree trunk showing work of larvae; natural size

Figure 4—Above, tree trunk split open to show tunnels made by larvae. Natural size. Below, bark removed to show work of larvae; natural size

moving the food supply the development of eggs would be checked. Consequently the infestation would be reduced to a marked extent. The fact that the goldenrod is a very good honey plant makes this method somewhat objectionable in localities where bees are kept.

Whitewash.—A coating of whitewash applied to the trunk and main branches of the trees during late summer before oviposition begins will prevent much damage. The insects do not oviposit as readily in the bark coated with whitewash as they do on untreated bark. The application should be well made, that is, all cracks and crevices in the bark should be filled with the mixture.

Tanglefoot.—Bands of tanglefoot from two to five inches wide were applied to the trunks of trees about five feet above the ground to ascertain if this material might be effective in trapping the beetles. These bands remained in good condition during the entire fall, but not a single beetle was caught. Beetles placed in these bands by the experimenter were able to free themselvs from it. This shows that tanglfoot is ineffective so far as capturing the beetles is concerned.

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