

had so few in my own nursery that I had no trouble in cutting off all the injured limbs and burning them. I have never found them trouble the pear."

From this full series of specimens the somewhat important scientific fact has been ascertained that this and the rare *X. obesa*, Léc., are the same species.

Mr. J. B. Smith, of Washington, who kindly confirmed the identification of the specimens, writes to me: "The *Xyleborus* is *pyri*, i.e., the female is; the male is *obesa*. This proves what Mr. Schwarz has long claimed, that *obesa* was but the male of *pyri*. Both of these are equal to the European *dispar*, Fab. *Obesa* is extremely rare, only two or three specimens being known thus far."

Mr. Schwarz also called the attention of the Entomological Society of Washington to the probability of the above identity on April 1, 1886.

In Jacquelin du Val and Fairmaire's "Genera des Coléoptères d'Europe," there are beautiful enlarged figures of both the male and female under the name of *Bostrichus dispar*.

The male and female differ considerably. In the female, fig. 13, which is about  $\frac{1}{2}$  of an inch in length, the thorax is large, very convex and rounded, and comprises about  $\frac{1}{3}$  of the insect, it is much roughened in front with coarse protuberances, the elytra are furrowed, and each one bears about six stripes of punctures and rows of hairs. They slope off slightly behind, but not nearly so perceptibly as in many insects of the same family. Each tibia, or shank, is much widened and flattened towards the end, bearing at the extremity a spine, and on the outer margin some teeth and bristles pointing outwards. These are no doubt a great assistance to the beetles in moving about in their burrows, which the mature beetles frequent much, retiring quickly out of sight on the approach of danger. The tarsi, or feet-joints, are very slender as compared with the shanks.

The male of this beetle is much smaller than the female, seldom exceeding one-tenth of an inch in length. The thorax is quite differently formed, being much flatter and instead of being higher than the base of the elytra, slopes sharply down to the head. The tibiæ, too, are less inflated. Altogether it is quite a different looking beetle and was as above stated at one time supposed to belong to a different species.

The injuries committed by this small beetle are very great compared with its insignificant size, and I have had the statement made to me several times that it seems to poison a large area of wood around its burrows when these are in the solid wood. In the young limbs the burrows cut through their tissues so that they are completely girdled. Some specimens injured in this way which were sent to me by Mr. Smith and Mr. J. D. Eells, of Sheffield Mills, N.S., had as many as five tunnels in a length of  $4\frac{1}{2}$  inches. Mr. E. E. Dickie also sends specimens from Cornwallis, N.S. He says: "It is doing much damage to our apple trees in this part of King's County; we do not know it is in the tree until the leaf begins to fade." Mr. T. E. Smith writes from the same locality: "I send by this mail specimen of apple twig borer, of which we were talking last winter. One of my neighbors says he has lost about forty fine healthy apple trees, mostly Gravenstein and King of Tompkins. They attack the butt, and in some cases well into the limbs of young and bearing trees a foot in diameter,\* mostly on the north side of the tree. I recommended plugging with wooden pegs such holes as were visible, to stop their supply of air. We found this too tedious and used fine cut nails. Those that were plugged in on Saturday were coming out in other spots on Monday. We are now going to try scraping and using a thick coat of whitewash with a mixture of Paris Green. Some are trying a coating of tar, others bore a hole and fill with paraffine and fill up."

The plugging up of the holes would, of course, be useless, as discovered by Mr. Smith, and the last two remedies would be very injurious to the trees. The thick coat of whitewash with Paris Green would probably be a useful remedy. I suggested applying at once a thick soap wash to be prepared as directed on page 19 of Saunders's *Insects Injurious to Fruits*, and known in my correspondence as "the Saunders Wash." It is as follows:—

\* Mr. Smith has since written, "I think after all they only attack diseased trees."